

SHORELINE MASTER PROGRAM - ADOPTION DRAFT

City of Castle Rock

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TABLE OF CONTENTS

1. INTRODUCTION	1-1
1.1 Title	1-1
1.2 Adoption Authority	1-1
1.3 Background.....	1-1
1.4 Purpose and Intent	1-3
1.5 Governing Principles.....	1-4
1.6 Liberal Construction	1-4
1.7 Severability	1-5
1.8 Relationship to Other Plans and Regulations	1-5
1.9 Effective Date.....	1-5
2. DEFINITIONS	2-1
3. APPLICABILITY, SHORELINE PERMITS, AND EXEMPTIONS.....	3-1
3.1 Applicability	3-1
3.2 Exemptions from a Shoreline Substantial Development Permit	3-2
3.3 Nonconforming Use and Development.....	3-3
4. SHORELINE MASTER PROGRAM GOALS AND POLICIES.....	4-1
4.1 General Shoreline Goals	4-1
4.1.1 Goal.....	4-1
4.1.2 Policies	4-1
4.2 Historic, Cultural, Archaeological, and Educational Resources.....	4-2
4.2.1 Goal.....	4-2
4.2.2 Policies	4-2
4.3 Conservation and Restoration	4-2
4.3.1 Goal.....	4-2

4.3.2 Policies	4-2
4.4 Economic Development	4-3
4.4.1 Goal	4-3
4.4.2 Policies	4-3
4.5 Flood Prevention and Flood Damage Minimization	4-3
4.5.1 Goal	4-3
4.5.2 Policies	4-3
4.6 Public Access	4-5
4.6.1 Goal	4-5
4.6.2 Policies	4-5
4.7 Recreation	4-5
4.7.1 Goal	4-5
4.7.2 Policies	4-6
4.8 Transportation	4-6
4.8.1 Goal	4-6
4.8.2 Policies	4-6
4.9 Utilities and Essential Public Facilities	4-7
4.9.1 Goal	4-7
4.9.2 Policies	4-7
4.10 Shoreline Uses	4-8
4.10.1 Goal	4-8
4.10.2 Policies	4-8
4.11 Shoreline Modifications	4-10
4.11.1 Goal	4-10
4.11.2 Policies	4-10

5. SHORELINE ENVIRONMENT DESIGNATIONS AND SHORELINES OF STATEWIDE SIGNIFICANCE	5-1
5.1 Introduction	5-1
5.2 Authority	5-1
5.3 Shoreline Environment Designation Interpretation	5-1
5.4 Shoreline Environment Designations.....	5-2
5.4.1 High-Intensity Environment.....	5-2
5.4.2 Residential Environment	5-3
5.4.3 Aquatic Environment	5-4
5.4.4 Recreation Environment.....	5-5
5.5 Shorelines of Statewide Significance.....	5-5
6. GENERAL SHORELINE REGULATIONS	6-1
6.1 No Net Loss of Ecological Function.....	6-1
6.2 Archaeological, Cultural, and Historic Resources.....	6-2
6.3 Critical Areas Protection	6-3
6.3.1 Applicable Critical Areas	6-3
6.3.2 General Provisions.....	6-3
6.4 Flood Prevention and Flood Damage Minimization	6-3
6.5 Public Access.....	6-6
6.6 Vegetation Conservation	6-11
6.7 Water Quality and Quantity.....	6-12
7. SPECIFIC SHORELINE USE REGULATIONS	7-1
7.1 Shoreline Use, Modification, and Standards Tables.....	7-1
7.2 Shoreline Use	7-3
7.2.1 Agriculture	7-3
7.2.2 Aquaculture	7-4
7.2.3 Boating Facilities	7-4

7.2.4 Commercial	7-9
7.2.5 Forest Practices.....	7-10
7.2.6 Industrial	7-11
7.2.7 Institutional	7-12
7.2.8 In-stream Structures	7-12
7.2.9 Mining	7-13
7.2.10 Recreational Development	7-14
7.2.11 Residential Development.....	7-15
7.2.12 Transportation Facilities	7-16
7.2.13 Utilities Uses	7-17
7.3 Shoreline Modification	7-19
7.3.1 General Regulations.....	7-19
7.3.2 Shoreline Stabilization	7-19
7.3.3 Breakwaters and Groins	7-22
7.3.4 Fill and Excavation	7-22
7.3.5 Dredging and Dredge Material Stockpiling	7-23
7.3.6 Shoreline Habitat and Ecological Enhancement Projects	7-25
8. SHORELINE ADMINISTRATION AND ENFORCEMENT	8-1
8.1 General	8-1
8.2 Application Requirements	8-1
8.3 Shoreline Letter of Exemption (SLE).....	8-3
8.4 Shoreline Substantial Development Permits (SSDP)	8-4
8.5 Shoreline Conditional Use Permits (SCUP)	8-5
8.6 Variances	8-7
8.7 Revisions to Permits	8-8
8.8 Restoration Project Relocation of OHWM.....	8-9
8.9 Enforcement.....	8-10
8.10 Shoreline Activity Tracking.....	8-10

Appendices

Appendix A. Shoreline Environment Designations Map

Appendix B. Critical Areas Regulations

Appendix C. Shoreline Restoration Plan

Appendix D. Exemptions from a Shoreline Substantial Development Permit

Appendix E. Aerial Photos of Castle Rock Shorelines September 2014 (CD Format)

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1. Introduction

1.1 Title

This document shall be known and may be cited as the Castle Rock (City) Shoreline Master Program (referred to in this document as Program).

1.2 Adoption Authority

This Program is adopted under the authority granted by the Shoreline Management Act (SMA, or the Act) of 1971 (Revised Code of Washington [RCW] 90.58) and Chapter 173-26 of the Washington Administrative Code (WAC) as amended.

1.3 Background

The City of Castle Rock recognizes the intent of the voters and the legislature of the state of Washington in adopting the “Shoreline Management Act of 1971” and adopts by reference the finding that the shorelines of the state are among the most valuable and fragile of its natural resources and that there is great concern throughout the state relating to their utilization, protection, restoration, and preservation. In addition it finds that ever increasing pressures of additional uses are being placed on the shorelines necessitating increased coordination in the management and development of the shorelines of the state.

The Act’s paramount objectives are to protect and restore the valuable natural resources that shorelines represent and to plan for and foster all “reasonable and appropriate uses” that are dependent upon a waterfront location or that offer opportunities for the public to enjoy the state’s shorelines. With this clear mandate, the provisions of the SMA established a planning and regulatory program, which is initiated at the local level under state guidance.

This cooperative effort balances local and state-wide interests in the management and development of shoreline areas. Local governments are required to plan for shoreline development by developing local shoreline master programs. They are also required to regulate such development through a shoreline permit system for substantial development projects.

Local government actions are monitored by the State of Washington Department of Ecology (Ecology), which approves new or amended shoreline master programs, reviews shoreline substantial development permits (SSDPs), and approves shoreline conditional use permits (SCUPs) and variances. The master program is essentially a shoreline comprehensive plan with a distinct orientation toward shoreline areas and customized to local circumstances. Collectively, the local master programs comprise the State Shoreline Master Program.

The City developed and adopted its first shoreline master program with the help of a citizen advisory group in 1976. The Master Program was subsequently amended several times during the intervening years. For the current comprehensive update the City prepared a Shoreline Analysis Report which includes a comprehensive inventory of the natural

characteristics, present land uses, and patterns of ownership along the City's shoreline that provides a substantial information base for understanding ecological functions and other considerations for the development of this Master Program update.

The Shoreline Analysis Report provides the following information for Castle Rock. The Castle Rock Assessment Unit has 170 acres of shoreline jurisdiction covering 6.6 miles of river and streams. Much of the Castle Rock shoreline is owned by the City and managed for a variety of public access uses. Approximately 10 percent of the area in the assessment unit is mapped as wetlands by the National Wetlands Inventory. Approximately 50 percent of the assessment unit is in the mapped floodplain, and another 24 percent of the shoreline area is within the floodway. A certified levee within the City limits occupies approximately 45 percent of the shoreline length along the east bank of the Cowlitz River within the City's jurisdiction. Priority species and habitats are limited to the shoreline waterbodies, which provide migratory, rearing, and potential spawning areas for six species of priority and listed salmonids.

As a result of the eruption of Mt. Saint Helens, the Cowlitz River and its tributaries in the City of Castle Rock have been substantially altered and area subject to ongoing sedimentation and erosion. The downtown core of the City of Castle Rock is protected by levees and revetments which limits the natural functions of the shoreline.

Vegetation is limited to a relatively narrow forested riparian corridor along much of the City's shoreline; however there are some areas with substantial forested vegetation extending up to 500 feet from the river.

Salmon Creek and Arkansas Creek within the City's shoreline jurisdiction have narrow bands of forested riparian vegetation. Although not confined by armoring or a levee, Salmon Creek borders the railway, and is artificially confined to its present course.

Over the past ten years, vacant lands and undeveloped lands decreased while single family residential uses and recreational uses increased substantially in the Castle Rock Assessment Unit. The City's Riverfront Master Plan, Park and Recreation Plan, and the Riverfront Trails Project, as amended and incorporated here by reference, provide a comprehensive public access approach for shoreline jurisdiction lands in Castle Rock.

In addition to the Shoreline Analysis Report, the City also engaged local citizens, agencies and interested parties to gather opinions and created a Visioning Report. Comments during the visioning process included a few questions from citizens but largely reflected Planning Commission questions about the process and how the shoreline master program will function with other programs. A Castle Rock Parks and Recreation survey, conducted at the same time, focused primarily on outdoor recreation, sports, and park facilities and amenities versus shoreline uses. However, in addition to increasing athletic fields, community center facilities, etc. the survey did indicate a desire to have some increased access to the Cowlitz River and more water related activities and trails developed.

The City with the involvement of its local citizens, agencies, and interested parties has developed this Shoreline Master Program to serve as both a planning guide and resource for

specific regulations pertaining to development and use of the shorelines in City of Castle Rock Included is a description of the goals, objectives, policies, environments, use regulations, and provisions for administration including variances and shoreline conditional uses.

1.4 Purpose and Intent

- A. To guide the future development of shorelines in the City in a positive, effective, and equitable manner consistent with the Act;
- 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 the City's shorelines; and
- C. To experience 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 following policy contained in RCW 90.58.020, Legislative Findings for shorelines of the state:

"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....

In the implementation of this policy the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the State shall be preserved to the greatest extent feasible consistent with the overall best interest of the State and the people generally. To this end uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment or are unique to or dependent upon use of the State's shoreline. Alterations of the natural condition of the shorelines of the State, in those limited instances when authorized, shall be given priority for single family residences, ports, shoreline recreational uses including but not limited to parks, marinas, piers, and other improvements facilitating public access to shorelines of the State, industrial and commercial developments which are particularly dependent on their location on or use of the shorelines of the State, and other development that will provide an opportunity for substantial numbers of the people to enjoy the shorelines of the State.

Permitted uses in the shorelines of the State shall be designed and conducted in a manner to minimize, insofar as practical, any resultant damage to the ecology and environment of the shoreline area and any interference with the public's use of the water."

1.5 Governing Principles

- A. The goals, policies, and regulations of this Program are intended to be consistent with the Washington State (State) Shoreline Master Program guidelines in Chapter 173-26 of the WAC. The goals, policies, and regulations are informed by the Governing Principles in WAC 173- 26-186 and the policy statements of RCW 90.58.020.
- B. Any inconsistencies between this Program and the Act must be resolved in accordance with the Act.
- C. Regulatory or administrative actions contained in this Program must not unconstitutionally infringe on private property rights or result in an unconstitutional taking of private property.
- D. The regulatory provisions of this Program are limited to shorelines of the state, whereas the planning functions of this Program may extend beyond the designated shoreline boundaries, given that activities outside the shoreline jurisdiction may affect shorelines of the state.
- E. Protecting the shoreline environment is an essential statewide policy goal, consistent with other policy goals. This Program protects shoreline ecosystems from such impairments in the following ways:
 - 1. By using a process that identifies, inventories, and ensures meaningful understanding of current and potential ecological functions provided by shorelines;
 - 2. By including policies and regulations that require mitigation of adverse impacts in a manner that results in no net loss of shoreline ecological functions. The required mitigation shall include avoidance, minimization, and compensation of impacts in accordance with the policies and regulations for mitigation sequencing in WAC 173-26-201(2)(e) Environmental Impact Mitigation;
 - 3. By including policies and regulations to address cumulative impacts and by fairly allocating the burden of addressing such impacts among development opportunities; and
 - 4. By including regulations and regulatory incentives designed to protect shoreline ecological functions and to restore impaired ecological functions where such functions have been identified.

1.6 Liberal Construction

As provided for in RCW 90.58.900, Liberal Construction, the Act is exempted from the rule of strict construction; the Act and this Program shall therefore be liberally construed to give full effect to the purposes, goals, objectives, and policies for which the Act and this Program were enacted and adopted.

1.7 Severability

Should any Section, Subsection, paragraph, sentence, clause or phrase of this Program or its application to any person or situation be declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of this ordinance or its application to any other person or situation.

1.8 Relationship to Other Plans and Regulations

- A. Proponents of shoreline use or development shall comply with all applicable laws prior to commencing any shoreline use or development activity.
- B. Where this Program makes reference to any RCW, WAC, or other state, or federal law or regulation, the most recent amendment or current edition shall apply.
- C. Uses, developments, and activities regulated by this Program may also be subject to the provisions of the following: the City of Castle Rock Comprehensive Plan; the City's Riverfront Master Plan, Park and Recreation Plan, and the Riverfront Trails Project; the Washington State Environmental Policy Act (SEPA; RCW 43.21C and WAC 197-11); other provisions of the Castle Rock Municipal Code (CRMC), specifically CRMC Title 17 Zoning Code; and various other provisions of local, state, and federal law, as may be amended.
- D. In the event this Program conflicts with other applicable City policies or regulations, they must be interpreted and construed so that all the language used is given effect, with no portion rendered meaningless or superfluous, and unless otherwise stated, the provisions that provide the most protection to shoreline ecological processes and functions as determined by the City, shall prevail.
- E. Projects and plans in the shoreline jurisdiction that have been previously approved through local and state reviews in accordance with the Shoreline Master Program in effect at the time, shall remain in full force and effect until such time that they expire or are expressly changed by the City and DOE as appropriate.

1.9 Effective Date

The effective date of this Program and all amendments thereto is fourteen (14) days after written notice of approval from the Department of Ecology (Ecology) and shall apply to new applications submitted on or after that date and to applications that have not been determined to be fully complete by that date.

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2. Definitions

The following definitions shall be used to guide the implementation of this Program. In the event of any question about the use, applicability, or interpretation of these terms, the City shall make an administrative determination in consultation with the Department of Ecology, as appropriate.

Accessory Structure – A subordinate building incidental to the use of the main building.

Accessory Use – Any use or activity incidental and subordinate to a primary use or development.

Act – The Washington State Shoreline Management Act of 1971, as amended, Chapter RCW 90.58.

Adjacent Lands – Lands adjacent to the shorelines of the state (not within shoreline jurisdiction) (RCW 90.58.340).

Adjacent to – For purposes of the Critical Areas Regulations in Appendix B, any activity or development located:

1. On a site immediately adjoining a critical area;
2. A distance equal to or less than the required critical area buffer or zoning and building setback requirements;
3. A distance equal to or less than one-half mile (2,640 feet) from a bald eagle's nest;
4. A distance equal to or less than 300 feet upland from a stream, wetland or water body;
5. Bordering or within the floodway, floodplain, or channel migration zone; or
6. A distance equal to or less than 200 feet from a critical aquifer recharge area.

Agriculture or **agricultural activities** – Agricultural uses and practices including, but not limited to, producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; allowing land used for agricultural activities to lie fallow (plowed and tilled, but left unseeded); allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities, provided that the replacement facility is no closer to the shoreline than the original facility; and maintaining agricultural lands under production or cultivation.

Agricultural equipment and **agricultural facilities** – Includes, but is not limited to:

1. The following used in agricultural operations: Equipment; machinery; constructed shelters, buildings, and ponds; fences; upland finfish rearing facilities; water diversion, withdrawal, conveyance, and use equipment and facilities including, but not limited to, pumps, pipes, tapes, canals, ditches, and drains;
2. Corridors and facilities for transporting personnel, livestock, and equipment to, from, and within agricultural lands;
3. Farm residences and associated equipment, lands, and facilities; and
4. Roadside stands and on-farm markets for marketing fruit or vegetables.

Agricultural land – Those specific land areas on which agricultural activities are conducted as of the date of adoption of a local master program pursuant to these guidelines as evidenced by aerial photography or other documentation. After the effective date of the master program, land converted to agricultural use is subject to compliance with the requirements of the master program.

Agricultural products – Includes, but is not limited to, horticultural, viticultural, floricultural, vegetable, fruit, berry, grain, hops, hay, straw, turf, sod, seed, and apiary products; feed or forage for livestock; Christmas trees; hybrid cottonwood and similar hardwood trees grown as crops and harvested within twenty years of planting; and livestock including both the animals themselves and animal products including, but not limited to, meat, upland finfish, poultry and poultry products, and dairy products.

Alluvial fan – A low, outspread, relatively flat to gently sloping mass of loose alluvium, shaped like an open fan, deposited by a stream where it issues from a narrow valley, or where a tributary stream issues into the main stream, or wherever a constriction in a valley abruptly ceases or the gradient of the stream suddenly decreases; it is steepest near the mouth of the valley where its apex points upstream, and it slopes gently and convexly outward with gradually decreasing gradient.

Alluvium – Sand, clay, etc., gradually deposited by moving water, as along a riverbed, stream or shore of a lake.

Alteration – A human action which results in a physical change to the existing condition of land or improvements including but not limited to: clearing vegetation, filling and grading and construction of structures or facilities including impervious surfaces.

Appurtenance – A structure or development incidental to a single family residence in accordance with the provisions of WAC 173-27-040(2)(g).

Aquaculture – The culture or farming of fish, shellfish, or other aquatic plants and animals.

Aquifer recharge area – Areas where water infiltrates the soil and percolates through it and surface rocks to the groundwater.

Associated Wetlands – Those wetlands that are in proximity to and either influence or are influenced by a lake, river or stream subject to the Shoreline Management Act.

Average grade level – The average of the finished ground level at the center of all exterior walls of a building. In case walls are parallel to and within five feet of a sidewalk, the sidewalk shall be considered the finished ground level. In the case of structures to be built over water, average grade level shall be the elevation of the ordinary high water mark.

Berm – A linear mound or series of mounds of earth, sand or gravel generally paralleling the water at or landward of the OHWM. Also a linear mound used to screen an adjacent activity, such as a parking lot, from transmitting excess noise and glare.

Best Available Science – The most reliable and available scientific information, most often used in the context of local government compliance with the State Growth Management Act (RCW 36.70A.172) for developing policies and development regulations regarding critical areas (WAC 365-195).

Best Available Technology (BAT) – The most effective method, technique, or product available that is generally accepted in the field, and which is demonstrated to be reliable, effective, and preferably low maintenance.

Best Management Practices (BMP) – The schedules of activities, prohibitions of practices, maintenance procedures, and structural or managerial practices approved by the Washington State Department of Ecology that, when used singly or in combination, control, prevent or reduce the release of pollutants and other adverse impacts to waters of the State.

Bioengineering – The use of biological elements, such as the planting of vegetation, often in conjunction with engineered systems, to provide a structural shoreline stabilization measure with minimal negative impact to the shoreline ecology.

Boating facility for the purposes of this Program – Any public or private facility for mooring, storing, or transfer of materials from vessels on the water, such as docks and piers, including on-land related facilities such as approaches and ramps, and includes any private and publicly accessible launch sites or facilities. A boating facility does not include on-land accessory facilities such as parking or storage.

Breakwater – A structure aligned parallel or at an angle to the shore, sometimes shore-connected, that provides protection from waves or currents.

Buffer – An area that is part of or adjacent to a jurisdictional shoreline or designated critical area that functions to avoid loss or diminution of the ecologic functions and values of the critical area. Specifically, a buffer may:

1. Preserve the ecologic functions and values of a system including, but not limited to, providing microclimate conditions, shading, input of organic material, and sediments; room for variation and changes in natural wetland, river, or stream

characteristics; providing for habitat for lifecycle stages of species normally associated with the resource; and

2. Physically isolate a critical area such as a wetland, river, or stream from potential disturbance and harmful intrusion from surrounding uses using distance, height, visual, and/or sound barriers, and generally including dense sustainable vegetation, but also may include human-made features such as fences and other barriers;
3. Act to minimize risk to the public from loss of life, well-being, or property damage resulting from natural disasters such as from landslide or flooding.

Building height – The vertical distance between average grade and the highest part of the coping of a flat roof, or the deck line of a mansard roof, or the average height of the highest gable of a pitched or hipped roof. The height of a stepped or terraced building is the maximum height of any segment of the building. Television antennas, chimneys, and similar appurtenances shall not be used in calculating height, except where such appurtenances obstruct the view of the shoreline of a substantial number of residences on areas adjoining such shorelines. Temporary construction equipment is excluded in this calculation.

Bulkhead – A structure of timber, concrete, steel, rock, or similar substance located parallel to the shore, which has as its primary purpose to contain and prevent the loss of soil by erosion, wave, or current action.

Channel migration zone (CMZ) – The area along a river within which the channel(s) can be reasonably predicted to migrate over time as a result of natural and normally occurring hydrological and related processes when considered with the characteristics of the river and its surroundings. The channel migration zone does not include areas that are separated from the active river channel by legally existing artificial structures or channel constraints that limit channel movement. Examples of such structures and constraints include transportation facilities built above or constructed to remain intact through a 100-year flood (such as an arterial road, public road serving as a sole access route, or a state or federal highway or a railroad), levees, and other lawfully established structures that are significant investments likely to be repaired and maintained even if damaged.

Clearing – The destruction or removal of vegetation from a site by physical, mechanical, chemical or other means. This does not include landscape maintenance or pruning consistent with accepted horticultural practices, which does not impair the health or survival of the trees or native vegetation.

Commercial dredging – Applies to establishments engaged in the dredging of sand, gravel or rocks for resale or wholesale marketing.

Commercial fishing – The activity of capturing fish and other seafood under a commercial license.

Conservation easement – An interest or right of use over a property, less than fee simple (means that the easement has been conveyed to the public by deed or other document, but the actual land stays with the original landowner), to protect, preserve, maintain, improve, restore, limit the future use of, or conserve for open space purposes any land or improvement on the land.

Construction – Any act or process that requires a building or fill and grading permit, and/or that adds an addition onto an existing building or erects a new principal or accessory structure on a lot which is subject to the design standards for the district in which the property is located.

Covered moorage – A roofed structure over a boat, either with or without walls and typically supported by posts mounted on the dock.

Critical Aquifer Recharge Area – Areas with a critical recharging effect on aquifers used for potable water as defined by the Washington State Growth Management Act and as designated in Appendix B of this Program.

Critical areas – Those areas and ecosystems as defined under RCW 36.70A, which include:

1. Wetlands;
2. Areas with a critical recharging effect on aquifers used for potable waters;
3. Fish and wildlife habitat conservation areas;
4. Frequently flooded areas; and
5. Geologically hazardous areas.

Critical Habitat- Specific geographical areas that possess physical or biological features that are essential to the conservation of federally listed species. These designated areas may require special management considerations or protection.

Cumulative impacts – The results of incremental actions when added to past, present, and reasonably foreseeable future actions. Cumulative impacts can be deemed substantial and subject to mitigation conditions even though they may consist of individual actions having relatively minor impacts.

Date of Filing – The date upon actual receipt by Ecology of the City’s decision except as provided for below:

With regard to a permit for a variance or a conditional use, “date of filing” means the date the decision of Ecology is transmitted by Ecology to the City.

When the city simultaneously transmits to Ecology its decision on a shoreline substantial development with its approval of either an SCUP or variance, or both, “date of filing” has the same meaning as defined in (1).

Development – An activity consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel, or minerals; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature that may interfere with the normal public use of the surface of the waters overlying lands subject to the Shorelines Management Act of 1971 at any state of water level (RCW 90.58.030(3d)).

Dike – An artificial embankment normally set back from the bank or channel in the floodplain for the purpose of keeping floodwaters from inundating adjacent land.

Dock – A structure built over or floating upon the water and used as a landing place for boats and other marine transport, fishing, swimming, and other recreational uses. A dock typically consists of the combination of one or more of the following elements: pier, ramp, and/or float. Floats may stand alone with no over-water connection to shore or may be located at the end of a pier or ramp.

Dredging – The removal of earth, sand, gravel, silt, or debris from below the ordinary high water mark of any river, stream, pond, lake, or other water body and beneath the area of seasonal saturation of any wetland.

Dredge Material Stockpiling – The placement of dredge materials on land on a permanent or long-term basis, or on a temporary or interim basis pending removal to another location.

Ecological functions or **shoreline functions** – The work performed or role played by the physical, chemical, and biological processes that contribute to the maintenance of the aquatic and terrestrial environments that constitute the shoreline’s natural ecosystem.

Ecosystem-wide processes – The suite of naturally occurring physical and geologic processes of erosion, transport, and deposition; and specific chemical processes that shape landforms within a specific shoreline ecosystem and determine both the types of habitat and the associated ecological functions.

Enhancement – Alterations performed to improve the condition of an existing environmentally degraded area so that the functions provided are of a higher quality. Enhancements are to be distinguished from resource creation or restoration projects.

Erosion – The general process or the group of processes whereby the material of the earth’s crust are loosened, dissolved, or worn away, and simultaneously moved from one place to another, by natural forces, that include weathering, solution, corrosion, and transportation, but usually exclude mass wasting.

Erosion Hazard Area – See “geologic hazard areas.”

ESA – The Endangered Species Act, specifically Section (4)(d), Protective Regulations.

Excavation – The mechanical removal of earth material.

Existing and Ongoing Agricultural Activities – See “agricultural activities.”

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 (WAC 173-27-030(8)).

Feasible – That an action, such as a development project, mitigation, or restoration requirement, meets all of the following conditions:

1. The action can be accomplished with technologies and methods that have been used in the past in similar circumstances, or studies or tests have demonstrated in similar circumstances that such approaches are currently available and likely to achieve the intended results;
2. The action provides a reasonable likelihood of achieving its intended purpose; and
3. The action does not physically preclude achieving the project's primary intended legal use.

In cases where this Master Program may require certain actions that may not be feasible, the burden of proving infeasibility is on the applicant. In determining an action's infeasibility, the City may weigh the action's relative public costs and public benefits, considered in short- and long-term timeframes.

Fill – The addition of soil, sand, rock, gravel, sediment, earth retaining structure, or other material to an area waterward of the OHWM, in wetlands, or on shorelands in a manner that raises the elevation or creates dry land.

Fish – As used in these regulations, refers to resident game fish; anadromous fish and specified salmonoids listed as endangered or threatened under the Federal Endangered Species Act, Section (4)(d), or the Washington State List of Threatened and Endangered Species.

Fish and wildlife habitat conservation areas – Those habitats designated by WAC 365-190-080(5)(a) and include all areas listed in the WAC.

Floating Home – A single-family dwelling unit constructed on a float, that is moored, anchored, or otherwise secured in waters, and is not a vessel, even though it may be capable of being towed.

Flood hazard reduction – Measures taken to reduce flood damage or hazards. Flood hazard reduction measures may consist of nonstructural or indirect measures, such as setbacks, land use controls, wetland restoration, dike removal, use relocation, bioengineering measures, and storm water management programs; and of structural measures, such as dikes, levees, and floodwalls intended to contain flow within the channel, channel

realignment, and elevation of structures consistent with the National Flood Insurance Program.

Floodplain – Synonymous with one hundred-year floodplain and that land area susceptible to inundation with a one percent chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulation maps or a reasonable method which meets the objectives of the act.

Floodway – The area, as identified in a master program, that either:

1. Has been established in federal emergency management agency flood insurance rate maps or floodway maps; or
2. Consists of those portions of a river valley lying streamward from the outer limits of a watercourse upon which flood waters are carried during periods of flooding that occur with reasonable regularity, although not necessarily annually, said floodway being identified, under normal condition, by changes in surface soil conditions or changes in types or quality of vegetative ground cover condition, topography, or other indicators of flooding that occurs with reasonable regularity, although not necessarily annually. Regardless of the method used to identify the floodway, the floodway shall not include 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.

Forest practices – Any activity conducted on or directly related to forest land and relating to growing, harvesting, or processing timber for commercial purposes. These activities include but are not limited to: road and trail construction, final and intermediate harvesting, precommercial thinning, reforestation, fertilization, prevention and suppression of disease and insects, salvage of trees, and brush control (WAC 222-16-010(21)).

Frequently Flooded Areas – Those areas of special flood hazard which are commonly identified as critical areas in local government development regulations.

Game Fish – “Game fish,” as described in the Washington Game Code, spend their life cycle in freshwater.

Geologic hazard areas – "Geologically hazardous areas" means areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, are not suited to the siting of commercial, residential, or industrial development consistent with public health or safety concerns.

Geotechnical assessment – An assessment prepared by a geotechnical engineer licensed by the state of Washington, which evaluates the site conditions and the effects of a proposal, and identifies mitigating measures to ensure that the risks associated with geologic hazards will be substantially reduced.

Geotechnical report or **geotechnical analysis** – A scientific study or evaluation conducted by a qualified professional that includes a description of the ground and surface hydrology and geology, the affected land form and its susceptibility to mass wasting, erosion, and other geologic hazards or processes, conclusions and recommendations regarding the effect of the proposed development on geologic conditions, the adequacy of the site to be developed, the impacts of the proposed development, alternative approaches to the proposed development, and measures to mitigate potential site-specific and cumulative geological and hydrological impacts of the proposed development, including the potential adverse impacts to adjacent and down-current properties. Geotechnical reports shall conform to accepted technical standards and must be prepared by qualified professional engineers or geologists who have professional expertise about the regional and local shoreline geology and processes.

Grading – The movement or redistribution of the soil, sand, rock, gravel, sediment, or other material on a site in a manner that alters the natural contour of the land.

Groin or **spur dike** or **rock weir** – A barrier-type structure extending from the backshore or stream bank into a water body for the purpose of the protection of a shoreline and adjacent upland by influencing the movement of water and/or deposition of material.

Groundwater – That part of the subsurface water that is in the saturated zone, including underground streams, from which wells, springs, and ground water runoff are supplied.

Hazard Tree – Dead or dying trees, dead parts of live trees, or unstable live trees (due to structural defects or other factors) that are within striking distance of people or. Hazard trees have the potential to cause property damage, personal injury or fatality in the event of a failure.

Hydric soils – Soils which are wet long enough to periodically produce anaerobic (reduced oxygen) conditions, thereby influencing plant growth.

Hydrologic unit (watershed) – An area of land above or upstream from a specific point on a stream, which is enclosed by a topographic divide (i.e., hillsides, mountains, cliffs, etc.) such that direct surface runoff from precipitation normally drains by gravity into the stream or the area above the specified point on a stream.

Institutional – A use or development whose purpose is to serve or promote a government, educational, charitable, or religious organization or its mission. Examples include, but are not limited to: community centers, educational facilities, government offices, health care facilities, and religious facilities.

In-stream Structure – A structure placed by humans within a stream or river waterward 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 structure does not apply to stormwater outfalls, which are regulated as utilities.

Interested Party – All persons who have notified local government of their desire to receive a copy of the final order on a permit under WAC 173-27-030 (WAC 173-27-030(12)).

International Building Code – The Washington State International Building Code’s most currently adopted edition, as adopted by the City.

Invasive – A non-native plant or animal species that either:

1. Causes or may cause significant displacement in range, a reduction in abundance, or otherwise threatens, native species in their natural communities;
2. Threatens or may threaten natural resources or their use in the state;
3. Causes or may cause economic damage to commercial or recreational activities that are dependent upon state waters; or
4. Threatens or harms human health (RCW 77.08.010(28)).

Landfill – A disposal facility or part of a facility at which solid waste is placed in or on land.

Landslide – Abrupt downslope movement of a mass of soil or rock.

Limited Utility Extension – The extension of a utility service that is categorically exempt under RCW 43.21C for natural gas, electricity, telephone, water or sewer to service an existing use and does not extend more than twenty-five hundred (2500) linear feet within the shorelines of the state.

Littoral Drift – The mud, sand, or gravel material moved parallel to the shoreline in the nearshore zone by waves and current.

Liquefaction – A process in which soil loses strength, and behaves like a liquid.

Local utility – Public or private utilities normally servicing a neighborhood or defined subarea in the City, e.g., telephone exchanges; sanitary sewer; stormwater facilities; distribution lines; electrical distribution less than fifty-five (55) kilovolts; telephone; cable television, etc.

Marina – Any commercial or club-owned facility consisting of docks or piers serving five or more vessels or a shared moorage serving a subdivision serving 10 or more vessels.

May – The action is acceptable, provided it conforms to the provisions of this Program.

Merchantable Trees – Live trees, 6 inches in diameter at breast height (DBH) and larger, unless documentation of current, local market conditions are submitted and accepted by the local jurisdiction indicating non-marketability.

Mining – The removal of sand, gravel, soil, minerals, and other earth materials for commercial and other uses.

Mitigation – Actions designed to replace project-induced losses or impacts to shoreline resources, including, but not limited to, restoration, creation, or enhancement. Mitigation in jurisdictional shoreline areas should be sequenced in the following order:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments, and/or
6. Monitoring the impact and taking appropriate corrective measures.

Mitigation, In-Kind – Replacement of shoreline resources, such as wetlands or surface water systems, with substitute wetlands or surface water systems whose characteristics and functions and values closely approximate those destroyed or degraded by a regulated activity.

Mitigation, Out-of-Kind – Replacement of shoreline resources, such as surface water systems or wetlands, with substitute surface water systems or wetlands whose characteristics do not closely approximate those destroyed or degraded by a regulated activity.

Mitigation plan – A plan that outlines the activities that will be undertaken to alleviate project impacts. The plan generally contains: a site and project description; an environmental assessment of the functions and values of the site that will be impacted; a description of the proposed mitigation; the goals and objectives of the proposed mitigation; the performance standards against which success will be measured; monitoring of and reporting on the success of the mitigation; and a contingency plan in case of failure.

Mixed use within an area subject to the jurisdiction of the Shoreline Management Act – A combination of compatible uses within one development, in which water-oriented and non-water-oriented uses are included.

Multiple use – A combination of compatible uses within one development, and may include commercial, multi-family, and recreation uses, among others.

Must – A mandate; the action is required.

Natural or **existing topography** – The topography of the lot, parcel, or tract of real property immediately prior to any site preparation or grading, including excavation or filling.

No net loss of ecological functions – The maintenance of existing ecological processes and functions.

1. No net loss of ecological functions on the level of the City - that the ecological processes and functions are maintained within a watershed or other functional catchment area. Regulations may result in localized cumulative impacts or loss of some localized ecological processes and functions, as long as the ecological processes and functions of the system are maintained. Maintenance of system ecological processes and functions may require compensating measures that offset localized degradation.
2. On a project basis, no net loss - that permitted use or alteration of a site will not result in on-site or off-site deterioration of the existing condition of ecological functions that existed prior to initiation of use or alterations as a direct or indirect result of the project.
3. No net loss is achieved both through avoidance and minimization of adverse impacts as well as compensation for impacts that cannot be avoided. Compensation may include on-site or off-site mitigation of ecological functions to compensate for localized degradation.

Non-Water-Dependent Use – Those uses which are not dependent on a waterfront location.

Non-Water-Oriented Use – Those uses which are not water-dependent, water-related, or water-enjoyment.

Noxious weeds – Any plant which, when established, is highly destructive, competitive, or difficult to control. The county maintains a noxious weed list.

Open space – An area that is intended to provide light and air, view, use, or passage of persons or animals which is almost entirely unobstructed by buildings, paved areas, or other human-made structures, and is designed or preserved for environmental, habitat, scenic, or recreational purposes.

Ordinary high water mark on all lakes, streams, and tidal water – That mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department: PROVIDED, That in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining salt water shall be the line of mean higher high tide and the ordinary high water mark adjoining freshwater shall be the line of mean high water.

Over-water Structure – A structure or other construction located waterward of the Ordinary High Water Mark (OHWM) or a structure or other construction erected on piling above the surface of the water, or upon a float.

Permit – Any substantial development, variance, conditional use permit, or revision authorized under the Act (RCW 90.58).

Pier – Docks and similar structures consisting of a fixed and/or floating platform extending from the shore over the water. This definition does not include overwater trails.

Pond – A naturally existing or artificially created body of standing water which exists on a year-round basis and occurs in a depression of land or expanded part of a stream.

Potentially Hazardous Substances – Hazardous materials as well as other materials if discharged or improperly disposed that may present a risk to water resources.

Priority habitat – A habitat type with unique or significant value to one or more species. An area classified and mapped as priority habitat must have one or more of the following attributes:

1. Comparatively high fish or wildlife density;
2. Comparatively high fish or wildlife species diversity;
3. Fish spawning habitat;
4. Important wildlife habitat;
5. Important fish or wildlife seasonal range;
6. Important fish or wildlife movement corridor;
7. Rearing and foraging habitat;
8. Important marine mammal haul-out;
9. Refugia habitat;
10. Limited availability;
11. High vulnerability to habitat alteration; or
12. Unique or dependent species.

A priority habitat may be described by a unique vegetation type or by a dominant plant species that is of primary importance to fish and wildlife (such as oak woodlands or). A priority habitat may also be described by a successional stage (such as, old growth and mature forests). Alternatively, a priority habitat may consist of a specific habitat element (such as a consolidated marine/estuarine shoreline, talus slopes, caves, snags) of key value to fish and wildlife. A priority habitat may contain priority and/or nonpriority fish and wildlife.

Priority species – Species requiring protective measures and/or management guidelines to ensure their persistence at genetically viable population levels. Priority species are those that meet any of the criteria listed below.

1. Criterion 1. State-listed or state proposed species. State-listed species are those native fish and wildlife species legally designated as endangered (WAC 232-12-014), threatened (WAC 232-12-011), or sensitive (WAC 232-12-011). State proposed species are those fish and wildlife species that will be reviewed by the department of fish and wildlife (POL-M-6001) for possible listing as endangered, threatened, or sensitive according to the process and criteria defined in WAC 232-12-297.
2. Criterion 2. Vulnerable aggregations. Vulnerable aggregations include those species or groups of animals susceptible to significant population declines, within a specific area or statewide, by virtue of their inclination to congregate. Examples include heron colonies, seabird concentrations, and marine mammal congregations.
3. Criterion 3. Species of recreational, commercial, and/or tribal importance. Native and nonnative fish, shellfish, and wildlife species of recreational or commercial importance and recognized species used for tribal ceremonial and subsistence purposes that are vulnerable to habitat loss or degradation.
4. Criterion 4. Species listed under the federal Endangered Species Act as either proposed, threatened, or endangered.

Public access – Physical and/or visual approach to and along the shoreline available to the general public.

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 including, but not limited to, an effect on public property or on health, safety, or general welfare resulting from a use or development (WAC 173-27-030(14)).

Qualified professional – A person with experience, education, and/or professional degrees and training pertaining to the critical area in question as described for each critical area below. Qualified professionals will also possess experience with performing site evaluations, analyzing critical area functions and values, analyzing critical area impacts, and recommending critical area mitigation and restoration. The City shall require professionals to demonstrate the basis for qualifications and shall make final determination as to qualifications. Demonstration of qualifications may include, but not be limited to, professional certification(s) and/or recognition through publication of technical papers or journals. Qualified professionals for each critical area shall include as follows:

1. Wetlands. Biologist or wetland ecologist who has a bachelor's degree in wetland science from an accredited college or university, at least two years of experience under the supervision of a practicing wetland professional and has experience delineating wetlands, preparing wetland reports, conducting function assessments and developing and implementing mitigation plans.
2. Fish and Wildlife Habitat Areas. Biologist/wildlife biologist/stream ecologist/habitat ecologist who has a bachelor's degree in biological, wildlife and/or stream ecology science from an accredited college or university and has at least two years of experience under the supervision of a practicing professional biologist or ecologist.
3. Geologically Hazardous Areas.
 - a. Geologist – a person who has a bachelor's degree in geologic sciences from an accredited college or university and at least five years of professional experience as described in WAC 308-15-040 and is licensed as a professional geologist in the State of Washington. The licensed geologist shall have demonstrated experience analyzing geologic hazards and preparing reports for the relevant type of hazard.
 - b. Hydrogeologist – a licensed geologist in the State of Washington with a specialty license in hydrogeology meeting the requirements of WAC 308-15-057. The licensed hydrogeologist shall have demonstrated experience analyzing hydrogeologic hazards and preparing reports for the relevant type of hazard.
 - c. Engineering geologist – a licensed geologist in the State of Washington with a specialty license in engineering geology meeting the requirements of WAC 308-15-055. The licensed engineering geologist shall have demonstrated experience analyzing geologic hazards and preparing reports for the relevant type of hazard.
 - d. Geotechnical engineer – a person who has a bachelor's degree in civil engineering from an accredited college or university and at least five years of experience as a practicing geotechnical engineer, and is a registered professional engineer in the State of Washington (meeting the requirements of RCW 18.43.040). The licensed engineer shall have demonstrated experience conducting geotechnical investigations, analyzing geologic hazards, and preparing reports for the relevant type of hazard.
4. Critical Aquifer Recharge Areas. Hydrogeologist – a licensed geologist in the State of Washington with a specialty license in hydrogeology meeting the requirements of WAC 308-15-057. The licensed hydrogeologist shall have demonstrated experience analyzing hydrogeologic hazards and preparing reports for the relevant type of hazard.
5. Frequently Flooded Areas.

- a. Hydrogeologist – a licensed geologist in the State of Washington with a specialty license in hydrogeology meeting the requirements of WAC 308-15-057. The licensed hydrogeologist shall have demonstrated experience analyzing hydrogeologic hazards and preparing reports for the relevant type of hazard.
- b. Fluvial geomorphologist – a person who has a bachelor’s degree in earth sciences from an accredited college or university with applicable course work in fluvial geomorphology and at least five years of professional experience in fluvial geomorphology.
- c. Hydraulics engineer – a person who has a bachelor’s degree in civil engineering from an accredited college or university and at least five years of experience as a practicing hydraulics engineer, and is a registered professional engineer in the State of Washington (meeting the requirements of RCW 18.43.040). The licensed engineer shall have demonstrated experience conducting, analyzing and preparing reports for hydraulic investigations.

Recreation areas or facilities – Any privately or publicly owned passive or active facility that provides for activities undertaken for pleasure or relaxation and for the refreshment of the mind and body that takes place in the outdoors or in a facility dedicated to the use including walking, fishing, photography, viewing, and bird-watching and may include parks, playgrounds, sports fields, paths and trails, beaches, or other recreation areas or facilities.

Residential – Buildings, structures or portions thereof that are designed and used as a place for human habitation. Included are single, duplex or multi-family dwellings, manufactured homes, and other structures that serve to house people, as well as the creation of new residential lots through land division. This definition includes accessory uses common to normal residential use, including but not limited to, residential appurtenances, accessory dwelling units, and home occupations.

Restore, restoration, or ecological restoration – 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 aboriginal or pre-European settlement conditions.

Right-of-way – Land or easements dedicated for public roads, railways, public utilities, public levees, and public dikes.

Riparian habitat area (RHA) – An area adjacent to aquatic streams with flowing water (e.g., rivers, perennial or intermittent streams, seeps, springs) that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

Riparian zone – The upland area immediately adjacent to and paralleling a body of water and is usually composed of trees, shrubs and other plants. Riparian functions include bank and channel stability, sustaining water supply, providing flood storage, retainment of woody debris, leaf litter, nutrients, sediment and pollutant filtering, while providing shade, shelter and other functions that are important to the survival of both fish and wildlife.

Seasonal stream – Those streams that are not perennial but are physically connected by a defined channel system to downstream waters so that water or sediment initially delivered to these waters may eventually be delivered to a Type S, F, Np, or, Ns water. Stormwater drainage channels are considered in this type.

Shall – A mandate; the action must be done.

Shared or **Joint-use moorage** – Interchangeable terms in this Program. These terms mean moorage constructed and utilized by more than one waterfront property owner or by a homeowner's association that owns waterfront property. Shared moorage includes moorage for pleasure craft and/or landing for water sports for use in common by shoreline residents or for use by patrons of a public park or quasi-public recreation area, including rental of non-powered craft. If a shared moorage provides moorage for more than ten slips then it is a marina.

Shorelands or **shoreland areas** – Those lands under the jurisdiction of the Shoreline Management Act extending landward for two hundred (200) feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred (200) feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters that are subject to the provisions of the Shoreline Management Act (RCW 90.58.030); the same to be designated as to location by the Washington State Department of Ecology.

Shorelines – All of the water areas of the state, including reservoirs, and their associated shorelands, together with the lands underlying them; except (i) shorelines of statewide significance; (ii) shorelines on segments of streams upstream of a point where the mean annual flow is twenty cubic feet per second or less and the wetlands associated with such upstream segments; and (iii) shorelines on lakes less than twenty acres in size and wetlands associated with such small lakes.

Shoreline areas and **shoreline jurisdiction** – All “shorelines of the state” and “shorelands” as defined in RCW 90.58.030.

Shorelines Hearings Board (SHB), State – A quasi-judicial body established at the state level by the Act to hear appeals by any aggrieved party on the issuance of an SSDP, SCUP, variance or, enforcement penalties. See RCW 90.58.170 and RCW 90.58.190.

