REVISED2024 SHORELINE MASTER PROGRAM

City of Kalama

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Shoreline Master Program
2021

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The City of Kalama Planning Staff would like to extend their thanks and appreciation to the residents of the City of Kalama for their contributions throughout development of this Shoreline Master Program. Special thanks to members of the Shoreline Technical Advisory Committee for their thoughtful input and countless hours of dedication.

CITATION

Revised - Shoreline Master Program, City of Kalama. Prepared by The Watershed Company, Parametrix, E2 Land Use Planning, TRJ Planning, and Ecological Land Services March 2021, revised June 17, 2024, adopted by Ordinance 1516, June 20, 2024.

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Appendices

1. Introduction

1.1 Title

This document shall be known and may be cited as the City of Kalama (City) Shoreline Master Program (referred to in this document as Program or SMP).

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 Purpose and Intent

A. To guide the future development of shorelines in the City in a positive, effective, and equitable manner consistent with 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.

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 ensure, at minimum, no net loss of shoreline ecological functions and processes and to plan for restoring shorelines that have been impaired or degraded.

1.4 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 herein must not unconstitutionally infringe on private property rights or result in an unconstitutional taking of private property.

D. The Shorelines Program establishes a cooperative program of shoreline management between local government and the state. Local government shall have the primary responsibility for initiating the planning required by this chapter and administering the regulatory program consistent with the policy and provisions of this chapter. Ecology shall act primarily in a supportive and review capacity with an emphasis on providing assistance to local government and on insuring compliance with the policy and provisions of this chapter.

E. Protecting the shoreline environment is an essential statewide policy goal, consistent with other policy goals. This Program protects shoreline ecosystems from impairments in the following ways:

1. By using a process that identifies, inventories, and ensures meaningful understanding of shoreline ecological functions documented in the City's Shoreline Analysis Report;

2. By including policies and regulations that require mitigation of any adverse impacts not otherwise avoided or mitigated by compliance with this Program and other applicable regulations. Any required mitigation not addressed by applicable regulations 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 and Subsection 6.1.E of this Program, in a manner that ensures no net loss of shoreline ecological functions;

3. By including policies and regulations to address cumulative impacts, ensuring that the cumulative effect of exempt development will not cause a net loss of shoreline ecological functions, 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.

1.5 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.

1.6 Severability

If any provision of the ordinance codified in this title, or its application to any person or legal entity or circumstances is held to be invalid, the remainder of said ordinance or the application of the provision to other persons or legal entities or circumstances shall not be affected.

1.7 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, development, or activity.

B. Uses, developments, and activities regulated by this Program may also be subject to the provisions of the following: the City of Kalama Comprehensive Plan; the Washington State Environmental Policy Act (SEPA; RCW 43.21C and WAC 197-11); other provisions of the Kalama Municipal Code (KMC), specifically KMC Title 17, Zoning; and various other provisions of local, state, and federal law, as may be amended.

C. 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 shall prevail.

D. Projects and plans in shoreline jurisdiction that have been previously approved by the City in accordance with the Shoreline Master Program in effect at the time shall remain in full force and effect until such time that the approval expires or is expressly changed by the City.

E. Projects are vested according to KMC 15.10.045 (A).

F. Revisions to permits will be reviewed and processed as outlined in Section 8.5.7, Revisions to Permits.

1.8 Effective Date

This Program and all amendments thereto was adopted by City Council with Ordinance #1516 This Program took effect 14 days after written notice of approval from the Washington Department of Ecology (Ecology), which was dated July 23 2024

2. Definitions

Accessory - A use, building, or structure that is subordinate to and the use of which is incidental to that of the main activity, structure, building, or use on the same lot or parcel. If an accessory structure is attached to the main building by a common wall or roof, such accessory building shall be considered a main part of the main building.
Accretion – The growth of land by the addition of material transported by wind and/or water.
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).

6.
Agriculture or **agricultural activities** – Agricultural uses and practices including 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. (WAC 173-26-020(3)(a))

Agricultural equipment and **agricultural facilities** – Equipment and facilities such as:

1. The following used in agricultural operations: equipment; machinery; constructed shelters, buildings, and ponds; fences; upland finfish rearing facilities; and water diversion, withdrawal, conveyance, and use equipment and facilities including 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. (WAC 173-26-020(3)(c))

Agricultural land(s) – Those specific land areas on which agricultural activities are conducted as of the date of adoption of this Master Program as evidenced by aerial photography or other documentation. After the effective date of this Program, land converted to agricultural use is subject to compliance with the requirements of this Program. (WAC 173-26-020(3)(d))
Agricultural products – Includes 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 20 years of planting; and livestock including both the animals themselves and animal products including meat, upland finfish, poultry and poultry products, and dairy products. (WAC 173-26-020(3)(b))

Alteration – A human action which results in a physical change to the existing condition of land or improvements including clearing vegetation, filling, grading, and construction of structures or facilities including impervious surfaces.

Amendment – A revision, update, addition, deletion, and/or reenactment to an existing shoreline master program. (WAC 173-26-020(4))

Applicant – The person; party; firm; corporation; Indian tribe; federal, state, or local government; or any other entity that proposes any activity in shoreline jurisdiction.

Accessory Element – A structure or development customarily incidental to and located upon the same lot occupied by the main use or building.

Appurtenance, residential – A structure or development incidental to a single-family residence as defined in WAC 173-27-040(2)(g).

Aquaculture – The culture or farming of fish, shellfish, or other aquatic plants and animals. Aquaculture does not include the harvest of wild geoduck associated with the state managed wildstock geoduck fishery. (WAC 173-26-020(6)) Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area.

Aquifer – A geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well, spring, or natural watercourse.

1. Confined means an aquifer bounded by formations of distinctly lower permeability than that of the aquifer itself and that contains groundwater under sufficient pressure for the water to rise above the top of the aquifer.

2. Unconfined means an aquifer where groundwater is in a formation which is not bound by a formation of lower permeability and in which the groundwater surface is at atmospheric pressure.

Associated Wetlands – Those wetlands that are in proximity to and either influence or are influenced by tidal waters or a lake, river, or stream subject to the Shoreline Management Act. This influence includes one or more of the following: hydraulic continuity (which includes undrained hydric soils contiguous with the waterbody and sheet flow from the site during or following precipitation events), location within a 100-year floodplain, or a surface connection through a culvert. (WAC 173-22-040 and Ecology's Shoreline Master Program Handbook)

Average grade level – The average of the natural or existing topography of the portion of the lot, parcel, or tract of real property which will be directly under the proposed building or structure. In the case of structures to be built over water, average grade level shall be the elevation of the ordinary high water mark (OHWM). Calculation of the average grade level shall be made by averaging the ground elevations at the midpoint of all exterior walls of the proposed building or structure. (WAC 173-27-030(3))

Base flood – The flood having a one percent chance of being equaled or exceeded in any given year. Also referred to as the 100-year flood. Designation on maps always includes the letter A or V.

Basement – Any area of the building having its floor subgrade (below ground level) on all sides.

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 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 Department of Ecology that, when used singly or in combination:

1. Control soil loss and reduce water quality degradation caused by nutrients, animal waste, and toxins;

2. Control the movement of sediment and erosion caused by land alteration activities to protect water quality and slope stability;

3. Minimize adverse impacts to surface and groundwater quality, flow, and circulation patterns and to the chemical, physical, and biological characteristics of wetlands;

4. Minimize adverse impacts to the chemical, physical, and biological characteristics of a critical area;

5. Protect trees and vegetation designated to be retained during and following site construction and use native plant species appropriate to the site for revegetation of disturbed areas; and

6. Monitor mitigation measures to ensure functions and values impacted by a project are provided and maintained.

Bioengineering – A project that employs the principles of bioengineering, including limited use of rock as a stabilization only at the toe of the bank, and with primary emphasis on using native vegetation to control the erosive forces of flowing water. (WAC 173-27-040.2.o.i.B)

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, piers, mooring dolphins, catwalks, loading equipment and other similar features, including on-land related facilities such as approaches and ramps, and including any private and publicly accessible launch sites or facilities. A boating facility does not include on-land accessory facilities such as parking or storage. Docks, buoys, and marine railways that are accessory to four or fewer single-family residences are also not boating facilities.

Breakwater – A structure aligned parallel to shore, sometimes shore-connected, that provides protection from waves.

Buffer – An area adjacent to a 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 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 native vegetation, but also may include human-made features such as fences and other barriers; and

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.

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 as allowed by WAC 173-26-020(7) and WAC 173-26-221(3)(b) that are significant investments likely to be repaired and maintained even if damaged.

Chemicals – Herbicides, pesticides, organic or mineral-derived fertilizers, or other hazardous substances.

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 – A business use or activity at a scale greater than a home occupancy business involving retail or wholesale marketing of goods and services. Commercial uses are further defined in KMC Title 17, Zoning.

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

Conditional Use – A use, development, or substantial development that is classified as a conditional use, or is not classified within this Program, and requires a shoreline conditional use permit pursuant to WAC 173-27-160. (WAC 173-27-030(4))

Conservation easement – An interest or right of use over a property, less than fee simple, to protect, preserve, maintain, improve, restore, limit the future use of, or conserve for open space purposes, any land or improvement on the land.

Council – The Kalama City Council.

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 (CARA) – 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 area – The following areas and ecosystems: (1) wetlands, (2) areas with a critical recharging effect on aquifers used for potable water, (3) fish and wildlife habitat conservation areas, (4) frequently flooded areas, and (5) geologically hazardous areas. (WAC 173-26-020(8))

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 –

1. With regard to a permit other than a permit for variance or conditional use, "date of filing" as used in this section refers to the date of actual receipt by Ecology of the local government's decision.
2. 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 local government.
3. When a local government simultaneously transmits to Ecology its decision on a shoreline substantial development with its approval of either a shoreline conditional use permit or variance, or both, "date of filing" has the same meaning as defined in 2. of this definition. (RCW 90.58.140(6))

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. (WAC 173-27-030(6) and (RCW 90.58.030(3)(a))) Development does not include dismantling or removing structures if there is no other associated development or re-development. See also Substantial Development.

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.

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

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. Shoreline ecological functions include hydrologic (transport of water and sediment across the natural range of flow

variability; attenuating flow energy; developing pools, riffles, gravel bars, nutrient flux, recruitment, and transport of large woody debris and other organic material), shoreline vegetation (maintaining temperature; removing excessive nutrients and toxic compound, sediment removal, and stabilization; attenuation of high stream flow energy; and provision of woody debris and other organic matter), hyporheic functions (removing excessive nutrients and toxic compounds, water storage, support of vegetation, and sediment storage and maintenance of base flows), and habitat for native aquatic and shoreline-dependent birds, invertebrates, mammals, amphibians, and anadromous and resident native fish (e.g., space or conditions for reproduction; resting, hiding, and migration; and food production and delivery). (WAC 173-26-020(13) and WAC 173-26-201(3)(d)(i)(C))

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. (WAC 173-26-020(14))

Endangered Species Act (ESA) – The Endangered Species Act of 1973.

Enhancement – Alterations performed to improve the condition or functions and values of an existing environmentally degraded area so that the functions provided are of a higher quality. Enhancements are to be distinguished from resource creation/establishment or restoration projects. Enhancement actions include increasing plant diversity, increasing fish and wildlife habitat, installing environmentally compatible erosion controls, and removing invasive plant species such as milfoil and loosestrife.

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 (American Geological Institute, 1998).

Erosion Hazard Area. See Geologic hazard areas.

Essential Public Facilities – Are broadly defined as being those types of facilities that are typically difficult to site. This definition includes airports, state education facilities, state and regional transportation facilities, state and local correctional facilities, solid waste handling facilities, medical care facilities, mental health facilities, and group homes (RCW 36.70A.200(1)).

Excavation – The mechanical removal of earth material.

Exempt/Exemption – Developments that are set forth in WAC 173-27-040 and RCW 90.58.030(3)(e), 90.58.147, and 90.58.515, as hereafter amended, that are not required to obtain a Shoreline Substantial Development Permit, but which must otherwise comply with applicable provisions of the Act and this Program. (WAC 173-27-030(7))

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.

4. 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 for evaluating the proportional cost of the improvements relative to the impacts proposed.

In cases where this Program requires certain actions unless they are infeasible, the burden of proving infeasibility is on the applicant. (WAC 173-26-020(15))

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. (WAC 173-26-020(16))

Fill material – A deposit of earth or other natural or manmade material placed by artificial means.

Fish and wildlife habitat conservation areas – Those areas identified as being of critical importance to maintenance of fish and wildlife including those listed in section 15.02.130-1 of appendix B.

Fish habitat – Habitat that is used by fish at any life stage at any time of the year, including potential habitat likely to be used by fish that could be recovered by restoration or management and includes off-channel habitat. (WAC 222-16-030(5)(h))

Float – An anchored (not directly to the shore) floating platform that is free to rise and fall with water levels and is used for water-dependent recreational activities such as boat mooring, swimming, or diving. Floats may stand alone with no over-water connection to shore or may be located at the end of a pier or ramp.

Floating residence - 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 stormwater 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.

Flood or **flooding** – A temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland waters and/or the unusual and rapid accumulation of runoff of surface waters from any source.

Floodplain – Synonymous with 100-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. (WAC 173-26-020(17))

Floodway – means those portions of the area 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. (Appendix B section 15.02.050, Floodway). 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.

Food web – The system of interlocking and interdependent food chains.

Forest Practices – Any activity conducted on or directly related to forest land and relating to growing, harvesting, or processing timber. These activities include 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 – are lands in the flood plain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater. (Appendix B section 15.02.050, Frequently Flooded Areas).

Functions and values– The beneficial roles served by critical areas including water quality protection and enhancement; fish and wildlife habitat; food chain support; flood storage, conveyance, and attenuation; groundwater recharge and discharge; erosion control; wave attenuation; protection from hazards; historical, archaeological, and aesthetic value protection; educational opportunities; and recreation. (Appendix B section 15.02.050)

Geologically hazardous areas – means areas susceptible to erosion, landslide, seismic, volcanic, or other geologic events. (Appendix B section 15.02.050 and further classified in Appendix B section 15.02.150).

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. (WAC 173-26-020(19))

Grading – The movement or redistribution (excavating and/or filling) of the soil, sand, rock, gravel, sediment, or other material on a site in a manner that alters the natural contour of the land. (WAC 173-26-020(20))

Groin – A barrier-type structure extending from the backshore or stream bank into a waterbody 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. All waters that exist beneath the land surface or beneath the bed of any stream, lake, or reservoir, or other body of surface water within the boundaries of this state, including underground streams, from which wells, springs, and ground water runoff are supplied, whatever may be the geological formation or structure in which such water stands or flows, percolates, or otherwise moves.

Guidelines – Those standards adopted by the Washington Department of Ecology to implement the policy of RCW 90.58 for regulation of use of the shorelines of the state prior to adoption of master programs. Such standards shall also provide criteria for local governments and Ecology in developing and amending master programs. (WAC 173-26-020(21))

Habitat conservation areas – Areas designated as fish and wildlife habitat conservation areas. See Table 3-A, Fish and Wildlife Habitat Conservation Areas, in Appendix B, or WAC 365-190-080(5)(a).

Hazardous substances – Any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical, or biological properties described in WAC 173-303-090 or 173-303-100.

Height – Measured from average grade level to the highest point of a structure: provided that television antennas, chimneys, and similar residential appurtenances shall not be used in calculating height, except where such residential appurtenances obstruct the view of the shoreline of a substantial number of residences on areas adjoining such shorelines, or the applicable master program specifically requires that such residential appurtenances be included: provided further that temporary construction equipment is excluded in this calculation. (WAC 173-27-030(9))

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

Impervious surface – A hard surface area that either prevents or severely restricts the entry of water into the soil mantle.

In-lieu Fee Program – A mitigation approach where a permittee pays a fee to a third party in lieu of conducting project-specific mitigation or buying credits from a mitigation bank. In-lieu fee mitigation is used mainly to compensate for minor impacts to wetlands and other aquatic or shoreline resources when better approaches to compensation are not available or practicable, or when the use of an in-lieu fee program is in the best interest of the environment and watershed. Compensation for larger impacts is usually provided by a mitigation bank or project-specific mitigation. Where proposed impacts are located within the service area of an approved in-lieu fee program, the permittee's compensatory mitigation requirements may be met by paying an established fee to the sponsor.

An in-lieu fee represents the expected costs to a third party of replacing the wetland or other aquatic or shoreline resource functions lost or degraded as a result of the permittee's project. In-lieu fees are typically held in trust until they can be combined with other in-lieu fees to finance a specific mitigation project.

Industrial – Activities and their supporting developments that relate to manufacturing, warehousing, distribution operations, and other industrial activities in KMC 17.28.020.

Institutional –A use and related structure(s) for the provision of educational, medical, cultural, social, public safety, and/or recreational services to the community, including schools, colleges,

museums, community centers, and the relevant essential public facilities identified in WAC 365-196-550

In-stream Structure – A structure placed by humans within a stream or river waterward of the OHWM that either causes or has the potential to cause water impoundment or the diversion, obstruction, or modification of water flow. In-stream structures may include those for hydroelectric generation, irrigation, water supply, flood control, transportation, utility service transmission, or fish habitat enhancement. In-stream structure does not apply to stormwater outfalls, which are regulated as utilities and do not impound or impede water flow.

Intensity, High – Land uses which are associated with moderate or high levels of human disturbance including commercial, industrial, medium- and high-density residential, multifamily residential, and active recreation land uses (e.g. golf courses, ball fields). (Different from the High-Intensity environment designation found in Section 5.4.2.)

Intensity, Low – Land uses that are associated with low levels of human disturbance including agriculture or forest management uses, single-family residential and related accessory structures, passive recreation, and home occupational uses.

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

Invasive – A nonnative plant or animal species that either:

1. Causes or may cause significant displacement in range or 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)).

Lake – means a body of standing water in a depression of land or expanded part of a river, including reservoirs, of twenty acres or greater in total area. A lake is bounded by the ordinary high water mark or, where a stream enters a lake, the extension of the elevation of the lake's ordinary high water mark within the stream;

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

Landslide – The abrupt downslope movement of a mass of soil or rock.

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 55 kilovolts; telephone; cable television, etc.

Log Booming – Includes the placement or removal of logs and log bundles into and from the water, and the assembly and disassembly of rafts for waterborne transportation.

Management recommendations – Recommendations developed by the Washington Department of Fish and Wildlife or other state or federal agencies to meet the goal of maintaining or enhancing the structural and functional integrity of riparian habitat and associated aquatic systems needed to perpetually support fish and wildlife populations on both site and landscape levels.