Shoreline master program – The comprehensive use plan for a described area, and the use regulations together with maps, diagrams, charts, or other descriptive material and text, a statement of desired goals, and standards developed in accordance with the policies enunciated in RCW 90.58.020. As provided in RCW 36.70A.480, the goals and policies of a

shoreline master program approved under RCW 90.58 shall be considered an element of the City of Castle Rock's Comprehensive Plan. All other portions of this Program adopted under RCW 90.58, including use regulations, shall be considered a part of the City of Castle Rock's development regulations.

Shoreline modifications – Those actions that modify the physical configuration or qualities of the shoreline area in support of a use, usually through the construction of a physical element such as a dike, breakwater, pier, weir, dredged basin, fill, bulkhead, or other shoreline structure. They can include other actions, such as clearing, grading, or application of chemicals.

Shoreline stabilization – Structural and non-structural methods to address erosion impacts to property and dwellings, businesses, or structures caused by natural processes, such as currents, floods, tides, wind, or wave action.

Shoreline Substantial Development Permit (SSDP) – The permit required by this Program for uses that are substantial developments in shoreline jurisdiction.

Shorelines of the state – The total of all “shorelines” and “shorelines of statewide significance” within the state.

Shorelines of statewide significance – With respect to the City of Castle Rock, shorelines of statewide significance are identified as the Cowlitz River (see RCW 90.58.030(2)(f)).

Should – That the particular action is required unless there is a demonstrated, compelling reason, based on policy of the Shoreline Management Act and the provisions of the Castle Rock Shoreline Master Program, against taking the action.

Significant vegetation removal – The removal or alteration of trees, shrubs, and/or ground cover by clearing, grading, cutting, burning, chemical means, or other activity that causes significant ecological impacts to functions provided by such vegetation. The removal of invasive or noxious weeds does not constitute significant vegetation removal. Tree pruning, not including tree topping, where it does not affect ecological functions, does not constitute significant vegetation removal.

Site – Any parcel or lot or combination of contiguous parcels, or right-of-way or combination of contiguous rights-of-way under the applicant's ownership or control where the proposed project occurs.

Slope – An inclined earth surface, the inclination of which is expressed as the ratio of horizontal distance to vertical distance. In these regulations, slopes are generally expressed as a percentage; percentage of slope refers to a given rise in elevation over a given run in distance. Slopes 15 to 30 percent constitute areas of geologic concern. Slopes greater than 30 percent constitute potential areas of geological hazard.

Snag – Any dead, partially dead, or defective (cull) tree at least 10 feet tall and 12 inches in diameter at breast height.

Snag-rich areas – Areas that are characterized by the presence of relatively high numbers of large diameter (greater than 20 inches DBH) snags, in varying states of decay, suitable for use by broad and diverse groups of wildlife. Snag-rich areas include naturally regenerated (unmanaged) forests, riparian areas, and burned, damaged or diseased forests. Snag-rich areas may also include individual snags or small groups of snags of exceptional value to wildlife due to their scarcity or location in particular landscapes.

Soil with severe erosion hazard – Any soil type having a degree of hazard or limitation of severe or very severe according to Table 3 of the Soil Survey of Cowlitz County Area, Washington, issued February 1974 by the U.S. Department of Agriculture, Soil Conservation Service.

Speculative fill – The placement of fill material when there is no development proposed or development permits, which may lead to piecemeal development that is contrary to the policies of this Program, the Act, and CRMC.

Structure – A permanent or temporary edifice or building or any piece of work artificially built or composed of parts joined together in some definite manner, whether installed on, above, or below the surface of the ground or water, except for vessels (WAC 173-27-030(18)).

Substantial development – Any development of which the total cost or fair market value exceeds six thousand, four hundred, and sixteen dollars (\$6,416), or any development which materially interferes with the normal public use of the water or shorelines of the state. The dollar threshold established in this Subsection (3)(e) must be adjusted for inflation by the office of financial management every five years, beginning July 1, 2007, based upon changes in the consumer price index during that time period.

Substantially degrade – To cause significant ecological impact.

Surface Water – Water that flows across the land surface, in channels, or is contained in depressions in the land surface, including but not limited to ponds, lakes, rivers, and streams.

Talus slope – A slope formed by the accumulation of rock debris at the bottom of steep slopes or cliffs.

Transmittal – *Transmit* means to send from one person or place to another by mail or hand delivery. The date of transmittal for mailed items is the date that the document is certified for mailing or, for hand-delivered items, is the date of receipt at the destination.

Undisturbed buffer – A protective area left in its natural state, except for any access and/or utility crossings approved by the city planner, between land development and a critical area.

Upland – Generally described as the dry land area above and landward of the OHWM.

Utilities – Services and facilities that produce, convey, store, or process power, water, wastewater, stormwater, gas, communications, oil, and the like. On-site utility features serving a primary use, such as water, sewer, or gas line to a residence, are “accessory utilities” and shall be considered a part of the primary use.

Utility line – Pipe, conduit, cable, or other similar facility by which services are conveyed to the public or individual recipients. Such services shall include, but are not limited to, water supply, electric power, natural gas, communications, and sanitary sewer.

Variance – A means to grant relief from the specific bulk, dimensional or performance standards set forth in this Program and not a means to vary a use of a shoreline.

Vessel – Includes ships, boats, barges, or any other floating craft which are designed and used for navigation and do not interfere with the normal public use of the water (WAC 173-27).

View Corridor – Portion of a viewshed, often between structures or along thoroughfares. View corridors may or may not be specifically identified and reserved through development regulations for the purpose of retaining the ability of the public to see a particular object (such as a mountain or body of water) or a landscape within a context that fosters appreciation of its aesthetic value.

Water-dependent use – A use or portion of a use which cannot exist in a location that is not adjacent to the water and which is dependent on the water by reason of the intrinsic nature of its operations. Examples of water-dependent uses may include, but are not limited to, the following: ship cargo terminal loading areas, ferry and passenger terminals, barge loading facilities, ship building and dry docking, marinas, boating facilities, private moorage facilities, aquaculture, float plane facilities, sewer outfalls, hydroelectric generating plants and water diversion facilities, such as agricultural pumphouses.

Water-enjoyment use – A recreational use or other use that facilitates public access to the shoreline as a primary characteristic of the use, or a use that provides for enjoyment or recreational use of the shoreline for a substantial number of people as a general characteristic of the use and which through location, design, and operation ensures the public’s ability to enjoy the visual and physical qualities of the shoreline. In order to qualify as a water-enjoyment use, the use must be open to the general public and the shoreline-oriented space within the project must be devoted to the specific aspects of the use that fosters shoreline enjoyment.

Water-oriented use – A use that is water-dependent, water-related, or water-enjoyment, or a combination of such uses.

Water quality – The physical characteristics of water within shoreline jurisdiction, including water quantity, hydrological, physical, chemical, aesthetic, recreation-related, and biological characteristics. Where used in this Chapter, the term “water quantity” refers only to development and uses regulated under this Chapter and affecting water quantity, such as impermeable surfaces and storm water handling practices. Water quantity, for purposes of

this Chapter, does not mean the withdrawal of ground water or diversion of surface water pursuant to RCW 90.03.250 through 90.03.340.

Water-related use – A use or portion of a use which is not intrinsically dependent on a waterfront location, but its economic viability is dependent upon a waterfront location because:

1. The use has a functional requirement for a waterfront location such as the arrival or shipment of materials by water or the need for large quantities of water; or
2. The use provides a necessary service supportive of the water-dependent uses and the proximity of the use to its customers makes its services less expensive and/or more convenient.

Weir – A structure in a stream or river for measuring or regulating stream flow.

Wetlands or **wetland areas** – Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands. For identifying and delineating a wetland, the methodology shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplements as provided in RCW 90.58.380 and WAC 173-22-035.

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3. Applicability, Shoreline Permits, and Exemptions

3.1 Applicability

All new or expanded uses and development within shoreline jurisdiction shall be carried out in a manner consistent with this Program and the policy of the Act as required by RCW 90.58.140(1), regardless of whether an SSDP, Shoreline Letter of Exemption (SLE), shoreline variance, or SCUP is required. Unless described otherwise, this Program does not apply to the continuance of legally established and permitted uses and developments.

- A. This Program shall apply to all of the shorelands and waters within the City of Castle Rock that fall under the jurisdiction of RCW 90.58. Such shorelands shall include those lands extending two hundred (200) feet in all directions as measured on a horizontal plane from the ordinary high water mark (OHWM), floodways and contiguous floodplain areas landward two hundred feet from such floodways, associated wetlands, critical areas with associated buffer areas, and river deltas associated with the streams, that are subject to the provisions of this program, as may be amended; the same to be designated as to location by Ecology, as defined by RCW 90.58.
 1. Within the City of Castle Rock the following waters are considered “shorelines” and are subject to the provisions of this Program: Cowlitz River, Salmon Creek, and Arkansas Creek. A copy of the Castle Rock Shoreline Environment Designations Map is shown in Appendix A.
 2. The provisions of this Program shall not apply to developments specified in WAC 173-27-045, Developments Not Subject to the Shoreline Management Act.
- B. All shoreline uses and development activities outside of the city limits, are subject to the provisions of the Cowlitz County Shoreline Master Program. Upon annexation, the City will continue to apply the shoreline environment designation and applicable standards of the County’s Shoreline Master Program until such time that the City Master Program is amended to include the annexed property per WAC 173-26-160. Maps indicating the extent of shoreline jurisdiction and shoreline environment designations are for guidance only. They are to be used in conjunction with best available science, field investigations and on-site surveys to accurately establish the location and extent of shoreline jurisdiction when a project is proposed. All areas meeting the definition of a shoreline or a shoreline of statewide significance, whether mapped or not, are subject to the provisions of this Program.

- C. This 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 that develops, owns, leases, or administers lands, wetlands, or waters that fall under the jurisdiction of the Act; and within the external boundaries of federally owned lands (including but not limited to, private in-holdings in national wildlife refuges).
- D. Non-federal agency actions undertaken on federal lands must comply with this Program and the Act.
- E. Native American Tribes' actions on tribal lands and federal agencies' actions on federal lands are not required, but are encouraged, to comply with the provisions of this Program and the Act. Nothing in this Chapter shall affect any rights established by treaty to which the United States is a party.
- F. Hazardous substance remedial actions pursuant to a consent decree, order, or agreed order issued under RCW 70.105(D) are exempt from all procedural requirements of this Program.
- G. Applicants that are responding to an emergency water withdrawals and facilities shall be provided an expedited permit decision from the City, no longer than fifteen (15) days in accordance with RCW 90.58.370.
- H. Certain forest practices that are not regulated by the Act and are regulated under RCW 76.09 are not subject to additional requirements of this Program.
- I. The administrative regulations of this Program are superseded in authority by the terms and provisions of an environmental excellence program or agreement entered into under RCW 43.21(K), Environmental Excellence Program. The environmental excellence agreement must meet the substantive requirements of this Program. An environmental excellence program agreement must achieve more effective or efficient environmental results than the results that would be otherwise achieved.
- J. Shoreline development occurring in or over navigable waters may require a shoreline permit in addition to other approvals required from state and federal agencies.
- K. Unless specifically exempted by statute, all proposed uses and development occurring within shoreline jurisdiction must conform to Chapter 90.58 RCW, the Shoreline Management Act and this Program whether or not a permit is required.

3.2 Exemptions from a Shoreline Substantial Development Permit

- A. Substantial development as defined by this program and RCW 90.58.030 requires approval from the City through a Shoreline Substantial Development Permit (SSDP) (See Chapter 8 for permit review and approval procedures), except that:

1. An SSDP is not required for projects that meet the terms established in WAC 173-27-040(2), Developments Exempt from Substantial Development Permit Requirement, and in Appendix D.
 2. An SSDP is not required for those actions described in WAC 173-27-045, Developments Not Subject to the Shoreline Management Act (See Appendix D).
- B. Any person claiming exemption from the permit requirements of this Program as a result of the exemptions specified in this Section shall make application for an SLE as described in Chapter 8.
- C. If any part of a proposed development is not eligible for exemption, then a shoreline permit is required for the entire proposed development project.
- D. Any development which occurs within the regulated shorelines of the state, whether it requires a permit or not, must be consistent with the intent of the Act and this Program.
- E. The City may attach conditions to the approval of exempted developments and/or uses as necessary to assure consistency of any project with the Act and this Program.

3.3 Nonconforming Use and Development

- A. Existing uses, structures, and lots legally established prior to the effective date of this Program are allowed to continue and shall be considered conforming to this Program.
- B. Structures that were legally established and are used for a conforming use, but which are nonconforming to this Program with regard to setbacks, buffers or yards; area; bulk; height or density may be maintained and repaired and may be enlarged or expanded provided that said enlargement does not further encroach upon or extend into areas where construction or use would not be allowed for new development or uses.
- C. A structure for which a variance has been issued shall be considered a legal conforming structure.
- D. A structure which is being or has been used for use that would not be allowed as a new use under this Program within the past twelve (12) months may be used for a different nonconforming use only upon the approval of a new conditional use permit and demonstration of the following:
1. No reasonable alternative conforming use is practical; and
 2. The proposed use will be at least as consistent with the policies and provisions of the Act and this Program and as compatible with the uses in the area as the preexisting use.

In addition, such conditions may be attached to the permit as are deemed necessary to assure compliance with the above findings, the requirements of this Program and the Act, and to assure that the use will not become a nuisance or a hazard.

- E. If a development that would not be allowed as a new use under this Program is damaged to an extent not exceeding seventy-five (75) percent of the replacement cost of the original development, it may be reconstructed to those configurations existing immediately prior to the time the development was damaged, provided that application is made for the permits necessary to restore the development within one (1) year of the date the damage occurred, all permits are obtained and the restoration is completed within two (2) years of permit issuance or the conclusion of any appeal on the permit.
- F. If a use that would not be allowed as a new use under this Program is discontinued for twelve (12) consecutive months or for twelve (12) months during any two-year period, any subsequent use shall be required to conform to this Program.
- G. An undeveloped lot, tract, parcel, site, or division of land located landward of the OHWM which was established in accordance with City and state subdivision requirements prior to the effective date of the Act or this Program, but which does not conform to the present lot size standards, may be developed if permitted by other land use regulations of the City and so long as such development conforms to all other requirements of this Program and the Act.
- H. Vegetation conservation standards of this Program shall not apply retroactively in a way which requires lawfully existing uses and developments, including residential landscaping and gardens, to be removed except as required as mitigation for new and expanded development.
- I. The following shall apply only to pre-existing legal residential structures constructed prior to the effective date of this Program:
 - 1. Residential structures, accessory, and appurtenant structures that were legally established and are used for a conforming use, but that do not meet standards for setback, buffers, or yards; area; bulk; height; or density, shall be considered a conforming structure.
 - 2. The City may allow redevelopment, expansion, or a change of class of occupancy, for residential structures that are consistent with underlying zoning, the SMP, including requirements for no net loss of shoreline ecological functions and maximum height, and that do not intrude farther into a required buffer.
 - 3. Pre-existing legal residential structures that are damaged or destroyed may be replaced to their prior size and location provided:

- a. All other requirements of the Castle Rock Municipal Code and the Cowlitz County Health Department are satisfied; and
 - b. A complete application for a building permit shall be submitted within one (1) year of the act causing damage or destruction to the dwelling unit.
4. Nothing in this Section shall:
- a. Restrict the ability of this Program to limit development, expansion, or replacement of over-water structures located in hazardous areas, such as floodplains and geologically hazardous areas; or
 - b. Affect the application of other federal, state, or City requirements to residential structures.

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4. Shoreline Master Program Goals and Policies

4.1 General Shoreline Goals

4.1.1 Goal

Plan for and foster all reasonable and appropriate uses of shorelines in the City of Castle Rock. This should be done in a manner which will achieve an orderly balance of shoreline uses that improve the quality of the environment.

4.1.2 Policies

- A. Require that all new or expanded uses and new or expanded developments are as compatible as possible with the site, the surrounding area and the environment, provide restoration as appropriate, and do not result in a net loss of shoreline ecological functions.
- B. Water-dependent and associated water-related uses are the highest priority for shorelines.
- C. Water-related and water-enjoyment uses that are compatible with ecological protection and restoration objectives are the second highest priority.
- D. Limit non-water-oriented uses to those locations where access to the water is not provided or where the non-water-oriented use contributes to the objectives of the Act in providing ecological restoration and public access.
- E. Use of shoreline areas should consider optimal uses for future generations by recognition and of potential long term benefits to the public, and discouragement of short term gain or convenience.
- F. Provide site development performance standards and other appropriate criteria to guide the use and development of shorelines.
- G. Allow multiple use of shoreline areas where integration of compatible uses or activities is feasible.
- H. Provide flexibility for development, including non-water-oriented uses, within the shoreline in areas physically separated from the shoreline by another property or public right-of-way.
- I. Respect and protect private property rights.

4.2 Historic, Cultural, Archaeological, and Educational Resources

4.2.1 Goal

Protect, preserve and encourage restoration of those sites and areas on the shoreline which have significant historical, cultural, educational or scientific value.

4.2.2 Policies

- A. Continue to identify historic, cultural and archaeological resources within the shoreline in cooperation with federal, state, local and tribal agencies.
- B. Preserve for the public benefit, with opportunity for appropriate public utilization, significant historic, scientific, and educational areas of the shoreline.
- C. Provide that the review and construction of development permits includes professional assessment of historic, cultural and archaeological resources and that such resources are preserved or conserved in compliance with applicable laws when such resources are present.

4.3 Conservation and Restoration

4.3.1 Goal

Protect, preserve, and encourage the restoration of shoreline areas and critical areas.

4.3.2 Policies

- A. All development within shoreline jurisdiction should implement the following sequence of actions when addressing potential adverse effects on the ecological functions within shoreline jurisdiction in the listed order of priority.
 - 1. Avoiding the impact altogether by not taking a certain action or parts of an action;
 - 2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
 - 3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
 - 4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
 - 5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and

6. Monitoring the impact and the compensation project and take appropriate corrective measures.
- B. Identify, prioritize, and implement shoreline restoration projects in accordance with the provisions of the Program and supporting documents.

4.4 Economic Development

4.4.1 Goal

Give priority to those industrial, commercial and recreational developments that are particularly dependent on their location on City of Castle Rock's shoreline.

4.4.2 Policies

- A. Minimize the adverse effects of new commercial, industrial and recreational development upon the physical environment and natural processes, through careful siting and design and the mitigation sequencing provisions of this Program.
- B. Provide effective flood protection for the City of Castle Rock.

4.5 Flood Prevention and Flood Damage Minimization

4.5.1 Goal

To minimize flood hazards to human life and to property while enhancing the ecological processes of the shoreline.

4.5.2 Policies

- A. Manage flood protection through implementation of the City's Comprehensive Plan, Comprehensive Stormwater Management Plan, stormwater regulations, and the regional flood hazard control plans for the Cowlitz River in accordance with applicable local, state, and federal requirements.
- B. Recognize that flood control works, such as levees, dikes, and revetments, are an existing and important feature to protect life and property in the City of Castle Rock and the region.
- C. Where feasible, non-structural methods or integrated bioengineering/soft engineering approaches to protect, enhance, and restore shoreline ecological functions and processes and other shoreline resources should be encouraged as an alternative to structural flood control works.
- D. Protect existing development from flood damage:

1. Maintain existing levee and pump systems to effectively reduce flood hazards in areas currently protected by such facilities.
 2. Provide for maintenance dredging of the Cowlitz River and other streams affected by continuing deposition of Mt. St. Helens volcanic deposits to maintain flow capacity and control risk of flooding.
 3. New structural flood hazard reduction measures shall be avoided whenever possible. When necessary to protect public health and safety, they shall be consistent with an adopted comprehensive flood hazard management plan and accomplished in a manner that assures no net loss of ecological functions and ecosystem-wide processes.
 4. Long-term programs for flood hazard reduction should include measures to prevent or remove development in flood-prone areas, to manage storm water within the floodplain, and to maintain or restore river and stream systems' natural hydrological and geomorphological processes in addition to structural flood control measures such as levees.
 5. Removal of gravel, as opposed to volcanic deposits, for flood management purposes should be avoided unless identified as a necessary part of an adopted flood hazard reduction plan and allowed only after a biological and hydraulic study shows that extraction has a long-term benefit to flood hazard reduction, and does not result in a net loss of ecological functions.
- E. Reduce potential hazard to new development by reducing exposure to flood hazards to the extent feasible.
1. New development should be located outside of floodways and should avoid location in floodplains to the maximum extent feasible.
 2. New development should be designed and located to preclude the need for flood control structures. New or expanded development or uses in the shoreline, including subdivision of land, that would likely require flood control structures within a stream, channel migration zone, or floodway should be prohibited.
 3. Development should be prohibited in the channel migration zone if it would result in interference with the process of channel migration which may cause significant adverse impacts to property or public improvements and/or result in a net loss of ecological functions associated with the rivers and streams.
- F. Support measures to restore floodplain and channel migration zone functions, including flood storage, off-channel habitat, associated wetlands, and buffers of sustainable vegetation, through levee setbacks and similar programs, when feasible.

4.6 Public Access

4.6.1 Goal

Ensure safe, convenient and diversified access to publicly owned shorelines of the City of Castle Rock that recognizes the rights of private property owners.

4.6.2 Policies

- A. Public access should be provided consistent with the existing character of the shoreline and with consideration of opportunities and constraints for physical and visual access, as well as consideration of ecological functions and public safety.
- B. Public access to and along the water's edge should be available throughout publicly owned shoreline areas although direct physical access to the water's edge may be restricted to protect shoreline ecological values.
- C. Future developments and redevelopments should not adversely affect existing public access, and should provide new opportunities for the public to reach touch and enjoy the water's edge.
- D. Locate, design and maintain public access development in a manner that enhances the natural environment.
- E. As opportunities and funds arise, purchase or otherwise make available to the public, shoreline properties if their value for public use merits such action.
- F. Existing highway and railroad corridors along shorelines should accommodate public access to the shoreline and provide safe overcrossings to shoreline public access facilities where feasible.
- G. Coordinate with local, state, and federal agencies so that shoreline access is consistent with city and regional parks and recreation, open space and trails plans.
- H. Respect and protect the enjoyment of private rights in shoreline property when considering public access development.
- I. It is the intent of the City to establish a public access fund within the City budget to support public access to shorelines.

4.7 Recreation

4.7.1 Goal

Provide additional opportunities for diverse forms of recreation for the public and improvement of existing facilities.

4.7.2 Policies

- A. Shoreline recreation development is a priority and facilities should be located, designed, and operated in a manner consistent with the purpose of the environmental designation in which they are located and such that no net loss of shoreline ecological functions or ecosystem-wide processes result.
- B. Water-oriented recreational uses are preferred, and the SMP should allow shoreline recreational development in order to provide access, use, and enjoyment of shorelines that does not displace water-dependent uses.
- C. Continue to identify, obtain, preserve and protect areas with high values for recreation, when feasible.
- D. Allow shoreline recreational development in order to provide access, use, and enjoyment of shorelines that does not displace water-dependent uses.
- E. Permit recreational uses as part of private development where compatible with other uses and activities.
- F. Provide a balanced choice of recreational opportunities, including those requirements of the elderly and the physically challenged, when feasible.
- G. Cultivate innovative and cooperative techniques among public agencies and private persons or groups which increase and diversify recreation opportunities.
- H. In providing space for public recreation along the shorelines, give primary emphasis to providing for the local recreation needs for boating, kayaking, canoeing, swimming, bicycling, fishing, picnicking, and other activities benefiting from shoreline access as well as retaining and expanding regional trail systems.
- I. Coordinate with public agencies and Indian tribes so that shoreline recreational developments are consistent with city, county and state parks recreation, open space and trails plan.

4.8 Transportation

4.8.1 Goal

Develop safe, convenient and multi-modal shoreline circulation systems to assure efficient movement of goods and people with minimum disruptions to the shoreline environment and minimum conflict between the different users.

4.8.2 Policies

- A. Locate and design new major circulation systems well away from the shoreline, except for necessary crossings, whenever feasible.

- B. Encourage existing corridors for transportation facilities along shorelines to better accommodate public access to the shoreline and provide safe overcrossings to shoreline public access facilities whenever feasible.
- C. Encourage non-motorized vehicle access such as pedestrian and bicycle to shorelines.
- D. Allow parking facilities within shoreline jurisdiction only to support an authorized use when locations outside of shoreline jurisdiction are not suitable or feasible or when located landward of a levee, dike, revetment, railway, or right-of-way.

4.9 Utilities and Essential Public Facilities

4.9.1 Goal

Provide utility and essential public services necessary to protect the public and safety in a cost effective and efficient manner.

4.9.2 Policies

- A. All new utility facilities should be designed and located to assure no net loss of shoreline ecological functions, 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. New utility processing and production facilities shall not be located in shoreline areas unless it can be demonstrated that no other feasible option exists.
- C. Utilities should be upgraded and maintained to ensure water quality standards will be met.
- D. Utilities should be located in existing rights of way and corridors whenever possible.
- E. Transmission facilities for the conveyance of services, such as power lines, cables, and pipelines, should be located outside of the shoreline area where feasible and when necessarily located within the shoreline area shall assure no net loss of ecological functions.
- F. Non-water-dependent essential public facilities or parts thereof should not be located in shoreline areas unless no other feasible alternative exists and shall be designed and operated to assure that there is no net loss of ecological function in accordance with the mitigation sequencing provisions of this Program.

4.10 Shoreline Uses

4.10.1 Goal

Establish specific shoreline use standards in accordance with the provisions of the Washington State Shoreline Management Act, WAC 173-26, WAC 173-27, the Castle Rock Comprehensive Plan, the Castle Rock Municipal Code, and this Master Program.

4.10.2 Policies

A. Agriculture

1. Support new agricultural activities that are consistent with the shoreline environment designation, and located and designed in accordance with the mitigation sequencing provisions of this Program.
2. Agricultural uses legally established prior to the effective date of this Master Program may be continued.

B. Aquaculture

1. New aquaculture uses may be permitted only in association with the restoration of native fish species in the Columbia and Cowlitz Rivers.

C. Boating Facilities

1. New or expanded boating facilities should be located at sites with suitable environmental conditions, shoreline configuration, access, and neighboring upland and aquatic uses.
2. Boating facilities that minimize the amount of shoreline modification, in-water structures, and overwater cover are preferred.
3. Joint use of boating facilities is encouraged.

D. Commercial Uses

1. Priority should be given to water-dependent commercial uses within shoreline jurisdiction.
2. New commercial development that is not water-oriented should be discouraged in shoreline jurisdiction unless such development provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration, or if the site is physically separated from the shoreline by another property or public right-of-way.

E. Forest Practices

1. New forest practices within shoreline areas, unless documented to have a positive impact on ecological functions, are strongly discouraged.

F. Industrial Uses

1. Priority should be given to water-dependent industrial uses within shoreline jurisdiction.
2. New industrial development that is not water-oriented should be discouraged in shoreline jurisdiction unless such development provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration, or if the site is physically separated from the shoreline by another property or public right-of-way.

G. Institutional Uses

1. Priority should be given to water-oriented institutional uses within shoreline jurisdiction.
2. New or expanded institutional development that is not water-oriented should be prohibited in shoreline jurisdiction unless such development provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration, or if the site is physically separated from the shoreline by another property or public right-of-way.
3. Institutional uses that foster appreciation of shoreline historic, cultural, scientific, and educational resources are encouraged.

H. In-stream Structures

1. Ensure the location, design, construction and maintenance of in-stream structures give due consideration to the full range of public interests, ecological functions and processes, and environmental concerns.
2. Priority consideration shall be given to non-structural and non-regulatory approaches as an alternative to the construction of new in-stream structures.

I. Mining

1. Mining activities should be prohibited in Residential and Recreation Environment Designations.
2. Mining activities should be sited, designed, operated and completed to result in no net loss of shoreline ecological functions and processes after final reclamation of the site.
3. Give preference to mining proposals that result in the creation, restoration or enhancement of habitat for priority species.

J. Residential Development

1. Recognize single-family uses as a preferred use.
2. The design of residential uses should minimize the need for new shoreline stabilization.
3. New residential development in shoreline jurisdiction, comprising more than four (4) dwelling units, multi-unit residential development, including the subdivision of land into more than four (4) parcels should provide for public access to the shoreline consistent with this Program, when feasible.

4.11 Shoreline Modifications

4.11.1 Goal

Establish specific standards to limit and guide modifications to shoreline areas in accordance with the provisions of the Shoreline Management Act, WAC 173-26, the Castle Rock Comprehensive Plan, the Castle Rock Development Regulations, and the provisions of the Master Program.

4.11.2 Policies

A. General Policies

1. Allow shoreline modifications only when they are demonstrated to be necessary to support or protect an allowed primary structure or a legally existing shoreline use and adverse impacts are avoided, minimized, and mitigated resulting in no net loss of shoreline ecological functions.
2. The individual and cumulative effects of shoreline modification should not result in a net loss of ecological functions. Ecological impacts should be avoided and mitigated in accordance with the mitigation sequence of this Program.
3. Shoreline modifications should only be approved if they are appropriate to the specific type of shoreline and environmental conditions for which they are proposed.
4. As much as possible, the number and extent of shoreline modifications should be limited.
5. Ecological functions impaired by development activities should be enhanced and/or restored where feasible and appropriate while accommodating permitted uses. As shoreline modifications occur, the projects should incorporate all feasible measures to protect ecological shoreline functions and ecosystemwide processes.

B. Shoreline Stabilization

1. New structural shoreline stabilization should be allowed only where demonstrated to be necessary to support or protect an allowed primary structure or legally existing shoreline use that is in danger of loss or substantial damage or where structural modifications are necessary for mitigation or enhancement purposes.
2. Types of shoreline stabilization that have a lesser impact on ecological functions are preferred.

C. Breakwaters and Groins

1. Should only be permitted waterward of the OHWM when necessary to support water-dependent uses, public access, shoreline stabilization, or to protect a publicly owned flood control structure.

D. Piers and Docks

1. Moorage buoys are preferred over docks where appropriate to minimize shallow impacts to shoreline resources.
2. Joint use docks are preferred over single-use docks to help reduce the number of over water structures.
3. Piers and docks should only be permitted when they are in support of a water-dependent use or for the public to gain access to shorelines of the state.

E. Fill and Excavation

1. Fill and excavation should be located, designed, and constructed to protect shoreline ecological functions and ecosystem-wide processes, including channel migration in accordance with the provisions of WAC 173-26-231 (3)(c).

F. Dredging and Dredge Material Stockpiling

1. Dredging and dredge material stockpiling may be permitted in jurisdictional shoreline areas in accordance with the mitigation sequencing provisions in this Program.
2. Dredging operations should conform to the operating standards specified on any federal and state permits required for such operations.
3. New development should be sited and designed to avoid or, if that is not possible, to minimize the need for new and maintenance dredging.
4. The necessary and ongoing maintenance dredging of the Cowlitz River for flood control purposes, including actions by the U.S. Army Corps of Engineers, should be supported.

G. Shoreline Habitat and Ecological Enhancement Projects

1. Facilitate the projects described within the Shoreline Restoration Plan (Appendix C).
2. Shoreline restoration and enhancement activities designed to restore shoreline ecological functions and processes and/or shoreline features should be targeted toward meeting the needs of sensitive and/or regionally important plant, fish, and wildlife species.
3. Shoreline restoration and enhancement activities should be designed to create or improve dynamic and sustainable ecosystems.
4. All shoreline restoration and enhancement projects should protect the integrity of adjacent natural resources, including aquatic habitats and water quality.
5. Where possible, restoration and enhancement activities should be integrated and coordinated with other parallel natural resource management efforts.
6. May include public access facilities when feasible.

5. Shoreline Environment Designations and Shorelines of Statewide Significance

5.1 Introduction

The intent of assigning shoreline environment designations to specific geographies is to encourage development that will enhance the present or desired character of the shoreline. To accomplish this, segments of shoreline are given a shoreline environment designation based on existing development patterns, natural capabilities and limitations, and the vision of the City of Castle Rock. The shoreline environment designations are intended to work in conjunction with the comprehensive plan and zoning.

Management policies are an integral part of the shoreline environment designations and are used for determining uses and activities that can be permitted in each shoreline environment designation.

Sections 6 and 7 contain development regulations to specify how and where permitted development can take place within each shoreline environment designation and they govern height and setback.

5.2 Authority

Local governments are required under the Act to develop and assign a land use categorization system known as “shoreline environment designations” for shoreline areas as a basis for effective shoreline master programs.

The method for local government to account for different shoreline conditions is to assign a shoreline environment designation to each distinct shoreline section in its jurisdiction. The shoreline environment designations provide the framework for implementing shoreline policies and regulatory measures for environmental protection, use provisions, and other regulatory measures specific to each shoreline environment designation.

5.3 Shoreline Environment Designation Interpretation

- A. Shoreline jurisdiction maps are approximate. The OHWM and resultant upland, lateral extent of shoreline jurisdiction will need to be determined on a site-specific basis at the time of application. Any areas within shoreline jurisdiction that are not mapped and/or designated due to minor mapping inaccuracies in the upland extent of shoreline jurisdiction are automatically assigned the category of the contiguous upland shoreline environment designation.
- B. All other areas that were neither mapped in the shoreline jurisdiction nor meet the applicability criteria in Section 3.1, Applicability, shall be assigned a conservancy

designation until the shoreline can be designated through a Program amendment, unless otherwise provided in this Program.

- C. Property shown in shoreline jurisdiction that does not meet the definitions of shoreline or shoreland found in RCW 90.58.030 or the applicability criteria in Section 3.1 Applicability, shall not be subject to the requirements of this Program.
- D. Potentially associated wetlands shown on the Shoreline Environment Designation Map (Appendix A) must be delineated at the time of application. Those portions of delineated associated wetlands would receive the adjoining shoreline environment designation. In the case that there is more than one adjoining designation, the most restrictive designation should be assigned.
- E. Boundaries indicated as approximately following lot, tract, or section lines shall be so construed. Boundaries indicated as approximately following roads or railways shall be respectively construed to follow the nearest right-of-way edge.

5.4 Shoreline Environment Designations

The City classification system consists of shoreline environment designations that are consistent with and implement the Act, the Program, and the City of Castle Rock Comprehensive Plan.

These designations have been assigned consistent with the corresponding criteria provided for each shoreline environment designation. In delineating shoreline environment designations, the City aims to ensure that existing shoreline ecological functions are protected with the proposed pattern and intensity of development. Such designations should be consistent with the policies for restoration of degraded shorelines. The shoreline environment designations are, High-Intensity, Residential, Aquatic, and Recreation.

5.4.1 High-Intensity Environment

Purpose

The purpose of the high-intensity shoreline environment designation is to provide for high-intensity, water-oriented commercial, transportation, and industrial uses while protecting existing ecological functions and seeking to restore ecological functions in areas that have been previously degraded.

Management Policies

- A. Priority should be given to water-dependent, water-related, and water-enjoyment uses in that order of preference. Non-water-oriented uses within the High-Intensity shoreline environment designation are appropriate on sites where there is no direct access to the shoreline because of another property separating it from the shoreline or an intervening public right-of-way.

- B. Non-water-oriented uses on sites adjacent to the water should provide public benefit in the form of ecological enhancement and/or public access in compliance with the provisions of this Program.
- C. Where unavoidable impacts to ecological functions occur, appropriate mitigation should be provided in accordance with this Program to achieve no-net-loss. Where applicable, development should include environmental cleanup and restoration of the shoreline in accordance with relevant state and federal law.
- D. Visual and/or physical public access should be provided, where feasible.
- E. Aesthetic objectives of this Program should be in character with high intensity development and include height limits, screening, and other standards consistent with the primary purpose of accommodating high-intensity uses.
- F. Existing urban areas appropriate for intensive development should be fully utilized before expanding intensive development into other areas.

Designation Criteria

The High-Intensity environment designation is given to shoreline areas within the City of Castle Rock if they currently support or are planned for high-intensity uses related to commercial, industrial, or transportation.

5.4.2 Residential Environment

Purpose

The purpose of the Residential environment designation is to accommodate residential development and appurtenant structures, as well as public use, public access, and recreational uses that are consistent with this Program.

Management Policies

- A. New residential development should take into account the environmental limitations and sensitivity of the shoreline area, the level of infrastructure and services available, the proximity to levees, dikes, revetments, roads, railways, and other public right-of-ways, and comprehensive planning considerations.
- B. Multi-family and multi-lot residential (greater than four [4] lots) developments should provide public access and joint use for community facilities in compliance with this Program.
- C. Access, utilities, and public services should be available and adequate to serve existing needs and/or planned future development.
- D. New commercial development should be limited to water-oriented uses, as provided in this Program.

Designation Criteria

The Residential environment designation has been assigned to shoreline areas inside the City of Castle Rock planned, platted, or characterized, for single or multi-family residential development.

5.4.3 Aquatic Environment

Purpose

The purpose of the Aquatic environment designation is to protect, restore, and manage the unique characteristics and resources of the areas waterward of the OHWM.

Management Policies

- A. Allow new over-water and in-water structures only for water-dependent uses, public access, or ecological restoration. In order to reduce the impacts, multiple use of overwater facilities should be encouraged, and the size of new overwater structures should be limited to the minimum necessary to support the structure's intended use.
- B. All developments 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 those species dependent on migration.
- C. Uses that adversely impact the ecological functions of critical freshwater habitats should not be allowed, except where necessary to achieve the objectives of RCW 90.58.020.
- D. Shoreline uses and modifications should be designed and managed to prevent degradation of water quality and alteration of natural hydrographic conditions.
- E. New and maintenance dredging should be permitted in accordance with applicable local, state, and federal standards and the provisions of this Program.
- F. The repair and maintenance of flood control features such as levees, dikes, and revetments should be permitted in accordance with applicable local, state, and federal standards.

Designation Criteria

- A. The Aquatic environment designation is applied to lands waterward of the OHWM.

5.4.4 Recreation Environment

Purpose

The Recreation environment designation is intended to provide areas for new and continued recreational and public access opportunities along shorelines including public and private parks and recreational facilities. An additional purpose is to maintain ecological functions and open space.

Management Policies

- A. New recreation development shall be permitted in accordance with the provisions of approved plans and in accordance with the mitigation sequencing provisions of this Program.
- B. Water-dependent and water-enjoyment recreation facilities that do not deplete the resource over time, such as boating facilities, angling, hunting, wildlife viewing trails, and swimming beaches, are preferred uses provided significant adverse impacts to the shoreline can be mitigated.
- C. To the extent possible, recreational opportunities should be accessible by all populations.
- D. New recreation design should encourage ecological stewardship by locating non-water-dependent activity areas away from the water's edge and planting and maintaining sustainable vegetation buffers along the water.

Designation Criteria

The Recreation environment designation is applied to shoreline areas where public and private lands are devoted to or designated for recreation use including parks and open space and water-dependent uses which provide recreational moorage, as well as where lands are not yet developed but are planned for water-oriented recreation.

5.5 Shorelines of Statewide Significance

The Act designated certain shoreline areas as Shorelines of Statewide Significance (SSWS). Because these shorelines are major resources from which all people in the state derive benefit, the City should give preference to uses which favor long-range goals and support the overall public interest.

Within the City of Castle Rock, the Cowlitz River is designated as an SSWS. SSWS are of value to the entire state. In accordance with RCW 90.58.020, SSWS will be managed as follows:

- A. Every project located on an SSWS shall demonstrate the following priorities, in order of preference, in all permit review, in addition to other criteria provided by this Program:

1. Recognize and protect the statewide interest over local interest.
 - a. Solicit comments and opinions from groups and individuals representing state-wide interests by circulating amendments to the Program, and any proposed amendments affecting SSWS, to state agencies, affected tribes, adjacent jurisdictions, citizen's advisory committees and local officials, and statewide interest groups.
 - b. Recognize and take into account state agencies' policies, programs, and recommendations in developing and administering use regulations and in approving shoreline permits.
 - c. Solicit comments, opinions, and advice from individuals with expertise in ecology and other scientific fields pertinent to shoreline management.
2. Preserve the natural character of the shoreline.
 - a. Designate and administer shoreline environments and use regulations to minimize damage to the ecology and environment of the shoreline as a result of man-made intrusions on shorelines.
 - b. Restore, enhance, and/or redevelop those areas where intensive development or uses already exist in order to reduce adverse impact on the environment and to accommodate future growth rather than allowing high-intensity uses to extend into low-intensity use or underdeveloped areas.
 - c. Protect and preserve existing diversity of sustainable vegetation function and habitat values, wetlands, and riparian corridors associated with shoreline areas.
3. Support actions that result in long-term over short-term benefit.
 - a. Evaluate the short-term economic gain or convenience of developments relative to the long-term and potentially costly impairments to the natural shoreline.
 - b. Protect resources and values of SSWS for future generations by modifying or prohibiting development that would irretrievably damage shoreline resources.
 - c. Actively promote aesthetic considerations when contemplating new development, redevelopment of existing facilities, or general enhancement of shoreline areas.
4. Protect the resources and ecological function of the shoreline.

- a. Minimize development activity that will interfere with the natural functioning of the shoreline ecosystem, including, but not limited to, stability, drainage, aesthetic values, and water quality.
 - b. All shoreline development should be located, designed, constructed, and managed to avoid disturbance of and minimize adverse impacts to wildlife resources, including spawning, nesting, rearing, and habitat areas and migratory routes.
 - c. Restrict or prohibit public access onto areas which cannot be maintained in a natural condition under human use.
 - d. Shoreline materials including, but not limited to, bank substrate, soils, beach sands and gravel bars should be left undisturbed by shoreline development. Gravel mining should be severely limited in shoreline areas.
 - e. Preserve environmentally sensitive wetlands for use as open space or buffers and encourage restoration of currently degraded wetland areas.
5. Increase public access to publicly owned areas of the shoreline.
 - a. Retain and enhance public access to the shoreline including passive enjoyment, recreation, fishing, and other enjoyment of the shoreline and public waters consistent with the enjoyment of property rights of adjacent lands.
 - b. Give priority to developing a system of linear access consisting of paths and trails along the shoreline areas, providing connections across current barriers.
 - c. Provide multi-purpose, non-motorized trail facilities, in accordance with the provisions of the American's with Disabilities Act, wherever feasible.
 6. Increase recreational opportunities for the public on the shoreline.
 7. Plan for and encourage development of public facilities for water-oriented recreational use of the shoreline.

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6. General Shoreline Regulations

This Chapter describes general regulations which apply to all shorelines of the state that are located in the City of Castle Rock. The general regulations Section is used in conjunction with the use and modification regulations found in Chapter 7.

6.1 No Net Loss of Ecological Function

- A. All shoreline use and development, including preferred uses and uses that are exempt from permit requirements, shall be located, designed, constructed, conducted, and maintained in a manner that maintains shoreline ecological functions, in accordance with the mitigation sequencing provisions of the Program.
- B. Shoreline ecological functions that shall be protected include, but are not limited to, fish and wildlife habitat, food web support, and water quality maintenance.
- C. Shoreline processes that shall be protected include, but are not limited to, water flow; erosion and accretion; infiltration; groundwater recharge and discharge; sediment delivery, transport, and storage; large woody debris recruitment; organic matter input; nutrient and pathogen removal; and stream channel formation/maintenance.
- D. In-water work shall be scheduled to protect biological productivity (including but not limited to fish runs, spawning, and benthic productivity). In-water work shall not occur in areas used for commercial fishing during a fishing season unless specifically addressed and mitigated for in the permit.
- E. An application for any permit or approval shall demonstrate all reasonable efforts have been taken to provide sufficient mitigation such that the activity does not result in net loss of ecological functions. Mitigation shall occur in the following prioritized order:
 - 1. Avoid the adverse impact altogether by not taking a certain action or parts of an action or by moving the action.
 - 2. Minimize adverse impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology and engineering, or by taking affirmative steps to avoid or reduce adverse impacts.
 - 3. Rectify the adverse impact by repairing, rehabilitating, or restoring the affected environment.
 - 4. Reduce or eliminate the adverse impact over time by preservation and maintenance operations during the life of the action.

5. Compensate for the adverse impact by replacing, enhancing, or providing similar substitute resources or environments. Preference shall be given to measures that replace the impacted functions on site or in the immediate vicinity of the impact. However, alternative compensatory mitigation within the watershed that addresses limiting factors or identified critical needs for shoreline resource conservation based on watershed or comprehensive resource management plans may be authorized.
 6. Monitor the adverse impact and take appropriate corrective measures.
- F. Applicants for permits have the burden of proving that the proposed development is consistent with the criteria set forth in this Program and the Act, including demonstrating all reasonable efforts have been taken to provide sufficient mitigation such that the activity does not result in net loss of ecological functions.
- G. Uses and development activities that comply with the provisions of the Castle Rock Comprehensive Plan and the Castle Rock Municipal Code may be permitted landward of levees, dikes, revetments, roads, railways, and rights-of-way, in accordance with the provisions of the Shoreline Management Act and this Program, including but not limited to the provisions requiring no net loss of ecological function and mitigation sequencing.

6.2 Archaeological, Cultural, and Historic Resources

- A. If historic, cultural, or archaeological sites or artifacts are discovered in the process of development, work shall be stopped immediately in accordance with the provisions of federal, state, and local laws, the site secured, and the find reported as soon as possible to the City. The property owner also shall notify the Washington State Department of Archaeology and Historic Preservation (DAHP) and affected tribes. The City may provide for a site investigation by a qualified professional and may provide for avoidance or conservation of the resources in coordination with appropriate agencies. All shoreline permits shall contain a special provision notifying permittees of this requirement. Failure to comply with this requirement shall be considered a violation of the shoreline permit and shall subject the permittee to legal action.
- B. Prior to approval of development in an area of known or probable cultural resources, the City shall require a site assessment by a qualified professional archaeologist in coordination with affected tribes. Conditions of approval may require preservation or conservation of cultural resources as provided by applicable federal, state, and local statutes. All permits issued for development in areas known to be archaeologically significant shall provide for monitoring of any development activity for previously unidentified cultural resources.