Manufactured home – A structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term manufactured home does not include recreational vehicles.

Manufactured home park or subdivision – A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Marina – Any commercial or club-owned facility consisting of docks or piers serving 5 or more vessels or a shared moorage serving a subdivision serving 10 or more vessels.

Marine railway – Inclined tracks extending into the water so that a vessel can be hauled up on a cradle or platform.

May – The action is acceptable, provided it conforms to the provisions of this chapter. (WAC 173-26-020(25))

Mining – The removal of sand, gravel, soil, minerals, and other earth materials for commercial and other uses. (WAC 173-26-241(3)(h))

Mitigation – An action designed to replace project-induced critical area or shoreline losses or impacts including avoiding, minimizing, or compensating for adverse critical area or shoreline impacts (see Mitigation Sequencing).

Mitigation, compensatory – Replacing project-induced losses or impacts to a critical area or shoreline. Compensatory mitigation can be provided in three ways: mitigation banks, in-lieu fee programs, and/ or permittee-responsible mitigation (advance or concurrent).

Mitigation, in kind – Replacement of critical area or shoreline losses or impacts with substitute critical area or shoreline whose characteristics and functions and values closely approximate those destroyed or degraded by a regulated activity.

Mitigation, out of kind – Replacement of critical area or shoreline losses or impacts with substitute critical area or shoreline with characteristics which do not closely approximate those destroyed or degraded by a regulated activity.

Mitigation Bank – A site where wetlands, streams, and their buffers are restored, created, enhanced, or in exceptional circumstances, preserved expressly for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources. A mitigation bank may be created when a government agency, corporation, nonprofit organization, or other entity undertakes these activities under a formal agreement with a regulatory agency. A mitigation bank sponsor sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. Where proposed impacts are located within the service area of an approved mitigation bank and the bank is determined to be ecologically appropriate and environmentally desirable to other mitigation alternatives, the permittee's compensatory mitigation requirements may be met by securing those credits from the Mitigation Bank sponsor.

Mitigation sequencing – Avoiding, minimizing, or compensating for adverse shoreline or critical areas impacts. Mitigation, in the following sequential order of preference, is:

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 sensitive area;

4. Reducing or eliminating the impact over time by preservation or maintenance operations during the life of the development proposal;

5. Compensating for the impact by replacing, enhancing, or providing substitute sensitive areas and environments (see Mitigation, compensatory);

6. Monitoring the impact and taking appropriate corrective measures.

Mitigation for individual actions may include a combination of the above measures.

Mixed-use– A combination of compatible uses within one development in which at least one water-dependent use is included.

Monitoring – The ongoing evaluation of the impacts of a development proposal on the biological, hydrologic, and geologic conditions of shorelines and critical areas. Monitoring includes the gathering of baseline data and the assessment of the performance of required mitigation measures through the collection and analysis of data for the purposes of understanding and documenting changes in natural ecosystems and features.

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

Must – A mandate; the action is required. (WAC 173-26-020(26))

Native vegetation – Plant species that are indigenous to the area.

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. (WAC 173-27-030(11))

Navigation channels or Navigable Waters –navigable for general commercial purposes and are capable of being used practically for the carriage of commerce. In order to be navigable, it must be capable of being used to a reasonable extent in the carrying on of commerce in the usual manner by water; whether a river is navigable in fact is to be determined by inquiring whether it is used, or is susceptible of use, in its natural and ordinary condition, as a highway for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

Nonconforming structure – A structure lawfully erected prior to the effective date of this Program which does not meet current standards for setbacks, buffers, vegetation conservation, landscaping, public access, screening, or other regulations for the area in which it is located due to changes in regulations since its establishment.

Nonconforming Development– A Development lawfully established prior to the effective date of this Program which does not meet current standards for setbacks, buffers, vegetation conservation, landscaping, public access, screening, or other regulations for the area in which it is located due to changes in regulations since its establishment

Nonconforming use – A use which was legally established prior to the effective date of this Program, which would not be permitted as a new use in the area in which it is located under the terms of this Program.

No net loss of ecological functions – The maintenance of existing shoreline ecological processes and functions, as follows:

1. On the level of the City/SMP: 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 at the level that existed at the time of the effective date of this SMP. Maintenance of system ecological processes and functions may require compensating measures that offset localized degradation.

2. On a project basis: that permitted use or alteration of a site, after compliance with applicable regulations or application of mitigation sequencing, will not result in on-site or off-site deterioration of the legally existing condition of ecological functions that existed prior to initiation of use or alterations as a direct or indirect result of the project.

No net loss can be achieved through compliance with SMP and other regulations, including avoidance and minimization of any adverse impacts, as well as compensation for impacts that cannot be avoided. Compensation may include mitigation of ecological functions to compensate for localized degradation, or use of alternative mitigation tools such as in-lieu-fee.

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. (WAC 173-26-020(27))

Noxious weeds – Any plant which, when established, is highly destructive, competitive, or difficult to control. Cowlitz 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 (OHWM) on all lakes, streams– That mark 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 Ecology: provided, that in any area where the OHWM cannot be found, the OHWM adjoining freshwater shall be the line of mean high water. (RCW 90.58.030(2)(c))

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

Permeability – The capacity of soil or rock to transmit water.

Permit – Any Shoreline Substantial Development Permit, Shoreline Variance, Shoreline Conditional Use Permit, or revision authorized under the Act (RCW 90.58). (WAC 173-27-030(13))

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 under 20 acres, which exists on a year-round basis and occurs in a depression of land or expanded part of a stream.
Potable water – Water that is safe for human consumption.
Preservation – Actions taken to ensure the permanent protection of existing, high-quality wetlands or other critical areas and shoreline habitats.
Project area – All areas proposed to be disturbed, altered, or used by the proposed activity for temporary construction activities (i.e., materials staging, construction access, soil stockpiling, etc.), permanent development (i.e., residential homes, driveways, detached garages, decks, fences, etc.), or regulatory alteration (i.e., rezoning or Comprehensive Plan designation change). For subdivisions, short subdivisions, binding site plans, planned unit developments, or rezones, the project area shall include the entire parcel.
Provisions – Policies, regulations, standards, guideline criteria or environment designations.
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 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 a critical area as is further defined in Appendix B, 15.02.050 Qualified Professional.
Recharge – The process involved in the absorption and/or addition of water to groundwater.
Recreation areas or **facilities** – Any commercial and public recreation 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 birdwatching and may include parks, playgrounds, sports fields, paths and trails, beaches, or other recreation areas or facilities.
Recreational vehicle – A vehicle which is built on a single chassis; 400 square feet or less when measured at the largest horizontal projection, designed to be self-propelled or permanently towable by a light duty truck, and designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.
Residential – Buildings, structures, or portions thereof that are designed and used as a place for human habitation. Included are single-family, 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 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 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. (WAC 173-26-020(31))

Restoration (for purposes of implementing Appendix B) – Measures taken to restore an altered or damaged natural feature, including:

1. Active steps taken to restore damaged wetlands, streams, protected habitat, or their buffers to the functioning condition that existed prior to an unauthorized alteration; and

2. Actions performed to re-establish structural and functional characteristics of the critical area that have been lost by alteration, past management activities, or catastrophic events.

Restoration, Wetland (for purposes of implementing Appendix B) – The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural or historic functions to a former or degraded wetland. For the purposes of tracking net gains in wetland acres, restoration is divided into:

1. Reestablishment results in a gain in wetland acres (and functions). Activities could include removing fill material, plugging ditches, or breaking drain tiles.

2. Rehabilitation means repairing the natural or historic function 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.

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

Riparian habitat – Areas adjacent to aquatic systems with flowing water that contain elements of both aquatic and terrestrial ecosystems that mutually influence each other. The width of these areas extends to that portion of the terrestrial landscape that directly influences the aquatic ecosystem by providing shade, fine or large woody material, nutrients, organic and inorganic debris, terrestrial insects, or habitat for riparian-associated wildlife. The width shall be measured from the OHWM and may include the entire extent of the floodplain and the extent of vegetation adapted to wet conditions as well as adjacent upland plant communities that directly influence the stream system. For the purpose of regulating shoreline development, riparian habitat widths are defined in Section 6.8 of this Program. Riparian habitat areas include those riparian areas severely altered or damaged due to human development activities.

Seep or **spring** – A location where water emanates from the earth, often forming the source of a small stream. Seeps and springs are hydrologically supported by groundwater and have a relatively constant water temperature and chemistry. Springs differ from seeps in that they tend to have a more persistent water source and have fewer dry periods than seeps.

SEPA – The Washington State Environmental Policy Act, Chapter 43.21C RCW.

Setback – The distance an activity, building, or structure must be located from a defined point or line, such as a property line or buffer edge.

Shall – A mandate; the action must be done. (WAC 173-26-020(32))

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 10 slips then it is a marina. If proposed shared moorage includes a swinging boom or davit style hoist, then it shall be reviewed under the provisions as a marina.

Shorelands or **shoreland areas** – Those lands under the jurisdiction of the Shoreline Management Act extending landward for 200 feet in all directions as measured on a horizontal plane from the OHWM; floodways and contiguous floodplain areas landward 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 Department of Ecology. (RCW 90.58.030(2)(d))

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 20 cubic feet per second or less and the wetlands associated with such upstream segments; and (iii) shorelines on ponds (lakes less than 20 acres in size) and wetlands associated with such ponds. (RCW 90.58.030(2)(e))

Shoreline areas and **shoreline jurisdiction** – All shorelines of the state and shorelands as defined in RCW 90.58.030. (WAC 173-26-020(33))

Shorelines Hearings Board (SHB) – A quasi-judicial body established by the Act to hear appeals by any aggrieved party on the issuance of a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, Shoreline 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 Kalama's Comprehensive Plan. All other portions of this Program adopted under RCW 90.58, including use regulations, shall be considered a part of the Kalama development regulations.

Shoreline modifications – Those actions that modify the physical configuration or qualities of the shoreline area, 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. (WAC 173-26-020(36)

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 setback or **shoreline buffer** – The area adjacent to a shoreline waterbody that separates and protects the waterbody from adverse impacts associated with adjacent land uses in order to ensure no net loss of shoreline ecological functions.

Shoreline stabilization, hard – Shoreline erosion control practices using hardened structures that armor and stabilize the shoreline from further erosion. Hard structural shoreline stabilization typically uses concrete, boulders, dimensional lumber, or other materials to construct linear, vertical, or near-vertical faces. These include bulkheads, rip-rap, and similar structures.

Shoreline stabilization, soft – Shoreline erosion control and restoration practices that contribute to restoration, protection, or enhancement of shoreline ecological functions. Soft structural shoreline stabilization typically includes a mix of gravels, cobbles, boulders, logs, and native vegetation placed to provide shore stability in a non-linear, generally sloping arrangement. Linear, vertical faces are an indicator of hard stabilization.

Shoreline Substantial Development Permit – 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. (RCW 90.58.030(2)(g))

Shorelines of statewide significance – The following shorelines of the state in the City:

1. Those natural rivers or segments thereof downstream of a point where the mean annual flow is measured at one thousand cubic feet per second or more; and

2. Those shorelands associated with (1). (RCW 90.58.030(2)(f))

In the City of Kalama, the Columbia River and the Kalama River are Shorelines of Statewide Significance.

Should – That a particular action is required unless there is a demonstrated compelling reason, based on the policy of the Shoreline Management Act and this Program, against taking the action. (WAC 173-26-020(35))

Site – Any parcel or combination of contiguous lots, or right-of-way, or combination of contiguous rights of way under the applicant's ownership or control where the proposed regulated activity 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% constitute areas of geologic concerns. Slopes greater than 30% 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.

Soil survey – The most recent soil survey for the local area or county by the National Resources Conservation Service, U.S. Department of Agriculture.

Streams – Water contained within a channel, either perennial or intermittent, and classified according to WAC 222-16-030 or WAC 222-16-031. Streams also include natural watercourses modified by man. Streams do not include irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, stormwater runoff facilities or other wholly artificial watercourses, except those that directly result from the modification to a natural watercourse.

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(15)).

Substantial development – Any development of which the total cost or fair market value exceeds $8,504, or as adjusted by the State Office of Financial Management, or any development which

materially interferes with the normal public use of the water or shorelines of the state except as specifically exempted pursuant to RCW 90.58.030(3)(e)

Substantial damage – Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.

Substantial improvement – Any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure either:

A. Before the improvement or repair is started; or

B. If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term excludes:

C. Any project for improvement of a structure to correct pre-cited existing violations of state or local health, sanitary, or safety code specifications which have been previously identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or

D. Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.

Substantially degrade – To cause significant ecological impact. (WAC 173-26-020(38))

Surface Water – Water that flows across the land surface, in channels, or is contained in depressions in the land surface, including ponds, lakes, rivers, and streams.

Utility line – Pipe, conduit, cable, or other similar facility by which services are conveyed to the public or individual recipients. Such services shall include water supply, electric power, natural gas, communications, and sanitary sewer.

Transmit – 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. (WAC 173-27-030(16))

Unavoidable – Adverse impacts that remain after all appropriate and practicable avoidance and minimization have been achieved.

Upland – Generally described as the 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.

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. Shoreline Variances must

be approved, approved with conditions, or denied by Ecology. See RCW 90.58.160. (WAC 173-27-030(17))

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 173-27-030(18))

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 the following: ship cargo terminal loading areas, ferry and passenger terminals, barge loading facilities, ship building and dry docking facilities, marinas, boating facilities, private moorage facilities, aquaculture, float plane facilities, sewer outfalls, hydroelectric generating plants, and water diversion facilities, such as agricultural pumphouses. (WAC 173-26-020(39))

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. (WAC 173-26-020(40))

Water-oriented use – A use that is water-dependent, water-related, or water-enjoyment, or a combination of such uses. (WAC 173-26-020(41))

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, 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. (WAC 173-26-020(42))

Water-related use – A use or portion of a use which is not intrinsically dependent on a waterfront location, but of which the 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. (WAC 173-26-020(43))

Water resource inventory area (WRIA) – One of 62 watersheds in the State of Washington, each composed of the drainage areas of a stream or streams, as established in Chapter 173-500 WAC as it existed on January 1, 1997.

Water table – That surface in an unconfined aquifer at which the pressure is atmospheric.

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 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. (RCW 90.58.030(2)(h)) 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.

3. Applicability, Exemptions, and Nonconforming Development

3.1 Applicability

A. Except when specifically exempted by statute, all proposed uses and development occurring within shoreline jurisdiction must conform to Chapter 90.58 RCW Shoreline Management Act of 1971 and this master program, whether or not a permit is required.

B. All prior approved Shoreline Substantial Development Permits, Shoreline Conditional Use Permits, or Shoreline Variances are recognized as valid, subject to the applicable time requirements, regardless if the permit was issued by the City of Kalama or Cowlitz County. New proposals and developments that were not included in the originally approved plan will be subject to the policies and regulations of this Program.

C. Unless described otherwise, this Program does not apply to the continuance of legally established and permitted uses established prior to the effective date of this Program; these uses and developments are allowed to continue. Building permit applications (RCW 19.27.095), short subdivision and subdivision applications (RCW 58.17.033), and development agreements (RCW 36.70B.180) that pre-date the effective date of this Program are subject to the SMP in effect at the time of a complete land use application or according to the terms of a development agreement.

D. Shoreline Jurisdiction.

1. This Program shall apply to all of the shorelands and waters within the City of Kalama that fall under the jurisdiction of RCW 90.58. Such shorelands shall include those lands extending 200 feet in all directions as measured on a horizontal plane from the OHWM. In addition, floodways and contiguous floodplain areas landward 200 feet from such floodways, and all wetlands and river deltas associated with the shorelines that are subject to the provisions of this Program, as may be amended, are shorelands. The City has elected not to extend jurisdiction to include land necessary for buffers for critical areas. For these critical areas which are partly within shoreline jurisdiction, the SMP will apply within shoreline jurisdiction and the City's Critical Areas Ordinance will apply outside of shoreline jurisdiction. Note that shoreline associated wetlands are fully included within shoreline jurisdiction, consistent with WAC 173-22-040.

2. Within the City of Kalama, the following waters are considered shorelines and are subject to the provisions of this Program: Columbia River, Kalama River, and Kress Lake.

3. A copy of the Kalama Shoreline Environment Designation Map is shown in Appendix A.

E. Maps indicating the extent of shoreline jurisdiction are for guidance only. They are to be used in conjunction with the most current, accurate, and complete scientific and technical information available, 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.

F. In establishing the minimum shoreline jurisdiction, applicants may utilize the Federal Emergency Management Agency's (FEMA's) mapping of any floodways. Alternatively, applicants may utilize an alternative map of the floodway consistent with the definition provided in Section 2, provided that it is prepared by a qualified professional and is supported by the most current scientific and technical information available. 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.

G. 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.

H. Areas and uses in those areas that are under exclusive federal jurisdiction as established through federal or state statutes are not subject to the jurisdiction of chapter 90.58 RCW

I. 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.

J. Applicants that are responding to an emergency that requires a water withdrawal or facility shall be provided an expedited permit decision from the City, no longer than 15 calendar days after the date of application in accordance with RCW 90.58.370.

K. 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.

L. The City may grant relief from shoreline master program development standards and use regulations resulting from shoreline restoration projects within urban growth areas consistent with criteria and procedures in WAC 173-27-215.

3.2 Exemptions from a Shoreline Substantial Development Permit

A. Substantial development as defined Chapter 2, Definitions requires approval from the City through a Shoreline Substantial Development Permit (SSDP) (see Subsection 8.6.1, Shoreline Substantial Development Permit), except that:

1. An SSDP is not required for developments that meet the precise terms of one or more of the listed exemptions identified in WAC 173-27-040(2) Developments exempt from substantial development permit requirement.

B. Any person claiming exemption from the permit requirements of this Program as a result of the exemptions specified in this section may apply for a Shoreline Letter of Exemption (LOE) as described in Chapter 8. In the event a federal permit is also required for the proposed action, the applicant must apply for a LOE 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.

3.3 Developments not required to obtain shoreline permits or local reviews

Requirements to obtain a Substantial Development Permit, Conditional Use Permit, Variance, letter of exemption, or other review to implement the Shoreline Management Act do not apply to the following:

A. Remedial actions. Pursuant to RCW 90.58.355, any person conducting a remedial action at a facility pursuant to a consent decree, order, or agreed order issued pursuant to chapter 70.105D RCW, or to the Department of Ecology when it conducts a remedial action under chapter 70.105D RCW.

B. Boatyard improvements to meet NPDES permit requirements. Pursuant to RCW 90.58.355, any person installing site improvements for storm water treatment in an existing boatyard facility to meet requirements of a national pollutant discharge elimination system storm water general permit.