6.3 Critical Areas Protection

Critical Areas Regulations are in Appendix B.

6.3.1 Applicable Critical Areas

For purposes of this Program, the following critical areas, as defined in Appendix B, will be protected under this Program: Wetlands; Critical Aquifer Recharge Areas; Frequently Flooded Areas; Geologically Hazardous Areas; and Fish and Wildlife Habitat Conservation Areas.

6.3.2 General Provisions

- A. Shoreline uses, activities, developments and their associated structures and equipment shall be located, designed and operated to protect the ecological processes and functions of critical areas.
- B. New and/or expanded development proposals shall integrate protection of wetlands, fish and wildlife habitat, and flood hazard reduction with other stream management provisions to ensure no net loss of ecological functions.
- C. Critical areas within the shoreline jurisdiction shall be regulated for any use, development, or activity as provided in accordance with this Program and Appendix B.
- D. If provisions of Appendix B and other parts of this Program conflict, the provisions most protective of ecological resources shall apply, as determined by the City.
- E. Unless otherwise stated, critical area buffers associated with jurisdictional shoreline areas shall be regulated in accordance with this Program and Appendix B, including but not limited to, Section 2.5, Table 7, and Table 8.
- F. These provisions do not extend the shoreline jurisdiction beyond the limits specified in this Program as defined in Section 3.1, Applicability.
- G. All critical areas and critical areas buffers located outside of the jurisdiction of the Shoreline Management Act shall be subject to the provisions of the Castle Rock Municipal Code and the Washington State Growth Management Act.

6.4 Flood Prevention and Flood Damage Minimization

This Program addresses flooding in two different ways. This Section includes flood hazard reduction measures, including flood control works, intended to avoid increasing hazards and minimize damage. Section 6.3 includes flood hazard protections through the Critical Areas Regulations.

- A. Development or uses in floodplains shall avoid significantly or cumulatively increasing flood hazards, and shall be consistent with Chapter 15.24 of the CRMC.
- B. New residential, commercial, or industrial development and uses, including subdivision of land, within shoreline jurisdiction are prohibited if it would be reasonably foreseeable that the development or use would require structural flood hazard reduction measures in the channel migration zone or floodway over the life of the development.
- C. The following uses and activities may be authorized in floodways or channel migration zones when otherwise permitted by this Program:
 - 1. Actions and development with a primary purpose of protecting or restoring ecological functions and ecosystem-wide processes.
 - 2. Forest practices in compliance with the Washington State Forest Practices Act and its implementing rules.
 - 3. Existing and ongoing agricultural practices, provided that no new restrictions to channel movement occur.
 - 4. Bridges, utility lines, public stormwater and wastewater facilities and their outfalls, and other public utility and transportation structures where no other feasible alternative exists, or where the alternative would result in unreasonable and disproportionate costs. Where such structures are allowed, mitigation shall address impacted functions and processes in the affected shoreline.
 - 5. Repair and maintenance of an existing legally established use, provided flood hazards to other uses are not increased and that the activity does not cause significant ecological impacts that cannot be mitigated.
 - 6. Development in Castle Rock, where structures exist that prevent active channel movement and flooding.
 - 7. Modifications or additions to an existing nonagricultural legal use, provided that channel migration is not further limited and that the new development includes appropriate protection of ecological functions.
 - 8. Measures to reduce shoreline erosion provided that it is demonstrated that the erosion rate exceeds that which would normally occur in a natural condition, that the measures do not interfere with fluvial hydrological and geomorphological processes normally acting in natural conditions, and that the measures include appropriate mitigation of impacts to ecological functions associated with the river or stream.
- D. Removal of materials for flood management purposes shall be consistent with an adopted flood hazard reduction plan in accordance with the mitigation sequencing provisions of this Program and shall only be allowed if a biological and

geomorphological study demonstrates a long-term benefit to flood hazard reduction.

E. Channel Migration Zones:

1. Channel migration zones must be evaluated on a site by site basis when required by the City.
2. The Channel Migration Zone Map is available for review at the City as either hard copy or computer-generated image. Applicants may submit a site-specific channel migration zone study if they believe these conditions do not exist on the subject property and the map is in error. The study must be prepared consistent with WAC 173-26-221(3)(b), and may include, but is not limited to, historic aerial photographs, topographic mapping, flooding records, and field verification. The study must be prepared by a licensed geologist or engineer with at least five years of applied experience in assessing fluvial geomorphic processes and channel response.

F. Flood Control Works:

1. New or expanded structural flood hazard reduction measures, such as dikes, levees, revetments, berms, and similar flood control structures, shall be consistent with flood hazard regulations or management plans adopted pursuant to RCW 86.12, provided the plan has been adopted after 1994 and approved by Ecology.
2. New or expanded structural flood hazard reduction measures shall be permitted only when it can be demonstrated by a scientific and engineering analysis that:
 - a. They are necessary to protect existing development;
 - b. Non-structural flood hazard reduction measures are infeasible; and
 - c. Appropriate vegetation conservation actions are undertaken consistent with Section 6.6, Vegetation Conservation.
 - d. Appropriate mitigation is provided consistent with Section 6.1.
3. Require that new structural public flood hazard reduction measures, such as dikes and levees, dedicate and improve public access pathways consistent with Section 6.5 of the SMP:
4. To the maximum extent feasible, new or altered dikes, levees, and revetments shall be designed to be:
 - a. The height necessary to protect adjacent lands from the predicted flood stage as identified in the applicable comprehensive flood control

management plan or as required by the U.S. Army Corps of Engineers, or FEMA.

- b. Placed landward of associated wetlands and designated fish and wildlife conservation area buffers identified in Table 8 of Appendix B of this SMP, except for actions that increase ecological functions, unless there is no other feasible alternative to reduce flood hazard to existing development in which case all impacts will be mitigated as required in Section 6.1 and Appendix B.
 - c. Located and designed so as to protect and restore the natural character of the stream, avoid the disruption of channel integrity, and provide the maximum opportunity for natural floodway functions to take place, including levee setbacks to allow for more natural functions of floodplains, channel migration zones, off-channel habitat, and associated wetlands directly interrelated and interdependent with the stream.
 - d. Planted with appropriate vegetation meeting the certification requirements while providing the greatest amount of ecological function possible.
5. A geotechnical or geofluvial report prepared by a qualified professional should demonstrate that new or altered flood protection structures will not increase downstream flooding and will not adversely affect natural drainage flows and stormwater runoff.
- G. Information Required. The City shall require the applicant to provide the following information as part of an application for development within a flood hazard area.
1. Flood hazard area characteristics up and downstream or up and down current from the project area;
 2. Existing shoreline stabilization and flood protection works within the area;
 3. Physical, geological, and soil characteristics of the area;
 4. Biological resources and predicted impact to fish, vegetation, and animal habitat associated with shoreline ecological systems;
 5. Predicted impact upon adjacent area shore and hydraulic processes, adjacent properties, and shoreline and water uses; and
 6. Analysis of alternative flood protection measures, both structural and nonstructural.

6.5 Public Access

Public access provisions apply to all shorelines of the state, if feasible, unless stated otherwise and are intended to protect the ability of the general public to reach, touch, and

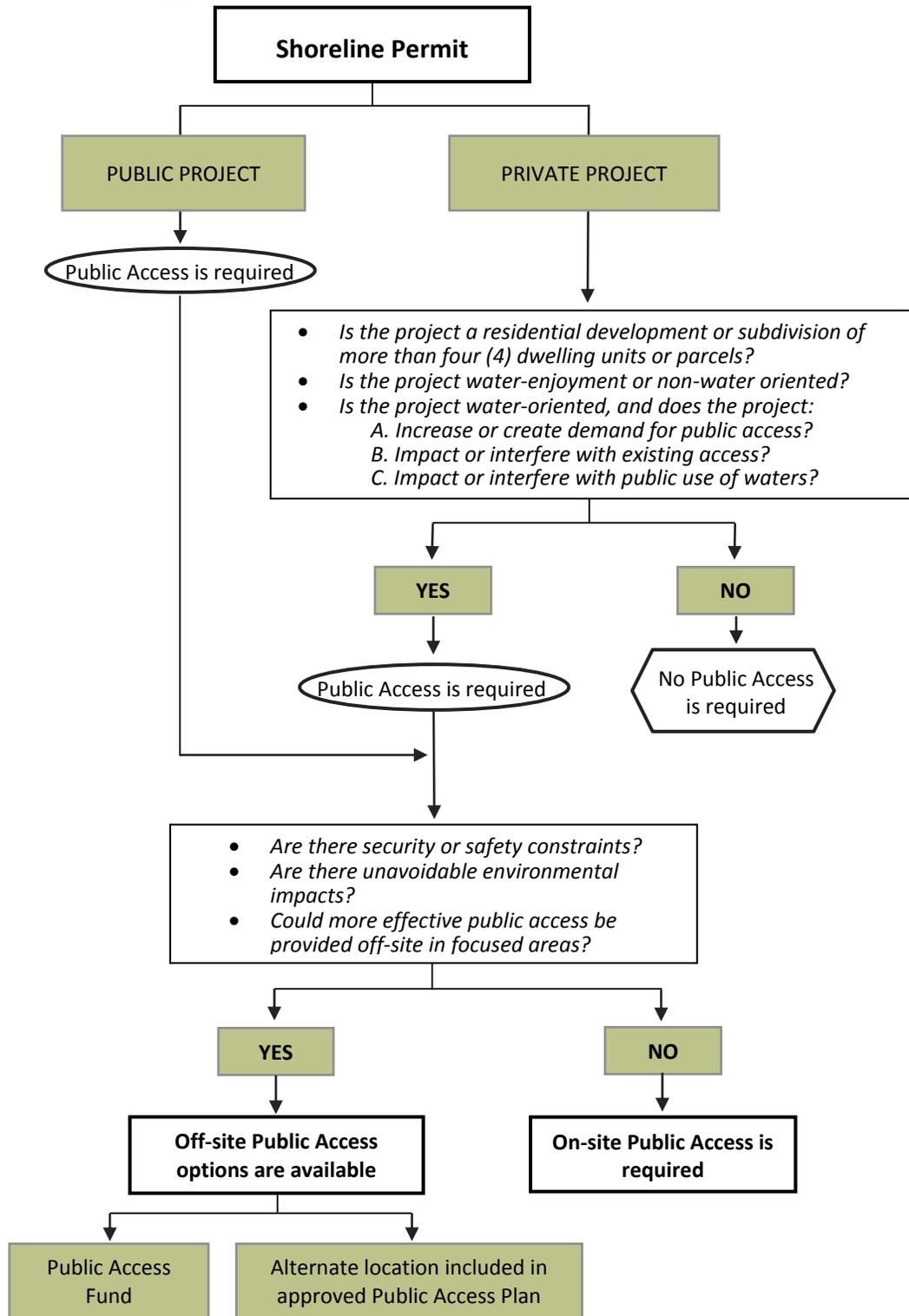
enjoy the water's edge, to travel on the waters of the state, and to view the water and the shoreline from adjacent locations.

A. Applicability (also see Figure 6-1):

1. Public access shall be required in the following circumstances:
 - a. The use or development is a public project; or
 - b. The project is a water-enjoyment or non-water-oriented use or development; or
 - c. The project is a residential development of more than four (4) dwelling units; or
 - d. The project is a subdivision of land into more than four (4) parcels; or
 - e. The project is a private water-dependent or water-related use or development and one of the following conditions exists:
 - i. The project increases or creates demand for public access;
 - ii. The project impacts or interferes with existing access by blocking access or discouraging use of existing access;
 - iii. The project impacts or interferes with public use of waters subject to the Public Trust Doctrine.
2. Public access to the shoreline shall not be required for the following:
 - a. Activities qualifying for a Shoreline Letter of Exemption;
 - b. New single-family residential development of four (4) or fewer units; or
 - c. Reasonable, safe and convenient public access to the shoreline exists within one-quarter mile (1,320 feet) of the site.
3. Physical public access shall not be required where the new or expanded use or development would be physically separated from the shoreline by another property or public right-of-way.
4. The City may approve alternatives to on-site, physical access to the shoreline if the applicant can demonstrate with substantial evidence that at least one of the following conditions exist:
 - a. Unavoidable health or safety hazards to the public exist which cannot be prevented by any reasonable means;
 - b. Inherent security requirements of the use cannot be satisfied through the application of alternative design features or other solutions;

- c. The cost of providing the access, easement, or an alternative amenity, is unreasonably disproportionate to the total long term cost of the proposed development;
- d. Environmental impacts that cannot be mitigated, such as damage to spawning areas or nesting areas, would result from public access on-site;
- e. Significant undue and unavoidable conflict between access provisions and the proposed use and/or adjacent uses would occur and cannot be mitigated; and/or
- f. More effective public access can be provided off-site by focusing public access improvements at sites within shoreline jurisdiction identified in an approved Shoreline Public Access Plan. The Public Access Plan will reference the Castle Rock Comprehensive Plan, the City Park's Plan, the Regional Trail Plan, and other such plans as may be adopted by the City.

Figure 6-1. Public Access Applicability



5. To be approved for alternative public access, the applicant shall demonstrate that all feasible alternatives have been considered, including, but not limited to, regulating access through allowed hours of use, maintaining access gate, and/or separating uses and activities with fences, terracing, hedges, etc.

B. Public Access Standards:

1. When public access is required and provided on site, it shall be:
 - a. Located and designed to be compatible with the natural shoreline character as much as possible, to avoid adverse impacts to shoreline ecological functions, and to ensure public safety, as feasible.
 - b. Allowed to encroach into the shoreline buffer when necessary to provide physical and or visual access to the water's edge when otherwise consistent with this Program and Appendix B, Critical Areas Regulations.
 - c. Connected to the nearest public street and shall include improvements that conform to the requirements of the ADA when feasible or required by law.
 - d. Fully developed and available for public use prior to final occupancy when required for public land, commercial, port or industrial use/development.
 - e. Clearly identified by signage installed and maintained in easily visible locations indicating the public's right of access, hours of access, and other information as needed to control or manage access according to conditions of approval.
 - f. Recorded by easement and permit conditions on the deed of title and/or the face of a short or long plat. Recordation shall occur at the time of final plat approval or prior to final occupancy.
 - g. Consistent with all relevant constitutional and other legal limitations on regulation of private property.
2. Off-site or Alternative Public Access:
 - a. When public access is provided off-site location, design, and access type shall be consistent with Castle Rock's adopted Shoreline Public Access Plan, the Castle Rock Parks and Recreation Plan, the Cowlitz County Regional Trail Plan, and the Castle Rock Comprehensive Plan.
 - b. When public access is allowed off-site, an applicant may elect to make a payment into the City's Shoreline Public Access Fund in lieu of developing the access directly, if such a fund has been established by the City. Such payment should be used to finance activities of a similar nature.

3. Public access requirements for a single-family residential development of greater than four (4) parcels but less than ten (10) parcels can be met by providing community access to the shoreline or to a common waterfront lot/tract for non-commercial recreation use by the property owners and guests within the subdivision.

6.6 Vegetation Conservation

- A. All development shall minimize vegetation removal in areas of shoreline jurisdiction to the amount necessary to accommodate the permitted use.
- B. Unless otherwise specified, all shoreline uses and development shall comply with the setback and buffer provisions of this Program included in Table 7-1 and Appendix B, to protect and maintain shoreline vegetation.
- C. Vegetation conservation standards of this Program shall not apply retroactively in a way which requires lawfully existing uses and developments, including residential landscaping and gardens, to be removed, except as required as mitigation for new and expanded development. Routine maintenance of existing landscaping and gardens is allowed.
- D. Vegetation may be removed or altered landward of shoreline buffers described in this Program provided that there is no net loss of ecological function.
- E. Shoreline landowners are encouraged to preserve and enhance sustainable woody vegetation and sustainable groundcovers to stabilize soils and provide habitat. When shoreline uses or modifications require a planting plan (i.e., uses or modifications that require a mitigation plan), maintaining sustainable plant communities, replacing noxious weeds and avoiding installation of ornamental plants are preferred. Non-native vegetation requiring use of fertilizers, herbicides/pesticides, or summer watering is discouraged.
- F. Mitigation plans shall be approved before initiation of other permitted activities, unless a phased schedule that ensures completion prior to occupancy has been approved.
- G. Aquatic weed control shall only occur to protect sustainable plant communities and associated habitats or where an existing water-dependent use is restricted by the presence of weeds. Aquatic weed control shall occur in compliance with all other applicable laws and standards and shall be done by a qualified professional.
- H. Limbing or crown thinning shall comply with the Tree Care Industry Association pruning standards, unless the tree is a hazard tree as defined by this SMP. No more than 25 percent of the limbs of any single tree may be removed and no more than 20 percent of the canopy cover in any single stand of trees may be removed for view preservation.

- I. The clearing of non-native vegetation is allowed as is routine landscape maintenance and family gardening, when conducted using hand-held equipment.
- J. Vegetation may be removed or altered landward of shoreline buffers described in this Program provided that there is no net loss of ecological function.

6.7 Water Quality and Quantity

- A. All shoreline development shall comply with the applicable requirements of the Castle Rock Comprehensive Plan, which identifies the *1992 Puget Sound Stormwater Management Manual*, as approved by the City, as the guidance for the City's program, and best management practices to prevent impacts to water quality and stormwater quantity that would result in a net loss of shoreline ecological functions and/or a significant impact to aesthetic qualities or recreational opportunities.
- B. Stormwater management structures including ponds, basins, and vaults shall be located outside of shoreline jurisdiction where possible, as far from the water's edge as feasible, and shall minimize disturbance of vegetation conservation buffers. Low impact development facilities (which do not substantially change the character of the shoreline) such as vegetation filter strips, grass-lined swales, and vegetated bioretention and infiltration facilities, are encouraged in association with development allowed in shoreline jurisdiction.
- C. Sewage management. To avoid water quality degradation, sewer service is subject to the requirements outlined below.
 - 1. Any existing septic system or other on-site system that fails or malfunctions will be required to connect to an existing municipal sewer service system if feasible, or make system corrections approved by the Cowlitz County Environmental Health Unit.
 - 2. Any new development, business, single-family or multi-family unit will be required to connect to an existing municipal sewer service system if feasible, or install an on-site septic system approved by Cowlitz County Environmental Health Unit.

7. Specific Shoreline Use Regulations

The regulations in this Chapter apply to specific uses within shoreline jurisdiction. In many circumstances, more than one Section of use regulations will apply to a specific proposal. Guiding policies for uses and modifications are located in Chapter 4.

7.1 Shoreline Use, Modification, and Standards Tables

- A. Table 7-1 Shoreline Use, Modification, Setbacks, and Heights, shall be used to determine which uses may be permitted (P), approved with conditions through the issuance of a Shoreline Conditional Use Permit (SCUP), or prohibited (X) in each shoreline environment. Specific regulations for each corresponding Use and Modification can be found in Chapters 7 of the SMP.
- B. All uses and development activities proposed for jurisdictional shoreline areas must comply with all provisions of the Castle Rock Municipal Code, as determined by the City.
- C. Setbacks shall be measured on a horizontal plane landward from the required feature described in Table 7-1 below.

Table 7-1. Shoreline Use, Modification, Setbacks, and Heights

Table Key: P = May be permitted through SSDP or SLE SCUP = May be permitted through SCUP X = Prohibited N/A = Not Applicable	Shoreline Environment Designations			
	High-Intensity	Residential	Recreation	Aquatic
Shoreline Uses				
Agriculture ⁽¹⁾	P	P	X	X
Aquaculture ⁽²⁾	P	P	P	P
Boating Facilities ⁽³⁾	P	P	P	P
Marinas	X	X	X	X
Commercial ⁽⁴⁾				
Water-dependent	P	P	X ⁴	P
Water-related	P	P	X ⁴	P
Water-enjoyment	P	P	P	P
Non-water-oriented	P	X	X	X
Forest Practices ⁽⁵⁾	P	X	X	X
Industrial ⁽⁶⁾				
Water-dependent	P	X	X	P
Other water-oriented	P	X	X	X
Non-water-oriented	P	X	X	X
Institutional ⁽⁷⁾	P	P	P	X

Table Key: P = May be permitted through SSDP or SLE SCUP = May be permitted through SCUP X = Prohibited N/A = Not Applicable	Shoreline Environment Designations			
	High-Intensity	Residential	Recreation	Aquatic
In-stream structures ⁽⁸⁾	P	P	P	P
Mining ^(9, 18, 19)	SCUP	X	X	SCUP
Recreation ⁽¹⁰⁾				
Water-dependent	P	P	P	P
Other water-oriented	P	P	P	P
Non-water-oriented	P	P	P	X
Residential ⁽¹¹⁾				
Single family	P	P	X	X
Multi-family	P	P	X	X
Floating or over-water residence, including live-aboard vessels	X	X	X	X
Transportation ⁽¹²⁾				
Bridges	P	P	P	P
Roads, Railroads, Trails	P	P	P	X
Parking (Accessory)	P	P	P	X
Parking (Primary Use)	X	X	X	X
Utilities ⁽¹³⁾	P	P	P	P
Uses Not Specified	SCUP	SCUP	SCUP	SCUP
Modifications				
Shoreline Stabilization ⁽¹⁴⁾	P	P	P	P
Breakwaters and Groins ⁽¹⁵⁾	SCUP	SCUP	SCUP	SCUP
Fill / Excavation ⁽¹⁶⁾	P	P	P	SCUP
Dredging ⁽¹⁷⁾				
Dredging	N/A	N/A	N/A	P
Dredge Disposal / Material Stockpiling	P	X	P	X
Habitat and Ecological Enhancement ⁽¹⁸⁾	P	P	P	P
Flood Control Works ⁽²⁰⁾				
Modification of Existing Flood Control Works (including relocation further landward)	P	P	P	SCUP
New Flood Control Works	P	P	P	SCUP
Dimensional Standards				
Buffer ⁽²³⁾	See Table 8, Appendix B			
Building setback from Buffer in Table 8, Appendix B, or Landward Toe of Levee Where Present ⁽²³⁾	10'	10'	10'	N/A

Table Key:	Shoreline Environment Designations			
	High-Intensity	Residential	Recreation	Aquatic
P = May be permitted through SSDP or SLE				
SCUP = May be permitted through SCUP				
X = Prohibited				
N/A = Not Applicable				
Maximum Height ⁽²¹⁾	35'	35'	35'	35'
Minimum River Frontage ⁽²²⁾	N/A	60'	N/A	N/A

Table Footnotes:

- (1) See Section 7.2.1 for more details.
- (2) See Section 7.2.2 for more details.
- (3) See Section 7.2.3 for more details.
- (4) See Section 7.2.4 for more details.
- (5) See Section 7.2.5 for more details.
- (6) See Section 7.2.6 for more details.
- (7) See Section 7.2.7 for more details.
- (8) See Section 7.2.8 for more details.
- (9) See Section 7.2.9 for more details.
- (10) See Section 7.2.10 for more details.
- (11) See Section 7.2.11 for more details.
- (12) See Section 7.2.12 for more details.
- (13) See Section 7.2.13 for more details.
- (14) See Section 7.3.2 for more details.
- (15) See Section 7.3.3 for more details. A Breakwater or groin for the purposes of restoration or ecological protection is a permitted use through an SSDP and does not require an SCUP.
- (16) See Section 7.3.4 for more details.
- (17) See Section 7.3.5 for more details.
- (18) See Section 7.3.6 for more details.
- (19) New mining activities proposed in channel migration zones located within jurisdictional shoreline areas may be approved only through a Shoreline Conditional Use Permit.
- (20) See Section 6.4 for more details.
- (21) Additional height may be approved in accordance with Section 7.2.6.G.
- (22) In the R-1 zoning district, Minimum River Frontage for a two-family dwelling is 75'.
- (23) Water-dependent uses and developments may locate within the buffers shown in Table 8, Appendix B, and within the setbacks shown in Table 7-1. These uses must meet mitigation sequencing requirements to avoid, minimize, and mitigate for adverse impacts.

7.2 Shoreline Use

7.2.1 Agriculture

- A. For the purposes of this Program, the definitions in WAC 173-26-020 apply for the terms agricultural activities, agricultural products, agricultural equipment and facilities, and agricultural land.
- B. In accordance with RCW 90.58.065, this Program shall not restrict existing or ongoing agricultural activities occurring on agricultural lands. The regulations in this Program apply to:

1. New agricultural activities on land not meeting the definition of agricultural land;
 2. Conversion of agricultural lands to other uses; and
 3. Other development on agricultural land that does not meet the definition of agricultural activities.
- C. New or expanded agricultural uses and developments shall conform to the requirements of this Program.
1. The use of tanks and troughs for animal watering is encouraged; allowing animals direct, unrestricted access to surface water is not permitted. If stream crossings are necessary, bridges, culverts, or ramps shall be used to enable animal crossing without damaging the streambed or banks and must conform to requirements of this Program.
 2. Surface water drainage and runoff shall be diverted away from animal confinement and waste storage sites.
 3. Animal confinement areas shall be graded to slope away from surface water.
 4. Gutters and downspouts shall be installed on roofs to prevent excess water from entering animal confinement areas. The roof water shall be managed consistent with current stormwater standards.
 5. Wetlands and Fish and Wildlife Habitat critical areas and their buffers or required setbacks shall not be used as animal containment sites.
 6. Confinement lots, feeding operations, lot wastes, stockpiles of manure solids, manure lagoons, and storage of noxious chemicals are prohibited in shoreline jurisdiction.

7.2.2 Aquaculture

- A. New aquaculture uses may be permitted only in association with the restoration of native fish species in the Cowlitz River.
- B. Non-commercial aquaculture undertaken for conservation or habitat restoration purposes is a preferred use within the City of Castle Rock's shorelines.
- C. Aquaculture is not allowed where it would significantly conflict with navigation or other water-dependent uses.
- D. Aquaculture facilities shall not significantly impact the aesthetic qualities of the shoreline.

7.2.3 Boating Facilities

- A. General Requirements:

1. New and modified boating facilities shall meet Washington State Department of Natural Resources requirements and other state guidance if located in or over state-owned aquatic lands.
2. Boating facilities shall locate in areas where:
 - a. There is adequate water mixing and flushing;
 - b. The structure would not block or obstruct lawfully existing or planned public shoreline access;
 - c. Such facilities will not adversely affect flood channel capacity or otherwise create a flood hazard;
 - d. Water depths are adequate to minimize new or maintenance dredging and other channel maintenance activities;
 - e. The structure would minimize the obstruction of currents, alteration of sediment transport, and the accumulation of drift logs and debris;
 - f. New shoreline stabilization would not be needed. Where the need for stabilization is unavoidable, only the minimum necessary shoreline stabilization to adequately protect facilities, users, and watercraft may be allowed; and
 - g. Water depths are adequate to prevent floating structures from grounding out at the lowest low water or else stoppers are installed to prevent grounding out.
3. Boating facilities shall not be located:
 - a. Along braided or meandering river channels where the channel is subject to change in alignment;
 - b. On point bars or other accretion beaches; or
 - c. Where existing in-water navigation uses would be impaired or obstructed.
4. Boating facilities shall be constructed of materials that will not adversely affect water quality or aquatic plants and animals over the long term. Materials used for submerged portions, decking, and other components that may come into contact with water shall be approved by applicable state agencies for use in water.
5. Boating uses and facilities shall be located away from public swimming beaches and fishing.
6. Accessory uses at boating facilities shall be:

- a. Limited to water-oriented uses, including uses that provide physical or visual shoreline access for the general public.
 - b. Located as far landward as possible while still serving their intended purposes.
7. Parking and storage areas shall be landscaped or screened to provide visual and noise buffering between adjacent dissimilar uses or scenic areas.
 8. Lighting associated with overwater structures shall be beamed, hooded or directed to avoid causing glare on adjacent properties or water bodies. Illumination levels shall be the minimum necessary for safety.
 9. When feasible boating facilities shall be designed to be aesthetically compatible with the surrounding shoreline environment, and where aesthetic impacts are unavoidable mitigation shall be provided.
 10. Boating facilities shall locate where access roads are adequate to handle the traffic generated by the facility and shall be designed so that lawfully existing or planned public shoreline access is not obstructed.
 11. New uses, developments and activities accessory to boating facilities should be located outside any applicable shoreline buffer unless at least one of the following is met:
 - a. Proximity to the water-dependent project elements is critical to the successful implementation of the facility's purpose and the elements are supportive of the water-dependent use and have no other utility (e.g., a road to a boat launch facility);
 - b. The applicant's lot/site has topographical or other constraints where no other location of the development is feasible (e.g., the water-dependent use or activity is located on a parcel entirely or substantially encumbered by the required buffer).

In these circumstances, uses and modifications accessory to water-dependent boating facilities must be designed and located to minimize intrusion into the buffer, and any adverse impacts to ecological functions shall be mitigated.

B. Boat Launches

1. Launch ramps shall be designed and constructed using methods/technology that have been recognized and approved by state and federal resource agencies as the best currently available with consideration for site-specific conditions and the particular needs of that use.

2. There is no maximum length or width for boat launches; however, the proponent must demonstrate that the size proposed is the minimum necessary to allow the use proposed.
 3. Additional standards for public boat launches are as follows:
 - a. Public boat launches shall include adequate restroom and sewage and solid waste disposal facilities in compliance with applicable health regulations.
 - b. When overwater development is proposed in association with a public boat launch facility, it may be permitted only where such use requires direct water access and/or where such facilities will increase public opportunities for water access.
 - c. Public boat launches shall be located and designed to prevent traffic hazards and to minimize traffic impacts on nearby access streets.
 - d. Public boat launch sites shall include parking spaces for boat trailers commensurate with projected demand.
- C. Docks
1. New piers and docks shall be allowed only for water-dependent uses or public access.
 2. New dock construction, excluding docks accessory to single-family residences (regulated under Subsection D of this Section), shall be permitted only when the applicant has demonstrated that a specific need exists to support the intended primary water-dependent use. The applicant shall demonstrate need by providing a needs analysis or comprehensive master plan projecting future needs for dock or moorage space for approval. If approved by staff, the document may serve as the necessary justification for design, size, and construction to the extent that the plans are consistent with this Program.
 3. Extended moorage on waters of the state requires a lease or permission from the WA State Department of Natural Resources.
- D. This Section applies to docks and buoys that are accessory to four (4) or fewer single-family residences. A dock associated with a single-family residence is considered a water-dependent use if it is designed and intended for access to watercraft and complies with the requirements of this Program.
1. A new moorage structure (dock or buoy) to serve a single-family residence may be allowed only when the lot does not have access to a shared structure and there is no homeowners association or other corporate entity capable of developing shared structure.

2. Prior to approving a new residential dock, an applicant shall demonstrate that a mooring buoy is not feasible to provide moorage.
3. When feasible, new residential development of two or more dwellings with new accessory docks shall provide joint use or community dock facilities to reduce ecological impacts of new overwater facilities.
4. Docks shall meet the following standards:
 - a. Docks shall be restricted to the minimum size necessary to meet the needs of the proposed water-dependent use. The length of docks accessory to residential use/development shall be no greater than that required for safety and practicality for the residential use. The maximum length for residential docks shall be limited to either sixty (60) feet as measured horizontally from the OHWM, or the length necessary to provide a minimum of six (6) feet of water depth. The maximum width for residential docks shall be limited to six (6) feet. The dimensional standards may be adjusted as required by local, state and federal agencies.
 - b. New or expanded covered moorage is prohibited.
 - c. Floats shall be constructed and attached so that they do not ground out on the substrate. Float stops, tubs, or similar structures may be used. A minimum of one (1) foot of elevation above the substrate is required.
 - d. Pile spacing shall be the maximum feasible to minimize shading and avoid a "wall" effect that would block or baffle wave patterns, currents, littoral drift, or movement of aquatic life forms, or result in structure damage from driftwood impact or entrapment, except as may be necessary to protect the public health and safety and comply with other provisions of this Program, as determined by the City.
 - e. Piling diameter shall be sized to use the minimum possible while meeting the structural requirements of expected loads.
 - f. Grating, or clear translucent material, shall cover the surface area of the pier and ramp waterward of the OHWM and all portions of float(s) not underlain by float tubs or other material that provides buoyancy. The open area of grating shall have a minimum of sixty percent (60 percent) open space, or as otherwise required by state or federal agencies during permit review, unless determined to be infeasible due to specific site or project considerations. Clear translucent material shall have greater than ninety percent (90 percent) light transmittance as rated by the manufacturer.

- g. Docks shall be set back a minimum of ten (10) feet from side property lines, except that joint-use facilities may be located closer to, or upon, a side property line when agreed to by contract or covenant with the owners of the affected properties. This agreement shall be recorded in a format(s) prescribed by the City and a copy filed with the shoreline permit application.
- 5. Unavoidable impacts from new or expanded private boat moorage or launch construction pursuant to this Section shall be minimized and mitigated consistent with the requirements of this Program.
- 6. Moorage or launch structures shall not be allowed in critical freshwater aquatic habitats unless it can be established that the structure, including auxiliary impacts and established mitigation measures, will not be detrimental to the natural habitat or species of concern, and complies with the mitigation sequencing provisions of this Program.

7.2.4 Commercial

- A. Water-dependent commercial uses are preferred over non-water-dependent commercial uses. Water-related and Water enjoyment use are preferred over non-water-oriented uses.
- B. Non-water-dependent commercial uses shall not be allowed if they displace existing viable water-dependent uses or if they are proposed to occupy space designated for water-dependent uses identified in a previously approved SSDP or SLE.
- C. New or expanded non-water-oriented commercial development may be allowed only when:
 - 1. It is part of a mixed-use project including water-dependent uses and provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration; or
 - 2. Navigability is severely limited at the site and the development provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration; or
 - 3. The site is physically separated from the shoreline by another property or public right-of-way.
- D. Commercial uses shall provide a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration where feasible, in compliance with Section 6.5 of this SMP, and shall avoid impacts to existing navigation, recreation and existing public access.

- E. Overwater structures, or other structures waterward of the OHWM, are allowed only for those portions of water-dependent commercial uses that require overwater facilities as an essential feature of their function or for public access facilities. Design of overwater structures or structures beyond the OHWM shall demonstrate that they will not interfere with normal stream geomorphic processes, require additional future shoreline stabilization, and interfere with navigation or normal public use of the water and will mitigate any unavoidable impacts to shoreline resources.
- F. Commercial uses that are accessory to a public access or recreation use are allowed in the Recreation SED through an SSDP.

7.2.5 Forest Practices

- A. Commercial harvest of timber undertaken on shorelines shall comply with the applicable policies and provisions of the Forests and Fish Report (U.S. Fish and Wildlife Service, et al., 1999) and the Forest Practices Act, RCW 76.09 as amended, and any regulations adopted pursuant thereto (WAC 222) as administered by the Department of Natural Resources.
- B. When timberland is to be converted to another use, such conversion shall be clearly indicated on the forest practices application. Failure to indicate the intent to convert the timberland to another use on the application will result in subsequent conversion proposals being reviewed pursuant to a conversion Option Harvest Plan. Failure to declare intent to convert on the application shall provide adequate grounds for denial of subsequent conversion proposals for a period of six (6) years from the date of the forest practices application approval per RCW 76.09.060(3)(d), (e), and (f); RCW 76.09.460; and RCW 76.09.470 subject to the provisions of Sections 40.260.080(A)(4)(a)(2) and (C).
- C. With respect to timber situated within two hundred (200) feet landward of the OHWM within shorelines of the statewide significance, only selective commercial timber cutting so that no more than thirty percent (30 percent) of the merchantable trees may be harvested in any ten (10) - year period of time; provided that other timber harvesting methods may be permitted in those limited instances where the topography, soil conditions, or silviculture practices necessary for regeneration render selective logging ecologically detrimental; and provided further, that clear cutting of timber which is solely incidental to the preparation of land for other uses authorized by this Chapter may be permitted. Such exceptions to this standard shall be by an SCUP only.
- D. Forestry practices for preparatory work associated with the conversion of land to non-forestry uses and/or developments shall be consistent with the policies and regulations for the proposed non-forestry use and the general provisions of this Program, including vegetation conservation.

7.2.6 Industrial

- A. Water-dependent industrial uses are preferred over non-water-dependent industrial uses.
- B. Water-related and non-water oriented industrial uses shall not be allowed if they displace existing viable water-dependent uses or if they are proposed to occupy space designated for water-dependent uses identified in a previously approved SSDP or SLE.
- C. New or expanded non-water-oriented industrial development may be allowed only when:
 - 1. It is part of a mixed-use project including water-dependent uses and provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration; or
 - 2. Navigability is severely limited at the site and the development provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration; or
 - 3. The site is physically separated from the shoreline by another property or public right-of-way.
- D. Industrial development and redevelopment should be encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated prior to impacting undeveloped shoreline areas.
- E. Proposed developments shall maximize the use of existing industrial facilities and avoid duplication of dock or pier facilities before expanding into undeveloped areas or building new facilities. Proposals for new industrial developments shall demonstrate the need for expansion into an undeveloped area.
- F. Only water-dependent elements of a proposal may encroach on required vegetated buffers of this Program (see Table 8, Appendix B, Critical Areas Regulations).
- G. Water-oriented structures may be allowed to exceed a height of thirty-five (35) feet. Such structures may include, but are not limited to, facilities which must be of a greater height in order to function, such as cranes or other facilities designed to move or place products, fixed loading facilities that must provide clearance over vessels, storage facilities such as grain elevators, as well as accessory features such as lighting required for operations. The applicant must demonstrate compliance with the following criteria:
 - 1. The public interest will be served by accommodating the increased height.
 - 2. The view of a substantial number of residences in areas adjoining such shorelines will not be obstructed.

3. Increased height will not substantially interfere with views from a designated public place, vista, or feature specifically identified in an adopted local, state, or federal plan or policy.

7.2.7 Institutional

- A. Water-oriented institutional uses and developments are preferred.
- B. Where allowed, non-water-oriented institutional uses may be permitted:
 1. If navigability is severely limited at the proposed site, and the institutional use provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as providing public access and ecological restoration; or
 2. If the site is physically separated from the shoreline by another property or public right-of-way; or
 3. As part of a mixed-use development which provides a significant public benefit with respect to the Shoreline Management Act's objectives, such as public access and ecological restoration.
- C. Loading, service areas, and other accessory uses shall be located landward of a primary structure or underground whenever possible but shall in no case be waterward of the structure.
- D. New institutional development within shoreline jurisdiction shall be:
 1. Designed such that no new shoreline stabilization measures are necessary;
 2. Located and designed to minimize view obstructions to and from the shoreline from other properties; and,
 3. Prohibited in floodways and channel migration zones.

7.2.8 In-stream Structures

- A. Applications for new or permanent expansion of in-stream structural uses shall include the following information prior to final approval, unless the City determines that the issues are adequately addressed via another regulatory review process:
 1. A hydraulic analysis prepared by a licensed professional engineer that describes anticipated effects of the project on stream hydraulics, including potential increases in base flood elevation, changes in stream velocity, and the potential for redirection of the normal flow of the affected stream.

2. A habitat management plan prepared by a qualified professional biologist that describes the anticipated effects of the project on fish and wildlife resources, provisions for protecting in-stream resources during construction and operation, and measures to compensate for impacts to resources that cannot be avoided.
3. A description of sites proposed for the depositing of debris, overburden, and other waste materials generated during construction.
4. Proposed provisions for accommodating public access to and along the affected shoreline, as well as any proposed on-site recreational features.

7.2.9 Mining

Mining in Washington is controlled by the Surface Mining Act of 1970 (RCW 78.44) and is administered by the Washington Department of Natural Resources. The provisions of this legislation shall be followed in all cases.

- A. An applicant for mining and associated activities within the shoreline jurisdiction shall demonstrate that the proposed activities are dependent on a shoreline location consistent with this Program and WAC 173-26-201(2)(a). Non-water-dependent mining activities are prohibited within shoreline jurisdiction.
- B. To be approved the applicant must demonstrate that there will be no:
 1. Adverse impact on the structural integrity of the shoreline that would change existing aquatic habitat or aquatic flow characteristics;
 2. Changes in hydraulic processes to or from adjacent waterbodies that would damage aquatic habitat, shoreline habitat, or groundwater.
- C. Mining waterward of the OHWM may be permitted only when the applicant demonstrates that:
 1. Removal of specified quantities of sand and gravel or other materials at specific locations will not adversely affect natural gravel transport or other stream processes.
 2. The proposed mining and associated activities will not have significant adverse impacts on habitat for priority species and will not cause a net loss of shoreline ecological functions.
 3. Determinations required by 1 and 2 above must be made consistent with RCW 90.58.100(1) and WAC 173-26-201(2)(a).
 4. In considering renewal, extension, or reauthorization of other mining operations waterward of the OHWM in locations where they have previously been conducted, the City must require compliance with this Subsection to the extent that no such review has previously been conducted. Where there has been prior

review, the City must review previous determinations comparable to the requirements of this Section to assure compliance with this Subsection under current site conditions.

- D. To ensure future use and visibility of the shoreline areas after completion of mining activities, the following provisions for land reclamation shall be met and shall be demonstrated in a reclamation plan approved by the Department of Natural Resources that complies with the format and standards of RCW 78.44 and WAC 332-18:
1. All reclamation shall be completed within two (2) years after discontinuance of mining operations.
 2. All equipment, machinery, buildings, and structures shall be removed from the site upon discontinuance or abandonment of mining operations.
 3. Backfill material used in site reclamation shall be natural materials. Combustible, flammable, noxious, toxic, or solid waste materials are not permitted as backfill or for on-site disposal.
 4. Reclamation shall prevent future erosion and sedimentation. Topography of the site shall be restored to contours compatible with the surrounding land and shoreline area.
 5. Final topography of the site shall not cause standing water to collect and remain on the site except as part of a sedimentation collection and removal system.
 6. All exposed areas shall be revegetated utilizing self-sustaining plants suitable to the immediate shoreline environment.
- E. The provisions of this Section do not apply to dredging of authorized navigation channels or management, placement, or beneficial reuse of dredged materials when conducted in accordance with Section 7.3.5 and all other provisions of this Program.

7.2.10 Recreational Development

- A. Recreation areas or facilities on the shoreline shall provide physical or visual access to the shoreline, where feasible.
- B. Recreation facilities and activities are permitted when they do not displace water-dependent uses and are consistent with existing water-related and water-enjoyment uses.
- C. Only water-dependent or water-enjoyment elements of a recreational proposal may encroach on required vegetated buffers of this Program.

- D. Parking areas shall be located outside of shoreline jurisdiction, unless infeasible, in which case parking facilities should be sited on the landward side of recreational development.
- E. Provisions shall be made for adequate vehicular parking and safe pedestrian crossings.
- F. New overwater structures for recreation use shall be allowed only when:
 - 1. They accommodate water-dependent recreation use or facilities; or
 - 2. They provide access for the public to enjoy the shorelines of the state.
- G. Recreational facilities shall provide adequate facilities for potable water supply, sewage disposal, and/or garbage collection, when feasible.

7.2.11 Residential Development

- A. New residential development shall comply with the shoreline buffer provisions established in Section 3.B.2 of Appendix B. Redevelopment or expansion of residential structures shall also conform to the provisions in Section 3.3 of this SMP as applicable.
- B. New residential development including subdivisions, short plats, new appurtenances and accessory uses and structures:
 - 1. Shall be designed such that no new shoreline stabilization measures are necessary for the life of the structure.
 - 2. Shall be located and designed to minimize view obstructions to and from the shoreline and other properties.
 - 3. Shall be prohibited in floodways and channel migration zones including associated sewage disposal systems.
- C. Appurtenances, accessory uses, and facilities serving a residential structure shall be located outside setbacks, critical areas, and buffers unless otherwise allowed by this Program.
- D. New residential lots shall be configured such that new structural flood hazard reduction and shoreline stabilization measures will not be required during the life of the development or use.
- E. Clustering of residential units, as permitted by the City, is permitted where minimization of physical and visual impacts to the shorelines can be achieved.

- F. Where housing developments are proposed in locations that would interrupt existing shoreline views, provisions shall be made for reasonable view corridors. The City may adjust the project dimensions and/or prescribe development operation and screening standards as deemed appropriate.
- G. Caretaker single family residence may be permitted in the Recreation SED.

7.2.12 Transportation Facilities

- A. Roads, Railroads and Bridges
 - 1. New or expanded surface transportation facilities not related to and necessary for the support of shoreline activities shall be located outside of the shoreline jurisdiction wherever possible unless location outside of shoreline jurisdiction is infeasible.
 - 2. The applicant shall demonstrate that new or expanded facilities are designed to:
 - a. Minimize impacts to critical areas and associated buffers and to minimize alterations to the natural or existing topography to the extent feasible;
 - b. Avoid or minimize the need for shoreline stabilization; and
 - c. Comply with the mitigation sequencing provisions of this Program.
 - 3. New transportation crossings over streams and wetlands shall be avoided, but where necessary shall utilize bridges rather than culverts to the extent possible.
 - 4. Requirements for bridge and culvert installation crossing all streams shall be consistent with the Washington State Department of Fish and Wildlife standards.
 - 5. All excavation materials and soils exposed to erosion by all phases of road, bridge, and culvert work shall be stabilized and protected by seeding, mulching or other effective means, both during and after construction.
 - 6. Private access roads or driveways providing ingress and egress for individual single-family residences or lots shall be limited to the minimum allowed by the fire code.
 - 7. Facility lighting must be designed and operated to prevent glare on adjacent properties and to prevent hazards. Methods of controlling spillover light include, but are not limited to, limits on height of structure, limits on light levels of fixtures, light shields, setbacks, buffer areas and screening. Lighting must be directed away from critical areas, unless necessary for public health and safety.
 - 8. Bridges shall provide the maximum length of clear spans feasible with pier supports to produce the minimum amount of deflection feasible.