C. WSDOT facility maintenance and safety improvements. Pursuant to RCW 90.58.356, Washington State Department of Transportation projects and activities meeting the conditions of RCW 90.58.356 are not required to obtain a Substantial Development Permit, Conditional Use Permit, Variance, letter of exemption, or other local review.

D. Projects consistent with an environmental excellence program agreement pursuant to RCW 90.58.045.

E. Projects authorized through the Energy Facility Site Evaluation Council process, pursuant to chapter 80.50 RCW.

3.4 Nonconforming Development

Existing uses, structures, and parcels or lots legally established prior to the effective date of this Program are allowed to continue. Uses, structures and development vested under and subject to a previous version of this Shoreline Master Program in a development agreement or other legal

method of vesting are not considered nonconforming subject to this Section 3.4, and will continue to be evaluated under the applicable previous version of the Shoreline Master Program until the expiration of vesting. Where lawful uses, structures, and lots exist that could not be established under the terms of this Program, such uses, structures, and lots are deemed nonconforming and are subject to the provisions of this section, unless specific exceptions are provided for in this section.

A. The following shall apply only to pre-existing legal residential structures constructed prior to the effective date of this Program:

1. Residential structures and appurtenant residential structures that were legally established and are used for a conforming use, but that do not meet standards for the following, shall be considered a conforming structure: setbacks, buffers, or yards; area; bulk; height; or density.

2. The City shall allow maintenance and repair, redevelopment, expansion, or change with the class of occupancy, of the residential structure if it is consistent with the SMP, including requirements for no net loss of shoreline ecological functions. For example, vertical or landward expansions that do not intrude farther into a required buffer and which are consistent with the maximum height allowed by this SMP and underlying zoning may be allowed. Lateral expansions may also be allowed provided they only extend into lawfully disturbed or altered areas. Expansions that propose new impacts or increase the existing impacted area shall not be allowed unless otherwise permitted through a new permit in compliance with this program.

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 City and the Cowlitz County Health Department are satisfied; and

   b. A complete application for a building permit shall be submitted within 5 years of the act causing damage or destruction to the dwelling unit.

4. This Section shall not:

   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.

B. Structures, other than those described in Subsection 3.4.A 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 increase the extent of nonconformity by further encroaching upon or extending into areas where construction or use would not be allowed for new development or uses.

C. Uses and developments that were legally established and are nonconforming with regard to the use regulations of this Program may continue as legal nonconforming uses. Such uses shall not be enlarged or expanded.

D. A use which is listed as a conditional use, but which existed prior to adoption of this Program or any relevant amendment, or prior to the applicability of this Program to the site, and for which an SCUP has not been obtained shall be considered a nonconforming use.

E. A structure, other than those described in Subsection 3.4.A, for which a variance has been issued shall be considered a legal nonconforming structure and the requirements of this section shall apply as they apply to preexisting nonconformities.

F. A structure which is being or has been used for a nonconforming use may be used for a different nonconforming use only upon the approval of an SCUP. An SCUP may be approved only upon a finding that:

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.

G. A nonconforming structure which is moved any distance must be brought into conformance with this Program and the Act.

H. If a nonconforming development is damaged to an extent not exceeding 75% 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 the permit process is commenced within 24 months of the date of such damage. Nonconforming development damaged to an extent exceeding 75% of the replacement cost of the original development must be brought into conformance with this Program and the Act.

I. If a nonconforming use is discontinued for 12 consecutive months or for 12 months during any two-year period, the nonconforming rights shall expire and any subsequent use shall be conforming. The term of a discontinued use starts when utility services have been cancelled. A use authorized pursuant to Subsection E of this section shall be considered a conforming use for purposes of this section.

J. Vegetation conservation standards of this Program shall not apply retroactively in a way which requires lawfully existing uses and developments or ongoing maintenance thereof, including residential landscaping and gardens, to be removed or modified except as required as mitigation for new and expanded development.

4. Shoreline Master Program Goals and Policies

4.1 Introduction

It shall be the ultimate goal of the City of Kalama SMP to provide plans, policies, and regulations consistent with the Act (RCW 90.58) and with the SMP Guidelines (WAC 173-26, State Master Program Approval/Amendment Procedures and Master Program Guidelines), which will reflect the desires of the citizens of the City regarding the balanced use of the City's shorelines.
As directed by RCW 90.58.100, master programs shall include, when appropriate, the following:

A. An economic development element for the location and design of industries, projects of statewide significance, transportation facilities, port facilities, tourist facilities, commerce and other developments that are particularly dependent on their location on or use of the shorelines of the state;

B. A public access element making provision for public access to publicly owned areas;

C. A recreational element for the preservation and enlargement of recreational opportunities, including but not limited to parks, tidelands, beaches, and recreational areas;

D. A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities, all correlated with the shoreline use element;

E. A use element which considers the proposed general distribution and general location and extent of the use on shorelines and adjacent land areas for housing, business, industry, transportation, agriculture, natural resources, recreation, education, public buildings and grounds, and other categories of public and private uses of the land;

F. A conservation element for the preservation of natural resources, including but not limited to scenic vistas, aesthetics, and vital estuarine areas for fisheries and wildlife protection;

G. An historic, cultural, scientific, and educational element for the protection and restoration of buildings, sites, and areas having historic, cultural, scientific, or educational values;

H. An element that gives consideration to the statewide interest in the prevention and minimization of flood damages; and

I. Any other element deemed appropriate or necessary to effectuate the policy of this chapter.

The following statements of goals and policies are directed to address these elements as outlined in the Act and SMP Guidelines.

4.2 General Shoreline Goals and Policies

4.2.1 Goal

Ensure appropriate conservation and economic development of City of Kalama's shorelines by allowing those uses which are water-dependent, as well as other development which provides

an opportunity for a substantial number of people to enjoy the shorelines while promoting economic prosperity. This should be done in a manner which will achieve an orderly balance of shoreline uses that do not degrade the quality of the environment.

4.2.2 Policies

A. Preserve and enhance water-oriented port and industrial use on the Columbia River and ensure provision of needed infrastructure, including maintenance of the Columbia River Navigation Channel as well as rail and highway access.

B. Water-dependent and associated water-related uses are the highest priority for Kalama's shorelines. Protection of the existing natural resource values of such areas must be considered. Adherence to no net loss policies should be met through a combination of conservation, enhancement, and preservation measures.

C. Water-related and water-enjoyment uses that are compatible with ecological protection and restoration objectives should be developed as part of mixed-use development in areas less suited for port and industrial use.

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. Reserve shoreline areas for uses which allow for future generations by recognizing the potential long-term benefits to the public and discouraging short-term gain or convenience.

4.3 General Shoreline Use Preferences

A. This SMP adopts the following policy provided in RCW 90.58.020, and fully implements it to the extent of its authority under this SMP:

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 and their appurtenant structures, 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. Alterations of the natural condition of the shorelines and shorelands of the state shall be recognized by the department [of Ecology]. Shorelines and shorelands of the state shall be appropriately classified and these classifications shall be revised when circumstances warrant regardless of whether the change in circumstances occurs through man-made causes or natural causes. Any areas resulting from alterations of the natural condition of the shorelines and shorelands of the state no longer meeting the definition of "shorelines of the state" shall not be subject to the provisions of chapter 90.58 RCW.

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.

B. When determining allowable uses and resolving use conflicts on shorelines within jurisdiction consistent with the above policy, the following preferences and priorities as listed in WAC 173-26-201(2)(d) have been implemented in the development of this program and should continue to guide decisions made under this program as applicable in the order presented below:

1. Reserve appropriate areas for protecting and restoring ecological functions to control pollution and prevent damage to the natural environment and public health.

2. Reserve shoreline areas for water-dependent and associated water-related uses. Harbor areas, established pursuant to Article XV of the state Constitution, and other areas that have reasonable commercial navigational accessibility and necessary support facilities such as transportation and utilities should be reserved for water-dependent and water-related uses that are associated with commercial navigation unless the local governments can demonstrate that adequate shoreline is reserved for future water-dependent and water-related uses and unless protection of the existing natural resource values of such areas preclude such uses. Local governments may prepare master program provisions to allow mixed-use developments that include and support water-dependent uses and address specific conditions that affect water-dependent uses.

3. Reserve shoreline areas for other water-related and water-enjoyment uses that are compatible with ecological protection and restoration objectives.

4. Locate single-family residential uses where they are appropriate and can be developed without significant impact to ecological functions or displacement of water-dependent uses.

5. Limit non-water-oriented uses to those locations where the above-described uses are inappropriate or where non-water-oriented uses demonstrably contribute to the objectives of the Shoreline Management Act.

4.4 Shorelines of Statewide Significance

Within the City of Kalama, the Columbia River and the Kalama River are designated as Shorelines of Statewide Significance (SSWS). Shorelines of Statewide Significance are of value to the entire state. Because these shorelines are major resources from which all people in the state derive benefit, through the implementation of this program the City gives preference to uses which favor long-range goals and support the overall public interest.

In accordance with RCW 90.58.020: in adopting guidelines for shorelines of statewide significance, and The City of Kalama, in developing master programs for shorelines of statewide significance, shall give preference to uses in the following order of preference which:

(1) Recognize and protect the statewide interest over local interest;

(2) Preserve the natural character of the shoreline;

(3) Result in long term over short term benefit;

(4) Protect the resources and ecology of the shoreline;

(5) Increase public access to publicly owned areas of the shorelines;

(6) Increase recreational opportunities for the public in the shoreline;

(7) Provide for any other element as defined in RCW **90.58.100** deemed appropriate or necessary.

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 and their appurtenant structures, 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. Alterations of the natural condition of the shorelines and shorelands of the state shall be recognized by Ecology. Shorelines and shorelands of the state shall be appropriately classified and these classifications shall be revised when circumstances warrant regardless of whether the change in circumstances occurs through man-made causes or natural causes.

Any areas resulting from alterations of the natural condition of the shorelines and shorelands of the state no longer meeting the definition of "shorelines of the state" shall not be subject to the provisions of chapter **90.58** RCW.

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.

Uses that are not consistent with these preferences should not be permitted on SSWS.

4.5 Historic, Cultural, Archeological, and Educational Resources

4.5.1 Goal

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

4.5.2 Policies

A. Identify historic, cultural, and archaeological resources within the shoreline in cooperation with federal, state, local, and tribal agencies.

B. Preserve for their inherent cultural value and for scientific study, as well as public enjoyment and observation, all areas known to contain significant archaeological artifacts.

C. Preserve for the public benefit, with opportunity for appropriate public utilization, significant historic, scientific, and educational areas of the shoreline.

D. Ensure that the review and construction of development includes professional assessment or protection of historic, cultural, and archaeological resources and that such resources are preserved or conserved in compliance with applicable laws. An Inadvertent Discovery Plan is acceptable.

4.6 Conservation and Restoration

4.6.1 Goal

Assure protection, preservation, and restoration of City of Kalama's nonrenewable resources, while encouraging the use of best management practices to assure no net loss of shoreline ecological functions.

4.6.2 Policies

A. Existing natural resources should be conserved through implementation of this Program, the City's Comprehensive Plan, and other local development regulations; incorporation of critical areas regulations; and cooperation as feasible with adjacent jurisdictions to implement regional watershed plans.

B. Facilitate publicly and privately initiated restoration projects through adoption of a Shoreline Restoration Plan (Appendix C). The plan identifies degraded areas, sets overall goals and priorities for restoring these areas, identifies existing and proposed restoration projects and programs, and provides implementation strategies.

C. The cumulative effect of mitigation required cannot exceed that necessary to assure that development will result in no net loss of shoreline ecological functions and not have a significant adverse impact on other shoreline functions fostered by the policy of the Act.

D. Preserve the scenic and aesthetic qualities of shorelines and vistas.

4.7 Economic Development

4.7.1 Goal

Give priority to those industrial, commercial, and recreational developments that are particularly dependent on their locations on City of Kalama's shoreline, and support economic activity and the City's Comprehensive Plan.

4.7.2 Policies

A. Recognize the importance to the region of Columbia River ports and encourage water-oriented port and industrial use on the Columbia River.

B. Recognize the potential for mixed-use developments in areas designated high-intensity along the Kalama River, and integrate upland and water-oriented uses to provide the maximum benefits to the public and land owners.

C. Locate recreational activities in areas where they will complement and not conflict with industrial and mixed-use development.

D. Facilitate effective flood protection for areas within the City of Kalama that provide important economic benefits to the City and the region.

4.8 Flood Prevention and Flood Damage Minimization

4.8.1 Goal

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

4.8.2 Policies

A. Manage flood protection through implementation of the City's Storm Drainage Standards, Comprehensive Plan, stormwater regulations, and the regional flood hazard control plans for the Columbia and Kalama Rivers.

B. On the Kalama River, protect existing development and restore floodplain and channel migration functions to the extent feasible.

C. Integrate bioengineering and/or soft engineering approaches where feasible into local and regional flood control measures, infrastructure, and related capital improvement projects.

D. Support measures to increase the natural functions of floodplains, including flood storage, off-channel habitat, associated wetlands, and buffers of native vegetation, through levee setbacks and similar programs.

4.9 Public Access

4.9.1 Goal

Ensure a variety of modes of access for the public to publicly owned shorelines of the City of Kalama, and assure that public access will not encroach upon the rights of private property owners or adversely affect fragile natural areas.

4.9.2 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, security, and public safety.

B. Public access in industrial areas should be concentrated in areas where it will not interfere with water-oriented industrial uses or compromise the safely of industrial uses or the public; such access may be provided in alternate locations. The Port of Kalama has incorporated public access planning into its Comprehensive Scheme of Harbor Improvements, dated July 1, 2015, to serve public access needs of industrial and recreational lands along the Columbia and Kalama Rivers. That plan may support more flexible off-site or special area public access provisions which may be proposed and approved through the SMP permitting review. (WAC 173-26-221(4)(c))

C. Public access improvements on the Kalama River should be developed as an interconnected system to serve the common public access and recreation needs of future development, to the extent practicable.

D. Future developments and redevelopments shall not adversely affect existing public access, and should provide new opportunities for the public to reach, touch, and enjoy the water's edge.

E. Locate, design, and maintain public access development in a manner that enhances the natural environment.

F. Require public entities to include public access measures as part of each development project, unless such access is shown to be incompatible due to reasons of safety, security, or impact to the shoreline environment.

G. Coordinate shoreline public access with other local, state, and federal agencies, and be consistent to the extent practicable with applicable regional parks, recreation, open space, and trails plans.

H. Respect and protect private property rights in shoreline jurisdiction when considering public access.

4.10 Recreation

4.10.1 Goal

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

4.10.2 Policies

A. Give priority, where appropriate, to water-oriented shoreline recreational development in shoreline jurisdiction, and prioritize development primarily related to access to, enjoyment of, and use of the water and shorelines of the state.

B. Design recreation activities on the Columbia River to avoid interference with water-oriented industrial use.

C. Provide recreational opportunities, including those requirements of the elderly and the physically challenged.

D. Cultivate innovative and cooperative techniques among public agencies and private persons or groups which increase and diversify recreation opportunities.

E. Allow compatible recreational uses, including bicycle and foot paths, in transportation and utility corridors where feasible.

F. Locate, design, and operate recreation facilities in a manner consistent with the purpose of the designation in which they are located so that no net loss of shoreline ecological functions or ecosystem-wide processes result.

G. Coordinate with local, state, and federal agencies so that shoreline recreational developments are consistent with the City's and any regional parks, recreation, open space, and trails plans.

4.11 Transportation, Utilities, and Essential Public Facilities

4.11.1 Goal

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

4.11.2 Policies

A. Preserve and enhance transportation facilities that serve water-oriented port and industrial uses on the Columbia River, including maintenance of the Columbia River Navigation Channel as well as rail and highway access.

B. Locate transportation facilities serving shoreline uses where they will adequately serve those uses and locate system elements not serving shoreline uses away from the shoreline, except for necessary crossings, so that natural shorelines remain substantially unmodified.

C. 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.

D. Encourage joint uses of any necessary roads.

E. When appropriate, the City shall require new transportation facilities to include active modes of transportation, such as pedestrian and bicycle use, to the shoreline.

4.12 **Shoreline Use**

4.12.1 **Goal**

Foster and promote the best use of the City's shorelines, by encouraging shoreline development which is wisely placed and consistent with the physical limitations of the areas; serving the needs and desires of the local citizens; and protecting the functions and values of the shorelines.

4.12.2 **Policies**

A. Agriculture

1. The City of Kalama should prohibit any new agricultural uses from locating within the shoreline jurisdiction. Existing agricultural uses in shoreline jurisdiction may continue.

B. Aquaculture

1. Encourage aquaculture that supports the recovery of endangered or threatened fish species.

2. Restrict aquaculture in areas where it would result in a net loss of ecological functions or significantly conflict with navigation or other water-dependent uses.

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 should be located and designed to ensure no net loss of ecological functions or other significant adverse impacts, and should, where feasible, enhance degraded and/or scarce shoreline features.

3. Boating facilities that minimize the amount of shoreline modification, in-water structures, and overwater cover are preferred.

4. Joint use of boating facilities is encouraged.

D. Commercial

1. Priority should be given to water-dependent commercial uses within shoreline jurisdiction.

2. The design of commercial uses should not cause a net loss of shoreline ecological functions.

E. Forest Practices

1. Due to a lack of timber harvest potential within the City's shoreline jurisdiction, these activities should be prohibited.

F. Industrial

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, such as public access and/or ecological restoration in addition to substantial economic benefit, or if the site is physically separated from the shoreline by another property or public right-of-way.

3. The location, design, construction, and operation of industrial uses should not cause a net loss of shoreline ecological functions.

G. Institutional

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 discouraged in shoreline jurisdiction unless such development provides a significant public benefit, such as public access or 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.

4. The location, design, construction, and operation of institutional uses should not cause a net loss of shoreline ecological functions.

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. Encourage non-structural and non-regulatory approaches as an alternative to in-stream structures.

I. Mining

1. The City of Kalama does not contain any mining uses and prohibits any new mining uses from locating within shoreline jurisdiction.

J. Recreational

1. Allow shoreline recreational development in order to provide access, use, and enjoyment of shorelines that does not displace water-dependent uses.

2. 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.

3. Continue to work with neighboring jurisdictions and other governments to support local and regional opportunities for public recreation, shoreline access, and use.

4. Develop recreational activity areas in a manner which complements commercial and residential uses and/or natural habitats.

5. Prioritize recreational development in coordination with the City of Kalama Comprehensive Plan goals and policies for recreation.

K. Residential

1. Recognize single-family uses as preferred when developed in a manner that does not result in a net loss of ecological functions.

2. The design of residential uses should be located and designed to avoid the need for shoreline stabilization.

3. New multi-family and single-family residential development in shoreline jurisdiction, comprising more than 4 dwelling units, should provide for public access to the shoreline consistent with this Program.

L. Transportation and Parking

1. Allow parking facilities within shoreline jurisdiction only to support an authorized use. (WAC 173-26-241(3)(k))

2. New or expanded facilities should be designed to result in no net loss of ecological functions and processes in shoreline jurisdiction.

M. Utilities

1. Whenever feasible, locate new non-water-oriented utilities outside shoreline jurisdiction.

2. Utilities that must be located within shoreline jurisdiction should be located within existing rights of way or corridors whenever feasible.

3. Locate, install, and maintain utility facilities and corridors, including necessary shoreline crossings, to minimize loss of ecological function and preserve the natural landscape, including avoiding impacts to critical areas, minimizing clearing of vegetation, and mitigating any impacts.

4.13 Shoreline Modifications

4.13.1 Goal

Foster and promote the best use of the City's shorelines, by encouraging shoreline modifications which are wisely placed and consistent with the physical limitations of the areas; serving the needs and desires of the local citizens; and protecting the functions and values of the shorelines.

4.13.2 Policies

A. General

1. Allow structural shoreline modifications where it can be demonstrated that the proposed activities are 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.

2. Allow shoreline modifications only when adverse individual and cumulative impacts are avoided, minimized, and mitigated resulting in no net loss of shoreline ecological functions. The cumulative effect of mitigation cannot exceed that necessary to assure that development will result in no net loss of shoreline ecological functions and not have a significant adverse impact on other shoreline functions fostered by the policy of the Act.

3. Only approve Shoreline modifications if they are appropriate to the specific type of shoreline and environmental conditions for which they are proposed. (WAC 173-26-231(2)(c))

4. Limit, as much as possible, the number and extent of shoreline modifications. (WAC 173-26-231(2)(b))

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.

3. Where adverse impacts are unavoidable from stabilization measures, mitigation should be required to assure no net loss of ecological function.

4. Where feasible, plan for enhancement of impaired ecological functions while accommodating permitted uses.

C. Breakwaters, Jetties, Rock Weirs, and Groins

Breakwaters, jetties, groins, and weirs should only be allowed when demonstrated to be necessary to protect a water-dependent use, public access project, shoreline restoration project, or the preferred shoreline stabilization structure.

D. Residential Moorage Facilities

The City of Kalama does not contain any residential moorage facilities and prohibits any new residential moorage facilities uses from locating within the shoreline jurisdiction.

E. Fill and Excavation

Fills, excavation, and other grading activity should be located, designed, and constructed to protect shoreline ecological functions and ecosystem-wide processes.

F. Dredging and Dredge Material Disposal

1. Dredging and dredge material disposal are allowed provided they are done in a manner which avoids or minimizes significant ecological impacts, and impacts which cannot be avoided should be mitigated in a manner that assures no net loss of shoreline ecological functions.

2. New development should be sited and designed to avoid or, if that is not feasible, to minimize the need for new and maintenance dredging.

3. The necessary and ongoing maintenance dredging of the Columbia River or Kalama River for navigation and/or flood control purposes, including actions by the U.S. Army Corps of Engineers, should be supported.

4. Disposal of dredge material on shorelands or wetlands within a river's channel migration zone should be discouraged. In the limited instances where it is allowed, such disposal shall require a conditional use permit. This provision does not apply to the discharge of dredge material into the flowing current of the river or in deep water or for beach nourishment purposes where it does not substantially affect the geohydrologic character of the channel migration zone.

G. Shoreline Habitat and Ecological Enhancement

1. Facilitate the projects described within the Shoreline Restoration Plan in 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 feasible, restoration and enhancement activities should be integrated and coordinated with other parallel natural resource management efforts.

5. Shoreline Environment Designations

5.1 Introduction

The intent of assigning shoreline environment designations (SEDs) 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 SED based on existing development patterns, natural capabilities and limitations, and the vision of the City of Kalama. The SEDs are intended to work in conjunction with the comprehensive plan and zoning.

Parallel environments divide shorelands into different sections generally along a physical feature such as a floodway, or following parcel or zoning boundaries or railroad right of way. Such environments may be useful, for example, to accommodate resource protection near the shoreline and existing development further from the shoreline.

Management policies are an integral part of the SEDs and are used for determining uses and activities that can be permitted in each SED.

Chapters 6 and 7 contain development regulations to specify how and where permitted development can take place within each SED.

5.2 Authority

The City is required under the Act and the Program 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 the City to account for different shoreline conditions is to assign an SED to each distinct shoreline section in its jurisdiction. The SEDs 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 SED.

B. All other areas that were not mapped in shoreline jurisdiction but that meet the applicability criteria in Section 3.1 Applicability shall be assigned an Urban

Conservancy SED until the shoreline can be designated through a Program amendment.

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. Associated wetlands must be delineated at the time of application. Such associated wetlands would receive the SED designation of the nearest designated shoreline unless the Shoreline Environment Designation Map indicates otherwise. In the case that there is more than one SED assigned to the nearest designated shoreline, the character of the associated wetland, land use zoning, and any development approvals, adopted plans, or development agreements will be considered in the context of the Designation Criteria set forth in this Chapter when determining which of the adjoining SEDs to assign.

E. Boundaries indicated as approximately following lot or parcel, 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.

F. The City of Kalama employs parallel environments where shorelines contain physical or land use characteristics where a single environment would not be consistent with achieving the goals and policies for the shoreline. Parallel environments divide shorelands into different sections generally following parcel or zoning boundaries, rights of way, or other natural features and may not be numerically parallel to the shoreline. Such environments are useful, for example, to accommodate resource protection near the shoreline and existing development further from the shoreline.

G. In the event of annexation of a shoreline area that is predesignated by this SMP, the affected area shall be subject to this Shoreline Master Program upon the effective date of the annexation.

H. For any additional annexations outside of areas pre-designated at the time of adoption of this SMP the affected area shall use the existing designation assigned by Cowlitz County and the applicable Cowlitz County SMP to regulate those shorelines until the shoreline area can be redesignated through a Shoreline Master Program amendment. Consistent with the procedures in WAC 173-26-160, the City shall submit such an amendment to the Washington Department of Ecology for approval no later than one year from the effective date of annexation.

5.4 Shoreline Environment Designations

The City classification system consists of SEDs that are consistent with and implement the Act (RCW 90.58), the Shoreline Master Program Guidelines (WAC 173-26), and the City of Kalama Comprehensive Plan.
These designations have been assigned consistent with the corresponding criteria provided for each SED. In delineating SEDs, 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 six SEDs are:

- Water-Dependent Industrial
- High-Intensity
- Residential
- Recreation
- Urban Conservancy
- Aquatic

5.4.1 Water-Dependent Industrial

Purpose

The purpose of the Water-Dependent Industrial SED is to reserve shoreline areas adjacent to commercial navigation channels for water-dependent industrial activities where infrastructure, such as inter-modal transportation, utilities, and other services, exist or are planned to support such uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded.

Management Policies

A. Priority should be given to private and/or public ports and industrial-related water-dependent uses. Non-water-oriented uses may be allowed in limited situations as part of mixed-use development where they do not conflict with or limit opportunities for water-oriented uses or on sites where there is no direct access to the shoreline because of an intervening property, public right-of-way, or public road (WAC 173-26-211(5)(d)(ii)(A)). Non-water-oriented uses may also be allowed in special circumstances outlined in Subsections 7.2.4, Commercial, and 7.2.6, Industrial.

B. Development should result in no net loss of shoreline ecological functions in accordance with Section 6.1 of this SMP. Where unavoidable impacts to ecological functions occur, appropriate mitigation should be provided in accordance with this Program.

C. Promote development and redevelopment of shoreline areas and encourage environmental remediation and restoration of the shoreline where applicable.

D. Where feasible, as described by this Program, visual and/or physical public access should be provided.

E. Aesthetic objectives should be in character with high intensity development and include appropriate development siting, height limits, screening, and other standards consistent with the primary purpose of accommodating water-dependent industrial use.

F. Existing urban areas appropriate for intensive development should be fully utilized before expanding intensive development into other areas. (Based on WAC 137-26-211(5)(d)(ii)(B))

Designation Criteria

The Water-Dependent Industrial SED is given to shoreline areas where more intense water-oriented industrial and commercial development exists or is planned, that have reasonable access to a commercial navigation channel. This includes channels that may be accessed by approved dredging programs and other areas designated in this Program where commercially navigable channels may be developed.

5.4.2 High-Intensity

Purpose

The purpose of the High-Intensity SED is to reserve shoreline areas for water-dependent activities, provide for high-intensity, commercial, transportation, marina, and recreational uses while protecting existing ecological functions and restoring 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 shoreline jurisdiction are appropriate as part of mixed-use development on sites where they do not conflict with or limit opportunities for water-oriented uses; or where there is no direct access to the shoreline because of an intervening property, public right-of-way, or public road (based on WAC 173-26-211(5)(d)(ii)(A)). Non-water-oriented uses may also be allowed in special circumstances outlined in Subsections 7.2.4 Commercial, and 7.2.6 Industrial.

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. No net loss of shoreline ecological functions should result due to development of a site. Where unavoidable impacts to ecological functions occur, appropriate mitigation should be provided in accordance with this Program. Where applicable, development should include environmental cleanup and restoration of the shoreline in accordance with relevant state and federal law.

D. Where feasible as described in Section 6.5 of this Program, visual and/or physical public access should be provided.

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. (WAC 137-26-211(5)(d)(ii)(B))

Designation Criteria

The High-Intensity SED is given to shoreline areas within Kalama and its urban growth areas that currently support or are planned for high-intensity uses, such as commerce, transportation, marinas, or essential public facilities. This designation is used for sites that either do not have access to commercially navigable channels maintained by state and federal agencies or that are dedicated to non-industrial water-dependent uses, such as a marina; or that are characterized by a predominance of current non-water-oriented uses. This designation may also be used when a site's existing physical constraints, such as land area, surrounding use, or land form would not support water oriented industrial uses.

5.4.3 Residential

Purpose

The purpose of the Residential SED is to accommodate residential development and residential appurtenances that are consistent with this Program.

Management Policies

A. Development in the Residential designation should assure no net loss of shoreline ecological functions.

B. Multi-family and multi-lot residential (greater than 4 lots or units) and recreational 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.

Designation Criteria

The Residential SED is assigned to shoreline areas inside the City of Kalama and its urban growth area if they are predominantly single-family or multi-family residential development or are planned and platted for residential development.

5.4.4 Recreation

Purpose

The Recreation SED is intended to provide areas for new and continued recreational and public access opportunities along shorelines, including public and private parks and recreational facilities, while maintaining ecological functions and open space.

Management Policies

A. New recreation development should result in no net loss of ecological function.

B. Water-dependent and water-enjoyment recreation uses and facilities that do not deplete the resource over time, such as boating facilities, marinas, boat launches, angling platforms, hunting support structures, 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.

D. New recreational development should be designed to encourage ecological stewardship by locating non-water-oriented activity areas away from the water's edge and planting and maintaining native vegetation buffers along the water.

Designation Criteria

The Recreation SED is applied to shoreline areas where public and private lands are devoted to or designated for recreation use, including parks, boat launches, marinas, and open space and water-dependent uses, as well as where lands are not yet developed but are planned for water-oriented recreation.

5.4.5 Urban Conservancy

Purpose

The purpose of the Urban Conservancy SED is to protect and restore ecological functions of open space, floodplain, and other sensitive lands where they exist in urban and developed settings while allowing a variety of compatible uses. Activities permitted in these areas are intended to have minimal adverse impacts upon the shoreline.

A. Primary allowed uses within this designation should preserve the natural character of the area or promote preservation of open space, floodplain, or other sensitive lands where they exist in urban and developed settings either directly or over the long term.

B. Development in the Urban Conservancy environment should only be allowed if it would not result in a net loss of shoreline ecological functions, and if significant ecological impacts can be mitigated.

C. Public access and public recreation objectives should be implemented whenever feasible but only when any resulting significant ecological impacts can be mitigated.

D. Water-oriented uses should be given priority over non-water-oriented uses. For shoreline areas adjacent to commercially navigable waters, water-dependent uses should be given highest priority.

Designation Criteria

The Urban Conservancy SED is assigned to shoreline areas where development could occur while maintaining or having the ability to restore ecological functions. These are shoreline areas that are not generally suitable for water-dependent uses within incorporated municipalities and urban growth areas that display any of the following characteristics:

A. Suitability for water-related or water-enjoyment uses;

B. Open space, floodplain or other sensitive areas that should not be more intensively developed;

C. Potential for ecological restoration;

D. Retention of ecological functions, even though partially developed; or

E. Potential for development that is compatible with ecological restoration.

5.4.6 Aquatic

Purpose

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

Management Policies

A. Allow new overwater 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, and then only when their impacts are mitigated according to the preferred mitigation sequence of this Program, Section 6.1 No Net Loss of Ecological Function, to assure no net loss of ecological functions.

D. New and maintenance dredging and disposal should be permitted in accordance with applicable local, state, and federal standards and the provisions of this Program.

E. Shoreline uses and modifications should be designed and managed to prevent degradation of water quality and alteration of natural hydrographic conditions.

Designation Criteria

The Aquatic SED is applied to lands waterward of the OHWM.

6. General Shoreline Regulations

This chapter describes general regulations which apply to all shorelines of the state that are located in the City of Kalama. The general regulations section is used in conjunction with specific 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. (RCW 90.58.020)

B. Shoreline ecological functions that shall be protected include fish and wildlife habitat, food web support, and water quality maintenance.

C. Shoreline processes that shall be protected include 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 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 for any adverse impacts such that the activity does not result in net loss of ecological functions. Mitigation shall occur in the following order of priority:

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 applicable 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. Mitigation required for a project cannot exceed that necessary to ensure that development will result in no net loss of shoreline ecological functions.

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 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 Department of Archaeology and Historic Preservation and affected tribes. Tribal contacts will be provided by the City. 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 as specified in Section 8.8 Enforcement of this Program.

B. Prior to approval of development in an area of known or probable cultural resources as designated in the DAHP Predictive Model Mapping, the City shall require a site assessment by a qualified professional archaeologist in coordination with affected tribes. The City may accept prior assessments completed for the project site. Conditions of approval may require preservation or conservation of cultural resources as provided by applicable federal, state, and local statutes.

6.3 Critical Areas Protection

Critical Areas Regulations that apply in shoreline jurisdiction are found in Appendix B of this Program.

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 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.

E. Unless otherwise stated, critical area buffers shall be regulated in accordance with this Program and Appendix B. Appendix B contains numerical and/or performance standards that apply to each critical area.

F. These provisions do not extend the shoreline jurisdiction beyond the limits specified in this Program as defined in Section 3.1, Applicability. Critical areas and buffers that extend outside of shoreline jurisdiction are regulated by Chapter 15.02 KMC.

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 in Appendix B.

A. Development or uses in floodplains shall avoid significantly or cumulatively increasing flood hazards consistent with Section 15.02.140 of Appendix B, Frequently Flooded Areas, and applicable flood hazard management plans adopted pursuant to RCW 86.12, provided the plan has been adopted after 1994 and approved by Ecology.

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, as identified consistent with WAC 173-26-221(3)(b), or floodway over the life of the development.

C. The following uses and activities may be authorized within the channel migration zone, as identified consistent with WAC 173-26-221(3)(b), or floodway when otherwise permitted by this Program (WAC 173-26-221(3)(c)(i)):

1. Actions and development with a primary purpose of protecting or restoring ecological functions and ecosystem-wide processes.

2. Existing and ongoing agricultural practices, provided that no new restrictions to channel movement occur.

3. Boating Facilities

4. Dredging and dredge material disposal

5. 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.

6. 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.

7. Development in the City and its urban growth areas where structures exist that prevent active channel movement and flooding.

8. 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.

9. 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 and is allowed only after a biological and

geomorphological study shows that extraction has a long-term benefit to flood hazard reduction, does not result in a net loss of ecological functions, and is part of a comprehensive flood management solution, except when the removal is part of a U.S. Army Corps of Engineers dredging activity.

E. Flood Control Works:

1. New or expanded structural flood hazard reduction measures, such as dikes, levees, berms, and similar flood control structures, shall be consistent with frequently flooded areas regulations in Appendix B 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:

    i. They are necessary to protect existing development.

    ii. Non-structural flood hazard reduction measures are infeasible.

    iii. Impacts to ecological processes and functions, and priority fish and wildlife species and habitats can be successfully mitigated to ensure no net loss of functions as set forth in Section 6.1 No Net Loss of Ecological Function.

    iv. Appropriate vegetation conservation actions are undertaken consistent with Section 6.6 Vegetation Conservation.

3. New structural public flood hazard reduction measures, such as dikes and levees, shall dedicate and improve public access pathways unless public access improvements would cause:

    i. Unavoidable health or safety hazards to the public,

    ii. Inherent and unavoidable security problems,

    iii. Unacceptable and unmitigable significant ecological impacts,

    iv. Unavoidable conflict with the proposed use, or

    v. A cost that is disproportionate and unreasonable to the total long-term cost of the development.

4. To the maximum extent feasible, new or re-constructed dikes and levees shall be designed to be:

i. No greater than the minimum height required 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 for dike certification.

ii. Placed landward of associated wetlands and designated vegetation conservation areas, except for actions that increase ecological functions, unless there is no other feasible alternative to reduce flood hazard to existing development.

iii. 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, off-channel habitat, and associated wetlands directly interrelated and interdependent with the stream.

iv. Planted with appropriate vegetation meeting any permit or certification requirements while providing the greatest amount of ecological function possible.

5. A geotechnical or geofluvial report prepared by a qualified professional shall demonstrate that new or altered flood protection structures will not increase downstream flooding and will not adversely affect the integrity of downstream ecological functions including disruption of natural drainage flows and stormwater runoff.

F. Information Required. In addition to any information required as part of a critical areas assessment as required by Appendix B, the City shall require the applicant to provide the following information as part of an application for development within a flood hazard area within the shoreline jurisdiction.

1. Flood hazard area characteristics up- and downstream or up- and downcurrent 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 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:

1. Provisions for adequate public access shall be incorporated into all shoreline development proposals that involve public funding unless the applicant demonstrates public access is not feasible due to one or more of the provisions of Section 6.5.A.3.i-v. Where feasible, such projects shall incorporate ecological restoration.

2. The City may rely on publicly reviewed and approved master plan(s), or other publicly reviewed and adopted documents that incorporate public access planning in-lieu of providing public access on a project by project basis for development identified in the master plan(s).