9. Routine repair and maintenance of public right-of-way may be permitted in accordance with the provisions of the Act and this Program.
 10. Circulation routes to and on shorelands shall include systems for pedestrian, bicycle, and public transportation where appropriate.
- B. Non-Motorized Facilities
1. Non-motorized facilities, such as trails, shall comply with provisions for public access that are part of this Program.
 2. New or expanded non-motorized transportation facilities shall be located outside of critical areas and their associated buffers or in the outer 25 percent of the critical area buffer with the exception of non-motorized facilities constructed for water access.
 3. Facility lighting shall be designed and operated to prevent glare on adjacent properties and to prevent hazards. Methods of controlling spillover light include, but are not limited to, limits on height of structure, limits on light levels of fixtures, light shields, setbacks, buffer areas, and screening. Lighting must be directed away from critical areas, unless necessary for public health and safety.
 4. Elevated walkways shall be utilized where feasible to cross wetlands and streams instead of culverts.
- C. Parking
1. Parking facilities are not a preferred use and shall be allowed only where necessary to support an authorized use. Parking facilities accessory to a permitted use shall be:
 - a. Set back as far as possible from the OHWM and outside shoreline jurisdiction where feasible; and
 - b. Located outside of critical areas and associated buffers where feasible.
 2. Facility lighting shall be designed and operated to prevent glare on adjacent properties and to prevent hazards. Methods of controlling spillover light include, but are not limited to, limits on height of structure, limits on light levels of fixtures, light shields, setbacks, buffer areas, and screening. Lighting must be directed away from critical areas, unless necessary for public health and safety.

7.2.13 Utilities Uses

These provisions apply to services and facilities that produce, convey, store, or process power, water, sewage, stormwater, gas, communications, oil, waste, and similar services and functions. On-site utility features serving a primary use, such as a water, sewer, or gas

line to a residence or other approved use, are accessory utilities and shall be considered a part of the primary use.

- A. New or expanded non-water dependent utilities or parts thereof may be located within shoreline jurisdiction only when the applicant demonstrates based on analysis of alternative locations and technologies that:
 - 1. No alternative location outside of shoreline jurisdiction is feasible, as determined by the City; and
 - 2. If a new corridor is proposed, utilization of existing corridors is not feasible, including expansion or replacement of existing facilities, as determined by the City; and
 - 3. The proposal minimizes changes to the visual character of the shoreline environment as viewed from the water and surrounding views to the water.
 - 4. The above requirements do not apply to water-dependent utilities, or parts thereof, which require a shoreline location, such as stormwater or wastewater treatment plant outfalls.
- B. Overhead electrical transmission lines should be located outside of shoreline jurisdictional areas, unless infeasible due to site constraints, including but not limited to topography or safety, as determined by the City.
- C. Transmission, distribution and conveyance facilities shall be located in existing rights of way and corridors or shall cross shoreline jurisdictional areas by the shortest, most direct route feasible, unless such route would cause significant environmental damage.
- D. Utility crossings of waterbodies shall be attached to bridges where feasible. Where attachment to a bridge is not feasible, underground construction methods that avoid surface disturbance are preferred.
- E. All underwater pipelines transporting liquids intrinsically harmful to aquatic life or potentially harmful to water quality shall be equipped with automatic shut off valves.
- F. Structural utility buildings, such as pump stations, electrical substations, waste facilities, or other facilities shall be located outside of jurisdictional shoreline areas, unless no other feasible location exists, in which case they shall be visually compatible in scale with surrounding development and landscape to provide compatibility with natural features and adjacent uses.
- G. Stormwater outfalls may be placed below the OHWM to reduce scouring. New outfalls and modifications to existing outfalls shall be designed and constructed to avoid impacts to existing native aquatic vegetation attached to or rooted in substrate.

- H. The presence of existing utilities shall not justify more intense development. Rather, the development shall be consistent with the City Comprehensive Plan, Development Regulations, and this SMP, and shall be supported by adequate utilities.
- I. Existing facilities such as the City's Municipal Water System and Sewer System, that are located landward of a levee, may be improved in accordance with the mitigation sequencing provisions contained in this Program.

7.3 Shoreline Modification

7.3.1 General Regulations

Shoreline modifications must comply with the following general provisions and the following specific provisions, as appropriate:

- A. Structural modifications may be permitted only where they are demonstrated to be necessary to support or protect an allowed primary structure or a legally existing shoreline use that is in danger of loss or substantial damage or are necessary for reconfiguration of the shoreline for mitigation or enhancement purposes;
- B. Preference shall be given to shoreline modifications that have a lesser impact on ecological functions; and
- C. Modifications shall be designed to incorporate all feasible measures to protect ecological shoreline functions and ecosystem-wide processes.

7.3.2 Shoreline Stabilization

- A. Proposals for new shoreline stabilization shall comply with mitigation sequencing requirements of this Program. Modified or enlarged shoreline stabilization proposals shall be treated as new stabilization for all requirements of this Section.
- B. Compliance with the following criteria shall be documented through geotechnical analysis by a qualified professional. Geotechnical reports pursuant to this Section shall address the necessity for shoreline stabilization by estimating timeframes and rates of erosion and shall report on the urgency associated with the specific situation.
 - 1. New development and lots created by subdivision shall demonstrate that new shoreline stabilization will not be necessary in order for reasonable development to occur.
 - 2. Development on steep slopes shall be set back sufficiently to ensure that shoreline stabilization is unlikely to be necessary during the life of the structure (Appendix B).

3. Development that would require new shoreline stabilization that would cause significant impacts to adjacent or down-current properties and shoreline areas, shall not be allowed.
4. Hard armoring solutions shall be authorized only:
 - a. When a report finds that a primary structure will be damaged within three (3) years from shoreline erosion without hard armoring measures;
 - b. If waiting to provide erosion protection would foreclose the opportunity to use measures that avoid impacts on ecological functions; or
 - c. When hard armoring is not justified based on the above criteria, a geotechnical report may be used to justify protection against erosion using soft shoreline stabilization measures.
- C. Shoreline stabilization shall be designed and constructed to be the minimum size necessary and to avoid or minimize stream channel direction modification, realignment, and straightening, or to result in increased channelization of normal stream flows or impacts to sediment transport.
- D. New or expanded shoreline stabilization shall follow this hierarchy of preference:
 1. No action (allow the shoreline to retreat naturally).
 2. Non-structural methods such as increased building setbacks, relocating structures, and/or other methods to avoid the need of stabilization.
 3. Stabilization constructed of soft structural protection and bioengineering, including, but not limited to, beach nourishment, protective berms, or vegetative stabilization.
 4. Soft structural stabilization, as described above, in combination with hard structure stabilization, as described below, constructed as a protective measure.
 5. Hard structure stabilization constructed of artificial materials such as, but not limited to, riprap or concrete.

Applicants should consult applicable shoreline stabilization guidance documents, such as the Integrated Streambank Protection Guidelines, promulgated by state or federal agencies.
- E. New structural shoreline stabilization measures to protect an existing primary structure, including residences, are only allowed when there is conclusive evidence, documented by a geotechnical analysis that the structure is in danger from shoreline erosion caused by currents or waves rather than from upland conditions. Normal sloughing, erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis, is not demonstration of need. The geotechnical analysis

should evaluate on-site drainage issues and address drainage problems away from the shoreline edge before considering structural shoreline stabilization. Any new or expanded erosion control structures shall not result in a net loss of shoreline ecological functions.

- F. New shoreline structural stabilization may be permitted in support of a water-dependent development when all of the conditions below are met as demonstrated in a geotechnical report by a qualified professional:
 - 1. The erosion is not being caused by upland conditions, such as the loss of vegetation and drainage.
 - 2. There is a need to protect primary structures from damage due to erosion.
 - 3. Non-structural measures, such as placing the development farther from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient.
- G. New shoreline structural stabilization may be permitted in support of a new non-water-dependent development (including single-family residences) when all of the conditions below are met as demonstrated in a geotechnical report by a qualified professional:
 - 1. The erosion is not being caused by upland conditions, such as the loss of vegetation and drainage.
 - 2. There is a need to protect primary structures from damage due to erosion caused by natural processes, such as currents or waves.
 - 3. Non-structural measures, such as placing the development farther from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient.
- H. New shoreline structural stabilization may be permitted to protect ecological restoration or hazardous substance remediation projects when the conditions below are met as demonstrated in a geotechnical report by a qualified professional:
 - 1. Non-structural measures, such as placing the development farther from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient.
- I. The construction of a shoreline stabilization structure, either “soft” or “hard” for the primary purpose of creating dry land is prohibited.
- J. Replacement of an existing shoreline stabilization structure with a similar structure is permitted if there is a demonstrated need to protect existing primary uses or structures from erosion caused by current or wave action. Replacement walls or bulkheads shall not encroach waterward of the OHWM or existing structure unless

the residence was occupied prior to January 1, 1992, and there are overriding safety or environmental concerns. In such cases, the replacement structure shall abut the existing shoreline stabilization structure. For purposes of this Subsection regarding standards on shoreline stabilization measures, "replacement" means the construction of a new structure to perform a shoreline stabilization function of an existing structure that can no longer adequately serve its purpose. Additions to or increases in the size of existing shoreline stabilization measures shall be considered new structures.

- K. A publicly financed or subsidized shoreline stabilization project shall not restrict existing public access, except where such access is determined to be infeasible due to incompatible uses, safety or security concerns, or harm to ecological functions, as determined by the City. Where feasible, such structural stabilization shall incorporate public access. See Section 6.5, Public Access, for additional information.
- L. Bioengineered projects shall be designed by a qualified professional in accordance with best available science and shall incorporate a variety of sustainable plants, unless demonstrated infeasible for the particular site.
- M. Gabions (wire-mesh baskets filled with concrete or rocks) shall not be used in the construction of shoreline stabilization structures, where alternatives more consistent with this Program are feasible, because of their limited durability and the potential hazard they present to shore users and the shoreline environment.

7.3.3 Breakwaters and Groins

- A. Breakwaters, groins and weirs located waterward of the OHWM shall be allowed only where necessary to support water-dependent uses, public access, shoreline stabilization, public safety, or other specific public purpose.
- B. Open pile or floating breakwater designs shall be used unless it can be demonstrated that riprap or other solid construction would not result in any greater net impacts to shoreline ecological functions, processes, fish passage, or shore features.

7.3.4 Fill and Excavation

- A. Fill may be placed in flood hazard areas only when otherwise allowed by the Frequently Flooded Areas Regulations in this Program (Appendix B) and where it is demonstrated in a hydrogeological report prepared by a qualified professional that adverse impacts to hydrogeologic processes will be avoided.
- B. Fill placed below the OHWM for any other use besides ecological restoration requires a Shoreline Conditional Use Permit.
 - 1. Accomplish an aquatic habitat restoration plan.

2. Support a mitigation action, environmental restoration, beach nourishment or other enhancement project.
 3. Correct the adverse results of past shoreline modification that have disrupted natural stream geomorphic conditions and adversely affected aquatic or terrestrial habitat.
 4. Support a water-dependent use.
 5. Serve as part of a public access proposal.
 6. Support cleanup of contaminated sediments as part of an interagency environmental clean-up plan, or permitted under MTCA or CERCLA.
 7. Expand or alter transportation facilities of statewide significance currently located on the shoreline only when demonstrated that alternatives to fill are not feasible.
- C. Fill is restricted in wetlands or fish and wildlife habitat conservation areas in accordance with the critical areas standards in this Program, Section 6.3, and Appendix B.
- D. Excavation of previously deposited dredge spoils above the OHWM may be permitted if the spoils site is part of a dredge materials management plan and the spoils were not originally placed as part of a beach nourishment or other shoreline restoration project.
- E. Excavation below the OHWM is considered dredging and is subject to provisions in Section 7.3.5, Dredging and Dredge Material Stockpiling.

7.3.5 Dredging and Dredge Material Stockpiling

- A. Dredging and in-water dredge disposal must be approved by state and federal agencies with jurisdiction, with documentation provided to local government as a condition of any shoreline permit.
- B. New dredging shall be permitted only:
1. When establishing, expanding, or reconfiguring navigation channels, anchorage areas, and basins in support of existing navigational uses;
 2. When implementing an approved regional dredge management plan for flood control purposes;
 3. As part of an approved habitat improvement project;
 4. As part of a Model Toxics Control Act or Comprehensive Environmental Response, Compensation, and Liability Act project;

5. In conjunction with a new port, bridge, navigational structure, wastewater treatment facility, essential public facility, hydroelectric facility, fish hatchery, or other water-dependent use for which there is a documented public need and where other feasible sites or methods are not feasible; or
 6. When otherwise approved by state and federal agencies.
- C. New development shall be sited and designed to avoid or, if that is not possible, to minimize the need for new and maintenance dredging.
 - D. Maintenance dredging shall be restricted previously authorized locations, depths, and widths.
 - E. Dredging waterward of the OHWM for the primary purpose of obtaining fill material is allowed only when the material is necessary for the restoration of ecological functions. When allowed, the site where the fill is to be placed must be located waterward of the ordinary high-water mark. The project must be either associated with a Model Toxics Control Act or Comprehensive Environmental Response, Compensation, and Liability Act habitat restoration project or, if approved through an SCUP, any other significant habitat enhancement project.
 - F. Dredge materials exceeding the Ecology criteria for toxic sediments shall be disposed of according to state and federal law. Proof of proper disposal at an upland permitted facility may be required.
 - G. Disposal of dredge material on shorelands or wetlands within a river's channel migration zone shall be discouraged. In the limited instances where it is allowed, such disposal shall require an SCUP. Disposal of dredge material within wetlands or within a river's channel migration zone shall be allowed only when proposed as part of an ecological restoration project demonstrated by a qualified professional to:
 1. Improve wildlife habitat;
 2. Correct the adverse results of past shoreline modification that have disrupted natural stream geomorphic conditions and adversely affected aquatic or terrestrial habitat; or
 3. Create, expand, rehabilitate, or enhance a beach when permitted under this Program and any required state or federal permit.

This provision is not intended to address discharge of dredge material into the flowing current of the river or in deep water within the channel where it does not substantially affect the geohydrologic character of the channel migration zone.

- H. When allowed, dredge material disposal or stockpiling must meet the following standards:

1. Dredge material disposal or stockpiling in shoreline jurisdiction shall be permitted only where it is demonstrated by a qualified professional that the disposal will not result in significant or ongoing adverse impacts to water quality, fish and wildlife habitat conservation areas and other critical areas, flood holding capacity, natural drainage and water circulation patterns, significant plant communities, prime agricultural land, and public access to shorelines. When such impacts are unavoidable, they shall be minimized and mitigated such that they result in no net loss of functions.
2. Dredge disposal both above and below OHWM may be approved if it is demonstrated that it complies with the provisions of Section 7.3.5.H.1 above and one or more of the following:
 - a. It benefits shoreline resources; or
 - b. If applicable, it utilizes the guidance from the 2007, or as amended, U.S. Army Corps of Engineers and Environmental Protection Agency publication EPA842-B-07-001, *Identifying, Planning, and Financing Beneficial Use Projects Using Dredged Material – Beneficial Use Planning Manual*; or
 - c. For dredging projects under Corps jurisdiction, the disposal has been identified and evaluated through an approved Corps Dredge Management Material Program.
- I. Clearing of secondary, volunteer vegetation growth on approved dredge disposal deposits does not require compensatory mitigation.
- J. Dredge disposal is allowed through an SSDP on lands already covered by legally deposited dredge spoils.
- K. Dredging, dredge disposal and stockpiling shall be scheduled to minimize impacts to biological productivity (including, but not limited to, fish runs, spawning, and benthic productivity) and to minimize interference with fishing activities and other water-dependent uses, when feasible.

7.3.6 Shoreline Habitat and Ecological Enhancement Projects

Shoreline habitat and ecological enhancement projects are those in which public and/or private parties engage to establish, restore, or enhance habitat.

- A. Long-term maintenance and monitoring shall be included in restoration or enhancement projects, as feasible.
- B. Shoreline restoration and enhancement projects shall be designed using scientific and technical information and implemented using best management practices. Applicants should consult applicable guidance documents, such as the most current

version of the Washington State Department of Fish and Wildlife's Stream Habitat Restoration Guidelines, promulgated by state or federal agencies.

- C. Habitat creation, expansion, restoration, and enhancement projects may be permitted in all shoreline environment designations subject to required state or federal permits when the applicant has demonstrated that there will be a specific ecological improvement and the following:
1. Spawning, nesting, or breeding fish and wildlife habitat conservation areas will not be adversely affected;
 2. Water quality will not be degraded;
 3. Flood storage capacity will not be degraded;
 4. Streamflow will not be reduced;
 5. Impacts to critical areas and buffers will be avoided and where unavoidable, minimized and mitigated in accordance with the mitigation sequencing provisions of this Program; and
 6. The project will not interfere with the normal public use of the navigable waters of the state.
 7. The project is consistent with the types and purposes of restoration information provided in the Shoreline Restoration Plan, Appendix C.

8. Shoreline Administration and Enforcement

8.1 General

- A. All proposed new uses and new development occurring within the shoreline jurisdiction must conform to RCW 90.58, the Act, and this Program, whether or not a shoreline permit is required.
- B. "The City," for the purposes of making administrative decisions and processing permits as may be required by the Program, means the Mayor of Castle Rock or his/her designees.
- C. Permit procedures and enforcement shall be conducted in a manner consistent with constitutional limitations on regulation of private property as specified in WAC 173-26-186 (5) and WAC 173-26-191(2)(a)(iii)(A).
- D. Shoreline substantial development permits (SSDPs), shoreline letters of exemption (SLE), SSDP revisions, SCUPs, and shoreline variances are subject to review in accordance with the provisions of the Castle Rock Municipal Code (CRMC) or as subsequently amended.
- E. The regulations of the Program shall be used in conjunction with the regulations contained in the CRMC. Where there is a conflict between the CRMC and the Program, the Program shall control, as determined by the City.
- F. The effective date of an SSDP, SCUP, or shoreline variance permit shall be the date of filing with the Ecology as provided in RCW 90.58.140(6). The permit time period does not include the time during which a use or activity was not actually pursued due to the pendency of administrative appeals or legal actions or due to the need to obtain any other government permits and approvals for the development that authorize the development to proceed, including all reasonably related administrative or legal actions on any such permits or approvals.

8.2 Application Requirements

- A. A complete application for an SSDP, SCUP, or shoreline variance permit shall contain, at a minimum, the information required for a complete application specified in WAC 173-27-180, as determined by the City.
- B. When an applicant submits an application for any development proposal, the application shall indicate whether any critical area is located on the site.
- C. The City may conduct a preliminary environmental review, based on existing in-house resources and data, to determine if critical areas are known or suspected to exist on the applicant's parcel; however, the ultimate burden of proof is on the

applicant to provide sufficient data to the City should the City suspect critical areas are present.

- D. A representative of the City may visit the site and, in conjunction with the review of the information provided by the applicant and any other suitable information, shall make a determination as to whether or not sufficient information is available to evaluate the proposal. If it is determined that the information presented is not sufficient to adequately evaluate a proposal, the City shall notify the applicant that additional studies as specified herein shall be provided.
- E. When the determination of critical areas has been completed, a written report will be issued to the applicant, placed in an address file, and a copy sent to the property owner if different from the applicant. A property owner may request a re-evaluation by the City once in any twelve (12)-month period when a change in physical conditions or government institutional actions warrants such re- evaluation.
- F. A shoreline permit (SSDP or SCUP) is required if it is determined that the proposed alteration or development is located within jurisdictional shoreline area, and/or a critical area or buffer. In addition to the information required for an application specified in WAC 173-27-180, the permit application shall also include the following, or as amended by the City:
 - 1. A vicinity map, SEPA environmental checklist, and any supplemental information required by the City.
 - 2. A site plan drawn to scale. The site plan should clearly depict the following information:
 - a. North arrow;
 - b. Property line dimensions;
 - c. Location and dimensions of all existing and proposed development or alterations, including public and private roads, sewer and water lines, wells, utilities, easements, water sources, lakes and springs, drainage facilities, on-site sewage disposal, and drainfield areas within the property boundary.
 - 3. Technical assessments. The City may require the applicant to submit a technical assessment addressing how the proposal incorporates best available science. The technical assessment shall be adequate for the City to evaluate the development proposal and all probable adverse impacts to critical areas. If adequate factual information exists to facilitate such evaluation, the City may determine that a technical assessment is not necessary. The City will advise the applicant of existing technical information that may be pertinent to their property. Technical assessments shall be attached to the development permit application package.

4. All critical area technical assessments and studies required of the applicant shall be prepared by a qualified professional. The City's decision to require additional studies will be based on the complexity of the project and/or a site inspection. The applicant for development shall be responsible for any cost associated with preparing critical area technical assessments and/or studies.
- G. The City shall solicit comments or technical assistance on the shoreline permit application from resource agencies with jurisdiction over the proposal within 14 days of determining an application is complete. These agencies shall have fourteen (14) days from the date the application is circulated by the City for comments. If a response is not received from the resource agency within the 14-day review period, the City will assume there are no comments on the project or activity forthcoming from the resource agency.
- H. Any person preparing to submit an application for development or use of land located within a critical area or associated buffer shall first apply for a pre-application conference, unless waived by the City in concurrence with the applicant. At this meeting, the City shall discuss the requirements of these regulations and provide applicable critical areas maps, scientific information, and other source materials. The City shall summarize the application review process and work with the proponent to identify potential issues that may arise during the review process in addition to discussing other permit procedures and requirements.
- I. The City will notify the public and other agencies with jurisdiction of applications for an SSDP, SCUP, or variance permit as required by WAC 173-27-110.

8.3 Shoreline Letter of Exemption (SLE)

- A. The City may issue a Shoreline Letter of Exemption (SLE) for proposed development activities or uses in jurisdictional shoreline areas that do not require an SSDP consistent with Section 3.2.
- B. Requests or applications for an SLE shall be submitted in a format prescribed by the City and include such documentation as may be required by the City.
- C. SLEs shall be processed by the City as an administrative decision and shall be issued in writing by the Mayor or his/her designee in accordance with the provisions of the CRMC as it now exists or as subsequently amended.
 1. All SLEs issued by the City shall be in writing and maintained in a file.
- D. An SLE may be issued for project-specific development activities or for programmatic, routine activities that may be repeated on a regular basis in accordance with approved standards such as the maintenance and minor repairs of roads, right-of-ways, levees, revetments, wastewater facilities, trails, parks, and/or stormwater facilities.

- E. Activities authorized through the issuance of an SLE must comply with all applicable provisions of the Castle Rock Municipal Code and comply with conditions included for approval to achieve consistency and compliance with the provisions of this Program and the Act.
- F. If the exemption is approved, the City shall prepare and provide an SLE to the applicant and Ecology indicating the specific applicable exemption provisions from WAC 173-27-040 and providing a summary of the project's consistency with this Program and the Act, as amended.
- G. An exemption from an SSDP is not an exemption from compliance with the Act or the Program, or from any other regulatory requirements. A project requiring an additional permit and subject to an exemption to an SSDP shall be reviewed under the criteria of the underlying permit with an additional finding recorded by the City addressing the grounds under which the project is exempt.
- H. A denial of an exemption shall be in writing and shall identify the reason(s) for the denial.

8.4 Shoreline Substantial Development Permits (SSDP)

- A. An SSDP shall be required for projects occurring within the City's shoreline jurisdiction pursuant to the requirements and procedures contained in WAC 173-27 (Shoreline Management Permit and Enforcement Procedures); except for those projects described in Section 3.2, Exemptions from a Shoreline Substantial Development Permit.
- B. An SSDP is a Type VIII Permit and shall be processed by the Mayor or his/her designee in accordance with the provisions of the CRMC as it now exists or is subsequently amended by the City.
- C. Applications for SSDPs shall be accompanied by the application materials specified in WAC 173-27-180 *Application Requirements for Substantial Development, Conditional Use, or Variance Permit* as determined by the City.
- D. Upon the review of materials submitted by an applicant the City may, at its discretion, require peer review be completed by a consultant chosen by the City, at the sole expense of the applicant.
- E. Notification of the public shall be as required by the CRMC, as it now exists or is subsequently amended.
- F. Time requirements for SSDPs are as follows (See WAC 173-27-090 for complete language.):

1. Construction activities shall commence, or where no construction activities are involved, the use or activity shall commence within two (2) years of the effective date of an SSDP.
 2. The period for commencement of construction or use may be extended once for a one (1)-year period if a request based on reasonable factors is filed before the expiration date and notice of the proposed extension is given to parties of record.
 3. The authorization to conduct certain development activities (see WAC 173-27-090) shall terminate five (5) years after the effective date of an SSDP.
 4. The authorization period to conduct development activities may be extended once for a one (1)-year period if a request based on reasonable factors is filed before the expiration date and notice of the proposed extension is given to parties of record and the department.
 5. The time periods in Sections 1 through 4, above, do not include the time during which a use or activity was not actually pursued due to the pendency of administrative appeals or legal actions or due to the need to obtain any other government permits and approvals for the development that authorize the development to proceed, including all reasonably related administrative or legal actions on any such permits or approvals.
- G. Applications for an SSDP will be reviewed against the following criterion:
1. Proposed use or development on shorelines of the state must be consistent with the policy and provisions of the Act and this Program.
- H. Appeals to the Shorelines Hearings Board shall be consistent with RCW 90.58.140. Construction pursuant to a shoreline permit may not begin or be authorized until twenty-one (21) days from the date the permit decision was filed with Ecology.

8.5 Shoreline Conditional Use Permits (SCUP)

- A. The purpose of an SCUP is to provide a system within the Program which allows flexibility in the application of use regulations in a manner consistent with the policies of RCW 90.58.020.
- B. An SCUP is required for uses and development that are not classified in the Program and for those uses and modifications as indicated in Table 7-1 of this Program. In authorizing a conditional use, the City and The Department of Ecology may attach special conditions to the permit to prevent undesirable effects of the proposed use and/or to assure consistency of the project with the Act and this Program.

- C. A SCUP is a Type VIII Permit and shall be processed by the Mayor or his/her designee in accordance with the provisions of the CRMC as it now exists or as subsequently amended.
- D. Applications for an SCUP shall be accompanied by the application materials specified in WAC 173-27-180 *Application Requirements for Substantial Development, Conditional Use, or Variance Permit* as determined by the City.
- E. The criteria for approving conditional uses shall be consistent with WAC 173-27-160 *Review Criteria for Conditional Use Permits* and shall include the following:
 - 1. That the proposed use is consistent with the policies of RCW 90.58.020 and the 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 the 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.
 - 6. Other uses that are not classified or set forth in the Program may be authorized as conditional uses provided that the applicant can demonstrate consistency with the requirements of this Section, WAC 173-27-160, and RCW 90.58.020.
 - 7. When reviewing SCUP applications, consideration shall be given to the cumulative impact of like actions in the area. For example, if any SCUPs 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.
 - 8. Uses which are specifically prohibited or not allowed by the Program may not be authorized through the issuance of an SCUP.
- F. To ensure compliance with the applicable criteria stated in the CRMC, the City shall have the authority to require and approve a specific plan for a proposed use, to impose performance standards in the form of conditions of approval that make the use compatible with other permitted uses in the area, and to expand the requirements set forth in the CRMC by means of conditions that are applicable to the proposed use. In no case shall the City have the authority to reduce the requirements of the City's municipal code when considering an application for a

conditional shoreline development permit; any such reduction shall only be granted upon the issuance of a variance.

- G. Where plans are required to be submitted and approved as part of the application for an SCUP, modifications of the original plans may be made only after a review has been conducted and approval granted by the City in accordance with the provisions of the CRMC.

8.6 Variances

- A. The purpose of a shoreline variance is strictly limited to granting relief to specific bulk, dimensional, or performance standards set forth in the Program where there are extraordinary or unique circumstances relating to the property such that the strict implementation of the Program would impose unnecessary hardship on the applicant or thwart the policies set forth in the Act.
- B. Variances from the use regulations of the Program are prohibited.
- C. Shoreline variances are Type VIII permits and shall be processed by the Mayor or his/her designee in accordance with the provisions of the CRMC as it now exists or as subsequently amended.
- D. Applications for shoreline variance shall be accompanied by the application materials specified in WAC 173-27-180 *Application Requirements for Substantial Development, Conditional Use, or Variance Permit* as determined by the City.
- E. Applications for shoreline variance shall be reviewed with the following criteria:
 - 1. Variance permits for development and/or uses that will be located landward of the OHWM, as defined in RCW 90.58.030 (2)(b), and/or landward of any wetland as defined in RCW 90.58.030 (2)(h), may be authorized provided the applicant can demonstrate all of the following:
 - a. That the strict application of the bulk, dimensional or performance standards set forth in the applicable master program precludes, or significantly interferes with, reasonable use of the property;
 - b. That the hardship described in 1.a of this Subsection 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 master program, and not, for example, from deed restrictions or the applicant's own actions;
 - c. 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 master program and will not cause adverse impacts to the shoreline environment;

- d. That the variance will not constitute a grant of special privilege not enjoyed by the other properties in the area;
 - e. That the variance requested is the minimum necessary to afford relief; and
 - f. That the public interest will suffer no substantial detrimental effect.
2. Variance permits for development and/or uses that will be located waterward of the OHWM, as defined in RCW 90.58.030 (2)(b), or within any wetland as defined in RCW 90.58.030 (2)(h), may be authorized provided the applicant can demonstrate all of the following:
 - a. That the strict application of the bulk, dimensional or performance standards set forth in the applicable master program precludes all reasonable use of the property;
 - b. That the proposal is consistent with the criteria established under Subsections 1.b through 1.f of this Section; and
 - c. That the public rights of navigation and use of the shorelines will not be adversely affected.
 3. In the granting of all variance permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example if variances were granted to other developments and/or uses 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 cause substantial adverse effects to the shoreline environment.

8.7 Revisions to Permits

- A. When an applicant seeks to revise a SLE, SSDP, SCUP, or shoreline variance, whether such permit or variance was granted under this Program or under the Program in effect prior to adoption of this Program, the City shall request from the applicant detailed plans and text describing the proposed changes to the project. If the staff determines that the proposed changes are within the general scope and intent of the original SLE, SSDP, SCUP, or shoreline variance, as the case may be, the revision may be approved by the City without the need for the applicant to file a new permit application provided the development is consistent with the Act, and WAC 173-27-100.
- B. All shoreline permit revisions shall be transmitted to Ecology upon the City's final decision. If the revision is to a SLE or SSDP, it becomes effective immediately upon final decision by the City. If the permit revision is concerning a shoreline conditional use or shoreline variance permit, the proposed revision is subject to Ecology review. Ecology shall respond with its final decision on the permit revision request within

fifteen (15) days of the date of receipt by Ecology per WAC 173-27-100(6). The City shall notify parties of record of the final decision.

- C. Shoreline permit revisions may be appealed to the Shoreline Hearings Board within twenty-one (21) days of the final decision to the permit revision in accordance with the provisions of WAC 173-27- 100(8).

8.8 Restoration Project Relocation of OHWM

The City may grant relief from Program development standards and use regulations when the following apply:

- A. A shoreline restoration project causes, or would cause, a landward shift in the OHWM, resulting in the following:
 - 1. Land that had not been regulated under this Program prior to construction of the restoration project is brought under shoreline jurisdiction; or
 - 2. Additional regulatory requirements apply due to a landward shift in required shoreline buffers or other regulations of the Program; and
 - 3. Application of Program regulations would preclude or interfere with use of the property permitted by local development regulations, thus presenting a hardship to the project proponent.
- B. The proposed relief meets all of the following criteria:
 - 1. The proposed relief is the minimum necessary to relieve the hardship.
 - 2. After granting the proposed relief, there is net environmental benefit from the restoration project.
 - 3. Granting the proposed relief is consistent with the objectives of the shoreline restoration project and consistent with the Program.
 - 4. Where a shoreline restoration project is created as mitigation to obtain a development permit, the project proponent required to perform the mitigation is not eligible for relief under this Section.
- C. The application for relief must be submitted to Ecology for written approval or disapproval. This review must occur during the Ecology's normal review of an SSDP, SCUP, or Shoreline Variance. If no such permit is required, then Ecology shall conduct its review when the City provides a copy of a complete application and all supporting information necessary to conduct the review.
 - 1. Except as otherwise provided in Subsection D of this Section, Ecology shall provide at least twenty (20)-days notice to parties that have indicated interest to

Ecology in reviewing applications for relief under this Section, and post the notice on to their website.

2. Ecology shall act within thirty (30) calendar days of close of the public notice period, or within thirty (30) days of receipt of the proposal from the City if additional public notice is not required.
- D. The public notice requirements of Subsection C of this Section do not apply if the relevant shoreline restoration project was included in this Program or shoreline restoration plan as defined in WAC 173-26-201, as follows:
1. The restoration plan has been approved by the Ecology under applicable Shoreline Master Program guidelines; and
 2. The shoreline restoration project is specifically identified in the Shoreline Master Program or Shoreline Restoration Plan (Appendix C) or is located along a shoreline reach identified in the Shoreline Master Program or Shoreline Restoration Plan as appropriate for granting relief from shoreline regulations; and
 3. The Shoreline Master Program or Shoreline Restoration Plan includes policies addressing the nature of the relief and why, when, and how it would be applied.

8.9 Enforcement

Any person failing to conform to the terms of a permit issued in accordance with the Program or who undertakes development on the shorelines of the state without first obtaining any permit required by the Program shall be subject to a civil penalty per WAC Sections 173-27-240 through 173-27-300 and the City of Castle Rock Municipal Code as it now exists or is subsequently amended.

8.10 Shoreline Activity Tracking

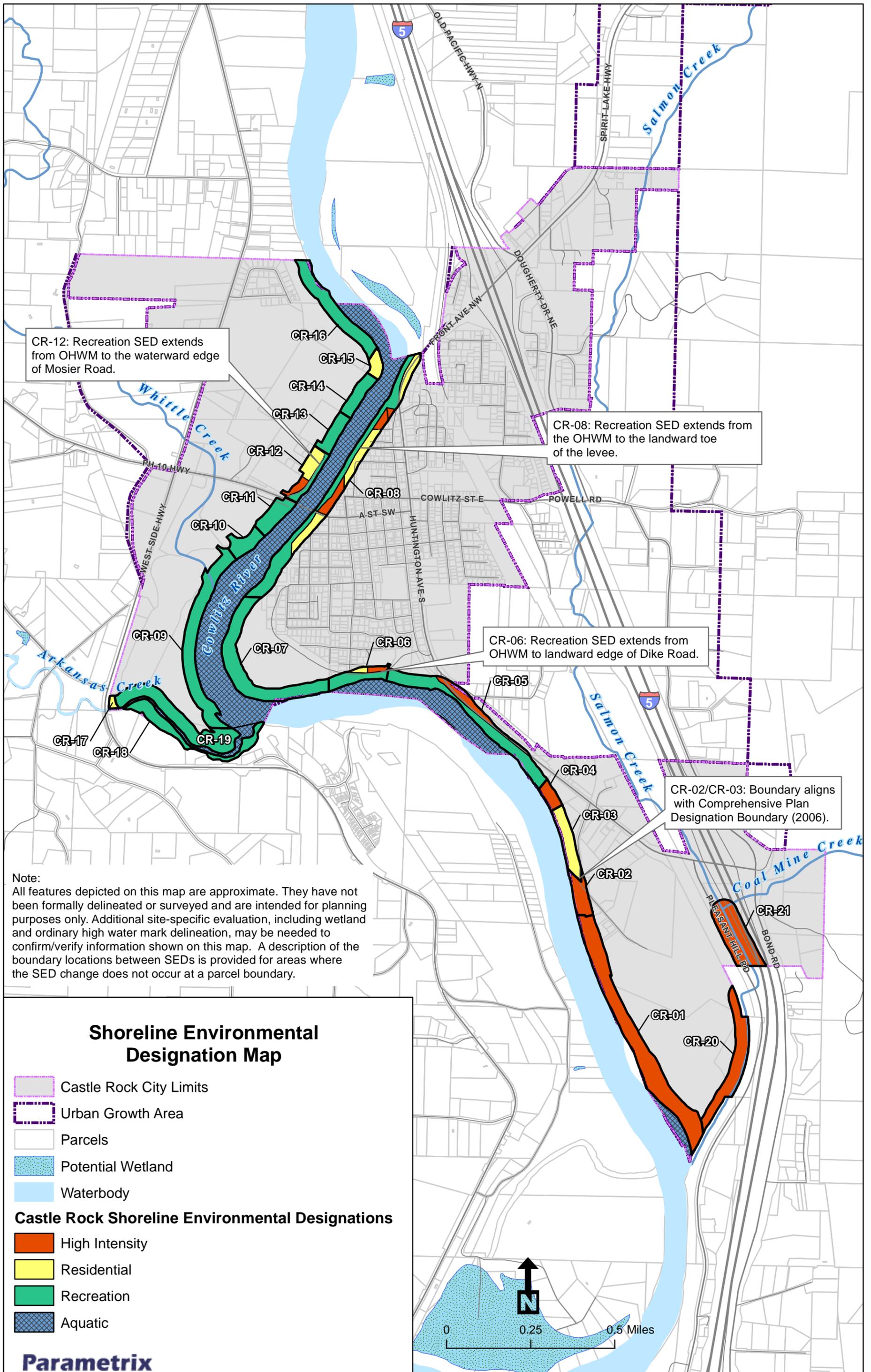
- A. The City will track all shoreline permits and exemption activities to evaluate whether this SMP is achieving no net loss of shoreline ecological functions. Activities to be tracked using the City's permit system include development, conservation, restoration and mitigation, such as but not limited to:
1. New shoreline development;
 2. Shoreline Variances and the nature of the variance;
 3. Compliance issues;
 4. Net changes in impervious surface areas, including associated stormwater management;
 5. Net changes in fill or armoring;

6. Net change in linear feet of flood hazard structures; and
 7. Net changes in vegetation (area, character).
- B. Using the information collected in Subsection A, a no net loss report shall be prepared every eight years as part of the City's SMP evaluation or Comprehensive Plan Amendment process. Should the no net loss report show degradation of the baseline condition documented in the Shoreline Analysis Report, changes to the SMP and/or Shoreline Restoration Plan shall be proposed at the time of the eight-year update to prevent further degradation and address the loss in ecological functions.

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APPENDIX A

Shoreline Environment Designations Map



APPENDIX B
Critical Areas Regulations

APPENDIX B

Shorelines Critical Areas Regulations

Shorelines Critical Areas Regulation

- 1. INTRODUCTION 1
 - 1.1 Purpose and Intent 1
 - 1.2 Definitions 3
 - 1.3 Applicability – Regulated activities..... 3
 - 1.4 Critical Areas Exemptions..... 3
 - 1.5 Critical Areas Permitting Within Shoreline Jurisdiction – Applications and approvals 4
 - 1.6 Optional Incentives for Nondevelopment of Critical Areas 5
 - 1.7 Relationship to Other Regulations 8
 - 1.8 Critical Area Inventory Maps..... 9

- 2. CRITICAL AREA WETLANDS WITHIN SHORELINE JURISDICTION 10
 - 2.1 Purpose..... 10
 - 2.2 Identification and Rating 11
 - 2.3 Regulated Activities 12
 - 2.4 Allowed Uses in Wetlands within Shoreline Jurisdiction..... 13
 - 2.5 Wetland Buffers 14
 - 2.6 Critical Area Reports for Wetlands within Shoreline Jurisdiction 19
 - 2.7 Compensatory Mitigation 19
 - 2.8 Unauthorized Alterations and Enforcement 30

- 3. FISH AND WILDLIFE HABITAT CONSERVATION AREAS WITHIN SHORELINE JURISDICTION 31

- 4. FREQUENTLY FLOODED CRITICAL AREAS 39

- 5. GEOLOGIC HAZARD AREAS 39

6. CRITICAL AQUIFER RECHARGE AREAS.....	44
7. MITIGATION PLAN PERFORMANCE STANDARDS	45

Appendices

Appendix B-1 Qualified Professional and valid scientific process.

Appendix B-2 Geotechnical assessments.

Appendix B-3 Geotechnical report.

Appendix B-4 Erosion hazard assessments.

Appendix B-5 Wetland critical areas report.

Appendix B-6 Habitat management plan requirements.

Appendix B-7 Hydrogeologic testing and site evaluation.

1. Introduction

These Critical Areas Regulations are based on the Castle Rock Municipal Code (CRMC) Chapter 18.10 and have been modified to comply with the provisions of the Washington State Shoreline Management Act. As a result, all non-exempt development activities proposed for areas that involve designated environmentally sensitive areas, also known as critical areas, which are within areas under the jurisdiction of the Shoreline Management Act, must comply with the provisions of this Chapter. Proposed development activities that involve critical areas but do not involve jurisdictional shoreline areas are subject to the provisions of CRMC 18.10 and are not subject to the provisions of the Shoreline Master Program unless otherwise required by the City.

The City believes it important to strike a balance between critical land protection, private property rights, economic development, and diversification. Consequently, these regulations have been designed to encourage landowners to protect critical areas within shoreline jurisdiction by offering a range of incentives intended to provide equitably for such protection. In addition, it is the intent of the City to actively and constructively assist the applicant in the preparation and processing of permits, approvals, plans, requirements or procedures. The ultimate responsibility for providing complete and accurate application material and/or required information falls on the applicant.

1.1 Purpose and Intent

- A. "Critical areas" include:
1. Wetlands;
 2. Critical aquifer recharge areas;
 3. Geologically hazardous areas;
 4. Fish and wildlife habitat; and
 5. Frequently flooded areas.

These areas contain valuable natural resources, provide natural scenic qualities important to the character of the community, perform important ecological functions and processes, or present a hazard to life and property. Identification, management, and protection of these lands and areas is, therefore, necessary to protect the public health, safety, and general welfare of Castle Rock's citizens.

- B. These regulations also describe the process used to determine whether a critical area exists on or adjacent to a particular parcel of land. The process includes the use
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of maps, physical inspections, and other methods of fact-finding. It is the intent of the city to use, with these regulations, the best available science and data in making a critical area determination. It is the intent of these regulations to:

1. Implement the goals, objectives, and policies of the environmental and land use elements of the City's Comprehensive Plan and the provisions of the Castle Rock Municipal Code;
2. Comply with the requirements of the Growth Management Act (Chapter 36.70A RCW) which mandate such rules and guidelines;
3. Coordinate Castle Rock's critical area protection activities and programs with those of other jurisdictions;
4. Coordinate environmental review and permitting of proposals to avoid duplication and delay;
5. Assist landowners by providing incentives for critical area protection.

It is therefore incumbent upon the developer or proponent of an action, when it is determined that a critical areas permit is required, to work with the city to meet all permit requirements. Also, it is incumbent upon the developer or proponent of an action to provide to the city staff with all identified studies and requested analyses of the project's potential environmental impacts, per RCW 36.70A.172, which directs cities and counties to use the best available science when reviewing proposals that are found to require a critical areas permit.

C. Critical Areas Functions.

1. **Wetlands.** Wetlands provide numerous valuable functions, including but not limited to providing wildlife and fish habitat areas, water quality enhancement, flood and erosion control, aquifer recharge and discharge, shoreline stabilization, research and education opportunities, and recreation.
 2. **Geologic Hazards.** Geologic hazards pose a risk to public and private property and to the natural systems that make up the city's environment. These lands are susceptible to slides, erosion, seismic effects, and volcanic and mining hazards. Building and development practices should consider topographical and geological features. Future development shall be directed to more geologically stable areas and restricted on unsuitable ground. Regulating these lands and avoiding or minimizing alteration of geologic hazards is necessary to protect the health, safety, and general welfare; therefore, two categories have been established for review which are as follows: potentially geologically hazardous areas which require more extensive review because of the severity of conditions, and areas of geological concern which may require only a minimal amount of geological information with recommendations for site development suitability.
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3. **Critical Aquifer Recharge Areas.** Aquifer recharge areas perform many important biological and physical functions that benefit the city and its residents, including but not limited to storing and conveying groundwater. Protection of aquifer recharge areas is, therefore, necessary to protect the public health, safety, and general welfare.
4. **Fish and Wildlife Habitat Conservation Areas.** Fish and wildlife habitat conservation areas perform many important physical and biological functions that benefit the city and its residents. These functions include but are not limited to: food, cover, nesting, breeding, and movement areas for fish and wildlife; maintaining and promoting diversity of species and habitat; maintaining air and water quality; controlling erosion; providing for recreation, education and scientific study, and aesthetic appreciation; and providing neighborhood separation and visual diversity within urban areas.
5. **Frequently Flooded Areas.** Frequently flooded areas pose a risk to public and private property and public health. Regulation of these lands will promote efficient use of the land and water resources by allocating frequently flooded areas (as determined by the Federal Emergency Management Agency's Flood Rate Insurance Maps) to the uses for which they are best suited and to discourage obstructions to flood flows or uses which pollute or deteriorate natural waters and watercourses.

1.2 Definitions

Definitions for Appendix B are located in Chapter 2 of the Shoreline Master Program.

1.3 Applicability – Regulated activities

All persons proposing development or any land division in critical areas or their buffers within shoreline jurisdiction shall obtain a shoreline permit pursuant to these regulations, except as exempted pursuant to WAC 173-27-040 and Section 1.4. Developments adjacent to a critical area or its buffer area, not separated by a major arterial or other natural or manmade barriers including but not limited to levees, dikes, revetments, roads, railways, and other rights-of-way, shall be reviewed for impacts to the critical area and/or its buffer.