3. Unless prohibited by law, provisions for adequate public access shall be incorporated into all land divisions and other shoreline development proposals (except residential development of 4 or fewer lots), unless this requirement is clearly inappropriate to the proposal. Some examples of when public access will not be required are in cases where the applicant demonstrates one or more of the following:

    i. Unavoidable health or safety hazards to the public exist that cannot be prevented by any practical means;

    ii. Inherent security requirements of the use cannot be satisfied through the application of alternative design features or other solutions;

    iii. The cost of providing the access, easement, alternative amenity, or mitigating the impacts of public access are unreasonably disproportionate to the total proposed development;

    iv. Significant environmental impacts that cannot be mitigated will result from the public access;

    v. Significant undue and unavoidable conflict between public access requirements and the proposed use and/or adjacent uses would occur, provided that the applicant has first demonstrated and the City determines that all reasonable alternatives have been evaluated and found infeasible, including:

        a. Regulating access by such means as maintaining a gate and/or limiting hours of use;

b. Designing separation of uses and activities (including fences, terracing, use of one-way glazings, hedges, landscaping); and

c. Provisions for access at a site geographically separated from the proposal such as a street end, vista or trail system, consistent with Section 6.5.C.

4. Public access sites shall include facilities based on criteria established by the Americans with Disabilities Act (ADA).

5. Public access shall include provisions for minimizing trespass and other possible adverse impacts to neighboring properties.

6. Signs indicating the public's right of access to shoreline areas shall be installed and maintained in conspicuous locations.

7. Required public access shall be fully developed and available for public use at the time of occupancy of the use or activity.

8. Public access shall consist of a physical improvement in the form of a walkway, trail, bikeway, corridor, viewpoint, park, deck, observation tower, pier, boat launching ramp, dock or pier area, or other area serving as a means of view and/or physical approach to public waters, and may include interpretive elements and displays.

9. Public access easements or dedications and permit conditions shall be recorded on the deed of title and/or on the face of a plat or short plat as a condition running contemporaneous with the authorized land use, as a minimum. Said recording with the County Auditor's Office shall occur at the time of project occupancy or use.

10. Future actions by the applicant, successors in interest, or other parties shall not diminish the usefulness or value of the public access provided.

11. Maintenance of the public access facility shall be the responsibility of the owner unless otherwise accepted by a public or non-profit agency through a formal agreement approved by the Shoreline Administrator and recorded with the County Auditor's Office.

B. Public access to the shoreline shall not be required for the following:

1. Activities qualifying for a shoreline permit exemption; or

2. New single-family residential development of 4 or fewer units; or

3. Where the proposal does not reduce existing public access; reasonable, safe, and convenient public access to the shoreline exists within one-quarter mile (1,320 feet)

of the site; and public access is not otherwise required to allow non-water-oriented commercial or industrial development pursuant to Sections 7.2.4 or 7.2.6 of this SMP.

C. Where public access is required, the City may approve alternatives to on-site, physical access to the shoreline if the applicant can demonstrate that more effective public access can be provided off-site by focusing public access improvements at shoreland sites identified in the Port of Kalama's Comprehensive Scheme of Harbor Improvements adopted July 1st 2015, or as amended.

1. To be approved for alternative public access as described in this Subsection 6.5.C, the applicant shall demonstrate that alternatives have been considered, including regulating access through allowed hours of use, maintaining access gate, and/or separating uses and activities with fences, terracing, hedges, etc.

D. Public Access Standards:

1. When public access is required and provided on-site, it shall be:

i. Located and designed to be compatible with the natural shoreline character, avoid adverse impacts to shoreline ecological functions, and ensure public safety.

ii. Allowed to encroach into the shoreline setback 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.

iii. Provide improvements that conform to the requirements of the ADA when feasible or required by law.

iv. Fully developed and available for public use prior to final occupancy when required for public land, commercial, port, or industrial use/development.

v. 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 limit access according to conditions of approval.

vi. Recorded by easement and permit conditions on the deed of title and/or the face of a short or long plat for private properties. Recordation shall occur at the time of final plat approval or prior to final occupancy. Public lands (ie Port of Kalama properties) may utilize alternate methods that provide equivalent protection in lieu of easements/ dedication.

vii. Consistent with all relevant constitutional and other legal limitations on regulation of private property.

2. Off-Site or Alternative Public Access: When public access is provided off-site via Subsection 6.5.C., its location, design, and access type shall be consistent with the the Port of Kalama's Comprehensive Scheme of Harbor Improvements adopted on July 1, 2015, or as amended.

3. Public access requirements for a single-family residential development of greater than 4 lots but less than 10 lots 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.

6.6 Vegetation Conservation

A. Unless otherwise specified, all shoreline uses and development shall comply with the setback and buffer provisions of this Program included in Tables 7.1 and 6.8.1, Section 6.8 Riparian Habitat Areas, and Appendix B Critical Areas Regulations to protect and maintain shoreline vegetation. Buffers are areas that are regulated to maintain no net loss of ecological function, while setbacks are regulated distances measured from a point to a proposed use or structure.

B. Vegetation clearing in shoreline jurisdiction shall be limited to the minimum necessary to accommodate and maintain approved shoreline development. Mitigation sequencing must be applied unless specifically excluded by this SMP, so that the design and location of the structure or development can achieve no net loss of ecological function through mitigation or preservation.

C. In cases where approved development results in unavoidable adverse impacts to existing shoreline vegetation, mitigation shall be required to ensure that there will be no net loss of ecological functions as set forth in Section 6.1 No Net Loss of Ecological Function.

D. Tree removal in Riparian Habitat Areas must be mitigated through a revegetation plan including planting for revegetation at a density to ensure no net loss of ecological function.

E. Where a tree poses a safety hazard, it may be removed or converted to a wildlife snag if the hazard cannot be eliminated by pruning, crown thinning, or other technique that maintains some habitat function. If a safety hazard cannot be easily determined by the City, a written report by a certified arborist or other qualified professional is required to evaluate potential safety hazards.

F. Selective pruning of trees for views is allowed. Selective pruning of trees for views does not include removal of understory vegetation, and must not compromise the health of the tree.

G. Hand removal or spot-spraying of invasive species or noxious weeds included on the Washington State Noxious Weed List as a Class A, B, or C weed on shorelands outside of steep or unstable slope areas is allowed and encouraged.

H. Mechanical removal or large-scale chemical treatment of invasive species:

1. Mechanical removal or large-scale chemical treatment of invasive species or noxious weeds included on the Washington State Noxious Weed List as a Class A, B, or C weed on shorelands outside of steep or unstable slope areas is encouraged.

2. Coordination with the Cowlitz Conservation District is encouraged prior to undertaking invasive or noxious weed removal projects to ensure that the control and disposal techniques are appropriate.

3. Where noxious weeds and invasive species removal results in bare soils, the area must be stabilized using best management practices and replanted with native plants (in or outside of shoreline or critical area buffers) or suitable non-native plants (outside of shoreline or critical area buffers). The replanted vegetation must be similar in size and structure at maturity to the removed vegetation.

4. Invasive species removal efforts that exceed one-quarter acre should be phased if feasible to minimize potential erosion and sedimentation impacts.

I. Clearing of vegetation that has become established on permitted dredge material deposits is allowed without mitigation if the activity is part of routine maintenance and consistent with any state and federal requirements included in the authorizations for the dredge operation.

J. Vegetation may be removed from levees, dikes, airports, marine terminals, roads, and railways in accordance with the provisions of this Program and applicable federal, state, and local standards, including the requirements of the U.S. Army Corps of Engineers, the Federal Aviation Administration, the Washington State Department of Transportation Aviation Division, and the City of Kalama.

K. Aquatic weed control shall only occur to protect native 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 applicable laws and standards.

6.7 Water Quality and Quantity

A. All shoreline development shall comply with the applicable requirements of the City's Storm Drainage Standards, Comprehensive Plan, 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 under KMC 12.04.010-035, or make system corrections approved by the Cowlitz County Environmental Health Unit.

2. Any new development, business, or single- or multi-family dwelling unit will be required to connect to an existing municipal sewer service system if feasible under KMC 12.04.010-035. If connection to the City's sewer system is determined by the City under KMC 12.04 to be infeasible, then the applicant shall install an on-site septic system approved by Cowlitz County Environmental Health Unit.

6.8 **Riparian Habitat Areas**

This Program addresses riparian habitat areas. This section includes riparian habitat protections applicable to shoreline waterbodies in addition to those applied through the Critical Areas Regulations in Appendix B.

Riparian Habitat Area (RHA) widths are specified in Table 7-1 of this SMP as the Shoreline Setback. For the purposes of this Program, including the Critical Areas Regulations in Appendix B, the term buffer shall have the same meaning as RHA.

A. The following provisions apply to RHAs 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 such that no net loss of ecological function is assured.

1. Water-dependent, water-related, and water-enjoyment shoreline setbacks shall apply only to those components of a proposed development meeting the definition of waterdependent, water-related, or water-enjoyment, respectively, including accessory uses and developments.

All uses and developments must be located as far from the OHWM as possible, consistent with the mitigation sequencing requirements of this SMP.

2. Shoreline residential access. A private access pathway constructed of pervious materials may be installed, a maximum of 4 feet wide, through the RHA 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.

B. Water-oriented public access and recreation facilities standards:

In recognition of the existing condition of current and planned public and private shoreline parks and recreation facilities, the following standards shall guide new development and redevelopment of water-oriented public access and recreation facilities in lieu of RHAs. Proposals under this provision must fully comply with other requirements of Appendix B, including any limitations placed by the presence of other critical areas. Applicants shall submit a management plan that addresses compliance with each of the following applicable standards and principles in table 6.8.2. The City may review and condition the project to more fully implement the principles in table 6.8.2

Table 6.8.1 Water-Oriented Public Access and Public Recreation Facilities: Design and Management Standards

Design Element	Design and Management Standards
Category of Use	The following use preferences apply in priority order: • Water-dependent uses located waterward, at or immediately upland of the OHWM • Water-related and/or water-enjoyment uses located upland of water-dependent uses. Water-related and water-enjoyment uses shall not displace existing or planned water-dependent uses. If water-dependent uses are not feasible, then water-related or water-enjoyment uses are allowed consistent with applicable performance standards. • Nonwater-oriented recreation uses located upland of water-oriented recreation uses. The preference is that nonwater-oriented uses occupy existing structures upland of water-oriented recreation uses rather than be established in new structures. Where new nonwater-oriented uses are proposed upland of water-oriented uses, but will not occupy existing structures, they shall avoid native and riparian vegetation consistent with the Vegetation Management guidelines below and be located outside of the buffer. • Accessory, nonwater-oriented uses located upland of water-oriented uses. However, parking for those with disabilities, when no other location is feasible, may be located per the Parking provisions in Section 7.2.13 of this Program.
Expansion and Conversion of Existing Uses	• Existing primary nonwater-oriented uses may only expand if they are located upland of water-oriented uses, if the expansion does not displace water-oriented uses and if the use is located outside of the applicable buffer. • Existing water-oriented uses may not be converted to a nonwater-oriented use except when the existing water-oriented use is separated from the OHWM by another property or right-of-way.

Design Element	Design and Management Standards
Impervious Surface and Stormwater Management	• New or expanded pollution-generating impervious surfaces, not including parking areas, within 50 feet of the OHWM or within already disturbed areas shall be limited to those necessary to provide vehicle access to a water-dependent use. • New or expanded trail systems may be allowed within the shoreline setback. All new or expanded trails shall avoid existing riparian vegetation to the extent feasible and comply with vegetation conservation standards of Section 6.6 of this Program. Existing trail systems may only be expanded in response to increased demand, and shall be expanded landward of existing trail where feasible. Parallel trails shall be pervious and placed at least 50 feet upland of the OHWM. Parallel portions of trails may be constructed closer to the aquatic area if the trail is located on or upland of previously disturbed rights of way, access and/or utility easements, or legally altered sites. Viewing platforms and crossings are allowed in buffers, provided they are also located to avoid existing riparian areas and comply with vegetation management requirements of this Program.

7. Shoreline Use and Modification Regulations

The regulations in this chapter apply to specific uses and modifications within shoreline jurisdiction. In many circumstances, more than one section of regulations will apply to a specific proposal. Guiding policies for uses and modifications are located in Chapter 4, Shoreline Master Program Goals and Policies.

7.1 Shoreline Use, Modification, and Standards Tables

A. Table 7-1 Shoreline Use, Modification, Shoreline Setbacks, and Heights shall be used to determine which new or expanded uses or modifications may be permitted or prohibited in each shoreline environment designation.

B. All existing legal uses and previously permitted modifications may continue regardless of whether they would be allowed as a new use or modification according to this SMP. Any new uses or modifications not explicitly listed or comparable to those included in Table 7-1 shall be reviewed through a Shoreline Conditional Use Permit (SCUP). (WAC 173-27-040(1)(b))

C. All uses and development activities proposed in shoreline jurisdiction must comply with all provisions of the Kalama Municipal Code, as determined by the City.

Table 7-1 Shoreline Uses, Modifications, Setbacks, and Heights

Table Key:*

P = May be permitted through an SSDP or LOE

CU = May be permitted through an SCUP

X = Prohibited

NA = Not Applicable

Shoreline Use or Modification	Shoreline Environment Designations					
	Water-dependent Industrial	High-Intensity	Residential	Recreation	Urban Conservancy	Aquatic
Uses						
Agriculture						
Existing agriculture	Not regulated by SMP					
New agriculture	X	X	X	X	X	X
Aquaculture	P	P	X	X	X	See adjacent upland designation
Boating Facilities						
Boat launches/ Dock	P	P	X	P	CU	See adjacent upland designation
Marinas	P	P	X	P	X	See adjacent upland designation
Commercial						
Water-dependent	P	P	X	CU[1]	CU[1]	P
Water-related	P	P	X	CU[1]	CU[1]	CU
Water-enjoyment	P	P	X	P	CU[1]	CU[1]
Non-water-oriented	P[9]	P[9]	X	X	X	X
Mixed-use	P	P	X	CU[1]	CU	CU
Forest Practices	X	X	X	X	X	X
Industrial						
Water-dependent	P	P	X	X	X	See adjacent upland designation
Water-related	P	P	X	X	X	X
Non-water-oriented	P[10]	P[10]	X	X	X	X
Mixed-use	P	P	X	X	X	See adjacent upland designation
Institutional						
Water-dependent	P	P	CU	CU	CU	CU
Water-related	P	P	X	X	X	X
Non-water-oriented	X	CU	X	X	X	X
In-stream Structures						
To protect public facilities or existing development	P	P	P	P	P	P
To protect, restore, or monitor ecological functions or processes	P	P	P	P	P	P
Other	P	P	CU	CU	CU	See adjacent upland designation
Log Storage	P	X	X	X	X	P

Shoreline Use or Modification	Shoreline Environment Designations					
	Water-dependent Industrial	**High-Intensity**	**Residential**	**Recreation**	**Urban Conservancy**	**Aquatic**
Mining	X	X	X	X	X	X
Recreational						
Water-dependent	CU	P	P	P	P	P
Water-oriented	CU	P	P	P	P	CU
Non-water-oriented	X	P	CU	CU	X	X
Residential						
Single-family	X[2]	P	P	CU[2]	P	X
Multi-family	X	P	P	X	CU	X
New floating residence	X	X	X	X	X	X
Transportation and Parking						
Roads and railroads	P	P	P	P	P	N/A, see bridges
Bridges	P[4]	P[4]	P[4]	P[4]	P[4]	P[4]
Non-motorized facilities	P	P	P	P	P	CU
Parking	P[5]	P[5]	P[5]	P[5]	P[5]	X
Utilities	P	P	P	P	P	P[6]
Uses Not Specified	CU	CU	CU	CU	CU	CU
Modifications						
Flood Control Works						
Modification of Existing Flood Control Works (including relocation farther landward)	P	P	P	CU	CU	CU
New Flood Control Works	P	P	CU	X	X	CU
Residential Moorage Facilities	X	X	X	X	X	X
Shoreline Stabilization						
New and replacement soft structural stabilization	P	P	P	P	P	P
New hard structural stabilization	P	P	CU	CU	CU	See adjacent upland designation
Replacement hard structural stabilization	P	P	P	P	P	P
Breakwaters, Jetties, Weirs, and Groins[3]	CU	CU	CU	CU	CU	CU
Fill / Excavation	P	P	P	P	P	CU[7]
Dredging and Dredge Material Disposal						
Dredging	N/A	N/A	N/A	N/A	N/A	P
Dredge disposal	P	P	CU	P	CU	P

Shoreline Use or Modification	Shoreline Environment Designations					
	Water-dependent Industrial	High-Intensity	Residential	Recreation	Urban Conservancy	Aquatic
Shoreline Habitat and Ecological Enhancement Projects	P	P	P	P	P	P
Dimensional Standards						
Shoreline Setbacks[11]	0					
Water Dependent[12]	0'	0'	0'	0'	0'	N/A
Water Related, Water Enjoyment[12]	35'	35'[14]	50'	50'	50'	N/A
Non-Water Oriented[12]	50'	50'[14]	100'	100'	200'	N/A
Minimum river frontage width	N/A	N/A	50'	N/A	N/A	N/A
Maximum Height[13]	45' [8]	50'[8]	40'	35'	35'	45'[8]

* SSDP = Shoreline Substantial Development Permit, SCUP = Shoreline Conditional Use Permit, LOE = Letter of Exemption

Table Notes

1. Commercial uses that are accessory to a public access or recreation use (such as kayak rental or concession stand) are allowed through an SSDP.
2. Caretaker residence only may be authorized through an SSDP.
3. Structures that support fish habitat enhancement are allowed in all environments through an SSDP.
4. Expansion of a bridge by 50% or more may be reviewed through an SCUP, rather than an SSDP, at the discretion of the Shoreline Administrator.
5. Parking must support an allowed primary use. Parking as a primary use is prohibited.
6. Trenching to install utilities waterward of the OHWM requires an SCUP.
7. All fill below the OHWM requires an SCUP, except that required for ecological restoration.
8. Water-oriented industrial uses have no height limit, including those extending into Aquatic Shoreline Designations.
9. See Subsection 7.2.4.C for detailed regulations about new or expanded non-water-oriented commercial uses.
10. See Subsection 7.2.6.D for detailed regulations about new or expanded non-water-oriented industrial uses.
11. Shoreline setbacks are measured landward from the ordinary high water mark (OHWM).
12. Water-dependent, water-related, and water-enjoyment shoreline setbacks shall apply only to those components of a proposed development meeting the definition of water-dependent, water-related, or water-enjoyment, respectively. Except as otherwise allowed in this Program, all other project components shall be located landward of the nonwater-oriented shoreline setback. All development proposed in shoreline jurisdiction shall demonstrate mitigation sequencing consistent with Section 6.1 of this Program, including avoidance by locating as far from the OHWM as possible and compensatory mitigation as needed to ensure no net loss of shoreline ecological functions.
13. Consistent with RCW 90.58.320, no permit shall be issued for any new or expanded structure of more than 35 feet above average grade level that will obstruct the view of a substantial number of residences unless overriding considerations of the public interest will be served, as determined by the Shoreline Administrator.
14. Where High Intensity shorelines are designated parallel to, and landward of, another upland environment designation, the shoreline setback for non-water-dependent development shall be the extent of the waterward parallel designation or 50', whichever is greater.