1.4 Critical Areas Exemptions

- A. **Critical Areas Exemptions.** The following development, activities, and associated uses shall be exempt from the requirements of the critical areas regulations, provided that:
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1. The critical areas exemptions do not include exemptions from the provisions of the Shoreline Master Program and are not exemptions from substantial development permits provided under WAC 173-27-040; and
2. Those actions described in WAC 173-27-040 and 173-27-045 are not subject to the Shoreline Master Program, including the provisions of these Critical Area Regulations found in Appendix B.
3. Installation or construction of utility lines where all work is entirely contained within developed City rights-of-way, not including electric substations.
4. The removal or control of noxious weeds in an area smaller than 0.5 acres of land by nonmechanical or nonchemical means.
5. Maintenance of ground cover or other vegetation installed as landscaping in a critical area or buffer area that was legally established disturbed prior to the effective date of this Shoreline Master Program; provided that no further disturbance is created.
6. Minimal site investigative work for future development such as surveys, soil logs, percolation tests, and other related activities, provided that impacts to critical areas are minimized, and disturbed areas are restored to the pre-existing level of function and value as soon as is feasible, and at most within one year after the investigative work is concluded.
7. Passive recreational uses such as sport fishing, scientific or educational review, or similar non-development activities.
8. Maintenance of intentionally created artificial wetlands or surface water systems including irrigation and drainage ditches, grass-lined swales and canals, detention facilities, and landscape or ornamental amenities. Wetlands, streams, lakes, or ponds created as mitigation for approved land use activities or that provide critical habitat are not exempt and shall be regulated according to this Appendix and the mitigation plan.

1.5 Critical Areas Permitting Within Shoreline Jurisdiction – Applications and approvals

No separate critical areas permit is required for a development proposal that requires a shoreline development permit. All applicable critical areas requirements in Appendix B shall be incorporated into a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, Shoreline Variance, or Shoreline Letter of Exemption as applicable, and the applicable shoreline permit or exemption shall be obtained prior to undertaking any development activity regulated by the SMP.

1.6 Optional Incentives for Nondevelopment of Critical Areas

- A. Introduction. This Section describes the alternatives available to property owners and incentives they may pursue in lieu of developing or altering their property under the terms and standards of these regulations. The incentives and options listed allow property owners to use any or all of the options that best suit their needs. City staff review of a selected incentive option(s) will be undertaken with the advice and consent of the applicable state agency or agencies.
 - B. Open Space. Any person who owns property containing an identified critical area within shoreline jurisdiction as defined by these regulations may apply for current use assessment pursuant to Cowlitz County Code Chapter 18.52, Open Space Rating Ordinance; and Chapter 84.34 RCW, Open Space, Agricultural, Timber Lands – Current Use – Conservation Futures. The Open Space Tax Act allows Cowlitz County to designate lands which should be taxed at their current use value and results in reduced property tax assessment. The county has programs for agricultural lands, small forest lands less than 20 acres in size, and other open spaces. Cowlitz County has adopted a public benefit rating system which classifies properties on the basis of their relative importance of natural and cultural resources, the availability of public access, and the presence of a conservation easement. These features are given a point value, and the total point value determines the property tax reduction. The open space program has property tax reductions of 50, 70, or 90 percent. Lands with wetlands or an important habitat or species would commonly qualify for this voluntary program. Applications are approved by the Board of Cowlitz County Commissioners at a public meeting.
 - C. Conservation Easement. Any person who owns property containing an identified critical area within shoreline jurisdiction as defined by these regulations shall be entitled to place a conservation easement over that portion of the property designated a critical area by naming the city as their qualified designee under RCW 64.04.130. The purpose of the conservation easement shall be to protect, preserve, maintain, restore, limit the future use of, or conserve for open space purposes the land designated as critical area(s), in accordance with RCW 64.04.130. Details governing easement restrictions shall be negotiated between the property owners and the City. See Subsection (E) of this Section, Process for Conservation Easement or Density Incentives.
 - D. Density Adjustments. The City shall allow transfer of density for residential uses from lands containing critical areas within shoreline jurisdiction, as defined by these regulations, when developed pursuant to CRMC Title 17, Zoning. Residential density may be transferred only from a critical area to an area on the same site which is not a critical area. For development proposals on lands determined to contain critical areas as defined by these regulations, the city shall determine allowable dwelling units for residential development proposals based on the formula below.
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Table 1. Residential Density Adjustments

Percentage of Site in Critical Area	Percentage of Adjustment
1 – 10%	100%
11 – 20%	90%
21 – 30%	80%
31 – 40%	70%
41 – 50%	60%
51 – 60%	50%
61 – 70%	40%
71 – 80%	30%
81 – 90%	20%

Density adjustment can be applied only within the development proposal site, and any fractional amounts will be rounded down. The applicant may reduce lot sizes below the minimum required for that zone (designation) to accommodate the transfer of density, but it cannot change the uses permitted in that zone.

Example: Size of proposed development site is 10 acres. Zone is R-1 low density residential. Lot size is 6,000 square feet or seven lots per acre. (10 acres equals 435,600 square feet divided by 6,000 square feet equals 72 lots). There are three acres of critical areas on the 10-acre site, or 30 percent of the total site area. The density adjustment according to the above table is 80 percent. The allowable adjustment is 72 lots multiplied by 80 percent equals 58 lots. Note: without the density adjustment, the developer would exclude the three-acre critical area from development. The site would be seven acres at 6,000 square feet per lot for 50 lots.

- E. Process for Conservation Easement or Density Incentives.
1. Contents of Conservation or Density Incentive Application. Recorded owners of real property seeking relief under this Section shall file with the City an application for a conservation easement, density incentives, and / or adjustments, as determined by the City.
 2. Pre-application Conference. The City will contact the applicant to establish the date, time, and place for a pre-application conference. The final application fee amount will include the cost of City staff time expended on the pre-application conference in accordance with the provisions of the City fee schedule.
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3. Applicant Responsibilities. The applicant is responsible for submitting a complete and accurate application as described in Chapter 8 of the SMP.
 4. City Staff Action. The City shall determine whether the application is complete within 30 working days of the receipt of the application. If additional information is necessary, the application shall be returned to the property owner together with a list identifying the deficiencies and explaining that the 30-day time clock has stopped and will not start again until the newly requested information is supplied in a readable format. When the application is complete, the City staff shall determine, within seven working days, whether all or part of the property is in fact eligible for participation under this Section. Staff shall forward written findings to the applicant and to the City Council.
 5. Council Decision. The City Council, in consultation with the Planning Commission as appropriate, shall make the final determination on whether all or part of the property is subject to these regulations. For conservation easement applications, if the Council determines that all or part of the property is subject to these regulations, the Council shall accept, as beneficiary on behalf of the City or its qualified designee under RCW 64.04.130, a conservation easement over that portion of the property subject to these regulations the extent requested by the record owner of the property. For residential density incentive applications, the Council shall approve requested density transfers subject to its final approval of CRMC Title 16, Subdivisions, and Title 17, Zoning, and any preliminary site plans developed pursuant to this SMP and Chapter 17.77 CRMC. The application may be filed at any time; provided, that all applications be filed in accordance with the requirements of this Section.
- F. Land Exchange. State agencies or local government may convey, sell, lease, or trade existing public lands in order to obtain public ownership of a fee interest, leasehold interest, or conservation easement over all or part of a critical area. Such exchanges may occur only upon agreement between the record owner and state or local agencies authorized to exchange the subject land. For the purposes of this Section, any requirements to provide information, appraisals, or notice relating to the “property” or “subject property” shall apply to all properties involved in the proposed exchange. The process for land exchange involving the City will be as follows:
1. Pre-application Conference. The City will contact the applicant to establish the date, time, and place for a pre-application conference. The final application fee amount will include the cost of City staff time expended on the pre-application conference in accordance with the provisions of the City Fee Schedule.
 2. Contents of Land Exchange Application. The applicant is responsible for submitting a complete and accurate application. Such application shall include, at minimum:
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- a. A completed application as described in Chapter 8 of the SMP.
 - b. A map showing the boundaries of all lands reserved in the deeds for the common uses of the property owners;
 - c. A written appraisal from a licensed appraiser of the fair market value of the properties when subject to the critical area these regulations, and a written appraisal by the same appraiser of the fair market value of the property if not subject to these critical area regulations;
 - d. All other information identified by the city staff during any pre-application conference.
3. **City Staff Action.** The City shall determine whether the land exchange application is complete within 30 working days. If additional information is necessary that will result in requiring more time for review, the application shall be returned to the property owner, together with a list identifying the deficiencies and explaining that the 30-day time clock has stopped, and will not start again until the newly requested information is supplied in a readable format. When the application is complete, the Mayor or his/her designee shall consult with the county assessor for a comparison of the fair market value of the property when subject to these critical area regulations as compared to the same property's value if it were not subject to these regulations. Staff shall forward written findings to the Council.
 4. **Public Hearing.** The City shall hold a public hearing to review all property owner requests, pursuant to this Section. Notice of public hearing shall be made at least 30 days prior to the scheduled hearing date. Notice shall consist of the publication of a legal notice in the newspaper of record stating the description of the property, and the purpose, date, time, and location of the hearing. Such notice shall also be mailed first class to the property owner and all persons owning property, as identified in the auditor's records, within 300 feet of the subject property boundaries 30 days prior to the hearing. Two or more notices shall be posted in the vicinity of the subject property 10 days prior to the hearing.
 5. **Public Hearing.** Following the public hearing, the Council shall issue its written decision, with findings, within 30 days. There shall be no time limitation on applications for land exchanges.

1.7 Relationship to Other Regulations

- A. These critical areas regulations shall apply within shoreline jurisdiction in addition to zoning and Shoreline Environment Designations adopted by the City.
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- B. Any individual critical area adjoined by another type of critical area shall have the buffer and meet the requirements that provide the most protection to the critical areas involved. When any provision of this Chapter or any other existing regulation, easement, covenant, or deed restriction conflicts with this Chapter, that which provides the most protection to the critical areas shall apply, as determined by the City.
- C. These critical areas regulations shall apply concurrently with review conducted under this SMP and State Environmental Policy Act (SEPA), as locally adopted. Any conditions required pursuant to this Chapter shall be included in the SEPA review and threshold determination and any required shoreline permit.

1.8 Critical Area Inventory Maps

- A. The City shall maintain public maps that may assist in the identification of critical areas. However, it shall be the responsibility of the applicant to obtain a map generated by a qualified professional to identifying critical areas on their property.
 - 1. The presence of critical areas and jurisdictional shoreline areas or associated buffers on a parcel triggers the requirements of this Chapter, regardless of whether or not a critical area or buffer is depicted on an official map.
 - 2. The approximate location and extent of critical areas within the City planning area are shown on the map adopted by the City. The map is based on the best available information and is intended to be used as a general guide for the assistance of property owners and as information for the public. Boundaries are generalized; field investigation and analysis by a qualified professional may be required to confirm the existence of a critical area within shoreline jurisdiction. The City will update information and resource material when new data is available and updates are feasible.
 - 3. In the event of any conflict between the location, designation, or classification of a critical area shown on the city maps and the criteria or standards of this Section, the criteria, standards, and determination of any field investigation shall prevail.

Table 2. Summary of Map Sources

The following is a summary listing that highlights the types of maps that may be available through the City. Please contact the City for an up-to-date listing.

Critical Area	Map/Data Source(s)
Geologically Hazardous Areas	1. Geologic Hazard Map of Cowlitz County, Cowlitz County GIS Department. 2. Soil Conservation Service, Cowlitz County Area Soil Survey, 1974, or as amended.

Critical Area	Map/Data Source(s)
	3. Other Department of Natural Resource Maps—when available. 4. 2003 Wegmann Landslide Inventory/Washington State Department of Natural Resources.
Frequently Flooded Areas	5. FEMA, National Flood Insurance Program, Flood Insurance Rate Maps.
Critical Aquifer Recharge Areas	6. Cowlitz County Aquifer Recharge Map, Cowlitz County GIS Department, 1993.
Wetlands	7. City of Castle Rock’s Wetland Inventory Map, Cowlitz County Wetlands Map, Cowlitz County, GIS Department, 1993. Source: Hydric Soils, USDA, Soil Conservation Service; National Wetlands Inventory Maps, U.S. Department of the Interior, Fish and Wildlife Service.
Fish and Wildlife Habitat Conservation Areas	8. Priority Habitat and Species Maps, Washington State Department of Fish and Wildlife, 1991, as amended. 9. Forest Practices Act Stream Mapping.

2. Critical Area Wetlands within Shoreline Jurisdiction

2.1 Purpose

The purposes of these regulations are to:

- A. Recognize and protect the beneficial functions performed by many wetlands, which include, but are not limited to, providing food, breeding, nesting, and/or rearing habitat for fish and wildlife; recharging and discharging ground water; contributing to stream flow during low-flow periods; stabilizing stream banks and shorelines; storing storm and flood waters to reduce flooding and erosion; and improving water quality through biofiltration, adsorption, and retention and transformation of sediments, nutrients, and toxicants.
 - B. Regulate land use to avoid adverse effects on wetlands and maintain the functions and values of wetlands throughout Castle Rock.
 - C. Establish review procedures for development proposals in and adjacent to wetlands.
-

2.2 Identification and Rating

- A. Identification and Delineation. Identification of wetlands and delineation of their boundaries pursuant to these regulations shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplements. All areas within City shoreline jurisdiction meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of these regulations. Wetland delineations are valid for five years; after such date the City shall determine whether a revision or additional assessment is necessary.
- B. Rating. Wetlands shall be rated according to the Washington Department of Ecology wetland rating system, as set forth in the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Rating System) (Ecology Publication #14-06-007), or as revised. The descriptions of wetland categories according to the Rating System are as follows:
1. Category I. Category I wetlands are: (1) relatively undisturbed estuarine wetlands larger than 1 acre; (2) wetlands that are identified by scientists of the Washington Natural Heritage Program/DNR as wetlands of high conservation value; (3) bogs; (4) mature and old-growth forested wetlands larger than 1 acre; (5) wetlands in coastal lagoons; (6) interdunal wetlands that score 8 or 9 habitat points and are larger than 1 acre; and (7) wetlands that perform many functions well (scoring 23 points or more). These wetlands: (1) represent unique or rare wetland types; (2) are more sensitive to disturbance than most wetlands; (3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or (4) provide a high level of functions.
 2. Category II. Category II wetlands are: (1) estuarine wetlands smaller than 1 acre, or disturbed estuarine wetlands larger than 1 acre; (2) interdunal wetlands larger than 1 acre or those found in a mosaic of wetlands; or (3) wetlands with a moderately high level of functions (scoring between 20 and 22 points).
 3. Category III. Category III wetlands are: (1) wetlands with a moderate level of functions (scoring between 16 and 19 points); and (2) interdunal wetlands between 0.1 and 1 acre. Wetlands scoring between 16 and 19 points generally have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.
 4. Category IV. Category IV wetlands have the lowest levels of functions (scoring fewer than 16 points) and are often heavily disturbed. These are wetlands that we should be able to replace, or in some cases to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions, and should be protected to some degree.
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- C. Illegal modifications. Wetland rating categories shall not change due to illegal modifications made by the applicant or with the applicant's knowledge.

2.3 Regulated Activities

- A. For any regulated activity within shoreline jurisdiction, a critical areas report (see Section 2.6 of these regulations) may be required to support the requested activity.
- B. The following activities are regulated if they occur in a wetland or its buffer within shoreline jurisdiction:
1. The removal, excavation, grading, or dredging of soil, sand, gravel, minerals, organic matter, or material of any kind.
 2. The dumping of, discharging of, or filling with any material, including discharges of storm water and domestic, commercial, or industrial wastewater.
 3. The draining, flooding, or disturbing of the water level, duration of inundation, or water table.
 4. Pile driving.
 5. The placing of obstructions.
 6. The construction, reconstruction, demolition, or expansion of any structure.
 7. The destruction or alteration of wetland or buffer vegetation through clearing, harvesting, shading, intentional burning, or planting of vegetation that would alter the character of a regulated wetland.
 8. "Class IV - General Forest Practices" under the authority of the "1992 Washington State Forest Practices Act Rules and Regulations," WAC 222-12-030, or as thereafter amended.
 9. Activities that result in:
 - a. A significant change of water temperature.
 - b. A significant change of physical, biological, or chemical characteristics of the wetland or sources of water to the wetland.
 - c. A significant change in the quantity, timing, or duration of the water entering the wetland.
 - d. The introduction of pollutants.
 - e. A reduction in buffer functions.
-

- C. Subdivisions. The subdivision and/or short subdivision of land in wetlands and associated buffers are subject to the following:
1. Land that is located wholly within a wetland or its buffer may not be subdivided.
 2. Land that is located partially within a wetland or its buffer may be subdivided provided that an accessible and contiguous portion of each new lot is:
 - a. Located outside of the wetland and its buffer; and
 - b. Meets the minimum lot size requirements of the CRMC.

2.4 Allowed Uses in Wetlands within Shoreline Jurisdiction

- A. Activities Allowed in Wetlands. The activities listed below are allowed in wetlands, subject to all requirements in the Shoreline Master Program. These activities do not require submission of a critical area report, except where such activities will result in a reduction or loss of the functions and values of a wetland or wetland buffer. These activities include:
1. Conservation or preservation of soil, water, vegetation, fish, shellfish, and/or other wildlife that does not entail changing the structure or functions of the existing wetland.
 2. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.
 3. Enhancement of a wetland through the removal of non-native invasive plant species. Removal of invasive plant species shall be restricted to hand removal unless permits from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species. Revegetation using hand-held equipment with appropriate native species at natural densities is allowed in conjunction with removal of invasive plant species.
 4. Educational and scientific research activities that do not degrade the critical area.
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2.5 Wetland Buffers

- A. Buffer Requirements. The standard buffer widths in Table 3 have been established in accordance with the best available science. They are based on the category of wetland and the habitat score as determined by a qualified wetland professional using the *Washington State Wetland Rating System for Western Washington: 2014 Update*.
1. The use of the standard buffer widths requires the implementation of the measures in Table 4, where applicable, to minimize the impacts of the adjacent land uses.
 2. If an applicant chooses not to apply the mitigation measures in Table 4, then a 33% increase in the width of all buffers is required. For example, a 75-foot buffer with the mitigation measures would be a 100-foot buffer without them.
 3. The standard buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community, or the buffer should be widened to ensure that adequate functions of the buffer are provided.
 4. Additional buffer widths are added based on habitat points. For example, a Category I wetland scoring 5 points for habitat function would require a buffer of 105 feet (75 + 30).

Table 3. Wetland Buffer Requirements within Shoreline Jurisdiction

Wetland Category	Buffer width if wetland scores:			
	3-4 habitat points	5 habitat points	6-7 habitat points	8-9 habitat points
Category I: Based on total score	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category I: Bogs and Wetlands of High Conservation Value	190 ft			
Category I: Forested	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category II	75 ft	Add 30 ft	Add 90 ft	Add 150 ft
Category III (all)	75 ft	Add 45 ft	Add 105 ft	Add 165 ft
Category IV (all)	40 ft			

Table 4. Required Measures to Minimize Impacts to Wetlands

Disturbance	Required Measures to Minimize Impacts
Lights	<ul style="list-style-type: none"> • Direct lights away from wetland.
Noise	<ul style="list-style-type: none"> • Locate activity that generates noise away from wetland. • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source. • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10 ft heavily vegetated buffer strip immediately adjacent to the outer wetland buffer.
Toxic runoff	<ul style="list-style-type: none"> • Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered. • Establish covenants limiting use of pesticides within 150 ft of wetland. • Apply integrated pest management.
Stormwater runoff	<ul style="list-style-type: none"> • Retrofit stormwater detention and treatment for roads and existing adjacent development. • Prevent channelized flow from lawns that directly enters the buffer. • Use Low Intensity Development techniques (per PSAT publication on LID techniques).
Change in water regime	<ul style="list-style-type: none"> • Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns.
Pets and human disturbance	<ul style="list-style-type: none"> • Use privacy fencing OR plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion. • Place wetland and its buffer in a separate tract or protect with a conservation easement.
Dust	<ul style="list-style-type: none"> • Use best management practices to control dust.
Disruption of corridors or connections	<ul style="list-style-type: none"> • Maintain connections to offsite areas that are undisturbed. • Restore corridors or connections to offsite habitats by replanting.

5. Increased Wetland Buffer Area Width. Buffer widths shall be increased on a case-by-case basis as determined by the City when a larger buffer is necessary to protect wetland functions and values. This determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values of the wetland. The documentation must include but not be limited to the following criteria, when applicable:

- a. The wetland is used by a plant or animal species listed by the federal or state government as endangered, threatened, candidate, sensitive, monitored, or documented priority species or habitats; or the wetland has essential or outstanding habitat for those species or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or

- b. The adjacent land is susceptible to severe erosion, and erosion-control measures will not effectively prevent adverse wetland impacts; or
 - c. The adjacent land has minimal vegetative cover or slopes greater than 30 percent.
 - 6. Buffer averaging to improve wetland protection may be permitted when all of the following conditions are met:
 - a. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a “dual-rated” wetland with a Category I area adjacent to a lower-rated area.
 - b. The buffer is increased adjacent to the higher-functioning area of habitat or more-sensitive portion of the wetland and decreased adjacent to the lower-functioning or less-sensitive portion as demonstrated by a critical areas report from a qualified wetland professional.
 - c. The total area of the buffer after averaging is equal to the area required without averaging.
 - d. The buffer at its narrowest point is never less than either $\frac{3}{4}$ of the required width or 75 feet for Category I and II, 50 feet for Category III, and 25 feet for Category IV, whichever is greater.
 - 7. Buffer averaging to allow reasonable use of a parcel may be permitted when all of the following are met:
 - a. There are no feasible alternatives to the site design that could be accomplished without buffer averaging.
 - b. The averaged buffer will not result in degradation of the wetland’s functions and values as demonstrated by a critical areas report from a qualified wetland professional.
 - c. The total buffer area after averaging is equal to the area required without averaging.
 - d. The buffer at its narrowest point is never less than either $\frac{3}{4}$ of the required width or 75 feet for Category I and II, 50 feet for Category III, and 25 feet for Category IV, whichever is greater.
 - B. To facilitate long-range planning using a landscape approach, the City may identify and pre-assess wetlands using the rating system and establish appropriate wetland buffer widths for such wetlands.
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- C. Measurement of Wetland Buffers within Shoreline Jurisdiction. All buffers shall be measured perpendicular from the wetland boundary as surveyed in the field. The buffer for a wetland created, restored, or enhanced as compensation for approved wetland alterations shall be the same as the buffer required for the category of the created, restored, or enhanced wetland. Only fully vegetated buffers will be considered. Lawns, walkways, driveways, and other mowed or paved areas will not be considered buffers or included in buffer area calculations.
 - D. Buffers on Mitigation Sites. All mitigation sites shall have buffers consistent with the buffer requirements of these regulations. Buffers shall be based on the expected or target category of the proposed wetland mitigation site.
 - E. Buffer Maintenance. Except as otherwise specified or allowed in accordance with this Chapter, wetland buffers within shoreline jurisdiction shall be retained in an undisturbed or enhanced condition. In the case of compensatory mitigation sites, removal of invasive non-native weeds is required for the duration of the mitigation bond (Section 2.7.J.2.a.viii).
 - F. Impacts to Buffers. Requirements for the compensation for impacts to buffers are outlined in Section 2.7 of these regulations.
 - G. Overlapping Critical Area Buffers. If buffers for two contiguous critical areas overlap (such as buffers for a stream and a wetland), the wider buffer applies.
 - H. Allowed Buffer Uses. The following uses may be allowed within a wetland buffer in accordance with the review procedures of these regulations, provided they are not prohibited by any other applicable law, and they are conducted in a manner so as to minimize impacts to the buffer and adjacent wetland:
 - 1. Conservation and Restoration Activities. Conservation or restoration activities aimed at protecting the soil, water, vegetation, or wildlife.
 - 2. Passive recreation. Passive recreation facilities designed and in accordance with an approved critical area report, including:
 - a. Walkways and trails, provided that those pathways are limited to minor crossings having no adverse impact on water quality. They should be generally parallel to the perimeter of the wetland, located only in the outer twenty-five percent (25%) of the wetland buffer area, and located to avoid removal of significant trees. They should be limited to pervious surfaces no more than five (5) feet in width for pedestrian use only. Raised boardwalks utilizing non-treated pilings may be acceptable.
 - b. Wildlife-viewing structures.
 - 3. Educational and scientific research activities.
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4. Normal and routine maintenance and repair of any existing public or private facilities within an existing right-of-way, provided that the maintenance or repair does not increase the footprint or use of the facility or right-of-way.
 5. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.
 6. Enhancement of a wetland buffer through the removal of non-native invasive plant species. Removal of invasive plant species shall be restricted to hand removal. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species. Revegetation with appropriate native species at natural densities is allowed in conjunction with removal of invasive plant species.
 7. Stormwater management facilities. Stormwater management facilities are limited to stormwater dispersion outfalls and bioswales. They may be allowed within the outer twenty-five percent (25%) of the buffer of Category III or IV wetlands only, provided that:
 - a. No other location is feasible; and
 - b. The location of such facilities will not degrade the functions or values of the wetland; and
 - c. Stormwater management facilities are not allowed in buffers of Category I or II wetlands.
 - I. Non-Conforming Uses. Repair and maintenance of non-conforming uses or structures, where legally established within the buffer, provided they do not increase the degree of nonconformity.
 - J. Signs and Fencing of Wetlands and Buffers:
 1. Temporary markers. The outer perimeter of the wetland buffer and the clearing limits identified by an approved permit or authorization shall be marked in the field with temporary "clearing limits" fencing in such a way as to ensure that no unauthorized intrusion will occur. The marking is subject to inspection by the City prior to the commencement of permitted activities. This temporary marking shall be maintained throughout construction and shall not be removed until permanent signs, if required, are in place.
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2. Permanent signs. As a condition of any permit or authorization issued pursuant to these regulations, the City may require the applicant to install permanent signs along the boundary of a wetland or buffer.
 - a. Permanent signs shall be made of an enamel-coated metal face and attached to a metal post or another non-treated material of equal durability. Signs must be posted at an interval of one (1) per lot or every fifty (50) feet, whichever is less, and must be maintained by the property owner in perpetuity. The signs shall be worded as follows or with alternative language approved by the City:
 - i. Protected Wetland Area
 - ii. Do Not Disturb
 - iii. Contact City of Castle Rock
 - iv. Regarding Uses, Restrictions, and Opportunities for Stewardship
 - b. The provisions of Subsection (a) may be modified as necessary to assure protection of sensitive features or wildlife.
3. Fencing
 - a. The applicant shall be required to install a permanent fence around the wetland or buffer when domestic grazing animals are present or may be introduced on site.
 - b. Fencing installed as part of a proposed activity or as required in this Subsection shall be designed so as to not interfere with species migration, including fish runs, and shall be constructed in a manner that minimizes impacts to the wetland and associated habitat.

2.6 Critical Area Reports for Wetlands within Shoreline Jurisdiction

- A. If the City determines that the site of a proposed development includes, is likely to include, or is adjacent to a wetland, a wetland report, prepared by a qualified professional, shall be required (see Appendix B-5 for details). The expense of preparing the wetland report shall be borne by the applicant.

2.7 Compensatory Mitigation

- A. Mitigation Sequencing. Before impacting any wetland or its buffer, an applicant shall demonstrate that the following actions have been taken. Actions are listed in the order of preference:
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1. Avoid the impact altogether by not taking a certain action or parts of an action.
 2. Minimize impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.
 3. Rectify the impact by repairing, rehabilitating, or restoring the affected environment.
 4. Reduce or eliminate the impact over time by preservation and maintenance operations.
 5. Compensate for the impact by replacing, enhancing, or providing substitute resources or environments.
 6. Monitor the required compensation and take remedial or corrective measures when necessary.
- B. Requirements for Compensatory Mitigation:
1. Compensatory mitigation for alterations to wetlands shall be used only for impacts that cannot be avoided or minimized and shall achieve equivalent or greater biologic functions. Compensatory mitigation plans shall be consistent with *Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans--Version 1*, (Ecology Publication #06-06011b, Olympia, WA, March 2006 or as revised), and *Selecting Wetland Mitigation Sites Using a Watershed Approach* (Western Washington) (Publication #09-06-32, Olympia, WA, December 2009).
 2. Mitigation ratios shall be consistent with Section 2.7.H of these regulations.
 3. Mitigation requirements may also be determined using the credit/debit tool described in *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report* (Ecology Publication #10-06-011, Olympia, WA, March 2012, or as revised) consistent with Section 2.7.I of these regulations.
- C. Compensating for Lost or Affected Functions. Compensatory mitigation shall address the functions affected by the proposed project, with an intention to achieve functional equivalency or improvement of functions. The goal shall be for the compensatory mitigation to provide similar wetland functions as those lost, except when either:
1. The lost wetland provides minimal functions, and the proposed compensatory mitigation action(s) will provide equal or greater functions or will provide functions shown to be limiting within a watershed through a formal Washington state watershed assessment plan or protocol; or
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2. Out-of-kind replacement of wetland type or functions will best meet watershed goals formally identified by the City, such as replacement of historically diminished wetland types.
- D. Preference of Mitigation Actions. Mitigation for lost or diminished wetland and buffer functions shall rely on the types below in the following order of preference:
1. Restoration (re-establishment and rehabilitation) of wetlands:
 - a. The goal of re-establishment is returning natural or historic functions to a former wetland. Re-establishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.
 - b. The goal of rehabilitation is repairing natural or historic functions of a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland acres. Activities could involve breaching a dike to reconnect wetlands to a floodplain or return tidal influence to a wetland.
 2. Creation (establishment) of wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of non-native species. Establishment results in a gain in wetland acres. This should be attempted only when there is an adequate source of water and it can be shown that the surface and subsurface hydrologic regime is conducive to the wetland community that is anticipated in the design.
 - a. If a site is not available for wetland restoration to compensate for expected wetland and/or buffer impacts, the approval authority may authorize creation of a wetland and buffer upon demonstration by the applicant's qualified wetland scientist that:
 - i. The hydrology and soil conditions at the proposed mitigation site are conducive for sustaining the proposed wetland and that creation of a wetland at the site will not likely cause hydrologic problems elsewhere;
 - ii. The proposed mitigation site does not contain invasive plants or noxious weeds or that such vegetation will be controlled at the site;
 - iii. Adjacent land uses and site conditions do not jeopardize the viability of the proposed wetland and buffer (e.g., due to the presence of invasive plants or noxious weeds, stormwater runoff, noise, light, or other impacts); and
 - iv. The proposed wetland and buffer will eventually be self-sustaining with little or no long-term maintenance.
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3. Enhancement of significantly degraded wetlands in combination with restoration or creation. Enhancement should be part of a mitigation package that includes replacing the altered area and meeting appropriate ratio requirements. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement alone will result in a loss of wetland acreage and is less effective at replacing the functions lost. Applicants proposing to enhance wetlands or associated buffers shall demonstrate:
 - a. How the proposed enhancement will increase the wetland's/buffer's functions;
 - b. How this increase in function will adequately compensate for the impacts; and
 - c. How all other existing wetland functions at the mitigation site will be protected.
4. Preservation. Preservation of high-quality, at-risk wetlands as compensation is generally acceptable when done in combination with restoration, creation, or enhancement, provided that a minimum of 1:1 acreage replacement is provided by re-establishment or creation. Ratios for preservation in combination with other forms of mitigation generally range from 10:1 to 20:1, as determined on a case-by-case basis, depending on the quality of the wetlands being altered and the quality of the wetlands being preserved.

Preservation of high-quality, at-risk wetlands and habitat may be considered as the sole means of compensation for wetland impacts when the following criteria are met:

- a. The area proposed for preservation is of high quality. The following features may be indicative of high-quality sites:
 - i. Category I or II wetland rating (using the wetland rating system for western Washington- Section 2.2 of these regulations)
 - ii. Rare wetland type (for example, bogs, mature forested wetlands, estuarine wetlands)
 - iii. The presence of habitat for priority or locally important wildlife species.
 - iv. Priority sites in an adopted watershed plan.
 - b. Wetland impacts will not have a significant adverse impact on habitat for listed fish, or other ESA listed species.
 - c. There is no net loss of habitat functions within the watershed or basin.
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- d. Mitigation ratios for preservation as the sole means of mitigation shall generally start at 20:1. Specific ratios should depend upon the significance of the preservation project and the quality of the wetland resources lost.
- e. Permanent preservation of the wetland and buffer will be provided through a conservation easement or tract held by a land trust.
- f. The impact area is small (generally <math>< \frac{1}{2}</math> acre) and/or impacts are occurring to a low-functioning system (Category III or IV wetland).

All preservation sites shall include buffer areas adequate to protect the habitat and its functions from encroachment and degradation.

- E. Location of Compensatory Mitigation. Compensatory mitigation actions shall be conducted within the same sub-drainage basin and on the site of the alteration except when all of paragraphs 1-4 below apply. In that case, mitigation may be allowed off-site within the subwatershed of the impact site. When considering off-site mitigation, preference should be given to using alternative mitigation, such as a mitigation bank, an in-lieu fee program, or advance mitigation.
 - 1. There are no reasonable opportunities on site or within the sub-drainage basin (e.g., on-site options would require elimination of high-functioning upland habitat), or opportunities on site or within the sub-drainage basin do not have a high likelihood of success based on a determination of the capacity of the site to compensate for the impacts. Considerations should include: anticipated replacement ratios for wetland mitigation, buffer conditions and proposed widths, available water to maintain anticipated hydrogeomorphic classes of wetlands when restored, proposed flood storage capacity, and potential to mitigate riparian fish and wildlife impacts (such as connectivity);
 - 2. On-site mitigation would require elimination of high-quality upland habitat.
 - 3. Off-site mitigation has a greater likelihood of providing equal or improved wetland functions than the altered wetland.
 - 4. Off-site locations shall be in the same sub-drainage basin unless:
 - a. Established watershed goals for water quality, flood storage or conveyance, habitat, or other wetland functions have been established by the City and strongly justify location of mitigation at another site; or
 - b. Credits from a state-certified wetland mitigation bank are used as compensation, and the use of credits is consistent with the terms of the certified bank instrument;
 - c. Fees are paid to an approved in-lieu fee program to compensate for the impacts.
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- F. **Design of Compensatory Mitigation.** The design for the compensatory mitigation project needs to be appropriate for its location (i.e., position in the landscape). Therefore, compensatory mitigation should not result in the creation, restoration, or enhancement of an atypical wetland. An atypical wetland refers to a compensation wetland (e.g., created or enhanced) that does not match the type of existing wetland that would be found in the geomorphic setting of the site (i.e., the water source(s) and hydroperiod proposed for the mitigation site are not typical for the geomorphic setting). Likewise, it should not provide exaggerated morphology or require a berm or other engineered structures to hold back water. For example, excavating a permanently inundated pond in an existing seasonally saturated or inundated wetland is one example of an enhancement project that could result in an atypical wetland. Another example would be excavating depressions in an existing wetland on a slope, which would require the construction of berms to hold the water.
- G. **Timing of Compensatory Mitigation.** It is preferred that compensatory mitigation projects be completed prior to activities that will disturb wetlands. At the least, compensatory mitigation shall be completed immediately following disturbance and prior to use or occupancy of the action or development. Construction of mitigation projects shall be timed to reduce impacts to existing fisheries, wildlife, and flora.
1. The City may authorize a one-time temporary delay in completing construction or installation of the compensatory mitigation when the applicant provides a written explanation from a qualified wetland professional as to the rationale for the delay. An appropriate rationale would include identification of the environmental conditions that could produce a high probability of failure or significant construction difficulties (e.g., project delay lapses past a fisheries window, or installing plants should be delayed until the dormant season to ensure greater survival of installed materials). The delay shall not create or perpetuate hazardous conditions or environmental damage or degradation, and the delay shall not be injurious to the health, safety, or general welfare of the public. The request for the temporary delay must include a written justification that documents the environmental constraints that preclude implementation of the compensatory mitigation plan. The justification must be verified and approved by the City.

H. Wetland Mitigation Ratios:

Table 5. Wetland Mitigation Ratios

Category and Type of Wetland	Creation or Re-establishment	Rehabilitation	Enhancement
Category I: Bog, Natural Heritage site	Not considered possible	Case by case	Case by case

Category and Type of Wetland	Creation or Re-establishment	Rehabilitation	Enhancement
Category I: Mature Forested	6:1	12:1	24:1
Category I: Based on functions	4:1	8:1	16:1
Category II	3:1	6:1	12:1
Category III	2:1	4:1	8:1
Category IV	1.5:1	3:1	6:1

- I. Credit/Debit Method. To more fully protect functions and values, and as an alternative to the mitigation ratios found in the joint guidance *Wetland Mitigation in Washington State Parts I and II* (Ecology Publication #06-06-011a-b, Olympia, WA, March, 2006), the City may allow mitigation based on the “credit/debit” method developed by the Department of Ecology in *Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report*, (Ecology Publication #10-06-011, Olympia, WA, March 2012, or as revised).
- J. Compensatory Mitigation Plan. When a project involves wetland and/or buffer impacts, a compensatory mitigation plan prepared by a qualified professional shall be required, meeting the following minimum standards:
 1. Wetland Critical Area Report. A critical area report for wetlands must accompany or be included in the compensatory mitigation plan and include the minimum parameters described in Appendix B-5 of these regulations.
 2. Compensatory Mitigation Report. The report must include a written report and plan sheets that must contain, at a minimum, the following elements. Full guidance can be found in *Wetland Mitigation in Washington State—Part 2: Developing Mitigation Plans* (Version 1) (Ecology Publication #0606-011b, Olympia, WA, March 2006) or as revised.
 - a. The written report must contain, at a minimum:
 - i. The name and contact information of the applicant; the name, qualifications, and contact information for the primary author(s) of the compensatory mitigation report; a description of the proposal; a summary of the impacts and proposed compensation concept; identification of all the local, state, and/or federal wetland-related permit(s) required for the project; and a vicinity map for the project.

- ii. Description of how the project design has been modified to avoid, minimize, or reduce adverse impacts to wetlands.
 - iii. Description of the existing wetland and buffer areas proposed to be altered. Include acreage (or square footage), water regime, vegetation, soils, landscape position, surrounding lands uses, and functions. Also describe impacts in terms of acreage by Cowardin classification, hydrogeomorphic classification, and wetland rating, based on Wetland Ratings (Section 2.2) of these regulations.
 - iv. Description of the compensatory mitigation site, including location and rationale for selection. Include an assessment of existing conditions: acreage (or square footage) of wetlands and uplands, water regime, sources of water, vegetation, soils, landscape position, surrounding land uses, and functions. Estimate future conditions in this location if the compensation actions are NOT undertaken (i.e., how would this site progress through natural succession?).
 - v. A description of the proposed actions for compensation of wetland and upland areas affected by the project. Include overall goals of the proposed mitigation, including a description of the targeted functions, hydrogeomorphic classification, and categories of wetlands.
 - vi. A description of the proposed mitigation construction activities and timing of activities.
 - vii. A discussion of ongoing management practices that will protect wetlands after the project site has been developed, including proposed monitoring and maintenance programs (for remaining wetlands and compensatory mitigation wetlands).
 - viii. A bond estimate for the entire compensatory mitigation project, including the following elements: site preparation, plant materials, construction materials, installation oversight, maintenance twice per year for up to five (5) years, annual monitoring field work and reporting, and contingency actions for a maximum of the total required number of years for monitoring.
 - ix. Proof of establishment of Notice on Title for the wetlands and buffers on the project site, including the compensatory mitigation areas.
- b. The scaled plan sheets for the compensatory mitigation must contain, at a minimum:
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- i. Surveyed edges of the existing wetland and buffers, proposed areas of wetland and/or buffer impacts, location of proposed wetland and/or buffer compensation actions.
 - ii. Existing topography, ground-proofed, at two-foot contour intervals in the zone of the proposed compensation actions if any grading activity is proposed to create the compensation area(s). Also existing cross-sections of on-site wetland areas that are proposed to be altered, and cross-section(s) (estimated one-foot intervals) for the proposed areas of wetland or buffer compensation.
 - iii. Surface and subsurface hydrologic conditions, including an analysis of existing and proposed hydrologic regimes for enhanced, created, or restored compensatory mitigation areas. Also, illustrations of how data for existing hydrologic conditions were used to determine the estimates of future hydrologic conditions.
 - iv. Conditions expected from the proposed actions on site, including future hydrogeomorphic types, vegetation community types by dominant species (wetland and upland), and future water regimes.
 - v. Required wetland buffers for existing wetlands and proposed compensation areas. Also, identify any zones where buffers are proposed to be reduced or enlarged outside of the standards identified these regulations.
 - vi. A plant schedule for the compensation area, including all species by proposed community type and water regime, size and type of plant material to be installed, spacing of plants, typical clustering patterns, total number of each species by community type, timing of installation.
 - vii. Performance standards (measurable standards reflective of years post-installation) for upland and wetland communities, monitoring schedule, and maintenance schedule and actions by each biennium.
- K. Buffer Mitigation Ratios. Impacts to buffers shall be mitigated at a 1:1 ratio. Compensatory buffer mitigation shall replace those buffer functions lost from development.
- L. Protection of the Mitigation Site. The area where the mitigation occurred and any associated buffer shall be located in a critical area tract or a conservation easement consistent with these regulations.
- M. Monitoring. Mitigation monitoring shall be required for a period necessary to establish that performance standards have been met, but not for a period less than five years. If a scrub-shrub or forested vegetation community is proposed,
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monitoring may be required for ten years or more. The project mitigation plan shall include monitoring elements that ensure certainty of success for the project's natural resource values and functions. If the mitigation goals are not obtained within the initial five-year period, the applicant remains responsible for restoration of the natural resource values and functions until the mitigation goals agreed to in the mitigation plan are achieved.

N. Wetland Mitigation Banks.

1. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when:
 - a. The bank is certified under state rules;
 - b. The City determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and
 - c. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.
2. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the certified bank instrument.
3. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the certified bank instrument. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.

O. In-Lieu Fee. To aid in the implementation of off-site mitigation, the City may develop an in-lieu fee program. This program shall be developed and approved through a public process and be consistent with federal rules, state policy on in-lieu fee mitigation, and state water quality regulations. An approved in-lieu-fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor, a governmental or non-profit natural resource management entity. Credits from an approved in-lieu-fee program may be used when paragraphs 1-6 below apply:

1. The approval authority determines that it would provide environmentally appropriate compensation for the proposed impacts.
 2. The mitigation will occur on a site identified using the site selection and prioritization process in the approved in-lieu-fee program instrument.
 3. The proposed use of credits is consistent with the terms and conditions of the approved in-lieu-fee program instrument.
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4. Land acquisition and initial physical and biological improvements of the mitigation site must be completed within three years of the credit sale.
 5. Projects using in-lieu-fee credits shall have debits associated with the proposed impacts calculated by the applicant's qualified wetland scientist using the method consistent with the credit assessment method specified in the approved instrument for the in-lieu-fee program.
 6. Credits from an approved in-lieu-fee program may be used to compensate for impacts located within the service area specified in the approved in lieu-fee instrument.
- P. Advance Mitigation. Mitigation for projects with pre-identified impacts to wetlands may be constructed in advance of the impacts if the mitigation is implemented according to federal rules, state policy on advance mitigation, and state water quality regulations.
- Q. Alternative Mitigation Plans. The City may approve alternative critical areas mitigation plans that are based on best available science, such as priority restoration plans that achieve restoration goals identified in the SMP. Alternative mitigation proposals must provide an equivalent or better level of protection of critical area functions and values than would be provided by the strict application of regulations.

The City shall consider the following for approval of an alternative mitigation proposal:

1. The proposal uses a watershed approach consistent with *Selecting Wetland Mitigation Sites Using a Watershed Approach* (Western Washington) (Ecology Publication #09-06-32, Olympia, WA, December 2009).
 2. Creation or enhancement of a larger system of natural areas and open space is preferable to the preservation of many individual habitat areas.
 3. Mitigation according to Section 2.7.E is not feasible due to site constraints such as parcel size, stream type, wetland category, or geologic hazards.
 4. There is clear potential for success of the proposed mitigation at the proposed mitigation site.
 5. The plan shall contain clear and measurable standards for achieving compliance with the specific provisions of the plan. A monitoring plan shall, at a minimum, meet the provisions in Section 2.7.M.
 6. The plan shall be reviewed and approved as part of overall approval of the proposed use.
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7. A wetland of a different type is justified based on regional needs or functions and values; the replacement ratios may not be reduced or eliminated unless the reduction results in a preferred environmental alternative.
8. Mitigation guarantees shall meet the minimum requirements as outlined in Section 2.7.J.2.a.viii.
9. Qualified professionals in each of the critical areas addressed shall prepare the plan.
10. The City may consult with agencies with expertise and jurisdiction over the resources during the review to assist with analysis and identification of appropriate performance measures that adequately safeguard critical areas.

2.8 Unauthorized Alterations and Enforcement

- A. When a wetland or its buffer has been altered in violation of these regulations, all ongoing development work shall stop, and the critical area shall be restored. The City shall have the authority to issue a “stop-work” order to cease all ongoing development work and order restoration, rehabilitation, or replacement measures at the owner’s or other responsible party’s expense to compensate for violation of provisions of these regulations.
 - B. Requirement for Restoration Plan. All development work shall remain stopped until a restoration plan is prepared and approved by the City. Such a plan shall be prepared by a qualified professional using the currently accepted scientific principles and shall describe how the actions proposed meet the minimum requirements described in 2.8.C. The City shall, at the violator’s expense, seek professional advice in determining the adequacy of the plan. Inadequate plans shall be returned to the applicant or violator for revision and resubmittal.
 - C. Minimum Performance Standards for Restoration. The following minimum performance standards shall be met for the restoration of a wetland, provided that if the violator can demonstrate that greater functions and habitat values can be obtained, these standards may be modified:
 1. The historic structure, functions, and values of the affected wetland shall be restored, including water quality and habitat functions.
 2. The historic soil types and configuration shall be restored to the extent practicable.
 3. The wetland and buffers shall be replanted with native vegetation that replicates the vegetation historically found on the site in species types, sizes, and densities. The historic functions and values should be replicated at the location of the alteration.
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4. Information demonstrating compliance with other applicable provisions of these regulations shall be submitted to the City.
- D. Site Investigations. The City is authorized to make site inspections and take such actions as are necessary to enforce these regulations. Representatives of the City shall present proper credentials and make a reasonable effort to contact any property owner before entering onto private property.
 - E. Penalties. Any person failing to conform to the terms of a permit issued in accordance with the Program or who undertakes development on the shorelines of the state without first obtaining any permit required by the Program shall be subject to a civil penalty per WAC Sections 173-27-240 through 173-27-300 and the City of Castle Rock Municipal Code as it now exists or is subsequently amended.

3. Fish and Wildlife Habitat Conservation Areas within Shoreline Jurisdiction

- A. Designation of Critical Fish and Wildlife Habitat Conservation Areas. Critical fish and wildlife habitat conservation areas are designated according to the classifications in the following table:

Table 6. Fish and Wildlife Conservation Area Classifications

Classifications WAC 365-190-130	Description
(1) Areas with which state/federal-designated endangered, threatened, candidate, or sensitive species have a primary association.	Areas which, if altered, may reduce the likelihood that the species will reproduce over the long term. Habitats associated with these species are those identified by Washington State Department of Fish and Wildlife's current system for mapping species of concern. These habitats are designated as critical areas, where endangered, threatened, candidate, and sensitive species are verified to have a primary association.
(2) Species and habitats of local importance, as set forth in WDFW's Priority Habitats and Species (PHS) list as defined in WAC 365-190-030	Habitat: Unique or significant habitats which regionally rare wildlife species depend upon and that have high wildlife concentrations, including: <ol style="list-style-type: none"> 1. Caves, urban, and rural natural open spaces; 2. Talus slopes, riparian systems, oak/conifer associations; 3. Snag and log-rich areas (outside forest practices); and 4. Old growth/mature forests, shrub-steppe areas, etc., see WAC 365-190-030.

Classifications WAC 365-190-130	Description
	Species: Wildlife species which require protective measures for their continued existence due to their population status or sensitivity to habitat alterations or are highly valued by the local citizens. Species meeting the above criteria but not depending upon a habitat of local importance (as listed above) to meet criteria habitat needs are those documented, verified, and mapped in Cowlitz County by the Department of Fish and Wildlife.
(3) Commercial and recreational shell fish areas.	There are no known commercial and recreational shell fish areas in Castle Rock.
(4) Kelp and eelgrass beds; herring and smelt spawning areas.	There are no kelp, eelgrass beds, or herring spawning areas known to occur in Castle Rock, but smelt have spawning areas along the shorelines of the Cowlitz River. The Washington State Hydraulic Code guidelines (WAC Title 232) and information from the Washington State Department of Fish and Wildlife are used to identify smelt spawning areas.
(5) Naturally occurring ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat	Naturally occurring ponds are waters with a surface area of less than 20 acres but greater than one acre and manmade ponds developed as mitigation as part of a permitting process or mitigation agreement. Naturally occurring ponds do not include ponds deliberately created such as canals, detention facilities, wastewater treatment facilities, farm ponds, temporary construction ponds (of less than three years' duration), and landscape amenities.
(6) Waters of the state.	Waters of the state shall be those defined in WAC 222-16-030, Forest Practices Board, Definitions.
(7) Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.	Waters of the state which regularly have game fish introduced.
(8) State natural area preserves and natural resource conservation areas.	Currently, there are no known areas in the City of Castle Rock.
(9) Unintentionally created ponds.	Ponds with a surface area of less than 20 acres, but greater than one acre.

B. Habitat Protection for Classification 5, 6 and 7 (Table 6). Buffer depth determination for these habitat areas shall be through the Shoreline Management Act, SEPA, the Federal Clean Water Act, and the State Hydraulic Code and/or best management practices. Within Classification 6, Type 1 through 5 waters, as defined in Chapter 222-16-030 WAC, Forest Practices Board, Definitions, are regulated streams.

1. Within Shoreline Management Act jurisdiction, the following shall apply: The stream typing system as provided in WAC 222-16-030k as hereafter amended shall be utilized for stream classification. The Department of Natural Resources stream classification maps shall be used to determine classification, unless the critical areas report provides a basis for reclassification. The Administrative

official may consult with the Department of Natural Resources and Washington Department of Fish and Wildlife to gain concurrence on any change in classification.

- a. "Type S Water" means all waters, within their bankfull width, as inventoried as "shorelines of the state" under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW including periodically inundated areas of their associated wetlands.
- b. "Type F Water" means segments of natural waters other than Type S Waters, which are within the bankfull widths of defined channels and periodically inundated areas of their associated wetlands, or within lakes, ponds, or impoundments having a surface area of 0.5 acre or greater at seasonal low water and which in any case contain fish habitat or are described by one of the following four categories:
 - i. Waters, which are diverted for domestic use by more than 10 residential or camping units or by a public accommodation facility licensed to serve more than 10 persons, where such diversion is determined by the department to be a valid appropriation of water and the only practical water source for such users. Such waters shall be considered to be Type F Water upstream from the point of such diversion for 1,500 feet or until the drainage area is reduced by 50 percent, whichever is less;
 - ii. Waters, which are diverted for use by federal, state, tribal or private fish hatcheries. Such waters shall be considered Type F Water upstream from the point of diversion for 1,500 feet, including tributaries if highly significant for protection of downstream water quality. The department may allow additional harvest beyond the requirements of Type F Water designation provided the department determines after a landowner-requested on-site assessment by the department of fish and wildlife, department of ecology, the affected tribes and interested parties that:
 - a. The management practices proposed by the landowner will adequately protect water quality for the fish hatchery; and
 - b. Such additional harvest meets the requirements of the water type designation that would apply in the absence of the hatchery;
 - iii. Waters, which are within a federal, state, local, or private campground having more than 10 camping units: Provided, That the water shall not be considered to enter a campground until it reaches the boundary of the park lands available for public use and comes within 100 feet of a camping unit, trail or other park improvement;

- iv. Riverine ponds, wall-based channels, and other channel features that are used by fish for off-channel habitat. These areas are critical to the maintenance of optimum survival of fish. This habitat shall be identified based on the following criteria:
 - a. The site must be connected to a fish habitat stream and accessible during some period of the year; and
 - b. The off-channel water must be accessible to fish.
 - c. “Type Np Water” means all segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams. Perennial streams are flowing waters that do not go dry any time of a year of normal rainfall and include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow.
 - d. “Type Ns Water” means all segments of natural waters within the bankfull width of the defined channels that are not Type S, F, or Np Waters. These are seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an above-ground channel system to Type S, F, or Np Waters.
2. The following buffers shall apply to the water bodies classified above. Buffer widths shall be measured on a horizontal plane landward from the OHWM.

Table 7. Water Body Buffers within Shoreline Management Act Jurisdiction

Stream	Riparian Habitat Area (RHA) Buffer (ft)
Type S Water	See Table 8
Type F Water (Type 2)	150
Type F Water (Type 3)	100
Type Np Water	50
Type Ns Water	50

Table 8. Shoreline Reach Based RHA Buffers

Code Reach Number	Shoreline Environment Designation	Water Body	Buffer
CR-01	High-Intensity	Cowlitz River	150 feet
CR-02	High-Intensity	Cowlitz River	150 feet
CR-03	Residential	Cowlitz River	100 feet
CR-04	High-Intensity	Cowlitz River	75 feet
CR-05	Parallel Designation: High-Intensity / Recreation	Cowlitz River	From the OHWM to the edge of existing impervious surface; Or, as specified in an approved Park Management Plan
CR-06	Parallel Designation: Recreation / High- Intensity / Residential	Cowlitz River	From the OHWM to the waterward toe of the levee.
CR-07	Recreation	Cowlitz River	150 feet; Or, to the waterward toe of the levee, as applicable.
CR-08	Parallel Designation: Recreation / High- Intensity / Residential	Cowlitz River	From the OHWM to the waterward toe of the levee.
CR-09	Recreation	Cowlitz River	150 feet
CR-10	Recreation	Cowlitz River	150 feet; Or, edge of impervious surface of existing development, where applicable.
CR-11	Recreation	Cowlitz River	50 feet (due to existing fairgrounds road)
CR-12	Parallel: Recreation/High- Intensity/Residential	Cowlitz River	From the OHWM to the waterward edge of the right-of-way.
CR-13	Recreation	Cowlitz River	<i>Boat Launch</i> – From the OHWM to the waterward side of the boat launch. <i>Other uses</i> – 100 feet
CR-14	Recreation	Cowlitz River	150 feet
CR-15	Residential	Cowlitz River	150 feet
CR-16	Recreation	Cowlitz River	150 feet
CR-17	Residential	Arkansas Creek	100 feet
CR-18	Recreation	Arkansas Creek	150 feet
CR-19	Recreation	Arkansas Creek	150 feet
CR-20	High-Intensity	Salmon Creek	From the OHWM to the waterward edge of the right-of-way.
CR-21	High-Intensity	Salmon Creek	<i>West bank</i> – 100 feet <i>East bank</i> – From the OHWM to the waterward edge of the right-of-way.

3. The recommended RHA buffer widths may be increased when the City determines that the recommended width is insufficient to prevent habitat degradation and to protect the structure and functions of the habitat area.

4. The following uses are allowed in the buffers shown in Table 8 and building setbacks in all SEDs consistent with Table 7-1 of the SMP, provided that mitigation sequencing is demonstrated and any adverse impacts to ecological functions are mitigated.
 - a. Water-dependent uses. Water-dependent uses, modifications and activities may be located in shoreline buffers at the water's edge without obtaining a Shoreline Variance, provided the project complies with all other provisions this Program.
 - b. Linear transportation and utility crossings. New linear transportation and utility crossings may be located in shoreline buffers without obtaining a Shoreline Variance, provided the project complies with all other provisions of this Program.
 - c. Shoreline residential access. A private access pathway constructed of pervious materials may be installed, a maximum of four (4) feet wide, through the shoreline buffer to the OHWM. Impervious materials may be used only as needed to comply with ADA requirements to construct a safe, tiered pathway down a slope. A railing may be installed on one edge of the pathway, a maximum of 36 inches tall and of open construction. Pathways to the shoreline should take the most direct route feasible consistent with any applicable ADA standards.
 5. Buffer averaging may be allowed where the applicant demonstrates:
 - a. There are no feasible alternatives to the site design that could be accomplished without buffer averaging;
 - b. Within the existing buffer there are areas with significant differences in characteristics that affect its habitat functions and would not be addressed by revegetation;
 - c. The buffer is increased adjacent to the higher-functioning area of habitat or more sensitive portion of the water body and decreased adjacent to the lower functioning or less sensitive portion;
 - d. The buffer averaging does not reduce the functions or values of the water body or riparian habitat, or the buffer averaging, in conjunction with vegetation enhancement, increases the habitat function;
 - e. The total area of the buffer after averaging is equal to the area required without averaging and all increases in buffer dimension for averaging are generally parallel to the water's edge;
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- f. The buffer at its narrowest point is never less than 75% of the required width; unless an existing human improvement that cannot be feasibly relocated is located closer to the water body.
- C. Development Performance Standards. Development activities, as described in Section 1.3 Applicability – Regulated activities, shall conform and be governed by the following items in this Subsection, and in Subsections (D) through (K) of this Section. When impacts to critical fish and wildlife habitat and the associated buffer cannot be avoided, the performance standards contained in this Section shall be used to develop plans submitted for regulated activities. Shoreline permits including critical areas impacts may be conditioned (that is, approved with conditions) to reflect the following performance standards:
1. Best available science shall be used to conduct any biological assessments of fish and wildlife habitats and to propose mitigation steps required for specific developments;
 2. Locate buildings and structures in a manner that preserves the habitat or minimizes adverse impacts;
 3. Consolidate habitat and vegetated open space in contiguous blocks, and where possible locate habitat contiguous to other habitat, open space or landscaped areas to contribute to a continuous system or corridor that provides connections to adjacent habitat areas;
 4. Use native species in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers. Emphasize diversity in selection of plant materials and structure of landscaping;
 5. Remove and/or control any noxious or undesirable species of plants as identified by the Cowlitz County weed control board;
 6. Demonstrate how existing trees will be preserved, preferably in groves;
 7. Preserve and introduce native plant species which serve as a food source for wildlife; provide shelter from climatic extremes and predators; provide structure and cover for reproduction and rearing of young;
 8. Preserve the natural hydraulic and ecological functions of drainage systems;
 9. Preserve critical fish and wildlife habitat areas through maintenance of stable channels, adequate low flows, management of stormwater runoff, erosion, and sedimentation;
 10. Manage access to critical fish and wildlife habitat areas to protect species which are sensitive to human disturbance;
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11. Maintain or enhance water quality through control of runoff and use of best management practices.
- D. Overlap of Critical Areas. Section 1.7, Relationships to Other Regulations, notwithstanding, if a fish or wildlife habitat classification is determined to be a wetland then the wetland regulations in Section 2, Critical Area Wetlands Within Shoreline Jurisdiction, shall apply. If two or more critical areas overlap, then the more protective standards of the two shall apply.
 - E. Habitat Management Plan for Classification 1 Only (Table 6). A habitat management plan shall be required (Appendix B-6) if the regulated activity is within 250 feet of a Classification 1 habitat area, or identified within 1,000 feet of a point location (nests, dens, etc.) for a Classification 1 habitat area. To ensure that potential conflicts between habitat and species protection measures and development activities are adequately identified, all projects within a minimum of 1,300 feet from endangered, threatened or sensitive species or habitat locations shall be reviewed for possible habitat management plan requirements set forth in Appendix B-6.
 - F. Habitat Management Plan Requirements.
 1. The habitat management plan will be prepared by a qualified fish and/or wildlife professional. See Appendix B-6.
 2. Habitat management plans will be sent to the Washington State Department of Fish and Wildlife, National Oceanic and Atmospheric Administration – Fisheries and other appropriate state and federal agencies as an attachment to the SEPA checklist.
 - G. Habitat Protection for Classification 2 (Table 6). Protection for these habitat areas shall be through the development performance standards listed above.
 - H. Habitat Protection for Classification 3 and 4 (Table 6). If found to occur, protection of these areas shall be coordinated by the city with the Washington State Department of Fish and Wildlife.
 - I. Habitat Protection for Classification 5, 6 and 7 (Table 6). Buffer depth determination for these habitat areas shall be through the Shoreline Management Act, SEPA, the Federal Clean Water Act, and the State Hydraulic Code and/or best management practices. Within Classification 6, Type 1 through 5 waters, as defined in Chapter 222-16-030 WAC, Forest Practices Board, Definitions, are regulated streams.
 - J. Habitat Protection for Classification 8 (Table 6). Protection for state natural area preserves and natural resource conservation area habitats will be achieved through assistance from the Washington State Department of Natural Resources, Department of Fish and Wildlife and the Department of Ecology.
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- K. Habitat Protection for Classification 9 (Table 6). Protection for habitat provided by unintentionally created ponds shall be through the development performance standards in Subsection (C) of this Section.

4. Frequently Flooded Critical Areas

- A. Frequently Flooded Area Classifications and Designations. All lands identified in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, as amended, and approved by the city as within the 100-year floodplain are designated as frequently flooded areas.
- B. Development Limitations. All development within designated frequently flooded areas shall comply with Chapter 15.24 CRMC, Flood Damage Prevention dated 1988.

5. Geologic Hazard Areas

- A. Geologic hazard areas fall within two designations:
 - 1. Areas of Geological Concern. Slopes between 12 percent and 25 percent (an area that may only require a minimal amount of geologic information with recommendations for site development);
 - 2. Areas of Potential Geological Hazard. Slopes greater than 26 percent (such areas require more extensive review because of the severity of conditions).
 - B. Geotechnical Assessments and/or Reports.
 - 1. A geotechnical assessment of the effects of potential site development shall be conducted to determine if a site is an area of geologic concern or an area of potential geologic hazard. It shall take into consideration steepness of slope, retention of natural vegetation, soil characteristics, geology, drainage, groundwater discharge, and engineering recommendations relating to slope and structural stability. The geotechnical assessment shall be prepared by a geotechnical engineer meeting the minimum qualifications as defined by these regulations. See Appendices B-1 and B-2.
 - 2. If the assessment indicates an area of potential geological hazard on the site, a geotechnical report (Appendix B-3) will be required. A geotechnical report involves greater detailed surface and subsurface examinations than does a geotechnical assessment. The minimum requirements for the erosion hazard, geotechnical assessments and the geotechnical report are included in the Appendices.
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- C. Classification – Landslide Hazard Areas. Landslide hazard areas are those areas meeting any of the following criteria:
1. Areas of historic failure, such as areas designated as quaternary slumps, earthflows, mudflows, or landslides;
 2. Any area with all of the following:
 - a. Slope greater than 26 percent;
 - b. Steep hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and
 - c. Springs or groundwater seepage.
 3. Slopes that are parallel or subparallel to planes of weakness, such as bedding planes, joint systems, and fault planes;
 4. Slopes having gradients greater than 80 percent (38 to 39 degrees) and subject to rockfall during seismic shaking;
 5. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action;
 6. Areas located in a canyon, on an active alluvial fan, or that are presently subject to inundation by debris flows or catastrophic flooding;
 7. Areas identified as being unstable or very unstable through on-site investigations;
 8. Steep slopes that are greater than 30 percent and higher than 10 feet; and
 9. Areas that include soil creep, which is a gradual movement of soil in response to gravity and weather. Severe soil creep can be an indicator of future landslide activity.
- D. Classification – Erosion Hazard. Erosion hazard areas are those areas identified by the presence of soils which are recognized as having a severe erosion hazard by the Natural Resources Conservation Service, Cowlitz County Area, Washington.
- E. Development Standards for Landslide Hazard and Erosion Hazard Classifications. Any area identified as potential geological hazard for landslides and erosion will require further studies and methods of mitigation prior to any consideration of development in the area. Any allowed or regulated activity on areas identified as landslide or erosion hazards or their buffers shall conform to the following standards:
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1. Grading. The City has adopted Chapter 33 of the Appendix to the Uniform Building Code, Excavation and Grading. Unless activity is exempted, an excavation and grading permit is required.
 - a. Clearing, grading, and other construction activities shall not aggravate or result in slope instability or surface sloughing.
 - b. Slope disturbance shall be minimized. Clearing, grading or filling of sloped areas containing landslide or erosion hazard areas shall be limited to the period between April 30th and October 1st, unless the applicant provides an erosion control plan that specifically identifies methods of erosion control for wet-weather conditions, that is consistent with the standards set forth in the *1982 Puget Sound Stormwater Management Manual* as adopted by the City.
 - c. All authorized clearing for roads and utilities shall be limited to the minimum necessary to construct the engineered design.
 - d. Undergrowth and vegetation shall be retained to the maximum extent feasible.
 - e. No dead vegetation or other foreign material shall be placed within landslide or erosion hazard areas, other than approved for bank stabilization or if such grading is consistent with authorized activities specified in a geotechnical report.
 2. Erosion Control. Compliance with Chapter 15.24 CRMC, Flood Damage Prevention; the Shorelines Master Program; and applicable provisions of *1982 Puget Sound Stormwater Management Manual* is required and includes the use of best management practices (BMP).
 - a. Disturbance of trees and vegetation shall be minimized to reduce erosion and maintain existing stability of hazard areas.
 - b. Vegetation removal on the slopes of waterways between the ordinary high watermark and the top of the banks shall be minimized because of the potential for erosion.
 - c. Vegetation and organic soil material shall be removed from fill sites prior to the placement of fill.
 - d. Thinning of limbs of individual trees is preferred over tree removal as a means to provide view corridors.
 - e. Vegetative cover or engineered ground covers shall be placed on any disturbed surface to the extent feasible.
 3. Drainage.
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- a. Surface drainage, including down spouts, shall not be directed across the face of a hazard area. If drainage must be discharged from the top of a hazard area to its toe, it shall be collected above the top and directed to the toe by tight line drain, which is an energy dissipating device at the toe for discharge to a swale or other acceptable natural drainage areas.
 - b. Stormwater retention and detention systems, including percolation systems utilizing buried pipe, are prohibited unless a geotechnical assessment proves that such a system shall not affect slope stability and the systems are designed in accordance with City standards.
 - c. The proposed project will not increase the rate of surface water discharge or sedimentation and will not decrease the adjacent property slope stability.
4. Buffers.
- a. An undisturbed 50-foot buffer, as measured on the surface, is required from the top, toe, and along all sides of any existing landslide or erosion hazard areas.
 - b. Based on the results of the geotechnical assessment, the City may increase or decrease the buffer as indicated.
 - c. The buffer shall be clearly staked before and during any construction or clearing.
5. Sanitary Sewage Lines. For the purpose of landslide or erosion control, the sanitary sewage lines shall be located outside of the hazard area buffer, unless otherwise determined by the City. The placement of all sanitary sewage lines must be in compliance with all local government health regulations.
6. Design Guidelines.
- a. Structures should be clustered where possible to reduce disturbance and removal of vegetation.
 - b. Foundations shall be stepped to the contours of the slope to the extent possible.
 - c. Roads, walkways, and parking areas should be designed to parallel the natural contours of the site.
 - d. Development proposals shall be designed to minimize the impacts of the project resulting in the least disturbance to the adjacent affected areas.
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- F. Classification – Seismic Hazard Areas. For the purposes of this classification, a seismic hazard area is any area indicated by a Zone 2B or higher rating as defined by the Seismic Risk Map of the United States, adopted by the Washington State Legislature and defined in the Uniform Building Code (UBC).
 - G. Development Standards – Seismic Hazard Areas. All development within areas that meet the classification for seismic hazard areas shall comply with the Uniform Building Code. A critical areas permit is not required by these regulations for seismic hazards.
 - H. Classification – Mine Hazard Areas. For the purposes of this classification, mine hazard areas are:
 - 1. Abandoned mines, shafts, tunnels, and/or workings where locations are known;
 - 2. Abandoned mines, shafts, tunnels, and/or workings where exact locations are unknown, but based upon the best available information that there is good cause to believe it is within an area which may be reasonably delineated;
 - 3. Abandoned powder magazines or bunkers.
 - I. Development Standards – Mine Hazard Areas. Development adjacent to (as defined in these regulations) a mine hazard area is prohibited unless the applicant can demonstrate the development will be safe. If a proposal is located adjacent to a mine hazard area, a geotechnical report shall be required.
 - J. Classification – Volcanic Hazard Areas. For the purposes of this classification, all volcanic mudflow hazard areas shall be identified as the 500-year floodplain areas identified in FEMA maps.
 - K. Development Standards – Volcanic Hazard Areas. Development shall comply with existing Federal Emergency Management Agency regulations for floodplain management.
 - L. Designations. Lands within the City of Castle Rock meeting the classification criteria for geologic hazard areas are hereby designated, under Chapter 36.70A RCW, as geologic hazard areas. Maps that illustrate critical areas include, but are not limited to:
 - 1. Soil Conservation Service, Cowlitz County Area Soil Survey, 1996 (Critical Soils);
 - 2. Flood Insurance Rate Map for Castle Rock, FEMA, 1998 (Flood Plain);
 - 3. USGS, Derived from 10 Meter Digital Elevation Model, 2001 (Steep Slope);
 - 4. National Wetlands Inventory, U.S. Fish and Wildlife Service, 1989 (Wetlands).
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6. Critical Aquifer Recharge Areas

- A. Classification – Critical Aquifer Recharge Areas. For the purposes of this classification, the critical aquifer recharge areas are determined by the combined effects of soil types and hydrogeology. (Critical Aquifer Recharge Map, Cowlitz-Wahkiakum Council of Governments, 1993.)

Classification 1: High susceptibility areas, identified on the Aquifer Recharge Map, with a very high susceptibility to contamination of the underlying aquifer due to high soil permeability and high water table.

- B. Regulated Activities – Classification 1. The following activities are regulated in classification critical aquifer recharge areas located within jurisdictional shoreline areas:
1. Aboveground and Underground Storage Tanks and Vaults. Aboveground or underground storage tanks or vaults for the storage of hazardous substances or dangerous wastes as defined in Chapter 173-303 WAC, Dangerous Waste Regulations, or any other substances, solids, or liquids in quantities identified by the county health department, consistent with Chapter 173-303 WAC, as a risk to groundwater quality, shall conform to the Uniform Fire Code, Chapter 173-360 WAC, Underground Storage Tank Regulations.
 2. Utility Transmission Facilities. Utility facilities which carry liquid petroleum products or any other hazardous substance as defined in Chapter 173-303 WAC.
 3. Land Divisions. Subdivisions, short subdivisions and other divisions of land will be evaluated for their impact on groundwater quality within the Classification 1 aquifer recharge areas. The following measures may be required:
 - a. An analysis of the potential contaminate loading;
 - b. Alternative site designs, phased development and/or groundwater quality monitoring;
 - c. Open spaces within development proposals.
- C. Hydrogeologic Testing and Site Evaluation.
- D. Hydrogeologic testing and site evaluation may be required for any regulated activity. If federal or state regulations require hydrogeologic testing, the City may waive the requirement for additional testing provided the staff has adequate factual information to evaluate the proposal.
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- E. If hydrogeologic testing and site evaluation are required, they shall be conducted by a qualified professional (at the applicant's cost), and must include but are not limited to the requirements in Appendix B.
- F. Development which negatively impacts the quality of any Classification 1 critical aquifer recharge area shall be prohibited unless the hydrogeologic testing and site evaluation satisfactorily demonstrate that significant adverse impacts will be mitigated.

7. Mitigation Plan Performance Standards

- A. Mitigation Planning Requirements. All critical areas mitigation projects required pursuant to these regulations, either as a permit condition or as the result of an enforcement action, shall follow a mitigation plan approved by the City and prepared by a qualified professional on behalf of the applicant.

Mitigation in order of preference is as follows:

1. Avoiding the 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 operations during the life of the action;
 5. Compensating for an impact by replacing or providing substitute resources or environments. When a mitigation plan is required it shall be approved by the City prior to any site disturbance. The City may seek assistance from state and/or federal resource agencies prior to making a decision. At a minimum the plan shall meet the following standards:
 - a. The mitigation plan shall be prepared by a qualified professional and shall be acceptable to the City. The cost of preparation is paid by the applicant.
 - b. The mitigation plan shall include:
 - i. An assessment of the existing function and values of the critical area;
 - ii. The functions and values that will be lost;
 - iii. The critical area's expected functions and values after mitigation.
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- c. Objectives shall be stated in measurable terms, if feasible.
 - d. The mitigation plan shall specify and describe how functions and values will be replaced.
 - e. The mitigation plan shall include provisions for monitoring the mitigation area as reasonably necessary to determine whether stated objectives have been accomplished. A contingency plan shall be included in the event the stated objectives are not accomplished.
 - f. Mitigation shall be provided on site, except where on-site mitigation is not scientifically feasible, economical, or practical due to physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on site, and found acceptable by the City Council.
 - g. When mitigation cannot be provided on site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant where such mitigation is practical and beneficial to the critical area and associated resources. Where possible, this means within the same hydrologic unit as the location of the proposed project.
 - h. Mitigation plans shall be approved by the City prior to any site alterations.
6. Restoration shall be required when a critical area has been altered after the adoption of these regulations and prior to project approval.

Appendix B-1 Qualified Professional and Valid Scientific Process.

A. Qualified Professional.

WAC 365-195-905(4) states:

Whether a person is a qualified scientific expert with expertise appropriate to the relevant critical areas is determined by the person's professional credentials and/or certification, licenses, and any advanced degrees earned in the pertinent scientific discipline, recognized leadership in the discipline of interest, formal training in the specific area of expertise, and field and/or laboratory experience with evidence of the ability to produce peer-reviewed publications or other professional literature. No one factor is determinative in deciding whether a person is a qualified scientific expert. Where pertinent scientific information implicates multiple scientific disciplines, counties and cities are encouraged to consult a team of qualified scientific experts representing the various disciplines to ensure the identification and inclusion of the best available science.

For the purposes of these regulations, the term qualified professional is defined in Chapter 2 of this Shoreline Master Program.

B. Valid Scientific Process.

WAC 365-195-905(5) states:

Scientific information can be produced only through a valid scientific process. To ensure that the best available science is being included, a county or city should consider the following:

(a) Characteristics of a valid scientific process. In the context of critical areas protection, a valid scientific process is one that produces reliable information useful in understanding the consequences of a local government's regulatory decisions and in developing critical areas policies and development regulations that will be effective in protecting the functions and values of critical areas.

To determine whether information received during the public participation process is reliable scientific information, the City of Castle Rock will review each report to ensure that the report's information was obtained and formatted in a manner that displays the characteristics of a valid scientific process as follows:

1. Peer Review. The information has been critically reviewed by other persons who are qualified scientific professionals in that scientific discipline. The criticism of the peer reviews has been addressed by the proponents of the information. Publication in a refereed scientific journal usually indicates that the information has been appropriately peer reviewed.
 2. Methods. The methods that were used to obtain the information are clearly stated and able to be replicated. The methods are standardized in the pertinent scientific discipline or, if not, the methods have been appropriately peer-reviewed to assure their reliability and validity.
 3. Logical Conclusions and Reasonable Inferences. The conclusions presented are based on reasonable assumptions supported by other studies and consistent with the general theory underlying the assumptions. The conclusions are logically and reasonably derived from the assumptions and supported by the data presented. Any gaps in information and inconsistencies with other pertinent scientific information are adequately explained.
 4. Quantitative Analysis. The data have been analyzed using appropriate statistical or quantitative methods.
 5. Context. The information is placed in proper context. The assumptions, analytical techniques, data and conclusions are appropriately framed with respect to the prevailing body of pertinent scientific knowledge.
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6. References. The assumptions, analytical techniques, and conclusions are well referenced with citations to relevant, credible literature and other pertinent existing information.
 - a. Common Sources of Scientific Information. Some sources of information routinely exhibit all or some of the characteristics listed in Subsection (A) of this Section. Information derived from one of these sources may be considered scientific information if the source possesses the characteristics listed in the following table. Castle Rock may consider information to be scientifically valid if the source possesses the characteristics listed in Subsection (A) of this Section. The information found in the following table provides a general indication of the characteristics of a valid scientific process typically associated with common sources of scientific information.
 - b. Common Sources of Nonscientific Information. Many sources of information usually do not produce scientific information because they do not exhibit the necessary characteristics for scientific validity and reliability. Nonscientific information may provide valuable information to supplement scientific information, but it is not an adequate substitute for scientific information. Nonscientific information should not be used as a substitute for valid and available scientific information. Common sources of nonscientific information include the following:
 - i. Anecdotal Information. One or more observations which are not part of unorganized scientific effort (for example, "I saw grizzly bears in that area while I was hiking").
 - ii. Nonexpert Opinion. Opinion of a person who is not a qualified scientific professional in a pertinent scientific discipline (for example, "I do not believe there are grizzly bears in that area").
 - iii. Hearsay. Information repeated from communication with others (for example, "At a lecture last week, Dr. Smith said there were no grizzly bears in that area").
 - c. The City of Castle Rock will monitor and evaluate its efforts in critical areas protection and update this Appendix to include new scientific information as it becomes available.
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Table B-1. Characteristics

Sources of Scientific Information	Peer Review	Methods	Logical Conclusions and Reasonable Inference	Quantitative Analysis	Context	References
A. Research. Research data collected and analyzed as part of a controlled experiment (or other appropriate methodology) to test a specific hypothesis.	X	X	X	X	X	X
B. Monitoring. Monitoring data collected periodically over time to determine a resource trend or evaluate a management program.		X	X	Y	X	X
C. Inventory. Inventory data collected from an entire population or population segment (e.g., individuals in a plant or animal species) or an entire ecosystem or ecosystem segment (e.g., the species in a particular wetland).		X	X	Y	X	X
D. Survey. Survey data collected from a statistical sample from a population or ecosystem.		X	X	Y	X	X
E. Modeling. Mathematical or symbolic simulation or representation of a natural system. Models generally are used to understand and explain occurrences that cannot be directly observed.	X	X	X	X	X	X
F. Assessment. Inspection and evaluation of site-specific information by a qualified scientific professional. An assessment may or may not involve collection of new data.		X	X		X	X

Sources of Scientific Information	Peer Review	Methods	Logical Conclusions and Reasonable Inference	Quantitative Analysis	Context	References
G. Synthesis. A comprehensive review and explanation of pertinent literature and other relevant existing knowledge by a qualified scientific professional.	X	X	X		X	X
H. Expert Opinion. Statement of a qualified scientific professional based on his or her best professional judgment and experience in the pertinent scientific discipline. The opinion may or may not be based on site-specific information.				X	X	X

x = Characteristic must be present for information derived to be considered scientifically valid and reliable.

y = Presence of characteristic strengthens scientific validity and reliability of information derived, but is not essential to ensure scientific validity and reliability.

Appendix B-2 Geotechnical assessments.

- A. The applicant must submit a geotechnical assessment prepared by a qualified geotechnical engineer, licensed by the state of Washington in accordance with RCW 18.220
- B. The technical assessment shall include at a minimum the following:
 1. A discussion of the surface and subsurface geologic conditions of the site;
 2. A site plan of the area delineating all areas of the site subject to landslide hazards based on mapping and field examination;
 3. A contour map of the proposed site, at a reasonable scale (not smaller than one inch equals 200 feet) that clearly delineates slopes for ranges between 12 and 25 percent and 26 percent or greater, and includes figures for area coverage of each slope category on the site.
- C. Site Evaluation. A written evaluation of the ability of the site to accommodate the proposed activity without causing either soil slippage, landslide or soil erosion.

Appendix B-3 Geotechnical report.

- A. The geotechnical report shall include at a minimum the following. Technical justification shall be provided where any information is not deemed applicable by the qualified professional.
1. Site Geology Information Required.
 - a. Topographic Data. Contour map of proposed site at a scale of one inch equals 200 feet, that clearly delineates the slopes between 12 and 25 percent and 26 percent or greater, including figures for area coverage of each slope category on the site;
 - b. Subsurface Data. Boring logs and exploratory methods, soil and rock stratification, groundwater levels including seasonal changes;
 - c. Site History. Description of any prior grading, soil instability, or slope failure;
 - d. Seismic Hazard. Data concerning the vulnerability of the site to seismic events.
 2. Geotechnical Engineering Information Required.
 - a. Slope stability studies and opinion of slope stability;
 - b. Proposed angles of cut and fill slopes and site grading requirements;
 - c. Structural foundation requirements and estimated foundation settlements;
 - d. Soil compaction criteria;
 - e. Proposed surface and subsurface drainage;
 - f. Lateral earth pressures;
 - g. Erosion vulnerability of site; illustration of steps that will be taken to prevent soil erosion or stormwater runoff;
 - h. Suitability for fill;
 - i. Laboratory data and soil index properties for soil samples; and
 - j. Building limitations.
 3. Site Evaluation. A written evaluation of the ability of the site to accommodate the proposed activity without causing either soil slippage, landslide or soil erosion. Where a valid geotechnical report has been prepared within the last five years for a specific site, and where the proposed activity and surrounding site conditions are unchanged, said report may be referenced in a new report.
-

Appendix B-4 Erosion hazard assessments.

- A. The applicant must submit an erosion hazard assessment (as set forth in Section 5, Geologic Hazard Areas) prepared by a qualified professional.
- B. The erosion hazard assessment shall include, at a minimum, the following:
 - 1. An overview of the existing channel or drainage way characteristics and stream hydraulics at the entrance and exit to and from the subject property.
 - 2. An assessment of the probability for storm-induced erosion to occur along the drainageway on the subject property and the estimated extent of the property that would be affected and what steps the applicant will take to prevent erosion damage to subject property and/or adjacent properties, including public stormwater drainage ditches.
 - 3. A site map of the property, drawn to scale, delineating the relationship of any streams and drainageway to the property, and existing erosion areas and/or potential erosion areas, and the proposed development, including structural dimensions.
 - 4. A cross-section map, drawn to scale and at five-foot contour intervals, from the edge of the stream or drainageway or river's surface to the furthest landward boundary of the property, and including the proposed development.

Appendix B-5 Wetland critical areas report.

If the City determines that the site of a proposed development includes, is likely to include, or is adjacent to a wetland, a wetland report, prepared by a qualified professional, shall be required. The expense of preparing the wetland report shall be borne by the applicant. A wetland critical areas report shall include the following. If the qualified professional deems any of the following information inapplicable by, he or she shall provide technical justification.

- A. Narrative. The report narrative must include all of the following:
 - 1. The name and contact information of the applicant;
 - 2. The name, qualifications, and contact information of the primary author(s) of the wetland critical area report;
 - 3. Identification of all the local, state, and/or federal wetland-related permit(s) required for the project;
 - 4. Location information (legal description, parcel number, and address);
-

5. Site characteristics, including topography, total acreage, delineated wetland acreage, vegetation, soil types, etc.;
 6. Identification and characterization of all critical areas, water bodies, shorelines, floodplains, and buffers on or adjacent to the proposed project area. For areas off site of the project site, estimate conditions within 300 feet of the project boundaries using the best available information;
 7. Identification of the wetland's rating as defined in these regulations;
 8. Analysis of functions and values of existing wetlands and buffers, including flood control, water quality, aquifer recharge, fish and wildlife habitat, and hydrology characteristics;
 9. A complete description of the proposed project and its potential impacts to wetlands and buffers and, if applicable, adjacent off-site wetlands and buffers, including an estimation of acreages of impacts to wetlands and buffers based on the field delineation and survey;
 10. Discussion of project alternatives, including total avoidance of impacts to wetlands and buffers;
 11. If mitigation for wetland impacts is proposed, a description and analysis of that mitigation;
 12. For all wetlands on or adjacent to the site, a wetland buffer width recommendation and rationale therefore;
 13. A description of the methodologies used to conduct the wetland delineations, ratings, or impact analyses, including references;
 14. For each wetland identified on site provide the wetland rating forms, including a description of and score for each function, per Wetland Ratings Section (Section 2.2) of these regulations; hydrogeomorphic classification; wetland acreage based on a professional survey from the field delineation (acreages for on-site portion and estimates for entire wetland area including off-site portions, if field delineation of the off-site portion is infeasible); Cowardin classification of vegetation communities; habitat elements; soil conditions based on site assessment and/or soil survey information; and to the extent possible, hydrologic information such as location and condition of inlets/outlets (if they can be legally accessed), estimated water depths within the wetland, and estimated hydroperiod patterns based on visual cues (e.g., algal mats, drift lines, flood debris, etc.). Provide acreage estimates, classifications, and ratings based on entire wetland complexes, not only the portion present on the proposed project site;
-

15. A discussion of the potential impacts to the wetland(s) associated with anticipated hydroperiod alterations from the project;
 16. A description of reasonable efforts made to apply mitigation sequencing pursuant to Mitigation Sequencing (Section 2.7) to avoid, minimize, and mitigate impacts to critical areas;
 17. A discussion of measures, including avoidance, minimization, and compensation, proposed to preserve existing wetlands and restore any wetlands that were degraded prior to the current proposed land-use activity;
 18. A conservation strategy for habitat and native vegetation that addresses methods to protect and enhance on-site habitat and wetland functions;
- B. Vicinity map drawn to scale and including a north arrow, public roads, and other known landmarks in the vicinity.
- C. A copy of the Cowlitz County wetlands inventory map and the National Wetlands Inventory Map (U.S. Fish and Wildlife Service) identifying wetlands on or adjacent to the site.
- D. Site Map. This map must be drawn to a usable scale, one inch equals 100 feet or better, and must include a north arrow and all of the following requirements:
1. Site boundary/property lines and dimensions;
 2. Wetland boundaries based upon a qualified wetland professional's delineation and depicting sample points and differing wetland types, if any;
 3. Recommended wetland buffer boundary;
 4. Buffers for off-site critical areas that extend onto the project site;
 5. Internal property lines, such as rights-of-way, easements, etc.;
 6. Existing physical features of the site, including buildings and other structures, fences, roads, utilities, parking lots, etc.;
 7. The location of the development proposal, including grading and clearing limits;
 8. Topographical variations.
- E. An on-site wetland delineation report, with data sheets, prepared by a qualified professional. The report shall include photos documenting that the wetland boundaries have been staked and flagged.
- F. Documentation of any other fieldwork performed on the site, e.g., baseline hydrologic data, etc.;
-

- G. A copy of the site plan sheet(s) for the project must be included with the written report and must include, at a minimum:
1. Maps (to scale) depicting delineated and surveyed wetland and required buffers on site, including buffers for off-site critical areas that extend onto the project site; the development proposal; other critical areas; grading and clearing limits; and areas of proposed impacts to wetlands and/or buffers (include square footage estimates).
 2. A depiction of the proposed stormwater management facilities and outlets (to scale) for the development, including estimated areas of intrusion into the buffers of any critical areas.

Appendix B-6. Habitat management plan requirements.

At a minimum, the habitat management plan shall typically contain the following information. Technical justification shall be provided where any information is not deemed applicable by the qualified professional. A qualified professional is defined in Chapter 2 of this Program, Definitions.

- A. A description of state or federally designated endangered, threatened or sensitive fish or wildlife species, or indigenous species of local importance, on site or adjacent to the subject property within a distance typical of the normal range of the species.
 - B. A description of the critical wildlife habitat for the identified species known or expected to be located on site or immediately adjacent to the subject property.
 - C. A site plan that clearly identifies and delineates fish and wildlife habitats found above.
 - D. An evaluation of the project's effects on fish and wildlife habitat both on and adjacent to the subject property.
 - E. A summary of any federal, state, or local management recommendations which have been developed for the critical fish or wildlife species or habitats located at the site.
 - F. A statement of measures proposed to preserve existing habitats and restore wildlife habitat area(s) degraded as a result of the proposed activities.
 - G. A description of proposed measures that mitigate the impacts to wildlife habitats resulting from the proposed project.
 - H. An evaluation of ongoing management practices which will protect fish and wildlife habitats after the project site has been fully developed, including a proposed
-

adaptive management program, in concert with monitoring and maintenance programs of the subject property.

Appendix B-7. Hydrogeologic testing and site evaluation.

If hydrogeologic testing and site evaluation are required, they shall be conducted by a qualified professional and include at least the following. Technical justification shall be provided where any information is not deemed applicable by the qualified professional.

- A. A characterization of the site and its relationship to the aquifer and evaluation of the ability of the site to accommodate the proposed activity;
 - B. A discussion of the effects of the proposed project on groundwater quality and quantity; and
 - C. Recommendations on appropriate mitigation, if any, to assure that there shall be no significant degradation of groundwater quality or quantity.
 - D. In addition, the testing and evaluation must include, but not be limited to, an analysis of:
 - 1. Geologic setting and soils information of the site and surrounding area;
 - 2. Water quality data, including pH, temperature, conductivity, nitrates, and bacteria;
 - 3. Location and depth to perched water tables;
 - 4. Recharge potential of facility site (permeability/transmittancy);
 - 5. Local groundwater flow, direction and gradient; and
 - 6. Surface water locations within 1,000 feet of the site.
-

APPENDIX C
Restoration Plan

COWLITZ COUNTY
Grant No. G1200052

SHORELINE RESTORATION PLAN

for Shorelines in Cowlitz County and the Cities of Castle Rock, Kalama, Kelso, and Woodland



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TABLE OF CONTENTS

1.	Introduction.....	1
1.1.	Purpose.....	1
1.2.	Restoration Plan Requirements	2
1.3.	Types of Restoration Activities	3
1.4.	Restoration Plan Approach	4
2.	Restoration Goals.....	5
3.	Existing Conditions	5
3.1.	Unincorporated Cowlitz County	6
3.1.1.	Columbia River Assessment Unit	6
3.1.2.	Lewis River Assessment Unit.....	6
3.1.3.	Kalama River Assessment Unit	7
3.1.4.	Cowlitz River Assessment Unit	8
3.1.5.	Mill, Abernathy, Germany Creek Assessment Unit	9
3.1.6.	South Fork Chehalis River Assessment Unit.....	9
3.2.	City of Castle Rock.....	9
3.3.	City of Kalama	10
3.4.	City of Kelso	10
3.5.	City of Woodland.....	10
4.	Existing County and City Programs	11
4.1.	Cowlitz County	11
4.1.1.	Comprehensive Plan.....	11
4.1.2.	Public Works	11
4.2.	City of Castle Rock.....	11
4.3.	City of Kalama	12
4.4.	City of Kelso	12
4.4.1.	Comprehensive Plan.....	12
4.4.2.	Public Works	13
4.5.	City of Woodland.....	13
5.	Restoration Partners	13
5.1.	U.S. Army Corps of Engineers	13

5.2.	Northwest Power and Conservation Council Fish & Wildlife Program	14
5.3.	Lower Columbia Fish Recovery Board	15
5.4.	PacifiCorp	16
5.5.	Cowlitz Public Utility District	17
5.6.	Lower Columbia Fish Enhancement Group	17
5.7.	Lower Columbia Estuary Partnership	18
5.8.	Intensively Monitored Watershed Program Partners	18
5.9.	Columbia Land Trust	19
5.10.	Cowlitz Indian Tribe	19
5.11.	Cowlitz Conservation District.....	20
5.12.	Other Volunteer Organizations.....	20
6.	Potential Projects	20
6.1.	Unincorporated Cowlitz County	23
6.1.1.	Columbia River Assessment Unit	23
6.1.2.	Lewis River Assessment Unit.....	26
6.1.3.	Kalama River Assessment Unit	27
6.1.4.	Cowlitz River Assessment Unit	29
6.1.5.	Mill, Abernathy, Germany Creek Assessment Unit	36
6.1.6.	South Fork Chehalis River Assessment Unit.....	38
6.2.	City of Castle Rock.....	38
6.3.	City of Kalama	39
6.4.	City of Kelso	41
6.5.	City of Woodland.....	42
7.	Implementation Strategy	43
7.1.	Local/Regional Planning and Coordination.....	43
7.2.	Funding Opportunities for Restoration.....	43
7.3.	Development Incentives	45
7.4.	Landowner Outreach and Engagement	46
7.5.	Maximizing Mitigation Outcomes	46
7.6.	Monitoring.....	46
8.	References	48
9.	List of Acronyms and Abbreviations.....	50

Appendix A: Maps of Potential Restoration Project Sites

LIST OF FIGURES

Figure 1.	Diagram of the role of restoration relative to achieving the SMP standard of “no net loss” of ecological functions (Ecology 2010).....	3
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LIST OF TABLES

Table 6-1	Restoration opportunities applicable to all Assessment Units.....	21
Table 6-2.	Restoration opportunities in the Lower Columbia River and Estuary	24
Table 6-3.	Restoration opportunities in the North Fork Lewis River.....	26
Table 6-4.	Restoration opportunities in the Kalama River	28
Table 6-5.	Restoration opportunities in the Cowlitz River Assessment Unit.....	30
Table 6-6.	Restoration opportunities in Mill, Abernathy, and Germany Creeks.....	37
Table 6-7a.	Restoration opportunities in and supported by the City of Castle Rock ..	39
Table 6-7b.	Restoration opportunities in the City of Castle Rock.....	39
Table 6-8.	Restoration opportunities in the City of Kalama.....	40
Table 6-9.	Restoration opportunities in the City of Kelso.....	41
Table 6-10.	Restoration opportunities in the City of Woodland.....	43
Table 7-1.	Potential funding sources for shoreline restoration in Cowlitz County.....	44

SHORELINE RESTORATION PLAN

COWLITZ COUNTY AND THE CITIES OF CASTLE ROCK, KALAMA, KELSO, AND WOODLAND

1. INTRODUCTION

The Shoreline Restoration Plan builds on the goals and policies proposed in the Shoreline Master Program (SMP). The Shoreline Restoration Plan provides an important non-regulatory component of the SMP to ensure that shoreline functions are maintained or improved despite potential incremental losses that may occur in spite of SMP regulations and mitigation actions.