7.2 Use-specific Development Regulations

7.2.1 Agriculture

A. In accordance with RCW 90.58.065, this Program shall not restrict existing or ongoing agricultural activities occurring on agricultural lands.

B. New or expanded agriculture is a prohibited use or activity within shoreline jurisdiction.

C. Development on agricultural land that does not meet the definition of agricultural activities, and the conversion of agricultural land to nonagricultural uses, shall be subject to the regulations applicable to the proposed use or development set forth in this Program.

7.2.2 Aquaculture

A. Aquacultural facilities must be designed and located to avoid:

1. The spreading of disease, especially to native aquatic life;
2. Introducing new non-native species which cause significant ecological impacts;
3. Significantly conflicting with navigation and other water-dependent uses;
4. A net loss of ecological functions; or
5. Significantly impacting the aesthetic qualities of the shoreline.

B. Potential locations for aquaculture are relatively restricted due to specific requirements for water quality, temperature, flows, oxygen content, adjacent land uses, wind protection, and commercial navigation. The technology associated with some forms of present-day aquaculture is still in its formative stages and is experimental. Therefore, some latitude in the development of this use shall be given, while the potential impacts on existing uses and natural systems are recognized.

C. Aquaculture structures and activities that do not require a waterside location must be located landward of the shoreline setbacks required by this SMP.

7.2.3 Boating Facilities

A. General Requirements:

1. New and modified boating facilities shall be sited and designed to ensure no net loss of shoreline ecological functions, as set forth in Section 6.1.

2. Boating facilities shall locate in areas where:

    i. There is adequate water mixing and flushing;

    ii. The structure would not block or obstruct lawfully existing or planned public shoreline access;

    iii. Such facilities will not adversely affect flood channel capacity or otherwise create a flood hazard;

    iv. Water depths are adequate to minimize new or maintenance dredging and other channel maintenance activities;

    v. The structure would minimize the obstruction of currents, alteration of sediment transport, and the accumulation of drift logs and debris and

    vi. 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. New boating facilities shall be located to avoid the need for shoreline stabilization for the life of the structure unless no alternative location is practical. Where shoreline stabilization is necessary for the protection of boating facilities, it shall be the minimum necessary and shall not result in a net loss of shoreline ecological functions, consistent with Section 7.3.1 of this SMP.

4. Boating facilities shall not be located:

    i. Along braided or meandering river channels where the channel is subject to change in alignment;

    ii. On point bars or other accretion beaches;

    iii. Where existing in-water navigation uses would impaired or obstructed.

5. 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.

6. Boating uses and facilities shall be located far enough from public swimming beaches within the City or County to avoid adverse impacts, safety concerns, and potential use conflicts.

7. Accessory uses at boating facilities shall be:

i. Limited to water-oriented uses, including uses that provide physical or visual shoreline access for the general public.

ii. Located as far landward as possible while still serving their intended purposes.

8. Parking and storage areas shall conform to design requirements for parking in 7.2.13.

9. Lighting associated with overwater structures shall be beamed, hooded, or directed to avoid causing glare on adjacent properties or waterbodies. Illumination levels shall be the minimum necessary for safety.

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. All new boating facilities must include public access (WAC 173-26-241(3)(c)(iv))

12. Extended mooring on waters of the state is prohibited, except as allowed by applicable state regulations and where a lease or permission is obtained from the Washington State Department of Natural Resources and impacts to navigation and public access are 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. Non-motorized boat launches shall use gravel, pervious concrete, or other similar material that provides for a sufficient surface for launching non motorized craft, while not restricting the flow of water.

4. Additional standards for public boat launches are as follows:

i. Public boat launches shall include adequate restroom, sewage, and solid waste disposal facilities in compliance with applicable health regulations.

ii. 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 substantially increase public opportunities for water access.

iii. Public boat launches shall be located and designed to prevent traffic hazards and to minimize traffic impacts on nearby access streets.

iv. Public boat launch sites shall include parking spaces for boat trailers commensurate with projected demand.

C. Docks

New dock construction 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, such as the Port's Comprehensive Scheme of Harbor Improvements, projecting future needs for dock or moorage space for approval.

D. Covered Moorage

New covered moorage is only permitted within a marina or as a necessary component of a water-dependent industrial or commercial use. Covered moorage shall be designed and located to minimize potential adverse impacts caused by shading the water or blocking views. The applicant shall demonstrate need by providing a needs analysis or comprehensive master plan, such as the Port's Comprehensive Scheme of Harbor Improvements, 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. Existing covered moorage may be maintained and repaired.

E. Marinas

1. Marinas shall be located, designed, constructed, and operated to:

i. Avoid interference with the rights of adjacent property owners and water uses.

ii. Meet the criteria of no net loss of ecological function and the preferred mitigation sequence of this Program, set forth in Section 6.1.

2. New marinas or expansion of existing marinas which provide moorage for more than 10 boats shall be equipped with vessel pump-out facilities and shall provide on-shore sewage and waste disposal facilities. Marinas shall display visible signs stating that discharge of sanitary wastes into waters of the state is prohibited.

3. Illumination shall be required for safety.

4. Restroom facilities shall be provided.

5. Where a marina includes gas and oil handling facilities, storage of gas and oil shall be separate from main centers of activity to the extent feasible in order to minimize fire and water pollution hazards. These marinas shall have adequate facilities and procedures for fuel handling and storage and the containment, recovery, and mitigation of spilled petroleum, sewage, and other potentially harmful or hazardous materials.

6. New marinas must provide physical and/or visual public access for as many water-oriented recreational uses as possible, commensurate with the scale of the proposal.

7. Boaters living aboard vessels are restricted to marinas, may occupy up to 20% of the slips at a marina, and shall be connected to utilities that provide potable water and wastewater conveyance to an approved disposal facility. Living aboard is not allowed at joint-use moorages.

7.2.4 **Commercial**

Preference is given to water-dependent commercial uses over nonwater-dependent commercial uses and water-related and water enjoyment commercial uses are preferred over nonwater-oriented commercial uses.

The design, layout and operation of certain commercial uses directly affects their classification with regard to whether or not they qualify as water-related or water-enjoyment uses. Commercial uses that may be authorized as water-related or water-enjoyment uses are required to incorporate appropriate design and operational elements so that they meet the definition of water-related or water-enjoyment uses.

Public access and ecological restoration will be considered as potential mitigation of impacts to shoreline resources and values for all water-related or water-dependent commercial development unless such improvements are demonstrated to be infeasible or inappropriate. Where commercial use is proposed for location on land in public ownership, public access should be required, except where access is infeasible as discussed in element 6.5 Public Access above.

Specific Requirements:

A. Water-dependent commercial uses are preferred over non-water-dependent commercial uses. Secondarily, water-related and water-enjoyment commercial uses are preferred over non-water-oriented commercial uses. (WAC 173-26-241(3)(d))

B. Non-water-dependent commercial uses shall not be allowed if they displace existing viable water-dependent uses or if they are proposed to permanently occupy space designated for water-dependent uses.

C. New or expanded non-water-oriented commercial uses may be permitted:

1. If navigability is severely limited at the proposed site and the commercial use provides a significant public benefit with respect to the Shoreline Management Act's objectives such as providing public access and/or 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 that:

    i. Has a formally approved master plan that complies with this Program; and

    ii. Includes water-dependent, water-oriented, and water related uses; and

    iii. Provides a significant public benefit such as public access and/or ecological restoration (WAC 173-26-241(3)(d)); or

4. On Port of Kalama properties on shorelands already developed and altered, but unoccupied by a tenant, non-water-oriented use and facilities may be approved in the High-Intensity designation through a Shorelines Substantial Development Permit and in the Water-Dependent Industrial designation through a Shoreline Conditional Use Permit upon demonstration by the applicant that:

    i. A substantial effort to obtain water-oriented uses for a period of at least 6 months has been made and suitable tenants were not found. The period of the search, the notice of availability, listing, or advertising employed, and any inquiries received shall be documented; and

    ii. Because of the size or other site-specific features, the site is not currently suitable for prospective water-oriented tenants; however, long-term plans for adjacent sites occupied by other uses will allow future consolidation or provision of features making the site usable; and

    iii. On or off-site public access and/or restoration will be provided; and

    iv. No permanent improvements will be made to the site that will reduce the suitability for future water-dependent use.

D. Water-dependent and water-related commercial uses should consider public access and/or ecological restoration as potential mitigation for impacts to shoreline resources and values unless such improvements are demonstrated to be infeasible or inappropriate, and shall avoid impacts to existing navigation, recreation, and public access uses.

E. An applicant for a new commercial use or development shall demonstrate that:

1. There will not be a net loss of shoreline ecological function due to the use or development; and

2. The use or development will have no significant adverse impacts to other shoreline resources or other shoreline uses.

F. Accessory development or use that does not require a shoreline location, such as parking, service buildings or areas, access roads, utilities, signs, and storage of materials, shall be located outside of the shoreline jurisdiction, unless the applicant can demonstrate the conditions in Subsection 7.2.4.F.1 - 3 exist and the applicant complies with Subsection 7.2.4.F.4-5:

1. The placement of the proposed structure outside shoreline jurisdiction would interfere with the overall functionality of the water-oriented facility; and

2. The new structure is located on a portion of the site where water access is not possible for a water-oriented use; and

3. The applicant can demonstrate there is no alternative location on site outside of shoreline jurisdiction that can accommodate the accessory non-water-oriented development or use(s).

4. The impacts to the Shoreline are fully mitigated; and

5. A non-water-oriented accessory use located in shoreline jurisdiction shall be located upland of the primary development, and in all cases no closer to the water than the primary development.

G. Commercial overwater uses and 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, or interfere with navigation or normal public use of the water.

H. Where commercial developments are proposed in locations that would interrupt existing shoreline views from neighboring properties, primary structures shall provide for reasonable view corridors. The Shoreline Administrator may adjust the project dimensions and/or prescribe development operation and screening standards as deemed appropriate to provide adequate view corridors. Need and special considerations for landscaping and buffer areas shall also be subject to review.

7.2.5 Forest Practices

Forest practices are those activities not covered by the Forest Practices Act involving conversion to non-forest use. Due to the lack of timber harvest potential within the City's shoreline jurisdiction, these activities are not applicable to the City of Kalama. There are no known forest practices existing or anticipated within shoreline jurisdiction. If such operations are established in the future, regulations will be established by amendment to this program.

A. Forest Practices are prohibited.

7.2.6 Industrial

A. Water-dependent industrial uses are preferred over non-water-dependent industrial uses. Secondarily, water-related industrial uses are preferred over non-water-oriented industrial uses. (WAC 173-26-241(3)(f))

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.

C. Where industrial use is proposed for location on land in public ownership, public access shall be required consistent with Section 6.5 Public Access. Industrial development and redevelopment shall be encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated.

D. New or expanded non-water-oriented industrial uses may be permitted if:

1. The use is part of a mixed-use project that includes water-dependent uses and provides a significant public benefit with respect to the Shoreline Management Act's objectives such as providing public access and/or ecological restoration; or

2. Navigability is severely limited at the proposed site, and the industrial use provides a significant public benefit with respect to the Shoreline Management Act's objectives by providing public access and ecological restoration; or

3. The site is physically separated from the shoreline by another property or public right-of-way, (WAC 173-26-241(3)(f)); or

4. On Port of Kalama properties, on shorelands already developed and altered, but unoccupied by a tenant, non-water-oriented use and facilities may be approved in the High-Intensity designation through a Shorelines Substantial Development Permit and in the Water-Dependent Industrial designation through a Shorelines Conditional Use Permit upon demonstration by the applicant that:

    i. A substantial effort to obtain water-oriented uses for a period of at least 6 months has been made and suitable tenants were not found. The period

of the search, the notice of availability, listing, or advertising employed, and any inquiries received shall be documented; or

ii. Because of the size or other site-specific features, the site is not currently suitable for prospective water-oriented tenants; however, long-term plans for adjacent sites occupied by other uses will allow future consolidation or provision of features making the site usable; and

iii. On- or off-site public access and/or restoration will be provided; and

iv. No permanent improvements will be made to the site that will prohibit future water-dependent use.

E. Water-dependent and water-related Industrial uses should consider public access and/or ecological restoration as potential mitigation for impacts to shoreline resources and values unless such improvements are demonstrated to be infeasible or inappropriate, and shall avoid impacts to existing navigation, recreation, and public access uses.

F. An applicant for a new industrial use or development shall demonstrate that:

1. There will not be a net loss of shoreline ecological function due to the use or development; and

2. The use or development will have no significant adverse impacts to other shoreline resources or other shoreline uses.

G. Accessory development or use that does not require a shoreline location, such as parking, service buildings or areas, access roads, utilities, signs, and storage of materials, shall be located outside of shoreline jurisdiction, unless the applicant can demonstrate the conditions in Subsection 7.2.4.G.1-3 exist and the applicant complies with Subsection 7.2.6.G.4-5:

1. The placement of the proposed structure outside shoreline jurisdiction would interfere with the overall functionality of the water-oriented facility; and

2. The new structure is located on a portion of the site where water access is not possible for a water-oriented use; and

3. The applicant can demonstrate there is no alternative location on site outside of shoreline jurisdictionthat can accommodate the accessory non-water-oriented development or use(s).

4. The impacts to the shoreline are fully mitigated; and

5. An accessory use located in shoreline jurisdiction shall be located upland of the primary development, and in all cases no closer to the water than the primary development.

H. Industrial overwater uses and structures, or other structures waterward of the OHWM, are allowed only for those portions of water-dependent industrial 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, or interfere with navigation or normal public use of the water.

I. Where industrial developments are proposed in locations that would interrupt existing shoreline views, primary structures shall provide for reasonable view corridors. The Shoreline Administrator may adjust the project dimensions and/or prescribe development operation and screening standards as deemed appropriate. Need and special considerations for landscaping and buffer areas shall also be subject to review.

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/or ecological restoration; or

2. If the site is physically separated from the shoreline by another lot or parcel or public right-of-way; or

3. As part of a mixed-use development when a significant public benefit, such as public access and/or ecological restoration, is provided.

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.

7.2.8 In-stream Structures

A. In-stream structures must provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources, including fish and fish passage, priority habitats and species (as defined in appendix "B"),

other wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas.

B. New in-stream structures shall not interfere with existing water-dependent uses, including recreation.

C. In-stream structures shall not be a safety hazard or obstruct water navigation.

D. In-stream structures shall be designed by a qualified professional.

7.2.9 Log Storage

A. Log storage in the Aquatic environment designation shall be permitted only when:

1. Water quality standards can be met;

2. Grounding will not occur;

3. Located waterward of the Water-Dependent Industrial environment designation; and

4. Associated activities will not hinder other beneficial uses of the water, such as small craft navigation.

B. Log storage facilities upland and waterward of the OHWM shall be sited to avoid and minimize the need for dredging in order to accommodate new barging and shall be located in existing developed areas to the greatest extent feasible. If a new log storage facility is proposed along an undeveloped shoreline, an alternatives analysis shall be required that demonstrates that it is not feasible to locate the facility within an existing developed area.

C. A debris management plan describing the removal and disposal of wood waste must be approved by the City. Debris monitoring reports shall be provided where stipulated. Positive control, collection, treatment, and disposal methods for keeping leachate, bark, and wood debris (both floating and sinking particles) out of surface water and groundwater shall be employed at log storage areas, log dumps, raft building areas, and mill-side handling zones. The management of wood debris entering the water should be addressed in the debris management plan.

D. Upland log storage areas shall meet the following requirements:

1. The ground surface of any unpaved log storage area underlain by permeable soils shall be separated from the highest seasonal water table by at least 4 feet in order to reduce waste buildup and impacts to groundwater and surface water, unless an analysis of the site conditions require different separation.

2. Stormwater shall be managed according to the City's Storm Drainage Standards.

E. New or expanded log storage development shall meet the criteria of no net loss of ecological functions and the preferred mitigation sequence of this Program, set forth in Section 6.1.

7.2.10 **Mining**

There are no active mining operations or areas suitable for mining in the City's shoreline jurisdiction. If such operations are established in the future, regulations will be established by amendment to this Program. Note that mining is a different use than dredging. While they both involve removal of material, mining is conducted for the primary purpose of putting that material to use. The purpose of dredging is to remove material to accommodate another existing or potential use (such as navigation) or need (such as flood hazard reduction); this does not preclude the material from secondary beneficial use. The subsequent management, placement, or beneficial reuse of the dredged material is likewise not a mining activity.
Mining is a prohibited use activity within shoreline jurisdiction.

7.2.11 **Recreational**

This section regulates recreation uses other than boating facilities and non-motorized transportation facilities, which are regulated by Subsections 7.2.3 and 7.2.13, respectively.

A. Recreation areas or facilities on the shoreline shall provide physical or visual access to the shoreline.

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. Recreational development shall meet the criterion of no net loss of ecological functions and the preferred mitigation sequence of this Program, set forth in Section 6.1, No Net Loss of Ecological Function.

D. Provisions shall be made for adequate vehicular parking and safe pedestrian crossings. Design of parking areas shall ensure that surface runoff does not discharge to adjacent waters. Parking areas shall be located upland, away from the immediate shoreline, with pedestrian trails or walkways providing access to the water.

E. 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.

F. Recreational facilities shall provide adequate facilities for potable water supply, sewage disposal, and/or garbage collection where practicable.

7.2.12 Residential

A. Single-family residential development is a priority use on the shoreline when designed and developed to create no net loss of ecological functions and in compliance with this Program as set forth in Section 6.1 No Net Loss of Ecological Function and in an SED that allows for residential development. To this end uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment.

B. New residential development shall comply with the shoreline setback provisions established in Section 6.8 and included in Appendix B. Redevelopment or expansion of residential structures shall also conform to the provisions in Chapter 3.4 of this SMP.

C. In the High Intensity and Residential environment designations, the shoreline setback in table 7.1 may be reduced to the average shoreline setback of the two adjacent lots, provided that each adjacent lot contains an existing primary structure, and provided that the shoreline setback required shall in no case be less than 35 feet. If the subject lot is adjacent to only one existing residence, the shoreline setback may be reduced to the average shoreline setback of the lot abutting the proposed house and the required shoreline setback in table 7.1. Use of this provision must continue to satisfy all of the requirements of this SMP including appendix B.

D. New residential development:

i. Shall be designed such that no shoreline stabilization measures are necessary.

ii. On steep slopes or bluffs shall be set back sufficiently to ensure that shoreline stabilization is unlikely to be necessary during the life of the structure, as demonstrated by a geotechnical analysis.

iii. Shall be located and designed to minimize view obstructions to and from the shoreline from neighboring properties.

iv. Shall be prohibited in, over, or floating on the water.

v. Shall be prohibited in floodways, including associated sewage disposal systems.

E. Residential structures and associated residential appurtenances, accessory uses, and facilities serving a residential structure shall be located outside critical areas

and buffers unless otherwise allowed by this Program to promote community access and recreational opportunities.

F. New residential lots shall be configured such that structural flood hazard reduction and shoreline stabilization measures will not be required in order for reasonable development to occur using geotechnical analysis of the site and shoreline characteristics.

G. New residential lots shall be configured such that siting and construction are feasible while achieving no net loss of ecological functions at full build out as set forth in Section 6.1 No Net Loss of Ecological Function.

H. Where multi-family developments are proposed in locations that would interrupt existing shoreline views from neighboring properties, primary structures shall provide for reasonable view corridors. The Shoreline Administrator may adjust the project dimensions and/or prescribe development operation and screening standards as deemed appropriate. Need and special considerations for landscaping and buffer areas shall also be subject to review.

I. For new residential construction, no fence or landscape wall shall be placed waterward of the OHWM or closer to the water than the landward edge of the required buffers identified in Table 15.02.130-2 of Appendix B.

J. New Subdivided lots are required to be designed, configured, and developed to:

i. Prevent the loss of ecological functions at full build-out;

ii. Prevent the need for new shoreline stabilization or flood hazard reduction measures; and

iii. Be consistent with applicable SMP environment designations and standards. WAC 173-26-241(3)(j)

7.2.13 **Transportation and Parking**

A. Roads, Railroads and Bridges

1. New or expanded surface transportation facilities not related to and necessary for the support of existing or planned shoreline activities shall be located outside of the shoreline jurisdiction wherever possible unless location outside of shoreline jurisdiction is infeasible. Where location outside of the shoreline jurisdiction is not possible, facilities (except for bridge components) shall comply with the buffers identified in Table 15.02.130-2 of Appendix B, be set back from the OHWM a distance sufficient to make shoreline stabilization unnecessary and shall demonstrate the need for the facility within shoreline jurisdiction.

2. The applicant shall demonstrate that new or expanded facilities are designed to:

    v. Minimize impacts to critical areas and associated buffers and to minimize alterations to the natural or existing topography to the extent feasible; and

    vi. Avoid or minimize the need for shoreline stabilization; and

    vii. Follow the mitigation sequence of this Program to achieve no net loss of ecological functions as set forth in Section 6.1.

    viii. Avoid adverse impacts existing or planned water dependent uses

3. New transportation crossings over streams shall be avoided, but where necessary shall utilize bridges rather than culverts to the extent possible.

4. Transportation facility lighting shall be designed and operated to avoid illuminating nearby properties or public areas; prevent glare on adjacent properties, public areas, or roadways to avoid infringing on the use and enjoyment of such areas; and to prevent hazards. Methods of controlling spillover light include 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 and adjacent waterbodies, unless necessary for public health and safety

5. Requirements for bridge and culvert installation crossing all streams shall be consistent with flow-, debris- and/or fish-passage requirements in Washington Department of Fish and Wildlife's site-specific Hydraulic Project Approval.

6. 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.

7. Private access roads or driveways providing ingress and egress for individual single-family residences or lots shall be limited to the minimum width allowed by the City of Kalama's current fire code.

8. Bridges shall provide the maximum length of clear spans feasible with pier supports to produce the minimum amount of deflection feasible.

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 allowed in critical areas and their associated buffers as specified in Section 6.8 and Appendix B.

3. Non-motorized facilities constructed for water enjoyment and water access are encouraged, provided any impacts to ecological functions are avoided, minimized, and mitigated.

4. Elevated walkways shall be utilized where feasible to cross wetlands and streams.

C. Parking. Parking facilities are not a preferred use and shall be allowed only where necessary to support an authorized use. (WAC 173-26-241(3)(k)) Parking facilities accessory to a permitted use shall be:

1. Set back as far as possible from the OHWM and outside shoreline jurisdiction where feasible; and

2. Located outside of critical areas and associated buffers according to the buffer standards found in Section 6.8.

3. landscaped or screened to provide visual and noise buffering between adjacent dissimilar uses or scenic areas

4. designed and operated to avoid illuminating nearby properties or public areas; prevent glare on adjacent properties, public areas, or roadways to avoid infringing on the use and enjoyment of such areas; and to prevent hazards. Methods of controlling spillover light include 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 and adjacent waterbodies, unless necessary for public health and safety

7.2.14 **Utilities**

These provisions apply to services and facilities that produce, convey, store, or process power; gas; wastewater; 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:

1. No alternative location outside of shoreline jurisdiction is feasible based on analysis of alternative locations and technologies;

2. If a new corridor is proposed, utilization of existing corridors is not feasible, including expansion or replacement of existing facilities.

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. Where overhead electrical transmission lines must parallel the shoreline, they shall be outside of shoreline jurisdiction unless infeasible due to site constraints, including topography or safety.

C. Transmission, distribution, and conveyance facilities shall be located in existing rights of way and corridors or shall avoid shoreline jurisdiction by crossing 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. When allowed in shoreline jurisdiction, structural utility buildings, such as pump stations, electrical substations, or other facilities, 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 to the extent feasible.

H. The presence of existing utilities shall not justify more intense development. Rather, the development shall be consistent with the City Comprehensive Plan, zoning code, and this SMP, and shall be supported by adequate utilities.

7.3 Shoreline Modification

To be authorized, all shoreline modification activities in shorelines shall be planned and implemented in a manner consistent with this Program. In considering the approval of shoreline modifications, the Shoreline Administrator shall make findings that the following policies and regulations are met based on information provided by the applicant, including studies by qualified professionals when necessary.

7.3.1 Shoreline Stabilization

A. 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. Proposals for new or modified shoreline stabilization shall demonstrate that proposed structures are the minimum size necessary, and comply with mitigation sequencing requirements in Section 6.1 No Net Loss of Ecological Function.

2. New development should be located and designed to avoid the need for future shoreline stabilization to the extent feasible.

3. New lots created by subdivision shall demonstrate that new shoreline stabilization will not be necessary in order for reasonable development to occur.

4. Development on steep slopes (see 15.02.150 in Appendix B) shall be set back sufficiently to ensure that shoreline stabilization is unlikely to be necessary during the life of the structure.

5. 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.

6. Hard armoring solutions should be authorized only:

    i. When a report finds that a primary structure will be damaged within 3 years from shoreline erosion without hard armoring measures;

    ii. If waiting to provide erosion protection would foreclose the opportunity to use measures that avoid impacts on ecological functions; or

    iii. 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.

B. Shoreline stabilization shall be designed and constructed to avoid or minimize stream channel direction modification, realignment, and straightening; increased channelization of normal stream flows; or impacts to sediment transport.

C. 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 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 riprap or concrete.

6. Applicants should consult applicable shoreline stabilization guidance documents, such as the Integrated Streambank Protection Guidelines, promulgated by state or federal agencies.

D. 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. (WAC 173-26-231(3)(a)(iii)(B)(I))

E. 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.

4. The stabilization structure will not result in a net loss of shoreline ecological functions. (WAC 173-26-231(3)(a)(iii)(B)(III))

F. 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.

4. The stabilization structure will not result in a net loss of shoreline ecological functions. (WAC 173-26-231(3)(a)(iii)(B)(II))

G. 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.

2. The stabilization structure will not result in a net loss of shoreline ecological functions.

H. The construction of shoreline stabilization structures, either “soft” or “hard,” for the purpose of creating dry land is prohibited.

I. 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. (WAC 173-26-231(3)(a)(iii)(C))

J. 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. (WAC 173-26-231(3)(a)(iii)(C))

K. Replacement must result in no net loss of ecological functions as set forth in Section 6.1. 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. (WAC 173-26-231(3)(a)(iii)(C))

L. 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. Where feasible, such structural stabilization shall incorporate ecological restoration and public access. See Section 6.5 Public Access, for additional information.

M. Bioengineered projects shall be designed by a qualified professional in accordance with the most current, accurate, and complete scientific and technical information available, and shall incorporate a variety of native plants, unless demonstrated infeasible for the particular site.

7.3.2 Breakwaters, Jetties, Weirs, and Groins

A. Breakwaters, jetties, groins, and weirs located waterward of the OHWM shall be allowed only where necessary to support water-dependent uses, public access, shoreline stabilization, or other specific public purpose.

B. Breakwaters, jetties, groins, weirs, and similar structures shall require an SCUP, except for those structures installed to protect or restore ecological functions, such as woody debris installed in streams.

C. Breakwaters, jetties, groins, and weirs shall be designed to protect critical areas and shall provide for mitigation according to the sequence defined in Section 6.1 No Net Loss of Ecological Function, of this Program.

D. 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.

7.3.3 Residential Moorage Facilities

Residential moorage facilities are docks, buoys, and marine railways that are accessory to four or fewer single-family residences. Residential moorage facilities are not an existing, planned, or appropriate use in the City of Kalama's shoreline waterways. All other docks, marinas, or other boating facilities are addressed as a use in Subsection 7.2.3.

Residential moorage facilities are prohibited.

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 (15.02.140in 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 below or waterward of the OHWM for any use except: ecological restoration; filling to accomplish an aquatic habitat restoration plan or support a mitigation action; environmental restoration; beach nourishment, or other enhancement project, requires an SCUP. Fill may be placed below the OHWM through a SCUP only when it is demonstrated that the fill is necessary to:

1. Support a water-dependent use.

2. Serve as part of a public access proposal.

3. Support cleanup of contaminated sediments as part of an interagency environmental clean-up plan, or permitted under MTCA or CERCLA.

4. Expand or alter transportation facilities of statewide significance currently located on the shoreline only when demonstrated that alternatives to fill are not feasible. (WAC 173-26-231(3)(c))

5. Support disposal of dredged material considered suitable under and conducted in accordance with the dredged material management program of the Washington Department of Natural Resources or U.S. Army Corps of Engineers.

C. Secondary excavation, grading, or other handling of dredge spoils deposited above the OHWM is allowed as a maintenance activity if the spoils site is part of a dredge materials management plan identified in the local, state, or federal permit originally authorizing the dredge and subsequent disposal. No excavation, grading, or any action is allowed outside of a permitted area.

D. Excavation below the OHWM, except as necessary to construct footings for new or expanded shoreline stabilization, is considered dredging and is subject to provisions in Subsection 7.3.5.

7.3.5 Dredging and Dredge Material Disposal

A. Consistent with mitigation sequencing principles outlined in Section 6.1 No Net Loss of Ecological Function, dredging and dredge material disposal shall be done in a manner which avoids or minimizes significant ecological impacts, and impacts which cannot be avoided shall be mitigated in a manner that assures no net loss of shoreline ecological functions.

B. Dredging and in-water dredge disposal must be approved by state and federal agencies with jurisdiction, with documentation provided to City as a condition of any shoreline permit or exemption.

C. New dredging shall be permitted only in one or more of the following conditions:

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. As part of an approved underground utility installation requiring trenches when boring, directional drilling, and other installation methods are not feasible;

6. 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 sites or methods are not feasible; or

7. When otherwise approved by state and federal agencies.

D. New development shall be sited and designed to avoid or, if that is not possible, to minimize the need for new and maintenance dredging.

E. Maintenance dredging shall be restricted to authorized locations, depths, and widths.

F. 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 OHWM. 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.

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 a Shoreline Conditional Use 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. (WAC 173-27-231(3)(f))

H. 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.

I. When allowed, dredge material disposal must meet the following standards:

1. Dredge disposal 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 the OHWM may be approved if it is demonstrated that it complies with the provisions of I.1 above and one or more of the following:

    i. It benefits shoreline resources; or

    ii. 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

J. Upland disposal in shoreline jurisdiction of dredge material that is extracted for flood control purposes may be permitted when it is cost-prohibitive to dispose of the material outside shoreline jurisdiction; an SSDP is required. Upland disposal requires an SCUP in a residential or urban conservancy designation.

K. Approved upland dredge disposal deposits may be regularly cleared and graded, and otherwise managed as specified in applicable agency approval documents, as a maintenance activity subject to Section 8.6.4 of this SMP, provided that there are no impacts to water quality or other ecological functions outside of the disposal area. Clearing of secondary, volunteer vegetation growth on approved dredge disposal deposits does not require compensatory mitigation.

L. Dredging and dredge disposal shall be scheduled to minimize impacts to biological productivity (including fish runs, spawning, and benthic productivity) and to minimize interference with fishing activities and other water-dependent uses.

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 valued ecological sites.

A. Long-term maintenance and monitoring shall be included in restoration or enhancement projects.

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 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:

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; and

6. The project will not interfere with the normal public use of the navigable waters of the state.

8. Shoreline Administration, Permits and Enforcement

8.1 Purpose

The purpose of this chapter is to provide provisions for the administration and enforcement of a permit system that shall implement the State Shoreline Management Act of 1971, Chapter 90.58 RCW; the Ecology regulations and guidelines adopted as Chapters 173-26 and 173-27 WAC; and the Kalama Shoreline Master Program, together with amendments and/or additions thereto. Issuance of any shoreline permit or exemptions by the City does not obviate requirements for other federal, state, and local permits, procedures, and regulations.

8.2 Shoreline Overlay

Shoreline regulations shall apply as an overlay in addition to development regulations, including zoning, environmental regulations, development standards, subdivision regulations, and other regulations established by the City.

A. Allowed uses shall be governed by both the zoning regulations in KMC Title 17 and this Program. The most restrictive provisions of applicable zoning district and shoreline environment designation shall apply.

B. Allowed uses shall be limited by the general policies and specific regulations regarding use preferences for water-dependent and water-oriented uses. Allowed uses may be specified and limited in specific shoreline permits. In the case of nonconforming development, the use provisions of this code shall be applied to any change of use, including occupancy permits (see Section 3.4 Nonconforming Development).

C. In the event of any conflict between SMP policies and regulations and any other regulations of the City, SMP policies and regulations shall prevail unless other regulations provide greater protection of the shoreline environment and aquatic habitat.

D. All regulations applied within shoreline jurisdiction shall be liberally construed to give full effect to the objectives and purposes for which they have been enacted. Shoreline Master Program policies, found in the City's Comprehensive Plan, establish intent for the shoreline regulations in addition to RCW 90.58, WAC 173-26, and WAC 173-27.

8.3 Development Compliance

A. All uses and developments within the jurisdiction of the Act shall be planned and carried out in a manner that is consistent with this Program and the policies of the Act as required by RCW 90.58.140(1), regardless of whether an SSDP, LOE,

Shoreline Variance, or SCUP is required. The applicant shall ensure compliance with the provisions of this Program for all permits and approvals. Any permit, after a hearing with adequate notice to the permittee and the public, may be rescinded by the issuing authority upon the finding that a permittee has not complied with conditions of a permit, in accordance with RCW 90.58.140(8).

B. Regulation of private property to implement any Program goals such as public access and protection of ecological functions must be consistent with all relevant constitutional and other legal limitations. These include property rights guaranteed by the United States Constitution and the Washington State Constitution, applicable federal and state case law, and state statutes, such as RCW 43.21C.060.

C. Compliance with the provisions of this Program does not constitute compliance with other federal, state, and local regulations and permit requirements that may be required (for example, Hydraulic Project Approvals [HPAs], U.S. Army Corps of Engineers Section 404 permits, Ecology Water Quality Certification [Section 401], and National Pollution Discharge Elimination System permits). The applicant is responsible for complying with all applicable requirements, apart from any requirements of this Program.

8.4 Administration

8.4.1 Shoreline Administrator

A. The provisions of this Program shall be administered by the Director of the Planning Department or his or her duly authorized designee, the Shoreline Administrator.

B. The Shoreline Administrator is vested with the authority to:

1. Administrate this SMP.
2. Grant or deny exemptions from SSDP requirements of this SMP.
3. Grant or deny SSDP applications.
4. Make field inspections as needed and prepare or require reports on shoreline permit applications.
5. Make written recommendations to the Hearing Examiner as appropriate.
6. Advise interested persons and prospective applicants as to the administrative procedures and related components of this SMP.

7. Determine and collect fees for all necessary permits as provided in City ordinances or resolutions.

8. Make administrative decisions and interpretations of the policies and regulations of this SMP and the SMA.

8.4.2 Compliance with SEPA

The Shoreline Administrator shall ensure that any official action will comply with the State Environmental Policy Act, the SEPA Rules, and the City of Kalama SEPA Ordinance, KMC Chapter 15.04 Environmental Policy.

8.4.3 Fees and Charges

The fees and charges for processing applications for shoreline permits, and for other administrative actions under this Program, shall be as established and updated by the City Council.

8.4.4 Violation Reports

The Shoreline Administrator shall transmit Shoreline Management Act violation reports to the City Attorney and/or Ecology for prompt appropriate legal action. See Section 8.7 for possible City actions that may be taken in response to non-compliance or other violation.

8.5 Shoreline Permit Application Procedures

8.5.1 Application for Permit

A. All applications for a permit required under the Act, Chapter 90.58 RCW, and information related thereto, shall be submitted to the Planning Department on forms provided by the Planning Department. Upon receipt of the permit application, the Shoreline Administrator shall determine whether the information submitted meets the requirements of WAC 173-27-180, Application requirements for Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, Shoreline Letter of Exemption, or Shoreline Variance, and RCW 90.58.140 Development permits, and whether any additional information is required.

B. The Shoreline Administrator may refer the permit application for review by pertinent City departments. All pertinent departments shall participate.

C. For applications involving SCUPs and Shoreline Variances, when the Shoreline Administrator has made a final SEPA threshold determination and the required review period has terminated, the Shoreline Administrator shall transmit the permit application; SEPA review; and all pertinent review comments, findings, and recommendations to the Hearing Examiner for public hearing per the provisions of this Program.

D. Critical Areas:

1. For applications that may affect critical areas, complete shoreline application will also include all of the information required by Appendix "B".