The Shoreline Restoration Plan draws on multiple past planning efforts to identify possible restoration projects and reach-based priorities, key partners in implementing shoreline restoration, and existing funding opportunities. The Shoreline Restoration Plan represents a long-term vision for voluntary restoration that will be implemented over time, resulting in ongoing improvement to the functions and processes in the County and cities' shorelines.

Many of the restoration opportunities noted in this plan affect private property. It is not the intent of this plan to require restoration on private property or to commit privately owned land for restoration purposes without the willing and voluntary cooperation and participation of the affected landowner.

1.1. Purpose

The primary purpose of the Shoreline Restoration Plan is to plan for "overall improvements in shoreline ecological function over time, when compared to the status upon adoption of the master program" (WAC 173-26-201(2)(f)). Secondly, the Shoreline Restoration Plan may enable the County and cities to ensure that the minimum requirement of no net loss in shoreline ecological function is achieved on a county-wide basis, notwithstanding any shortcomings of individual projects or activities.

Activities that will have adverse effects on the ecological functions and values of the shoreline must be mitigated (WAC 173-26-201(2)(e)). Proponents of such activities are individually required to mitigate for impacts to the shoreline areas, or agreed-to off-site

mitigation, which as conditioned, is equal in ecological function to the baseline levels at the time each activity takes place. However, some uses and developments cannot be fully mitigated. This could occur when project impacts may not be mitigated in-kind on an individual project basis, such as a new bulkhead to protect a single-family home that can be offset, but not truly mitigated in-kind unless an equivalent area of bulkhead is removed somewhere else. Another possible loss in function could occur when impacts are sufficiently minor on an individual level, such that mitigation is not required, but are cumulatively significant. Additionally, unregulated activities (such as operation and maintenance of existing legal developments) may also degrade baseline conditions. Finally, the SMP applies only to activities in shoreline jurisdiction, yet activities upland of shoreline jurisdiction or upstream or downstream in the watershed may have offsite impacts on shoreline functions.

Together, these different project impacts may result in cumulative, incremental, and unavoidable degradation of the overall baseline condition unless additional restoration of ecological function is undertaken. Accordingly, the Shoreline Restoration Plan is intended to be a source of ecological improvements implemented voluntarily by the County, cities, and other government agencies, developers, non-profit groups, and property owners within shoreline jurisdiction to ensure no net loss of ecological function, and to result in an improvement of ecological function (Figure 1).

1.2. Restoration Plan Requirements

This Restoration Plan has been prepared to meet the purposes outlined above, as well as specific requirements of the SMP Guidelines (Guidelines). Specifically, WAC Section 173-26-201(2)(f) of the Guidelines says:

- (i) Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration;
- (ii) Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions;
- (iii) 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;
- (iv) Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs;

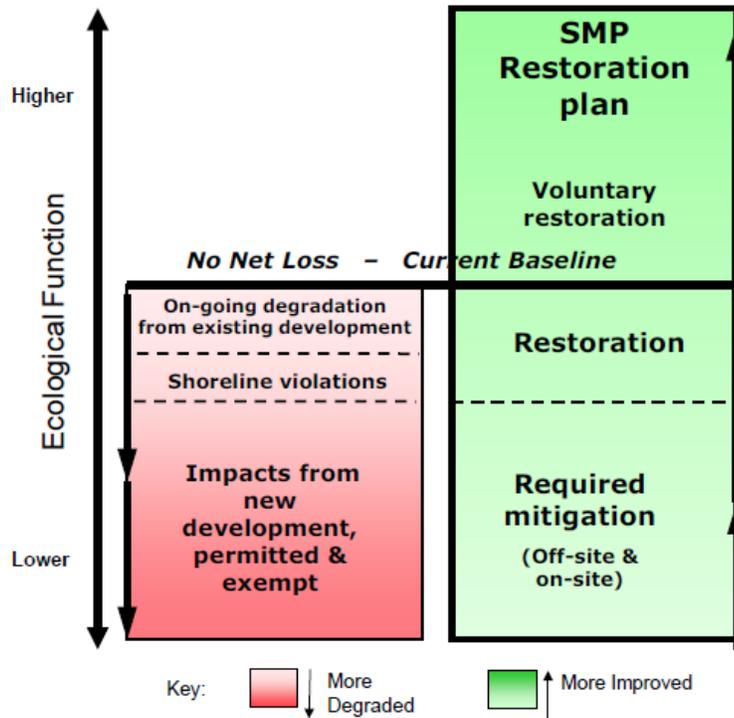


Figure 1. Diagram of the role of restoration relative to achieving the SMP standard of “no net loss” of ecological functions (Ecology 2010)

- (v) Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals;
- (vi) 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.

In addition to meeting the requirements of the Guidelines, this Restoration Plan is intended to identify and prioritize areas for future restoration and mitigation, support applications for grant funding, and to identify the various entities and their roles working within the County and cities to enhance the shoreline environment.

1.3. Types of Restoration Activities

Consistent with Ecology’s definition, the use of the word “restore” in this document encompasses a suite of strategies that can be approximately delineated into five categories:

- Creation: Establishment of new shoreline resource functions where none previously existed.

- Re-establishment: Restoration of a previously existing converted resource that no longer exhibits past functions.
- Rehabilitation: Restoration of functions that are significantly degraded.
- Enhancement: Improvement of functions that are somewhat degraded.
- Preservation: Protection of an existing high-functioning resource from potential degradation. Preservation is often achieved through conservation easements or the purchase of land.

Restoration can sometimes be confused with mitigation. Mitigation is defined by WAC 197-11-768 as the sequential process of avoiding, minimizing, rectifying and reducing impacts, as well as compensating for unavoidable impacts and monitoring the impact.

1.4. Restoration Plan Approach

As directed by the SMP Guidelines, the following discussions include: restoration goals and objectives; a summary of baseline shoreline conditions; existing County and local plans and programs that facilitate restoration actions; identification of the County's partners in restoration; and ongoing and potential projects that positively impact the shoreline environment. The Restoration Plan also identifies anticipated funding and implementation of restoration elements.

This Shoreline Restoration Plan is focused on restoration projects that are reasonably likely to occur in the foreseeable future, and restoration opportunities are not limited to those identified in this plan. Potential restoration opportunities were identified based on existing restoration planning document recommendations, including the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan (LCFRB 2010a), the Salmon and Steelhead Limiting Factors Reports, the Habitat Work Schedule (hws.ekosystem.us), and other salmon recovery Lead Entity planning documents, as well as input from Cowlitz County, participating cities, and restoration partners. Many of these restoration planning documents include protection of intact functions and processes as an integral component to restoration planning. Therefore, although protection is distinct from restoration at the site level, restoration opportunities presented in this document also include opportunities to protect high functioning areas.

In many cases, recommendations apply broadly to watershed areas (for example, "Protect existing rearing habitat to ensure no further degradation"). In this case, the Integrated Watershed Assessment in the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, as well as functional analysis in the *Shoreline Analysis Report*

can be used to identify high functioning areas that could benefit from protection (through regulatory or voluntary measures), as well as low to moderately functioning areas that may benefit from restoration actions.

The restoration opportunities identified in this plan are focused primarily on publicly owned open spaces and natural areas. Any restoration on private property would occur only through voluntary means or through re-development proposals.

2. RESTORATION GOALS

This plan establishes a basic framework for restoring the County's shoreline resources over time. The following goals have been identified in the County's existing comprehensive plan and shoreline master program. These may be updated once new document goals are available.

Comprehensive Plan Goals

- Conserve unique wildlife habitats, natural features, and recreation areas of Cowlitz County.
- Retain wherever possible, wetland and shoreland areas in their natural state, for the maintenance and production of wildlife and recreation uses.

Shoreline Master Program Goals

- Maintain a high quality environment along the shorelines of Cowlitz County.
- Preserve and protect those fragile and natural resources, and culturally significant features along the shorelines of Cowlitz County.
- Restore damaged features or ecosystems to a higher quality than may currently exist.
- Preserve unique and non-renewable resources.

3. EXISTING CONDITIONS

The *Shoreline Analysis Report* (TWC and Parametrix 2013) describes existing physical and biological conditions in the shoreline area within County and City limits, including identification of lower and higher functioning areas and recommendations for restoration of ecological functions where they are degraded. Degraded areas in shoreline jurisdiction are summarized below, organized by Shoreline Assessment Unit (as identified in the *Shoreline Analysis Report*).

3.1. Unincorporated Cowlitz County

3.1.1. Columbia River Assessment Unit

Key degraded functions include floodplain disconnection and in-stream habitat diversity. Lower scoring reaches in the Columbia River represent areas of intensive transportation (Port and railroad) infrastructure, with limited shoreline vegetation, levees, overwater structures, and extensive impervious surfaces. Because of the intensive industrial development in these reaches, there may be opportunities for enhancement; however, large scale rehabilitation of functions in these reaches is unlikely. As such, an effective restoration strategy for the Columbia River Assessment Unit should balance enhancement of highly impaired areas with rehabilitation or protection of less impacted areas.

In general, the islands and confluences of major river mouths with the Columbia River provide some of the least altered shoreline habitats in the assessment unit. Both Fisher and Cottonwood Islands are designated as Corps dredge disposal sites. Other high functioning reaches include undeveloped wetland areas south of the Cowlitz River mouth and near the mouths of the Kalama and Lewis Rivers. Protection of these high functioning areas should be a priority.

3.1.2. Lewis River Assessment Unit

The Salmon and Steelhead Limiting Factors report for WRIA 27 (Wade 2000b) identifies the Lewis River dam network as the primary limiting factor for salmonid habitat in this area. The three mainstem dams alter the natural hydroperiod of the lakes and downstream areas, limit longitudinal connectivity in the watershed, create fish passage barriers, and restrict downstream transport of sediment and large woody debris. Planned and ongoing actions by PacifiCorp to mitigate for impacts to fish passage and habitat alterations will be instrumental in maintaining and improving shoreline functions in the Lewis River (see Section 3.1.2).

In addition to dam impacts, floodplain connectivity, instream habitat complexity, and riparian vegetation are also key factors limiting functions in the Lewis River Assessment Unit. Ecological functions in the reaches in the lower Lewis River downstream from the City of Woodland (Shoreline Analysis Reaches 1-5) are significantly degraded. The shorelines in these lower reaches are lined with levees, devoid of native vegetation, and lack habitat complexity. Despite significant degradation of natural shoreline functions of the lower Lewis River, the agricultural fields in the area do likely provide winter foraging habitat for migratory waterfowl. These reaches also experience tidal influence from the Columbia River estuary, and therefore have the potential to provide low

energy rearing habitats for juvenile salmon, although the lack of shoreline complexity significantly limits the realization of such potential.

There are several key reaches that provide significant habitat functions in the Lewis River Assessment Unit. These areas include off-channel habitat surrounding Eagle Island; the Lewis River mainstem reach between Cedar Creek and Merwin Dam; Cedar Creek watershed and the lower reaches of Johnson, Ross, Robinson, and Colvin creeks; wetland complexes in the lower 2 miles of the South Fork Chelatchie Creek; and backwater slough areas above the Lewis River Salmon Hatchery (Wade 2000b). These areas should be prioritized for habitat protection and enhancement, as appropriate.

3.1.3. Kalama River Assessment Unit

Functional scores identified in the *Shoreline Analysis Report* were consistently higher functioning throughout the Kalama River basin compared to other assessment units in the County on account of the forested nature of much of the Kalama watershed.

The lower Kalama River has the most impaired functions in the assessment unit. A study of the lower 10 miles of the Kalama River conducted in Phase II of the LCFRB Watershed Assessment Project (R2 and MBI 2004) found that natural geomorphic processes are severely limited in the lower Kalama River. These processes are impaired by armoring and levees that cover the majority of the shoreline length; much of the armoring is designed to protect Kalama River Road, which parallels the lower Kalama River. As a result of development and channelization of the river the density of large woody debris is poor in the lower River.

Approximately 96 percent of the Kalama River Watershed is managed for forest production; therefore, forestry practices have a significant effect on shoreline functions in the watershed. In smaller tributaries in particular, areas of forest harvest occur on both sides of the stream, and vegetated buffers are smaller compared to the mainstem Kalama. Fish passage barriers also present a significant impairment to shoreline functions in the Kalama River Assessment Unit.

Areas with significant habitat value for salmonids include the following: mainstem Kalama between Lower Kalama Falls (RM 10) to around Modrow Bridge (RM 2.4); upper mainstem Kalama River (RM 10 to RM 35), tributaries below Lower Kalama Falls and any remaining off-channel habitat; Gobar Creek, Wildhorse Creek, North Fork Kalama, Langdon Creek, and Lakeview Peak Creek (Wade 2000b).

3.1.4. Cowlitz River Assessment Unit

As noted in the Lower Cowlitz River and Floodplain Habitat Restoration Siting and Design Report (Tetra Tech 2007), primary limitations on restoration in the Lower Cowlitz are the high sediment load in the upper Toutle River, the regulation of flows, and existing and proposed development within the floodplain and along the riparian zone.

The North Fork Toutle River and upper South Fork Toutle River still maintain an extremely high sediment load resulting from the 1980 eruption of Mount St. Helens, particularly on the North Fork Toutle River upstream of the Corps' Sediment Retention Structure. The high sediment load has resulted in a broadly braided and frequently migrating channel. Because these braided channels each convey a relatively small portion of the total flow and because each channel is wide relative to its depth, the sediment plain can act as a fish barrier, preventing upstream migrations during low flow conditions (AMEC 2010).

The Shoreline Analysis Report identified reaches just north of the City of Kelso (Shoreline Analysis Cowlitz reaches 9-13), as impaired compared to other reaches in the Assessment Unit. The Cowlitz River is artificially constrained by levees in these reaches and shoreline vegetation is limited. Other degraded reaches include highly developed reaches along Silver Lake (Shoreline Analysis Cowlitz Reaches 105, 111, and 112), which have a high density of overwater structures and other shoreline modifications. Several sites along the Cowlitz River were used as dredge disposal locations following the eruption of Mount Saint Helens in 1980. These sites occur in several locations on both sides of the river between the City of Kelso and Castle Rock. Today, these disposal sites remain unvegetated, and former floodplain areas are disconnected as a result of the disposal activities. The 1980 event also impacted tributaries, leaving them disconnected as a result of mud flows. Many of these tributaries are still in the process of recovering, as dredge spoil stockpiles were located directly on their banks. Ongoing erosion of these stockpiles adds to the fine sediment accumulation and poor water quality in the Cowlitz River.

In contrast to the artificially confined reaches in the lower Cowlitz River, shoreline areas near the northern County border occur on a broad floodplain with significant riparian wetland areas. Wetland areas in the vicinity of the Horseshoe Bend area, south of Castle Rock also provide high functioning, riverine wetland habitats (Shoreline Analysis Cowlitz Reaches 15 and 16). Similarly, undeveloped reaches of Silver Lake (Shoreline Analysis Cowlitz Reaches 104, 106-110, 113-116) have high hydrologic, vegetated, and

habitat functions resulting from the large areas of relatively undisturbed forested and shrub wetlands.

3.1.5. Mill, Abernathy, Germany Creek Assessment Unit

Ecological functions in Mill, Abernathy, and Germany Creeks are primarily influenced by forest harvest activities, agriculture, and rural residential development. The Shoreline Analysis Report did not identify any particularly low functioning reaches in this Assessment Unit. However, fish passage barriers in Germany and Coal Creeks block nearly one third of potential instream habitat, and correction of those barriers is a significant restoration opportunity.

3.1.6. South Fork Chehalis River Assessment Unit

Dominant land use in the upper South Fork is commercial forestry, and agricultural uses predominate in the lower river. Both agricultural and forestry uses have resulted in significant alterations to the shorelines of the South Fork Chehalis River. Degraded riparian vegetation, high sediment loads originating from the upper watershed, and a high density of fish passage barriers are the primary impairments in the upper watershed (Chehalis Basin Partnership Habitat Work Group 2008).

3.2. City of Castle Rock

As a result of sediment deposition from the 1980 Mount Saint Helens eruption, the Cowlitz River within the City of Castle Rock includes alluvial gravel bars on the inner bends of the River. Additionally, the tributaries of the Salmon, Whittle, Arkansas, and Janish Creeks were backed up with mud flow from the 1980 eruption, minimizing their effectiveness for fish habitat, wetland, and riparian functions. The continued loading of dredge spoils on stream banks as stockpile areas prolongs their ability to recover. The downtown core of the City of Castle Rock is surrounded by a ring levee, which limits hydrologic functions.

Vegetation is limited to a relatively narrow forested riparian corridor along much of the City's shoreline. "The Rock" community park includes substantial forested vegetation extending up to 500 feet from the river. A dredge disposal site, in Shoreline Reach 19 is sparsely vegetated. Salmon Creek and Arkansas Creek within the City's shoreline jurisdiction have narrow bands of forested riparian vegetation. Although not confined by armoring or a levee, Salmon Creek borders the railway, and is artificially confined to its present course.

3.3. City of Kalama

The shoreline along the Columbia River in the City of Kalama and its UGA is lined with levees or other shoreline armoring and shoreline vegetation is substantially limited. Over- and in-water structures are present throughout the Columbia River reaches, associated with Port properties. Wetlands north of the Kalama River in the City's UGA have important habitat and water quality functions.

Shoreline functions are significantly better on the Kalama River in the City. A narrow wetland situated between Interstate 5 and the railway provides important water quality functions. The majority of the shoreline area on Kress Lake (Reach 29) is well vegetated, with little human disturbance of functions.

3.4. City of Kelso

The entire Cowlitz River shoreline in the City and its UGA are impaired by shoreline armoring and levees. The series of levees has channelized the lower Cowlitz has channelized the lower Cowlitz River, and ongoing levee maintenance results in limited shoreline vegetation. A railway parallels the Cowlitz River, and further limits any shoreline vegetation functions along most of the Cities reaches.

Similarly, a levee isolates the Coweeman River from its northern shoreline for its entire length within the City. Hydrologic connectivity is better on the southern (left) bank of the River and within the eastern UGA where shoreline vegetation and habitat are more diverse. In the eastern UGA, Hart Lake (Shoreline Analysis Cowlitz Reach 44) includes a large wetland area, but much of the vegetation is mowed, which limits vegetative functions. This area represents significant restoration potential.

The shoreline area at the confluence of the Cowlitz and Columbia River includes substantial area of intact wetland habitat, and this area is ecologically significant and relatively high functioning, although functions are impaired by a levee at the northern portion of the reach.

3.5. City of Woodland

Riparian vegetation is limited in the City's core downtown area. The levee that separates Shoreline Analysis Reach 12 from the River acts to channelize the River through the City's core area.

The City's shoreline on Horseshoe Lake is developed with roads, parks, and residential and commercial development. At least eighteen overwater structures are present on Horseshoe Lake, associated with existing residential development.

Shoreline areas north of the City's core (Shoreline Analysis Lewis Reaches 13 and 15) provide the most densely vegetated forested shoreline in the City. These reaches also provide some of the highest hydrologic functions in the City because they provide hydrologically connected floodway areas.

4. EXISTING COUNTY AND CITY PROGRAMS

4.1. Cowlitz County

4.1.1. Comprehensive Plan

The County Comprehensive Plan, adopted by the Board of County Commissioners on November 1, 1976, is a statement of policies and goals that guides growth and development throughout the County. All other development ordinances, including land use, subdivision, and environmental regulations must be consistent with the Comprehensive Plan. The County is currently in the final phases of the process of drafting its Comprehensive Plan Update.

The Final Vision Report (MPC and EA Blumen 2010) of the proposed Comprehensive Plan states, "We value our strengths: our historic rural and small town character and our irreplaceable natural environment – mountains, forests, agricultural and mineral lands; streams, lakes and shorelines; and plentiful clean air and water. Conservation of these features contributes to our economic well-being, sense of place and relationship to nature."

4.1.2. Public Works

National Pollution Discharge Elimination System (NPDES)

On February 16, 2007, Cowlitz County was issued a NPDES phase II Municipal Stormwater Permit. This permit requires the County to develop and implement a program to reduce stormwater runoff and pollution in unincorporated urban areas adjacent to the cities of Longview and Kelso. The Stormwater Management Plan (SWMP) was updated in 2012. Activities associated with the stormwater permit include outreach and education, public involvement, and illicit discharge detection and elimination.

4.2. City of Castle Rock

The City updated its Comprehensive Plan in 2006. Citing the significance of lands both within the City limits and in the surrounding area of influence, the Plan extends beyond the City limits to address the area within a designated Urban Growth Boundary. The

Environment Element of the Comprehensive Plan states, “Natural amenities including the Cowlitz River, forested hillsides, riverfront property, abundant fish and wildlife and many other factors all contribute significantly to the City’s atmosphere and success. This chapter attempts to balance protection of critical areas and other natural amenities with the goals and policies found throughout the comprehensive plan.” The City of Castle Rock and Castle Rock School District Park and Recreation Plan, which outlines a standard for quality of life and environment enhancements was adopted by reference into the Comprehensive Plan. The city approved the Castle Rock Riverfront Park Master Plan as an appendix to the Park and Recreation plan. This Master plan included many opportunities to turn the negative impacts of the dredge spoils from the eruption of Mount Saint Helens into as asset for both public enjoyment and enhancement of fish and wildlife habitat. Many of the projects in this Master plan have been achieved, including three habitat improvement projects on the Whittle Creek, many bank improvements on the Cowlitz River with managed access (including an environmentally preferred boat launch).

4.3. City of Kalama

The Kalama City Council adopted a revised Kalama Comprehensive Plan on December 7, 2005. The City of Kalama is beginning to develop a growth management area similar to an official Urban Growth Boundary to help guide its growth and development. The Comprehensive Plan includes goals to balance economic growth with environmental protection. These goals include the following:

- Protect areas that are generally not suitable for intensive development such as those prone to landslides, flooding and/or containing wetlands and/or other critical areas.
- Seek to restore natural systems and environmental functions that have been lost or degraded, when feasible.
- Conserve and protect groundwater and maintain good quality surface water.
- Provide for the preservation and restoration of significant natural sites and locations.

4.4. City of Kelso

4.4.1. Comprehensive Plan

The Comprehensive Plan for the City of Kelso was adopted in 1980, with chapter updates in 1987 and 1992. Goals in the Comprehensive Plan are directed toward ensuring economic growth and security, public access, and environmental protection.

4.4.2. Public Works

The City of Kelso implements a Stormwater Management Plan to comply with its Phase II NPDES permit. Activities include education and outreach, illicit discharge detection and elimination, and stormwater management and monitoring programs. The City has also investigated the potential for application of Low Impact Development (LID) techniques within the City.

4.5. City of Woodland

A study completed in 2000 evaluated the City's flood hazard and drainage issues and identified recommended solutions (RW Beck 2000). Study goals included the following:

- Prevent property damage from flooding;
- Maintain good water quality;
- Preserve sensitive resources and maintain varied use; and
- Develop a continuous and comprehensive program for managing surface water.

Recommendations in the plan included both non-structural and structural recommendations. Non-structural recommendations included strengthening regulations, developing public education and outreach measures, and conducting studies and monitoring. Capital improvement projects were generally focused on improving structural stormwater drainage systems.

5. RESTORATION PARTNERS

In addition to the County and cities, state, regional, and local agencies and organizations are actively involved in shoreline restoration, conservation, and protection in and around Cowlitz County. These partners and their local roles in shoreline protection and/or restoration are identified below and generally organized in order by the scope of the organization, from the larger state and watershed scale to the local scale.

5.1. U.S. Army Corps of Engineers

The Corps of Engineers owns and operates the federal dams on the Columbia River and it constructed and maintains the Toutle River Sediment Retention Structure (SRS). As a result of the Federal Columbia River Power System (FCRPS) Biological Opinion, the Corps is obligated to mitigate for its impacts to listed fish species. The Corps is proposing to raise the SRS to limit downstream sedimentation and to conduct maintenance dredging as needed to limit flood risks for cities along the Cowlitz River. The Corps will need to mitigate for impacts to upstream habitats along the Toutle River

and for dredging effects. Specific mitigation measures have not yet been identified. The Corps has also conducted mitigation through habitat restoration projects along the Columbia River to compensate for the effects of dredging to deepen the navigation channel there.

In addition to planning for and funding restoration in the lower Columbia River and its tributaries, the Corps funds ongoing research, monitoring and evaluation studies in the Lower Columbia River as part of its mitigation responsibilities.

The Corps is also engaged in a General Investigation study to recommend approaches to restore ecosystem functions in the lower Columbia River and estuary, including “wetland/riparian habitat restoration, stream and fisheries improvement, water quality, and water-related infrastructure improvements” (Corps 2012). Congress authorized the General Investigation in 2000, and work was first initiated in 2003, and later reinitiated in 2012. Projects being evaluated include floodplain reconnections, channel habitat restoration, and riparian restoration (Corps 2013). Initial projects identified include six areas in the Columbia River Estuary, five areas in tributaries in Washington State, and three areas in tributaries in Oregon (Corps 2013). Projects on the Columbia River include an area bordering Cowlitz and Wahkiakum Counties, and an area between the Cities of Kalama and Woodland. Project areas identified in Columbia River tributaries in Cowlitz County include the entire Cowlitz River up to Mayfield Lake, as well as the lower Toutle River and lower Coweeman River, and a portion of the Lewis River just upstream from the City of Woodland (Corps 2013). An alternatives analysis will be completed to evaluate and select the preferred alternative.

5.2. Northwest Power and Conservation Council Fish & Wildlife Program

The Northwest Power and Conservation Council (NPCC) is a multi-state planning agency responsible for balancing the ecological impacts of energy production in the northwest. Current hydropower programs and operations are engaged in activities to minimize the ongoing impacts of flow regulation on the ecological processes of the Columbia River and its tributaries. These actions are generally the result of obligations under the Endangered Species Act (Section 7 consultations, Section 10 Habitat Conservation Plans (HCPs)) or Federal Energy Regulatory Commission (FERC) relicensing, and therefore, these actions are technically mitigation for ongoing impacts rather than voluntary restoration.

The Council guides Bonneville Power Administration's (BPA's) funding of projects to implement the fish and wildlife program. Projects that are conducted using these funds,

no matter how indirectly related to hydropower impacts, are also a part of mitigation for ongoing dam impacts. Nevertheless, it is expected that despite the funding source, such projects will improve ecosystem functions above the existing functional baseline, and as such, these projects would be considered as restoration within the framework of the County's SMP.

In 2009, the NPCC updated its Columbia River Basin Fish and Wildlife Program. The program identifies impacts to fish and wildlife resulting from hydropower operations in the Columbia Basin, and it identifies strategies to study, monitor, and mitigate those impacts. The project funding agenda identified for the program includes the following:

1. Anadromous Fish, Resident Fish, and Wildlife
 - Bonneville will fulfill its commitment to “meet all of its fish and wildlife obligations.” Funding levels should take into account the level of impact caused by the federally operated hydropower system and focus efforts in areas most affected by operations.
2. Land and Water Acquisition Funds
 - Water transaction program: Bonneville established a water transactions program in response to the 2000 Columbia River Basin Fish and Wildlife Program and the 2000 FCRPS Biological Opinion. Bonneville shall fund the continuation of the water transaction program to pursue water right acquisitions in subbasins where water quantity has been identified in a subbasin plan as a primary limiting factor. The water transaction program will continue to use both temporary and permanent transactions for instream flow restoration.
 - Land acquisition fund: Bonneville shall fund a basinwide land acquisition program, which will include, but not be limited to, riparian easements and fee-simple acquisitions of land that protects watershed functions.

5.3. Lower Columbia Fish Recovery Board

The Lower Columbia Fish Recovery Board (LCFRB) is the Lead Entity for salmon restoration in watersheds throughout most of Cowlitz County and watersheds to the east, extending to the Little White Salmon River, and to the west to the mouth of the Columbia River.

In 2010, the LCFRB, in coordination with regional partners, produced the Washington Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan. The Plan provides an integrated approach to addressing salmon recovery, watershed planning,

and Northwest Power and Planning Fish and Wildlife Subbasin Plans. The Plan used a two-pronged approach to evaluate existing conditions and restoration potential. First, an Integrated Watershed Assessment (IWA) approach was applied at the sub-basin scale to assess the need for restoration or protection and the relative priority of the action in the watershed. In addition, the Plan identified habitat factors affecting salmonid production, and developed stream priority rankings based on prioritized salmon populations and habitat factors using an Ecosystem Diagnosis and Treatment (EDT) approach. The EDT approach assesses habitat factors to rank priority areas for achieving population targets for salmon recovery. Population targets were based on scientific, biological, social, cultural, political and economic factors. Based on the results of the EDT analysis, stream reaches were identified by their treatment priority, where Tier 1 represents the highest priority, and Tier 4 represents the lowest priority for salmon recovery. Recovery plan reach priorities are mapped in Appendix A. Reach locations differ between the Shoreline reaches and the Salmon Recovery reaches because the Shoreline Analysis Report identified reaches based on land use considerations as well as stream characteristics, whereas Salmon Recovery stream reach break locations were located at every tributary confluence. Detailed information on the results of the IWA and EDT analyses can be found in Appendix E of the Lower Columbia Recovery Plan (LCFRB 2010).

5.4. PacifiCorp

As a part of its Federal Energy Regulatory Commission relicensing process, PacifiCorp engages in fish passage projects, fish population supplementation programs, habitat enhancement, monitoring, and funding of restoration projects in the Lewis River Basin.

In 2012, PacifiCorp completed installation of new facilities to transfer anadromous fish upstream from the base of Merwin Dam to above Swift #2, opening 117 miles of spawning habitat. The new facilities will also transfer juvenile salmonids downstream past the dams.

In 2008, PacifiCorp developed a Shoreline Management Plan in 2008 for the three major reservoirs in the upper Lewis River. The PacifiCorp Shoreline Management Plan applies to lands extending from the Ordinary High Water Mark (OHWM) to the elevation 10 feet above the OHWM. PacifiCorp owns many of the lands within the Shoreline Management Plan boundary area, and it holds flowage easements on the other lands. The PacifiCorp Shoreline Management Plan was not developed to meet the regulatory requirements of the Shoreline Management Act, but it has many parallels that are consistent with the Shoreline Management Act standards.

5.5. Cowlitz Public Utility District

The Cowlitz Public Utility District (PUD) owns the Swift #2 dam on the Lewis River. As part of its 2008 relicensing agreement, Cowlitz PUD agreed to conduct the following activities, either individually or in coordination with PacifiCorp, which manages the dam operations:

- reintroduce anadromous salmon above Swift Reservoir (complete-see description above)
- fund three salmon hatcheries (ongoing)
- fund aquatic habitat improvement projects (ongoing)
- ensure minimum flows to the North Fork Lewis River between Swift No. 1 and Swift No. 2 dams (ongoing)
- monitor water quality (ongoing)
- manage 525 acres of wildlife habitat (ongoing)

5.6. Lower Columbia Fish Enhancement Group

The Lower Columbia Fish Enhancement Group (LCFHG) is active throughout Cowlitz County as part of its mission to create and implement restoration and salmon recovery strategies through community partnerships. The organization promotes private stewardship and volunteerism through education and outreach, and concentrates funds on salmon recovery, assessment, and habitat restoration, often in partnership with other entities.

General elements of LCFEG's strategic plan are development of relationships with key shareholders; building financial and volunteer support through education and outreach programs; assisting the Lower Columbia Salmon Recovery Board, WDFW, and NOAA Fisheries in identifying, prioritizing, and implementing salmon restoration projects; increase program funding and hire and train staff; and expand the board to include a range of active members from a wide variety of backgrounds.

LCFEG sponsored efforts to identify limiting factors for salmon populations and restoration opportunities in the Lower Cowlitz River (Power and Tyler 2009) and the Kalama River basin (Tetra Tech 2007). The resulting documents provided lists of prioritized restoration opportunities (see Tables 5-4 and 5-5).

LCFEG is the primary sponsor of nutrient enhancement efforts that include the Kalama, Cowlitz, and Lewis watershed. This ongoing collaborative effort utilizes several funding sources (Pacific Salmon Commission, BPA, and/or PacifiCorp) and a wide range of volunteers groups to implement the collection and disperse of salmon carcasses. The

LCFEG recently completed an off-channel habitat enhancement projects on the Lower Kalama River and the North Fork Lewis River. Additional habitat enhancement projects are planned for the near future (see Tables 5-4 and 5-5).

5.7. Lower Columbia Estuary Partnership

The Lower Columbia Estuary Partnership (LCEP) administers a Habitat Restoration Program to protect and restore habitat functions and support salmon recovery in the lower Columbia River estuary, between Bonneville Dam and the mouth of the river. The organization's overall strategy is to take a widespread teaming approach to implement scientifically sounds projects, as well as fund partners' projects. LCEP takes a regional approach to habitat restoration, participates in the efforts of other restoration entities, including watershed councils, land trusts, and non-profits.

LCEP produced the Management Plan for the Lower Columbia River; actions recommended in the plan are listed in Section 6.1.1 Key habitat work led by the organization includes creating fish habitat with large woody debris, restoring riparian vegetation, and removing fish barriers. LCEP also conducts ecosystem condition monitoring, tracking toxins and habitat, as well as monitoring the success of restoration projects. They've produced several map sets using monitoring data, and make the spatial information available to the public, along with reports and publications. Volunteers are utilized for restoration and monitoring work. Finally, LCEP conducts education programs in school classrooms and through field trips.

Current LCEP projects in shoreline area are reference site monitoring at the mouth of the Lewis River, Dredge Spoil Island habitat monitoring, and Martin Island habitat monitoring.

5.8. Intensively Monitored Watershed Program Partners

The Intensively Monitored Watershed (IMW) project is a joint effort of the Washington Departments of Fish and Wildlife, Ecology, NOAA Fisheries, the Environmental Protection Agency, Lower Elwha Klallam Tribe and Weyerhaeuser Company. Funding for the IMW program is provided by the Washington Salmon Recovery Funding Board. The Mill, Abernathy, Germany watershed is one of three IMWs in the state. The IMW cooperators collected water quantity, water quality, habitat, summer juvenile fish abundance, and smolt production data and are identifying specific restoration actions for each IMW treatment watershed. An updated plan for monitoring fish and habitat responses to restoration was proposed for Lower Columbia watersheds in 2012 (Zimmerman et al. 2012).

5.9. Columbia Land Trust

The Land Trust, a non-profit in place since 1990, works throughout the Columbia River Region. The organization works collaboratively with private landowners, local governments, and other non-profits to develop stewardship plans that restore degraded habitat and protect natural resources. Private landowners who work with the Trust are generally conservationists, ranchers, farmers, foresters, and orchardists. Land acquisition and forest planning are major parts of the Trust's effort; more local efforts include a backyard habitat certification program, outreach events, and volunteer work crew events.

Land Trust work within Cowlitz County shoreline jurisdiction includes a recent two-phase acquisition and restoration on Germany Creek. More than 185 acres floodplain, riparian, and upland habitat have been removed from the threat of development and placed in permanent protection. Additional onsite improvements, including log placement, off-channel habitat enhancement, and invasive weed removal, will help restore rearing, spawning, and migrating habitat for salmonids.

5.10. Cowlitz Indian Tribe

The Tribe focuses protection and restoration actions on culturally relevant species and landscapes. Key in their mission is to work to educate and inspire the community to promote their mission of conservation. The Tribe specifically recognizes elk, deer, mountain goat, salmon, eulachon, sturgeon and lamprey as important species to the Cowlitz people. Landscapes of significance that may occur within shoreline jurisdiction include estuaries; freshwater lakes and wetlands; the Cowlitz, Lewis, and Kalama Rivers and their tributaries; deciduous and coniferous forest; sub-alpine meadows; and mountains.

The Tribe is presently engaged in several restoration projects in Cowlitz County, including two active projects on Abernathy Creek and two active side channel restoration projects at Eagle Island on the North Fork Lewis River. An additional project is presently proposed on Abernathy Creek. Projects on Abernathy Creek consist of abandoned roadbed removal to restore floodplain and channel migration zone connectivity and restoration of two acres of riparian wetlands and a side channel to created wintering habitat and high-flow refugia for steelhead and coho. The proposed project on Abernathy Creek would install large wood for instream habitat enhancement. Projects are described further in Section 6.

5.11. Cowlitz Conservation District

The Conservation District works through two primary avenues. First, the District works with communities to implement projects on a watershed scale. Projects focus on salmon recovery, water quality, and invasive weed removal. A basin-wide effort to implement all three types of projects is presently in place in the Mill-Abernathy-Germany area. Secondly, the District provides technical and financial assistance to individual landowners throughout the County to promote sound management of natural resources, advising on restoration, salmon needs, and forestry issues. The District works directly with landowners and provides information through watershed plans, timber plans, and farm plans.

The District has been a partner in the Cowlitz/Wahkiakum watershed planning effort, which defined strategies to best collect and compile data in order to identify limiting factors. This ongoing approach has identified fish barrier improvements, riparian restoration projects, in-stream habitat enhancement, livestock exclusion, and other potential restoration projects to address limiting factors, particularly in the Kalama and Lewis Rivers and Mill Creek. Currently funded projects by the District include the installation of woody debris in several reaches of Abernathy Creek to restore habitat and reduce flow and erosion.

5.12. Other Volunteer Organizations

Many recreational groups and private organizations are active in Cowlitz County. While some of these groups may not have historically worked in the shoreline jurisdiction of Cowlitz County, this does not preclude involvement in voluntary restoration activities in the future. Probably the most important volunteer is the landowner that acts as a steward of the land following the completion of the project. Potentially active groups include:

- Columbia River Keeper
- Lower Columbia Basin Audubon Society
- Trout Unlimited
- Ducks Unlimited

6. POTENTIAL PROJECTS

The Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan (LCFRB 2010a) identified several actions applicable to shoreline areas throughout Cowlitz County.

Some of these actions apply to programs or regulations, while others relate to projects that could be implemented at many sites throughout the watershed (Table 6-1).

Table 6-1 Restoration opportunities applicable to all Assessment Units.

	Action	Status	Entity
Land Use Planning/Regulations	Expand standards in local government comprehensive plans to afford adequate protections of ecologically important areas (i.e. stream channels, riparian zones, floodplains, CMZs, wetlands, unstable geology)	Expansion of existing program	County, Cities
	Manage future growth and development patterns to ensure the protection of watershed processes. This includes limiting the conversion of agriculture and timber lands to developed uses through zoning regulations and tax incentives (consistent with urban growth boundaries)	Expansion of existing program	County, Cities
	Prevent floodplain impacts from new development through land use controls and Best Management Practices	New program	County, Cities, Ecology
	Fully implement and enforce the Forest Practices Rules (FPRs) on private timber lands in order to afford protections to riparian areas, sediment processes, runoff processes, water quality, and access to habitats	Activity is currently in place	WDNR
	Conduct forest practices on state lands in accordance with the Habitat Conservation Plan in order to afford protections to riparian areas, sediment processes, runoff processes, water quality, and access to habitats	Activity is currently in place	WDNR
	Review and adjust operations to ensure compliance with the Endangered Species Act; examples include roads, parks, and weed management	Expansion of existing program	County, Cities
Funding/ Technical Assistance	Increase funding available to purchase easements or property in sensitive areas in order to protect watershed function where existing programs are inadequate	Expansion of existing program	LCFRB, NGOs, WDFW, USFWS, BPA (NPCC)
	Increase technical assistance to landowners and increase landowner participation in conservation programs that protect and restore habitat and habitat-forming processes. Includes increasing the incentives (financial or otherwise) and increasing program marketing and outreach	Expansion of existing program	NRCS, C/WCD, WDNR, WDFW, LCFEG, County, Cities
	Increase technical support and funding to small forest landowners faced with implementation of Forest and Fish requirements for fixing roads and barriers to ensure full and timely compliance with regulations	Expansion of existing program	WDNR
Protection/Restoration Projects	Create and/or restore lost side-channel/off-channel habitat for chum spawning and coho overwintering	New program	LCFRB, BPA (NPCC), NGOs, WDFW, NRCS, C/WCD
	Implement the prescriptions of the WRIA Watershed Planning Units regarding instream flows	Activity is currently in place	Ecology, WDFW, WRIAs, County, Cities
	Increase the level of implementation of voluntary habitat enhancement projects in high priority reaches and subwatersheds. This includes building partnerships, providing incentives to landowners, and increasing funding	Expansion of existing program	LCFRB, BPA (NPCC), NGOs, WDFW, NRCS, C/WCD, LCFEG

	Action	Status	Entity
	Protect and restore native plant communities from the effects of invasive species	Expansion of existing program	Weed Control Boards (local and state); NRCS, C/WCD, LCFEG
	Assess the impact of fish passage barriers throughout the basin and restore access to potentially productive habitats	Expansion of existing program	WDFW, WDNR, County, Cities, WSDOT, LCFEG

Potential and existing restoration projects and actions within each assessment unit are presented in the following sections and summarized in tables. Each project/action has an identification (ID) code; codes comprise a unique number (not intended to imply priority) and a locator tag that identifies the assessment unit within which the project or action is located. Project/action “type” codes are listed for each item. When an entry includes more than one type of project or action, all are listed within the type code.

Project/action types and codes are as follows:

- Habitat-related restoration action (Code H): The project or action is intended to improve habitat in jurisdictional shorelines.
 - Subcode f = floodplain/off-channel work such as side/off-channel creation or enhancement, meandering, adding spawning gravels, and oxbow reconnection
 - Subcode w = wetland creation, restoration, or enhancement
 - Subcode i = instream work such as LWD placement, dredging, and bank armor removal
 - Subcode r = riparian work, including planting, removing invasive vegetation, and gravel bar creation
- Water quality related actions (Code W): Improving water quality is a primary goal of these actions. They may include a habitat component (for example, when riparian restoration is intended to impact water temperatures) or may be aimed solely at water quality, such as completion of a TMDL or restriction of contaminant use.
- Management actions (Code M): This category describes actions that usually require a greater degree of decision-making and research to implement than most habitat actions. It includes management or manipulation of fish or

predator populations, nutrient enhancement, and fish population monitoring. This code also includes most habitat, hydrologic, and water quality monitoring, except where monitoring is implemented as part of a particular habitat restoration project.

- Hydrologic actions (Code Y): This category addresses hydrologic processes and functions that affect the shoreline, and specifically fish habitat. It includes actions that impact flow levels where they affect or impede fish passage or where they affect habitat.
- Fish passage (Code P): Projects related to fish passage include culvert replacement, tributary access, and improvements to dams and other water control devices,
- Habitat acquisition and/or protection (Code A): This code applies where the acquisition of land for the primary purpose of habitat protection, or the use of easements or protective covenants for the same purpose. It includes non-regulatory land use policy changes that apply to specific areas, such as cattle exclusion.
- Research and investigation (Code R): Both formal research projects and less formal gathering of information and literature review are considered in this category.
- Regulatory actions (Code G): Actions in this category include regulatory enforcement and proposed or recommended changes to existing regulations.
- Outreach (Code O): Conducting educational outreach to the public and other entities, identifying potential partners in conservation efforts, pursuing collaborative relationships with other entities, and disseminating information are considered outreach.

6.1. Unincorporated Cowlitz County

6.1.1. Columbia River Assessment Unit

Habitat restoration priorities identified in the Habitat Strategy (LCFRB 2010b) for the lower Columbia River and Estuary that are applicable to potential actions within Cowlitz County shorelines include:

1. Restoring subbasin valley floodplain function and stream habitat diversity

2. Managing forests to protect and restore watershed processes
3. Addressing immediate risks with short-term habitat fixes

The Lower Columbia Estuary Partnership (LCEP) has recently updated its Management Plan for the Lower Columbia River, which includes several programmatic and project recommendations (LCEP 2011).

Key actions identified by LCEP to address restoration, land use, and water quality improvement include the following:

- Identify and prioritize habitat types and attributes that should be protected or conserved.
- Protect, conserve, and enhance priority habitats, particularly wetlands, on the mainstem of the lower Columbia River and in the estuary.
- Monitor status and trends of ecosystem conditions.
- Establish and maintain Columbia River flows to meet ecological needs of the lower Columbia River and estuary.
- Avoid the introduction of non-native invasive species.
- Manage human-caused changes in the river morphology and sediment distribution within the Columbia River channel to protect native and desired species.
- Develop floodplain management and shoreland protection programs.
- Reduce and improve the water quality of stormwater runoff and other non-point source pollution.
- Ensure that development is ecologically sensitive and reduces carbon emissions.
- Expand and sustain regional monitoring of toxic and conventional pollutants.
- Reduce conventional pollutants.
- Clean up, reduce or eliminate toxic contaminants, particularly contaminants of regional concern.
- Provide information about the lower Columbia River and estuary that focuses on water quality, endangered species, habitat loss and restoration, biological diversity, and climate change to a range of users.
- Create and implement education and volunteer opportunities for citizens of all ages to engage in activities that promote stewardship of the lower Columbia River and estuary.

Action objectives from the LCFRB (2010a) are identified in Table 6-2 below.

Table 6-2. Restoration opportunities in the Lower Columbia River and Estuary (Assessment Unit LC).

ID	Type*	Restoration Opportunity	Limiting Factor Addressed	Source Plan
01 LC	Hwi	Protect existing rearing habitat to ensure no further degradation.	Availability of preferred habitat	LCFRB 2010a
02 LC	Hf	Increase shallow water peripheral and side channel habitats toward historic levels.	Availability of preferred habitat; Loss of habitat connectivity	LCFRB 2010a
03 LC	Hfi	Restore connectivity between river and floodplain, tidally influenced reaches of tributaries, as well as in-river habitats.	Loss of habitat connectivity; Microdetritus-based food web; Availability of preferred habitat	LCFRB 2010a
04 LC	M	Reduce predation mortality on emigrating juveniles.	Predation mortality	LCFRB 2010a
05 LC	W	Reduce contaminant exposure of emigrating juveniles.	Contaminant exposure	LCFRB 2010a
06 LC	RM	Document the interaction between emigrating juvenile salmonids and introduced species; minimize negative interactions.	Interaction with introduced species	LCFRB 2010a
07 LC	R	Develop an understanding of emigrating juvenile salmonid life history diversity and habitat use in the lower mainstem, estuary, and plume.	Availability of preferred habitat; Loss of habitat connectivity; Density dependence	LCFRB 2010a
08 LC	YW	Maintain favorable water flow and temperature throughout migration period.	Fitness and timing of juvenile salmonids entering the subbasin	LCFRB 2010a
09 LC	M	Reduce predation mortality on migrating adults.	Predation losses (Adults)	LCFRB 2010a
10 LC	AG	Protect existing spawning habitat to ensure no further net degradation.	Availability of spawning habitat	LCFRB 2010a
11 LC	YW	Maintain favorable water flow and temperature throughout mainstem spawning and incubation period.	Decreased flows during spawning and incubation; Dewatering of redds	LCFRB 2010a

*TYPE = project type: H=habitat (f=floodplain, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P=fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

In addition to shoreline restoration opportunities focused primarily on aquatic ecosystem restoration, restoration of shoreline habitats for terrestrial species should also be pursued. The U.S. Fish and Wildlife Service is proposing to list the streaked horned lark (*Eremophila alpestris strigata*) as threatened, and to designate 12,159 acres of critical habitat in Washington and Oregon. Proposed critical habitat units include several mid-channel islands in the Columbia River, including three islands in Wahkiakum County, as well as one island immediately across from the City of Kalama on the Oregon side of the Columbia River. There are no breeding records of the species in Cowlitz County.

Monitoring in Washington State indicates steep declines in abundance of the species in recent years.

Streaked horned larks inhabit flat, sparsely vegetated areas, including prairie, grasslands, wetlands, mudflats, and open spaces of anthropomorphic origin such as airports, dredge spoils islands, and agricultural fields. Vegetation is typically low and primarily herbaceous. Breeding and wintering habitat are similar. On the Columbia River, the species inhabits sandy islands.

Effective conservation measures for recovery have been identified through research and monitoring and include creating bare or sparsely vegetated areas within or adjacent to suitable, if not occupied, habitat; creation of suitable habitat and protected nest sites in areas protected from human disturbance, predators, and flood events; creation of seasonal mudflats; and the planned timing and placement of dredge materials to create nesting habitat. Elements of proposed or potential restoration projects described in this restoration plan may benefit streaked horned lark; conversely, some salmon-focused restoration actions could negatively impact the species if not planned appropriately to avoid impact.

6.1.2. Lewis River Assessment Unit

As noted in Section 2.1.2, management of dam impacts are among the most significant potential restoration opportunities in the Lewis River Assessment Unit. In addition to addressing dam management, other key strategies for restoring the Lewis River subbasin include restoring floodplain connections and instream habitat complexity and improving riparian habitat. In the upper basin, protection of higher functioning areas is a priority, and restoration should address agricultural and forestry impacts to stream corridors (LCFRB 2010a).

A summary of priority restoration opportunities is provided in Table 6-3.

Table 6-3. Restoration opportunities in the North Fork Lewis River (Assessment Unit NL).

ID	Type*	Action	Status	Entity	Source Plan/ID
12 NL	YG	Manage regulated stream flows to provide for critical components of the natural flow regime	Expansion of existing program or activity	PacifiCorp, Cowlitz County PUD, FERC, WDFW, NMFS, USFWS	LCFRB 2010a/ L-Lew 1
13 NL	HfO	Conduct floodplain restoration where feasible along the mainstem and in major tributaries that have experienced channel confinement.	New	NRCS, C/WCD, CCD, NGOs, WDFW, LCFRB,	LCFRB 2010a/ L-Lew 4

ID	Type*	Action	Status	Entity	Source Plan/ ID
		Build partnerships with landowners and agencies and provide financial incentives		USACE, LCFEG	
14 NL	QG	Address water quality issues through the development and implementation of water quality clean-up plans (TMDLs)	Expansion of existing program or activity	Ecology, Cowlitz County	LCFRB 2010a/ L-Lew 17
15 NL	AG	Limit intensive recreational use of the mainstem Lewis during critical periods	Expansion of existing program or activity	Cowlitz County, WDFW	LCFRB 2010a/ L-Lew 18
16 NL	Hirf	Instream large woody debris, riparian, and side-channel enhancement in the Eagle Island area.	Designs Complete	LCFEG, Cowlitz Tribe	Interfluve et al. 2009
17 NL	Hf	Off Channel habitat enhancement at RM 13	Design Complete	LCFRB	Unknown
18 NL	P	Anadromous fish passage at Merwin and Swift dams.	Facilities complete, Beginning Operations	PacifiCorp	PacifiCorp and PUD #1 2004
19 NL	Hi	Continue to install large woody debris below Merwin Dam.	Ongoing	PacifiCorp	PacifiCorp and PUD #1 2004
20 NL	MHi	Monitor and maintain gravel conditions below Merwin Dam for spawning habitat.	Ongoing	PacifiCorp	PacifiCorp and PUD #1 2004
21 NL	M	Monitor predator relationships in Lake Merwin and manage as necessary.	Ongoing	PacifiCorp	PacifiCorp and PUD #1 2004
22 NL	MG	Continue to manage wildlife habitat and forest resources per the integrated Wildlife Habitat Management Plans	Ongoing	PacifiCorp, Cowlitz PUD	PacifiCorp and PUD #1 2004
23 NL	M	WRIA 27/28 Nutrient Enhancement. Disperse surplus hatchery salmon carcasses in high-priority mainstem and tributary habitat.	Ongoing	LCFEG	PRISM

*TYPE = project type: H=habitat (f=floodplain, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

6.1.3. Kalama River Assessment Unit

The following actions were proposed to restore and enhance shoreline functions in the Kalama River (Table 6-4). This table includes specific actions prioritized for salmon recovery identified in a 2009 study to restore habitat conditions in the most developed

lower 2.5 miles of the Kalama River (Powers and Tyler 2009). In the upper watershed, recommended actions are primarily related to forest management to protect high functioning habitats.

Table 6-4. Restoration opportunities in the Kalama River (Assessment Unit KR).

ID	Type*	Action	Status	Entity	Source Plan/ ID
24 KR	G	Fully implement and enforce the Forest Practices Rules (FPRs) on private timber lands in order to afford protections to riparian areas, sediment processes, runoff processes, water quality, and access to habitats	Currently in place	WDNR	LCFRB 2010a/ KAL 1
25 KR	GHfO	Conduct floodplain restoration where feasible along the lower mainstem that has experienced channel confinement. Build partnerships with the Port of Kalama and other landowners and provide financial incentives	New	NRCS, C/W CD, NGOs, WDFW, LCFRB, USACE, Port of Kalama	LCFRB 2010a/ Kal 5
26 KR	W	Assess, upgrade, and replace on-site sewage systems that may be contributing to water quality impairment	Expansion of existing program	Cowlitz County, C/W CD	LCFRB 2010a/ Kal 15
27/ 32 KR	YWP	Address potential low-flow and thermal passage problems on the bar at the mouth of the Kalama	New	Port of Kalama, LCFEG	Wade 2000b, Powers and Tyler 2009
28 KR	RP	Assess and look for solutions to gravel and debris buildup near the mouths of tributaries in the upper river	New	Cowlitz County	Wade 2000b
29 KR	Hfw	Look for opportunities to increase and enhance off-channel and rearing habitat within the lower Kalama River	New	Cowlitz County/City of Kalama	Wade 2000b
30 KR	Hf	Ledgett Groundwater Channel, Left bank at RM 2.5. Create 10,400 square meters of year round rearing habitat with a potential for some spawning habitat.	New	TBD	Powers and Tyler 2009
31 KR	Hir	Pipeline Removal and LWD, Left bank at RM 2.2	New	TBD	Powers and Tyler 2009
33 KR	Hi	Lower Kalama Reach 1A Tidal Design: Install large wood structures to increase salmonid rearing and holding cover at the mouth of the Kalama River.	Design	LCFEG	PRISM
34 KR	Hf	Port Tidal and Backwater Channels, Left bank at RM 0.1	New	Port of Kalama	Powers and Tyler 2009
35 KR	Hfri	Lower Kalama Habitat Enhancement. Install approximately 12 wood structures to improve and expand pool and riffle habitat; restore 5 acres of riparian	Proposed	LCFEG	PRISM

ID	Type*	Action	Status	Entity	Source Plan/ ID
		habitat; enhance 500 feet of existing side channel with woody debris.			
36 KR	Hfi	Spencer Creek Riparian and LWD at RM 0.5. Restore riparian, spawning, and rearing habitat. The mouth of Spencer Creek is at Kalama RM 1.8	New	TBD	Powers and Tyler 2009
37 KR	P	Fish Passage Culvert, Spencer Creek at RM 1.8	New	TBD	Powers and Tyler 2009
38 KR	RHi	Pursue opportunities to reduce the effects of existing hardened shoreline armoring or replace or modify existing armoring with softer alternatives (e.g., large woody debris)	New	TBD	T. Rymer, NMFS, personal comm.
The following projects are identified in the unincorporated UGA of the City of Kalama					
39 KR	Hf	Port of Kalama Groundwater Channel, Right bank at RM 2.2. Create off-channel rearing habitat.	New	Port of Kalama	Powers and Tyler 2009
40 KR	Hfi	GW Channel System (private), Excavate existing side channel to groundwater source and connect to mainstem, Right bank at RM 2.1	New	TBD	Powers and Tyler 2009
41 KR	Hif	Riprap Removal/Floodplain Reconnection, Right bank at RM 2.4	New	TBD	Powers and Tyler 2009
42 KR	Hf	Evaluate potential to enhance existing active side channel, Right bank at RM 1.8	New	TBD	Powers and Tyler 2009
43 KR	HfwY	Improve hydrologic and habitat connectivity from the Columbia River to wetlands just east of Interstate-5.	New	TBD	T. Rymer, NMFS, personal comm.
44 KR	M	WRIA 27/28 Nutrient Enhancement. Dispersal of surplus hatchery salmon carcasses in high-priority mainstem and tributary habitat.	Ongoing	LCFEG	PRISM

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

6.1.4. Cowlitz River Assessment Unit

Prioritized restoration measures for the Lower Cowlitz basin are identified below as excerpted from the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan (LCFRB 2010a):

1. Protect stream corridor structure and function in high priority reaches at risk of degradation;

2. Protect hillslope processes in functional subbasins contributing to Tier 1 reaches;
3. Restore degraded hillslope processes in the Lower Cowlitz subbasin;
4. Create/Restore off-channel and side channel habitat in the mainstem Cowlitz and lower reaches of major tributaries;
5. Restore floodplain function and channel migration processes;
6. Restore access to habitat blocked by artificial barriers (priority locations at Mill Creek, Leckler Creek, Salmon Creek, Foster Creek, Skook Creek, and Blue Creek);
7. Provide for adequate instream flows during critical periods in tributaries;
8. Restore degraded hillslope processes on forest, agricultural and developed lands;
9. Restore riparian conditions throughout the basin (Priority locations in Tier 1 reaches);
10. Restore degraded water quality with an emphasis on temperature; and
11. Restore channel structure and stability.

The same set of general priorities apply to the Coweeman and Toutle Rivers, except that in the Coweeman River, restoring channel structure and stability is a higher priority than in the lower Coweeman. In the Toutle River, an additional high priority action is to address fish passage and sediment issues at the Sediment Retention Structure on the NF Toutle (LCFRB 2010a).

A summary of restoration opportunities throughout the assessment unit is presented in Table 6-5 below.

Table 6-5. Restoration opportunities in the Cowlitz River Assessment Unit (Assessment Unit CR).

ID	Type*	Action	Status	Entity	Source Plan/ ID
45 CR	YG	Manage regulated stream flows to provide for critical components of the natural flow regime	Expansion of existing program or activity	Tacoma Power, Lewis County PUD, FERC, WDFW	LCFRB 2010a/ L Cow 1, Wade 2000a
46 CR	R	Monitor and notify FERC of significant license violations, enforce terms and conditions of section 7 consultations on FERC relicensing agreements, and encourage implementation of section 7 conservation recommendations	Expansion of existing program or activity	NMFS, USFWS	LCFRB 2010a/ L Cow 4

ID	Type*	Action	Status	Entity	Source Plan/ ID
47 CR	HfRO	Conduct floodplain restoration where feasible along the mainstem and in major tributaries that have experienced channel confinement, and especially in areas affected by dredging and floodplain filling following the 1980 Mt. St. Helens eruption. Survey landowners, build partnerships, and provide financial incentives	New	NRCS, Cowlitz CD, NGOs, WDFW, LCFRB, USACE, LCFEG	LCFRB 2010a/ L Cow 6; Toutle 2; Coweeman 6, Wade 2000a
48 CR	G	Expand local government Comprehensive Planning to ensure consistent protections are in place to initiate review of development and real estate transactions that may affect natural resources	Expansion of existing program or activity	Cowlitz County, Kelso, Longview, Castle Rock	LCFRB 2010a/ L Cow 15
49 CR	W	Assess, upgrade, and replace on-site sewage systems that may be contributing to water quality impairment.	Expansion of existing program or activity	Cowlitz County, Cowlitz CD	LCFRB 2010a/ L Cow 19; Toutle 18
50 CR	PW	Address fish passage and sediment issues at the Sediment Retention Structure on the NF Toutle.	Expansion of existing program or activity	WDFW, USACE, LCFEG	LCFRB 2010a/ Toutle 1, Wade 2000a
51 CR	YP	Assess and, if possible, alter the Silver Lake Dam to increase flows in Outlet Creek to assure fish passage into the Silver Lake watershed.	New	TBD	Wade 2000a
52 CR	G	Continue to manage federal forest lands according to the Northwest Forest Plan.	Activity is in place	USFS	LCFRB 2010a/ Toutle 4
53 CR	W	Address temperature impairments through development of water quality clean-up plans (TMDLs)	Expansion of existing program or activity	Ecology	LCFRB 2010a/ Coweeman 15
54 CR	W	Assess, repair, and where possible, decommission roads that are contributing chronic sediment to stream systems or that may fail and lead to landslides, especially within areas with road densities above 3.0 miles/square mile.	Expansion of existing program or activity	USFS, Cowlitz County	Wade 2000a

ID	Type*	Action	Status	Entity	Source Plan/ ID
55 CR	RHi	Look for opportunities, both short- and long-term, to increase Large Woody Debris (LWD) supplies within stream systems.	Projects underway on Toutle and Coweeman	Cowlitz County, LCFEG	Wade 2000a
56 CR	Hr	Replant degraded riparian areas with native conifers. To begin with, focus riparian restoration efforts along the more productive tributaries including Baird, Mulholland, and Goble creeks.	Expansion of existing program or activity	Cowlitz County and partners	Wade 2000a
57 CR	PR	Address fish passage barriers in the Toutle River and tributaries to the lower Cowlitz River and prioritize for repair and replacement.	Expansion of existing program or activity	USFS, Cowlitz County, and partners	Wade 2000a
58 CR	Hrwi	Cowlitz RM 0.5 right bank remove some dredged materials and create riparian and wetland bench	Conceptual plan	TBD	Tetra Tech 2007
59 CR	Hrwif	Cowlitz RM 7.3 right bank remove some dredged materials and create riparian/floodplain bench; construct setback levee if necessary.	Conceptual plan	TBD	Tetra Tech 2007
60 CR	Hrif	Cowlitz RM 8.5 right bank set back levee and plant riparian/floodplain vegetation on bench	Conceptual plan	TBD	Tetra Tech 2007
61 CR	Hrif	Cowlitz RM 9.0 left bank dredged materials removal to create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
62 CR	Hr	Place LWD and vegetate with willows (mouth of Ostrander Creek)	Conceptual plan	TBD	Tetra Tech 2007
63 CR	Hr	Remove noxious weeds and restore riparian zone along length of Ostrander Creek.	Conceptual plan	TBD	Tetra Tech 2007
64 CR	Hf	Cowlitz RM 9.7 right bank bar and island enhancement.	Conceptual plan	TBD	Tetra Tech 2007
65 CR	P	Culvert replacement on Leckler Creek at Hazel Dell Road.	Conceptual plan	TBD	Tetra Tech 2007

ID	Type*	Action	Status	Entity	Source Plan/ ID
66 CR	Hrfi	Cowlitz RM 9.8 left bank riparian restoration: Remove revetment and some dredged material and create riparian and floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
67 CR	Hrfi	Cowlitz RM 10.5 left bank riparian restoration: Remove some dredged materials and create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
68 CR	Hrfi	Cowlitz RM 11.2 left bank bar and island enhancement: Place wood to promote side channel scour and provide cover.	Conceptual plan	TBD	Tetra Tech 2007
69 CR	Hrfi	Cowlitz RM 12.5 left bank side channel restoration and enhancement: Enhance low bar with remnant side channel by placing wood and minor excavation.	Conceptual plan	TBD	Tetra Tech 2007
70 CR	Hrfi	Cowlitz RM 12.5 right bank riparian restoration: Remove riprap and bioengineer as feasible, remove dredged materials to create riparian/floodplain bench	Conceptual plan	TBD	Tetra Tech 2007
71 CR	Hrfi	Cowlitz RM 13.5 left bank riparian restoration: Remove some dredged materials and bioengineer recent riprap placement to create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
72 CR	Hfi	Cowlitz RM 14.0 left bank side channel restoration and enhancement: Excavate remnant side channel, place LWD.	Conceptual plan	TBD	Tetra Tech 2007
73 CR	Hrfi	Cowlitz RM 14.5 right bank side channel restoration and enhancement: Excavate remnant side channel, place LWD, plant riparian vegetation.	Conceptual plan	TBD	Tetra Tech 2007
113 CR	Hi	Cowlitz RM 15.0 left bank bar enhancement: Enhance low bar and Sandy Creek and backwater by placing wood and minor excavation.	New	TBD	Tetra Tech 2007

ID	Type*	Action	Status	Entity	Source Plan/ ID
74 CR	Hrfi	Cowlitz RM 16.0 right bank side channel restoration and enhancement: Create defined boat launch area and restore historic side channel and improve floodplain with plantings and wood.	Conceptual plan	TBD	Tetra Tech 2007
75 CR	P	Delameter Creek Culvert replacement at Delameter Road.	Conceptual plan	TBD	Tetra Tech 2007
76 CR	HrA	Fence off Delameter Creek from livestock and restore riparian at RM 4.	Conceptual plan	TBD	Tetra Tech 2007
77 CR	P	Monahan Creek Culvert replacement at Delameter Road.	Conceptual plan	TBD	Tetra Tech 2007
78 CR	Hr	Monahan Creek Riparian restoration: Remove Japanese knotweed along lower 4 miles and revegetate.	Conceptual plan	TBD	Tetra Tech 2007
79 CR	Hrfi	Cowlitz RM 18.5 left bank dredged materials removal to create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
80 CR	Hrfi	Cowlitz RM 18.8 right bank bar and island enhancement: segregate boat launching from riparian zone and bars; cut chute overflow channels and restore floodplain/riparian habitat.	Conceptual plan	TBD	Tetra Tech 2007
81 CR	Hrfi	Cowlitz RM 19.8 left bank dredged materials removal to create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
82 CR	Hrfi	Toutle River RM 0.2 right bank dredged materials removal to create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
83 CR	Hrfi	Toutle River RM 3.2 right bank Off-channel restoration and enhancement: Reconnect off-channel ponds behind dredged material, enhance with LWD and riparian restoration.	Conceptual plan	TBD	Tetra Tech 2007
84 CR	Hrfi	Cowlitz RM 20.2 left bank dredged materials removal to	Conceptual plan	TBD	Tetra Tech 2007

ID	Type*	Action	Status	Entity	Source Plan/ ID
		create riparian/floodplain bench.			
85 CR	Hrfi	Cowlitz RM 22.2 left bank dredged materials removal to create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
86 CR	Hf	Cowlitz RM 23.0 left bank off-channel and floodplain restoration.	Conceptual plan	TBD	Tetra Tech 2007
87 CR	Hr	Cowlitz RM 23.2 right bank bar and island enhancement: Place LWD alongside channel and revegetate where appropriate on Hog Island.	Conceptual plan	TBD	Tetra Tech 2007
88 CR	P	Rock Creek Culvert replacement at West Side Highway.	Conceptual plan	TBD	Tetra Tech 2007
89 CR	PHr	Remove water control structure and reconnect Hill Creek; riparian revegetation along lower 1000-2000 feet of creek.	Conceptual plan	TBD	Tetra Tech 2007
90 CR	Hrf	Cowlitz RM 24.5 left bank riparian restoration: Slope back banks and create riparian/floodplain bench.	Conceptual plan	TBD	Tetra Tech 2007
91 CR	Hrfi	Lower Olequa Creek enhancement: Restore side channel and riparian zone, remove invasive species, place LWD.	Conceptual plan	TBD	Tetra Tech 2007
92 CR	A	Cowlitz RM 25.0 Acquire easements in active channel migration area.	Conceptual plan	TBD	Tetra Tech 2007
93 CR	Hrfi	Cowlitz RM 25.0 side channel restoration and enhancement: Remove car bodies, place LWD and riparian restoration.	Conceptual plan	TBD	Tetra Tech 2007
94 CR	Hri	Cowlitz RM 26.0 left bank riparian restoration: Slope back banks to create riparian bench; remove riprap; may need to move road in one area.	Conceptual plan	TBD	Tetra Tech 2007
95 CR	Hr	Cowlitz River habitat enhancements upstream of Cowlitz County (RM 27-43)	Conceptual plan	TBD	Tetra Tech 2007

ID	Type*	Action	Status	Entity	Source Plan/ ID
96 CR	Hf	Connect gravel ponds and other off-channel areas near RM 7 on the Coweeman River to provide rearing and overwintering habitat for juvenile salmonids.	New	TBD	Wade 2000a
97 CR	Hi	Coweeman Bedrock Channel Restoration. Install large diameter logs in various configurations on the Coweeman River in order to restore 2,700 feet of low gradient stream channel scoured to bedrock by historical log drives and other anthropological disturbances.	Underway	LCFEG	PRISM
98 CR	Hr	Coweeman riparian vegetation enhancement and knotweed control.	Underway	C/WCD	PRISM
99 CR	Hri	Explore opportunities to enhance shoreline habitat where bank armoring exists. This could be accomplished through bioengineering or by incorporation large wood into bank protection.	New	TBD	TWC

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

6.1.5. Mill, Abernathy, Germany Creek Assessment Unit

Prioritized restoration measures for the Lower Cowlitz basin are identified below as excerpted from the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan (LCFRB 2010a):

1. Protect stream corridor structure and function;
2. Protect hillslope processes;
3. Restore degraded hillslope processes on forest, agricultural, and developed lands;
4. Restore floodplain function and channel migration processes along the lower mainstems and major tributaries;
5. Restore riparian conditions throughout the basin;
6. Restore degraded water quality with an emphasis on temperature;
7. Create/restore off-channel and side-channel habitat;
8. Restore channel structure and stability;
9. Provide for adequate instream flows during critical periods;

10. Restore access to habitat blocked by artificial barriers (priority locations in Tributaries to Mill Creek and Coal Creek).

A summary of restoration opportunities throughout the assessment unit is presented in Table 6-6 below.

Table 6-6. Restoration opportunities in Mill, Abernathy, and Germany Creeks (Assessment Units MC, AC and GC, respectively).

ID	Type*	Action	Status	Entity	Source Plan/ ID
100 All units	O	Seize opportunities to conduct voluntary floodplain restoration on lands being phased out of agricultural production. Survey landowners, build partnerships, and provide financial incentives.	New	NRCS/WCD, NGOs, WDFW, LCFRB, USACE, LCFEG	LCFRB 2010a/ M-A-G 4
101 All units	W	Assess, upgrade, and replace on-site sewage systems that may be contributing to water quality impairment	Expansion of existing program or activity	Cowlitz County, Cowlitz CD	LCFRB 2010a/ M-A-G 15
102 GC	P	Address fish passage barriers, particularly in Germany and Coal Creeks where 30-34% of the habitat is blocked	Expansion of existing program or activity	LCFRB, Cowlitz County	Wade 2002
103 AC	Hf	Enhance off channel habitat in Abernathy Creek near Sarah Creek, Two Bridges and Abernathy hatchery sites.	Underway	Cowlitz Tribe	HDR and Cramer Fish Sciences 2009; Inter-Fluve 2011
104 GC	Hf	Enhance off channel habitat in Germany Creek.	New	LCFRB, Cowlitz County	HDR and Cramer Fish Sciences 2009
105 AC GC	Hri	Construct engineered log jams and enhance riparian areas to produce future large woody debris in Abernathy and Germany Creeks.	Project underway on Abernathy Creek	LCFRB, Cowlitz County, Cowlitz Tribe	HDR and Cramer Fish Sciences 2009
106 All units	RHfi	Identify areas where channel modifications (LWD or large rocks) could help slow flows, capture scarce spawning gravels, reconnect floodplain habitat, and enhance instream channel diversity.	New	LCFRB, Cowlitz County	Wade 2002
107 All units	Hr	Target riparian restoration efforts along the most productive and/or degraded streams including the agricultural areas (generally lower and middle reaches) of Germany and Abernathy Creeks,	Project underway on Abernathy Creek	LCFRB, Cowlitz County, Cowlitz CD, Cowlitz Tribe	Wade 2002, HDR and Cramer Fish Sciences 2009

ID	Type*	Action	Status	Entity	Source Plan/ ID
		and the residential areas of Mill Creek.			
108 GC	M	Germany Creek Nutrient Enhancement. Placement of salmon carcass analogs and monitoring of salmon population response.	Underway	LCFEG	PRISM

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

6.1.6. South Fork Chehalis River Assessment Unit

The Chehalis Basin Salmon Habitat Restoration and Preservation Work Plan for WRIA 22 and 23 (Chehalis Basin Partnership Habitat Work Group 2008) identified several restoration recommendations for the Chehalis watershed, including several recommendations applicable to the upper South Fork Chehalis River. These recommendations include:

- Riparian restoration
 - Conifer underplanting
 - Control of invasive species
- Control excess sedimentation
 - Implement alternative methods of bank stabilization (bioengineering) in locations with excessive erosion (sediment input)
 - Abandon roads on steep geologically sensitive areas
 - Upgrade existing roads to comply with Forest Practices Act rules and regulations
 - Revegetate streaming and riverbanks for added protection from erosion
- Correct fish passage barriers
- Remove hard armoring or implement bioengineering techniques
- Enhance or restore potential off-channel, floodplain, and wetland habitat

6.2. City of Castle Rock

The most significant opportunities for restoration in the City of Castle Rock and its UGA include riparian and floodplain restoration. A summary of restoration opportunities identified within and supported by the City is presented in Table 6-7a.

Table 6-7a. Restoration opportunities in and supported by the City of Castle Rock (Assessment Unit CR).

ID	Type*	Action	Status	Entity	Source Plan/ ID
110 CR	Hri	Cowlitz RM 16.8 right bank tributary enhancement: Create riparian bench, place LWD and riparian restoration along lower end of Arkansas Creek	New	TBD	Tetra Tech 2007; TJ Kieran, City of Castle Rock, personal communication
114 CR	Hrf	Channel and riparian restoration at lower Whittle Creek: Remove invasive species, revegetate, re-meander channel.	On-going	City of Castle Rock; Cowlitz Conservation District ; Castle Rock School District; WDFW	Tetra Tech 2007; TJ Kieran, City of Castle Rock, personal communication
115 CR	Hfi	Reconnect backwater channel and place LWD at Janisch Creek, just north of the City limits. Consider re-meandering the creek away from railroad tracks.	On-going	City of Castle Rock; Cowlitz Conservation District; Castle Rock School District; WDFW	Tetra Tech 2007; TJ Kieran, City of Castle Rock, personal communication
116 CR	Hr	Restore and enhance riparian vegetation along the Cowlitz River, including School District site.	On-going	North County Recreation Assoc; Castle Rock School District; City of Castle Rock	TJ Kieran, City of Castle Rock, personal communication

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

In addition to the projects identified above in Table 6-7a, the projects identified in Table 6-7b are within the City of Castle Rock and its UGA, however, they are not necessarily supported by the City of Castle Rock.

Table 6-7b. Restoration opportunities in the City of Castle Rock (Assessment Unit CR).

ID	Type*	Action	Status	Entity	Source Plan/ ID
109 CR	Hrfi	Cowlitz RM 16.7 left bank bar and island enhancement: Enhance bar with LWD and riparian plantings and promote side channel maintenance	New	TBD	Tetra Tech 2007;
111 CR	Hr	Cowlitz RM 17.0 left bank riparian restoration: Setback or slope back levees and create riparian bench along Castle Rock	New	TBD	Tetra Tech 2007
112 CR	Hr	Cowlitz RM 17.0 right bank riparian restoration: Setback or slope back	New	TBD	Tetra Tech 2007

ID	Type*	Action	Status	Entity	Source Plan/ ID
		levees and create riparian bench along Castle Rock			

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

6.3. City of Kalama

Several potential restoration opportunities are present with the City of Kalama and its Urban Growth Area.

Two areas within the City are proposed as mitigation, meaning that they would be restored to compensate for an action (or actions) that negatively affect(s) ecological functions. As such, mitigation projects are not truly restoration projects, and they may or may not result in a net gain in ecological functions. These potential mitigation sites include a portion of the land around Kress Lake, which is primarily forested, and the land along the north and south banks of the Kalama River, west of I-5.

In addition to these areas, a summary of additional restoration opportunities is presented in Table 6-8 below.

Table 6-8. Restoration opportunities in the City of Kalama (Assessment Unit KA).

ID	Type*	Action	Status	Entity	Source Plan/ ID
117 KA	HfO	Conduct floodplain restoration where feasible along the lower mainstem that has experienced channel confinement. Build partnerships with the Port of Kalama and other landowners and provide financial incentives	New	NRCS, C/W CD, NGOs, WDFW, LCFRB, USACE, Port of Kalama	LCFRB 2010a/ Kal 5
118 KA	YHw	Improve hydrologic and habitat connectivity from the Columbia River to wetlands just east of Interstate-5.	New	TBD	T. Rymer, NMFS, personal communication
119 KA	RHf	Look for opportunities to increase and enhance off-channel and rearing habitat within the lower Kalama River	New	Cowlitz County/ City of Kalama	Wade 2000b
120 KA	Hf	Groundwater Channel, Left bank at RM 1.4	New	TBD	Powers and Tyler, 2009
121 KA	RHi	Pursue opportunities to reduce the effects of existing hardened shoreline armoring or replace or modify existing armoring with softer alternatives (e.g., large woody debris)	New	TBD	TWC

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

6.4. City of Kelso

Several sites on the Cowlitz River in the City of Kelso have been used to deposit dredge spoils associated with the dredging following the eruption of Mount Saint Helens. These sites are predominantly under private ownership. Restoration of hydrologic connectivity and riparian vegetation at these sites could potentially significantly improve floodplain functions in the lower Cowlitz River.

A wetland, known as Hart’s Lake, in the City of Kelso UGA is noted as an area for potential restoration. The City Parks Department owns a portion of the wetland and the abutting Coweeman shoreline. This area is identified in the City’s Parks Plan as undeveloped open space. The area is within the floodplain of the Coweeman River, and has the potential to function as a backwater habitat during floods. As noted in Section 3.4, the portion of the parcel along the Coweeman shoreline is presently mowed. The shoreline would benefit from planting riparian shrubs and trees to provide shade to the Coweeman River and to improve fish and wildlife habitat. There may also be opportunities to improve hydrologic connectivity to the wetland from the west. Discussions are underway for potential wetland mitigation at Hart’s Lake for impacts that may occur within shoreline jurisdiction at the Southwest Washington Regional Airport. As noted above, if used as mitigation, the project may or may not result in a net improvement of functions on a City-wide basis.

A summary of restoration opportunities is presented in Table 6-9 below.

Table 6-9. Restoration opportunities in the City of Kelso (Assessment Unit KE).

ID	Type*	Action	Status	Entity	Source Plan/ ID
122 KE	Hrfi	Cowlitz RM 1.0 Left Bank Side channel restoration and enhancement: Remove some dredged materials and reconnect side channel, create riparian bench.	Conceptual Design	TBD	Tetra Tech 2007
123 KE	Hrf	Coweeman RM 3.5 Right Bank Tributary enhancement: Reconnect remnant oxbow and restore riparian zone.	Conceptual Design	TBD	Tetra Tech 2007
124 KE	Hi	Coweeman RM 4.0 Tributary enhancement: Place LWD for sediment trapping, cover, and in-stream enhancement upstream of levees.	Conceptual Design	TBD	Tetra Tech 2007

ID	Type*	Action	Status	Entity	Source Plan/ ID
125 KE	Hri	Cowlitz RM 3.0 Left Bank Riparian restoration: Slope back banks to create riparian bench; remove riprap; revegetate with riparian species.	Conceptual Design	TBD	Tetra Tech 2007
126 KE	Hrf	Conduct floodplain restoration where feasible along the Cowlitz River. In particular, consider restoration of floodplain and riparian functions at former dredge disposal sites.	New	TBD	T. Rymer, NMFS, personal communication
127 KE	HrAR	Discontinue mowing and plant riparian vegetation along the shoreline in the Hart Lake Recreation Area. Evaluate potential to increase hydrologic connections to the wetland from the west.	New	City of Kalama Parks Department	TWC
128 KE	HrO	Plant native trees and shrubs along the shoreline at Tam O'Shanter Park. Consider opportunities for interpretive signage.	New	City of Kalama Parks Department	TWC
129 KE	RHfw	Explore opportunities to improve hydrologic and habitat connectivity from the Columbia River to Owl Creek and associated wetlands just east of Interstate-5.	New	TBD	T. Rymer, NMFS, personal communication
130 KE	RHi	Pursue opportunities to reduce the effects of existing hardened shoreline armoring or replace or modify existing armoring with softer alternatives (e.g., large woody debris)	New	TBD	T. Rymer, NMFS, personal comm.

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

6.5. City of Woodland

There are several restoration sites available within the City of Woodland. The areas zoned for floodway are the most obvious areas for restoration and are generally found in the Lewis 13, 14 and 15 reaches. There are also restoration opportunities to found south of the CC Street Bridge within the floodway. This location has significant invasive species coverage and impacts from informal camping.

A summary of restoration opportunities is presented in Table 6-10 below.

Table 6-10. Restoration opportunities in the City of Woodland (Assessment Unit WO).

ID	Type*	Action	Status	Entity	Source Plan/ ID
131 WO	Hrf	Maintain and restore riparian vegetation within the designated floodway.	New	TBD	TWC
132 WO	Hr	Plant shoreline vegetation at Horseshoe Lake Park.	New	City of Woodland Parks Department	TWC
133 WO	Hr	Remove invasive vegetation and replant with native vegetation south of the CC Street Bridge.	New	TBD	City of Woodland

*TYPE = project type: H=habitat (f=floodplain/off-channel, w=wetland, i-instream, r=riparian), M=management, W=water quality, Y=hydrology, P= fish passage, A=acquisition/protection, R=research/investigation, G=regulatory, O=outreach

7. IMPLEMENTATION STRATEGY

7.1. Local/Regional Planning and Coordination

Cowlitz County and the cities of Castle Rock, Kalama, Kelso, and Woodland participate in the Cowlitz Wahkiakum Council of Governments (CWCOG). The Council of Governments provides a regional forum to address issues of mutual interest and concern, develop recommendations and provide technical services. Because the CWCOG focuses on regional and local planning, transportation planning, community and economic development planning, and technical assistance, it provides an opportunity for coordinated restoration planning and implementation. One potential mechanism to encourage implementation of shoreline restoration actions would be to incorporate shoreline restoration goals and projects into Capital Improvement Programs (CIP), Parks Master Plans, and Six-Year Transportation Improvement Plans.

The County and Cities will continue their association and involvement with their restoration partners. The County and Cities may also look for other time sensitive opportunities for involvement in regional restoration planning and implementation.

7.2. Funding Opportunities for Restoration

Some restoration projects and programs within the County could be funded by County general funds, utilities funds, or parks funding; however, many of the proposed habitat restoration projects will require outside funding through federal or state grants, as well as local, private, or non-profit matching funds. Projects may be funded in multiple phases, with different funding sources appropriate for each phase. It should be noted

that potential funding sources are not limited to those identified below. Potential grant sources and a description of their applications are provided in Table 7-1.

Table 7-1. Potential funding sources for shoreline restoration in Cowlitz County.

Funding Program	Description	Source/ Grant Administrator
Salmon Recovery Funding Board	Funding to improve important habitat conditions or watershed processes to benefit salmon and bull trout. Projects must go through selection by local lead entities and must address goals and actions defined in regional recovery plans or lead entity strategies.	Washington Recreation and Conservation Office
Aquatic Lands Enhancement Account	Funds the acquisition, improvement, or protection of aquatic lands for public purposes.	
Washington Wildlife Recreation Program	Funds a range of land protection and outdoor recreation, including park acquisition and development, habitat conservation, farmland preservation, and construction of outdoor recreation facilities. Provides funds to restore riparian vegetation.	
Family Forest Fish Passage Program	Provides funding to small forest landowners to repair or remove fish passage barriers. The state typically provides 75% – 100% of removal and replacement costs.	
Whole Watershed Restoration Initiative	Funds habitat restoration in Priority Basins. The lower Columbia River is one of the Priority Basins, including WRIA 25, 26, and 27. Funding for individual projects ranges from \$20,000 to \$100,000.	Ecotrust
Bonneville Power Administration	Funding for habitat projects to mitigate impacts of dam operations on the Columbia River.	Bonneville Power Administration
PacifiCorp	PacifiCorp provides annual funding to implement restoration that will benefit fish recovery and enhance fish habitat in the North Fork Lewis Basin.	PacifiCorp
Watershed Planning Act	Funding for local development of watershed plans for managing water resources and for protecting existing water rights.	Washington Department of Ecology
Centennial Clean Water Fund	Funds water quality infrastructure and projects to control non-point source pollution.	
Section 319	Funds non-point source pollution control projects.	

Funding Program	Description	Source/ Grant Administrator
Clean Water State Revolving Fund	Provides low interest and forgivable principal loan funding for wastewater treatment construction projects, eligible nonpoint source pollution control projects, and eligible Green projects.	
Conservation Reserves Enhancement Program	This program provides funds to farmers who maintain riparian buffers on on-site waterbodies. The funds cover technical assistance, plant costs, and land “rental” fees.	Cowlitz Conservation District
Conservation Partners	Provides technical assistance to farmers, ranchers, foresters and other private landowners to optimize wildlife habitat conservation on private lands.	National Fish and Wildlife Foundation
Five Star and Urban Waters Restoration Fund	Funds community stewardship and restoration of coastal, wetland and riparian ecosystems.	
NOAA Open Rivers Initiative	Funds the removal of obsolete dams and other stream barriers to improve fisheries, enhance public safety and boost local economies through benefits resulting from removal. Awards range from \$100,000 to \$3,000,000.	NOAA’s Restoration Center
American Sportfishing Association’s FishAmerica Foundation Grants	Fund marine and anadromous fish habitat restoration projects that benefit recreationally fished species. Typical awards range from \$10,000 to \$75,000.	
Stream Barrier Removal Grants	Funds stream barrier removal projects that benefit anadromous fish. Grant program is administered through American Rivers, in partnership with NOAA’s Restoration Center.	
Partners for Fish and Wildlife	Provides technical and financial assistance to landowners to improve their property for targeted fish and wildlife species without a long-term easement contract.	U.S. Fish and Wildlife Service
National Fish Passage Program	Funds priority projects to improve fish passage.	
North American Wetlands Conservation Act Grants Program	Provides matching funds for acquisition, enhancement, and restoration of wetlands that benefit waterfowl habitat.	

7.3. Development Incentives

The County and cities may provide development incentives for restoration, including development code incentives (e.g., height, density, impervious area or lot coverage).

This may serve to encourage developers to try to be more imaginative or innovative in

their development designs to include conservation efforts. Examples include the installation of rain gardens or LID features above and beyond DOE requirements, shared parking, exceeding landscape or open space requirements, or other innovative measures that benefit the environment and the citizenry.

7.4. Landowner Outreach and Engagement

The County and cities could emphasize and accomplish restoration projects by engaging community volunteers and coordinating with non-profit organizations. Volunteer engagement can have the added benefit of encouraging or guiding local residents to become more effective stewards of the land. Programs that provide ongoing assistance and resources to landowners through plantings, equipment use or technical support can also have a far reaching impact on shoreline functions.

7.5. Maximizing Mitigation Outcomes

Although projects identified in this plan are identified as restoration opportunities, this document may serve as a source to identify large-scale opportunities that could be used to optimize mitigation outcomes where on-site mitigation opportunities are limited due to building site constraints, limited potential ecological gains, or other site-specific factors.

These large-scale mitigation projects could be implemented through concurrent, permittee responsible mitigation, or through mitigation banking or an in-lieu fee program. It should be noted that the application of mitigation banking and in-lieu fee programs is not limited to wetlands and could be applied to mitigation for impacts to shorelines and endangered species. Whereas mitigation banking requires capital investment and ecological enhancement prior to the exchange of debits and credits, an in-lieu-fee program establishes a program in which funds are collected from permittees for unavoidable impacts, and these funds are pooled and used to implement mitigation projects within three growing seasons of the impact.

7.6. Monitoring

Monitoring of the effectiveness of restoration actions enables opportunities to adaptively manage future restoration efforts to maximize project outcomes. The Lower Columbia Fish Recovery Board developed a research, monitoring, and evaluation (RM&E) program plan in 2010 (LCFRB 2010c). LCFRB's RM&E Program includes recommendations for habitat status and trends monitoring, fish status and trends monitoring, project implementation and effectiveness monitoring. The program also identified key research needs. LCFRB is coordinating with regional, state, and federal

partners to develop an integrated status and trends monitoring (ISTM) design for the Lower Columbia. The LCFRB is presently working to bridge efforts of the ISTM program with municipal stormwater monitoring and reporting requirements. This sort of coordinated effort is expected to maximize monitoring resources to track changes in ambient watershed conditions over time and provide necessary information and understanding to guide future watershed management decisions.

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9. LIST OF ACRONYMS AND ABBREVIATIONS

BPA	Bonneville Power Administration
CIP	Capital Improvement Projects
Corps	U.S. Army Corps of Engineers
CMZ	Channel migration zone
C/WCD	Cowlitz/Wahkiakum Conservation District
CWCOG	Cowlitz Wahkiakum Council of Governments
Ecology	Washington Department of Ecology
FCRPS	Federal Columbia River Power System
FPR	Forest Practices Rules
Ft	Feet
IMW	Intensively Monitored Watershed
ISTM	Integrated Status and Trends Monitoring
LCEP	Lower Columbia Estuary Partnership
LCFEG	Lower Columbia Fish Enhancement Group
LCFRB	Lower Columbia Fish Recovery Board
LID	Low Impact Development
LWD	Large Woody Debris
OHWM	Ordinary High Water Mark
MOA	Memorandum of Agreement
NF	North Fork
NGOs	Non-governmental organizations
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
PUD	Public Utility District
RM	River Mile
RM&E	Research, Monitoring, and Evaluation
SMP	Shoreline Master Program
SRS	Sediment Retention Structure
TWC	The Watershed Company
UGA	Urban Growth Area
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code

WDFW Washington Department of Fish and Wildlife
WDNR Washington Department of Natural Resources
WRIA Water Resource Inventory Area