E. Special procedures for WSDOT projects.

1. Permit review time for projects on a state highway. Pursuant to RCW 47.01.485, the Legislature established a target of 90 days review time for local governments.

2. Optional process allowing construction to commence twenty-one days after date of filing. Pursuant to RCW 90.58.140, Washington State Department of Transportation projects that address significant public safety risks may begin twenty-one days after the date of filing if all components of the project will achieve no net loss of shoreline ecological functions.

8.5.2 Hearing Examiner Action

A. For applications involving SCUPs and Shoreline Variances, the Hearing Examiner shall hold a public hearing prior to taking action. The mailing and legal advertisement for such public hearing shall be made not less than 30 days prior to the open record public hearing.

B. The Hearing Examiner has discretion to hold a public hearing on other types of actions transmitted by the Shoreline Administrator prior to taking action.

C. There shall be no more than one open record hearing on any application regulated by this section, except for those applications which are associated with a determination of significance under SEPA.

8.5.3 Public Notice Requirement

The public notice requirements of KMC Title 15.10.070 shall be followed for each application for an SSDP, SCUP, or Shoreline Variance, except that the duration of the public comment period shall in no case be shorter than 30 days.

8.5.4 Approval Criteria

In order to approve any development within SMP jurisdiction, the City must find that a proposal is consistent with the following criteria in addition to the requirements of KMC Title 17 Zoning.

A. All use regulations of this Program appropriate to the shoreline environment designation and the type of use or development proposed shall be met, particularly the preference for water-oriented uses. If a non-water-oriented use is approved, the Shoreline Administrator shall enter specific findings documenting why water-oriented uses are not feasible.

B. All bulk and dimensional regulations of this Program appropriate to the shoreline environment designation and the type of use or development proposed shall be met, except those bulk and dimensional standards that have been modified by approval of a Shoreline Variance.

C. All requirements of this Program appropriate to the shoreline environment designation and the type of use or development activity proposed shall be considered and compliance demonstrated, subject to liberal construction to give full effect to the objectives and purposes for which they have been enacted.

8.5.5 Written Findings Required

1. All permits or LOEs issued for development or use within shoreline jurisdiction shall include written findings prepared by the Shoreline Administrator addressing compliance with the regulations of this Program. The Shoreline Administrator may attach conditions to the approval of exempt developments and/or uses as necessary to ensure consistency of the project with the Act and this Program. Written findings shall be issued consistent with KMC 15.10.080.

2. The City shall use an existing, or establish a new, mechanism for tracking all project review actions in shoreline jurisdiction and shall identify a process for periodically evaluating the cumulative effects of all authorized development on shoreline conditions.

8.5.6 Time Requirements for Shoreline Permits

A. The time requirements of this section shall apply to all SSDPs, Shoreline Variances, or SCUPs authorized under the Shoreline Master Program.

B. No construction pursuant to such permits shall begin or be authorized and no building, grading or other construction permits or use permits shall be issued by the City until 21 days from the date an SSDP was filed with Ecology and the Attorney General, or until all review proceedings are completed as were initiated within the 21 days of the date of filing. Filing shall occur in accordance with RCW 90.58.140(6) and WAC 173-27-130.

C. No permits and construction pursuant to an SCUP or Shoreline Variance shall begin or be authorized until 21 days from the date of notification of approval by Ecology, or until all review proceedings are completed as were initiated within the 21 days of the date of filing. Filing shall occur in accordance with RCW 90.58.140(6) and WAC 173-27-130.

D. Unless a different time period is specified in the shoreline permit as authorized by RCW 90.58.143, construction activities, or a use or activity for which a permit has

been granted pursuant to this Program, must be commenced within 2 years of the effective date of a shoreline permit, or the shoreline permit shall terminate and a new permit shall be necessary. However, the Shoreline Administrator may authorize a single extension for a period not to exceed 1 year based on reasonable factors if a request for extension has been filed with the City before the expiration date and notice of the proposed extension is given to parties of record and Ecology. Construction activities or commencement of construction means that construction applications must be submitted, permits must be issued, and foundation inspections must be approved and completed.

E. A permit authorizing construction shall extend for a term of no more than 5 years after the effective date of a shoreline permit, unless a longer period has been specified pursuant to RCW 90.58.143 and Subsection F of this Section. If an applicant files a request for an extension prior to expiration of the shoreline permit, the Shoreline Administrator shall review the permit and upon a showing of good cause may authorize a single extension of the shoreline permit for a period of up to one year. Otherwise said permit shall terminate. Notice of the proposed permit extension shall be given to parties of record and Ecology. To maintain the validity of a shoreline permit, it is the applicant's responsibility to maintain valid construction permits in accordance with adopted building codes.

F. If it is determined that standard time requirements of Subsections D and E should not be applied, the Hearing Examiner, upon a finding of good cause, may establish shorter time limits, provided that as a part of action on an SCUP or Shoreline Variance, the approval of Ecology shall be required. "Good cause" means that the time limits established are reasonably related to the time actually necessary to perform the development on the ground and complete the project that is being permitted.

G. For purposes of determining the life of a shoreline permit, the effective date of an SSDP, SCUP, or Shoreline Variance shall be the date of filing as provided in RCW 90.58.140(6). The permit time periods do not include the time during which a use or activity was not actually pursued due to the pendency of 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.

H. It is the responsibility of the applicant to inform the Shoreline Administrator of the pendency of other permit applications filed with agencies other than the City, and of any related administrative or legal actions on any permit or approval. If no notice of the pendency of other permits or approvals is given to the City prior to the expiration date established by the shoreline permit or the provisions of this Section, the expiration of a permit shall be based on the effective date of the shoreline permit.

I. If the granting of a shoreline permit by the City is appealed to the Shoreline Hearings Board, and the Shoreline Hearings Board has approved the granting of the permit, and an appeal for judicial review of the Shoreline Hearings Board decision is filed, construction authorization may occur subject to the conditions, time periods, and other provisions of RCW 90.58.140(5)(b).

8.5.7 Revisions to Permits

A. When an applicant seeks to revise an SSDP, SCUP, or Shoreline Variance, whether such permit or variance was granted under this SMP or under the prior effective SMP, the Shoreline Administrator shall request from the applicant detailed plans and text describing the proposed changes to the project. If the Shoreline Administrator determines that the proposed changes are within the general scope and intent of the original SSDP, SCUP, or Shoreline Variance, as the case may be, the revision may be approved by the Shoreline Administrator, without the need for the applicant to file a new permit application, provided the development is consistent with the SMA, WAC 173-27-100 (Revisions to Permits), and the SMP.

B. Within the general scope and intent of the original permit, as referenced in Subsection A, means the following:

1. No additional over-water construction will be involved, except that pier, dock, or float construction may be increased by 500 square feet or 10% from the provisions of the original permit, whichever is less.

2. Lot coverage and height may be increased a maximum of 10% from the provisions of the original permit, but in no case may the maximum coverage or height be greater than that allowed in this SMP, per 6. below.

3. Additional or revised landscaping is consistent with the conditions attached to the original permit and with the SMP.

4. The use authorized pursuant to the original permit does not change.

5. No adverse environmental impact will be caused by the project revision.

6. The revised permit shall not authorize development to exceed height, lot coverage, setback, or any other requirements of the SMP except as authorized under a variance granted as the original permit or a part thereof.

C. If the revision, or the sum of the revision and any previously approved revisions, will violate the criteria specified above, the Shoreline Administrator shall require the applicant to apply for a new SSDP, SCUP, or Shoreline Variance, as appropriate, in the manner provided for herein.

D. If proposed revisions to the original permit involve a conditional use or variance, the City shall submit the proposed revision to Ecology for review. Ecology shall respond with its final decision on the proposed revision request within 15 days of the date of receipt by Ecology per WAC 173-27-100(6).

E. Revisions to permits may be authorized after original permit authorization has expired under RCW 90.58.143. The purpose of such re- visions shall be limited to authorization of changes which are consistent with this section and which would not require a permit for the development or change proposed under the terms of chapter 90.58 RCW, this regulation and the local master program. If the proposed change constitutes substantial development then a new permit is required. Provided, this subsection shall not be used to extend the time requirements or to authorize substantial development beyond the time limits of the original permit.

8.5.8 **Surety Devices**

The Shoreline Administrator may require the applicant to post a surety device in favor of the City to assure full compliance with any terms and conditions imposed on any shoreline permit. Said surety device shall be in an amount to reasonably assure the City that any deferred improvement will be carried out within the time stipulated and in accordance with approved plans.

8.5.9 **Construction Permit Compliance**

For all development within shoreline jurisdiction, the Building Official shall not issue a construction permit for such development until compliance with this Program has been documented. If a shoreline permit is required, no construction permit shall be issued until all comment and appeal periods have expired. Any permit issued by the Building Official for such development shall be subject to the same terms and conditions that apply to the shoreline permit.

8.5.10 **Rulings to State**

Any ruling on an application for a shoreline permit under authority of this Program, whether it is an approval or denial, shall, with the transmittal of the ruling to the applicant, be filed concurrently with Ecology and the Attorney General by the Shoreline Administrator. Filing shall occur in accordance with RCW 90.58.140(6) and WAC 173-27-130.

8.5.11 **Appeals**

A. An appeal of a City of Kalama administrative critical area determination may be made before the hearing examiner of the City per KMC Chapter 2.34.

B. Appeal of any decision made for the project approval must be resolved before permits are filed with Ecology. Appeal Periods must either lapse or be waived prior to filing with Ecology.

C. Any person aggrieved by the granting, denying, or rescinding of a permit on shorelines of the state pursuant to RCW 90.58.140 may seek review from the Shorelines Hearings Board by filing a petition for review within 21 days of the date of receipt of the decision as provided for in RCW 90.58.140(6).

8.6 Shoreline Permits and Letters of Exemption

8.6.1 Shoreline Substantial Development Permit

A. Substantial development as defined by RCW 90.58.030 and stated in Chapter 2, Definitions, requires an SSDP approval by the Shoreline Administrator, unless the use or development is specifically identified as exempt from an SSDP.

B. The City may issue an SSDP only when the development proposed is consistent with the policies and procedures of RCW 90.58; the provisions of WAC 173-27; Chapter 8 Shoreline Administration, Permits, and Enforcement; and this Program.

8.6.2 Shoreline Conditional Use Permit

The objective of a Shoreline Conditional Use Permit is to provide more control and flexibility for implementing the regulations of this Program. With provisions to control undesirable effects, the scope of allowed uses can be expanded. In authorizing a conditional use, special conditions may be attached to the Permit by the City or Ecology to prevent undesirable effects of the proposed use and/or to assure consistency of the project with the Act and this Program. If this Program requires a Shoreline Conditional Use Permit, the use or development is not eligible for any of the exemptions identified in Section 3.2. The exemptions only provide relief from a Shoreline Substantial Development Permit. (WAC 173-27-040(1)(b))

A. Review criteria. Uses which are classified or set forth in this Program as conditional uses may be authorized provided that the applicant demonstrates all of the following:

1. That the proposed use is consistent with the policies, regulations and standards of RCW 90.58.020 and this 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 this 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.

B. In the granting of all SCUPs, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if 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.

C. Other uses which are not classified or set forth in this Program may be authorized as conditional uses provided the applicant can demonstrate consistency with the requirements of this section and the requirements for conditional uses contained in this Program. The Shoreline Administrator may interpret whether a use or modification that is not explicitly classified in this Program is analogous to a classified use, and may be authorized in the same way as the classified use.

D. Uses which are specifically prohibited by this Program may not be authorized pursuant to either Subsection A or C of this section.

8.6.3 Shoreline Variance

A. A Shoreline Variance permit is strictly limited to the granting of relief from specific bulk, dimensional, or performance standards set forth in this SMP where there are extraordinary circumstances related to the physical character or configuration of the property such that the strict implementation of the SMP will impose unnecessary hardship on the applicant or thwart the policies of RCW 90.58.020. A Shoreline Variance may be required for a use that does not require an SSDP.

B. Decision Criteria: The fact that the applicant might make a greater profit by using his property in a manner contrary to the intent of this Program is not, by itself, sufficient reason for a variance. The applicant has the burden of proof to demonstrate all of the following:

1. That denial of the permit would result in a thwarting of the policy enumerated in RCW 90.58.020, the applicant demonstrates extraordinary circumstances, and the public interest shall suffer no substantial detrimental effect.

2. 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:

    i. That the strict application of the bulk, dimensional or performance standards set forth in this Program precludes, or significantly interferes with, reasonable use of the property;

ii. That the hardship described in 2. 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 this Program, and not, for example, from deed restrictions or the applicant's own actions;

iii. 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 this Program and will not cause adverse impacts to the shoreline environment;

iv. That the variance will not constitute a grant of special privilege not enjoyed by other properties in the area;

v. That the variance requested is the minimum necessary to afford relief; and

vi. That the public interest will suffer no substantial detrimental effect.

C. 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:

1. 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;

2. That the proposal is consistent with the criteria in B.2. of this section; and

3. That the public rights of navigation and use of the shorelines will not be adversely affected.

D. In the granting of all Shoreline 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.

E. Variances from the use regulations of the SMP are prohibited.

8.6.4 **Letters of Exemption**

A. Any person claiming exemption from the SSDP requirements shall make an application to the City on forms provided by the Planning Department for such an exemption. If a federal permit is required for the action, a Letter of Exemption (LOE) is required. A person wishing to verify an exemption may also request that

the city process an option LOE that is not required for compliance with this program, but may be used to verify permit requirements.

B. If the exemption application is approved and an LOE is required by this program, the City shall prepare a LOE addressed 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.

C. If a LOE is required by this program, it shall be sent to Ecology and the applicant and maintained on file in the offices of the City. Letters of Exemption may contain conditions and/or mitigating measures of approval to achieve consistency and compliance with the provisions of this Program and the Act.

D. A denial of an exemption shall be in writing and shall identify the reason(s) for the denial. The Administrator's decision on a LOE may be reconsidered by submittal of an appeal to the Hearing Examiner per Chapter 2.34 KMC. An exemption from an SSDP is not an exemption from compliance with the Act or the Program, or from any other regulatory requirements. A use or development exempt from an SSDP may require an SCUP or a Shoreline Variance.

E. 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 Shoreline Administrator addressing the grounds under which the project is exempt.

8.7 Enforcement

All provisions of this Master Program shall be enforced by the Shoreline Administrator.

8.7.1 Rescission of Permits

A. Any shoreline permit issued under the terms of this Program may be rescinded or suspended upon a finding by the City or Ecology that a permittee has not complied with conditions of the permit.

B. Such rescission and/or modification of an issued permit by the City shall be initiated by serving written notice of noncompliance on the permittee, which shall be sent by registered or certified mail, return receipt requested, to the address listed on the application or to such other address as the applicant or permittee may have advised the City, or such notice may be served on the applicant or permittee in person or his agent in the same manner as service of summons as provided by law.

C. Before any such permit can be rescinded by the City, a public hearing shall be held by the Hearing Examiner. Notice of the public hearing shall be made in accordance

with KMC 15.10.070. The decision of the Hearing Examiner shall be the final decision of the City on all rescinded applications. A written decision shall be transmitted to Ecology, the Attorney General's office, the applicant, and such other departments or boards of the City as are affected thereby and the legislative body of the City.

D. If Ecology is of the opinion that noncompliance exists, Ecology shall provide written notice to the City and the permittee. Ecology may petition the Shoreline Hearings Board within 15 days of the termination of the 30 day notice to the City and the permittee for a rescission of the permit if Ecology is of the opinion that the noncompliance continues to exist 30 days after the date of the notice, and the City has taken no action to rescind the permit, as provided by RCW 90.58.140(8).

8.7.2 Violation and Penalties

A. Every person violating any of the provisions of this Program or the Act shall be punishable under conviction by a fine not exceeding $1,000 or by imprisonment not exceeding 90 days, or by both such fine and imprisonment, and each day's violation shall constitute a separate punishable offense.

B. The City Attorney may bring such injunctive, declaratory, or other actions as are necessary to ensure that no uses are made of the Shorelines of the State within the City's jurisdiction which are in conflict with the provisions and programs of this Program or the Act, and to otherwise enforce provisions of this Section and the Act.

C. Any person subject to this regulatory Program who violates any provision of this Program or the provisions of a permit issued pursuant thereto shall be liable for all damages to public or private property arising from such violation, including the cost of restoring the affected area to its condition prior to such violation. The City Attorney shall bring suit for damages under this Subsection on behalf of the City. Private persons shall have the right to bring suit for damages under this Subsection on their own behalf and on behalf of all persons similarly situated. (RCW 90.58.230)

D. If liability has been established for the cost of restoring an area affected by violation, the Court shall make provision to assure that restoration will be accomplished within a reasonable time at the expense of the violator. In addition to such relief, including monetary damages, the Court in its discretion may award attorney's fees and costs of the suit to the prevailing party.

8.7.3 Shoreline Moratorium

A. The City Council may adopt moratoria or other interim official controls as necessary and appropriate to implement the provisions of the Act.

B. Prior to adopting such moratorium or other interim official controls, the City Council shall:

1. Hold a public hearing on the moratorium or control within 60 days of adoption;

2. Adopt detailed findings of fact that include justifications for the proposed or adopted actions and explanations of the desired and likely outcomes; and

3. Notify Ecology of the moratorium or control immediately after its adoption. The notification must specify the time, place, and date of any public hearing held.

C. Said moratorium or other official control shall provide that all lawfully existing uses, structures, or other development shall continue to be deemed lawful conforming uses and may continue to be maintained, repaired, and redeveloped, so long as the use is not expanded, under the terms of the land use and shoreline rules and regulations in place at the time of the moratorium.

D. Said moratorium or control adopted under this section may be effective for up to 6 months if a detailed work plan for remedying the issues and circumstances necessitating the moratorium or control is developed and made available for public review. A moratorium or control may be renewed for two 6 month periods if the City Council complies with Subsection B before each renewal.

E. If a moratorium or control is in effect on the date a proposed Program or amendment is submitted to Ecology, the moratorium or control must remain in effect until Ecology's final action under RCW 90.58.090; however, the moratorium expires 6 months after the date of submittal if Ecology has not taken final action.

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 setbacks 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 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 30 calendar days of close of the public notice period, or within 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 Land Division

Prior to approval of any land division within shoreline jurisdiction (such as short subdivisions, preliminary long plats, and boundary line adjustments), the City shall document compliance with bulk and dimensional standards as well as policies and regulations of this Program and attach appropriate conditions and/or mitigating measures to such approvals to ensure the design, development activities, and future use associated with such lands are consistent with this Program.

8.10 Amendments Authorized

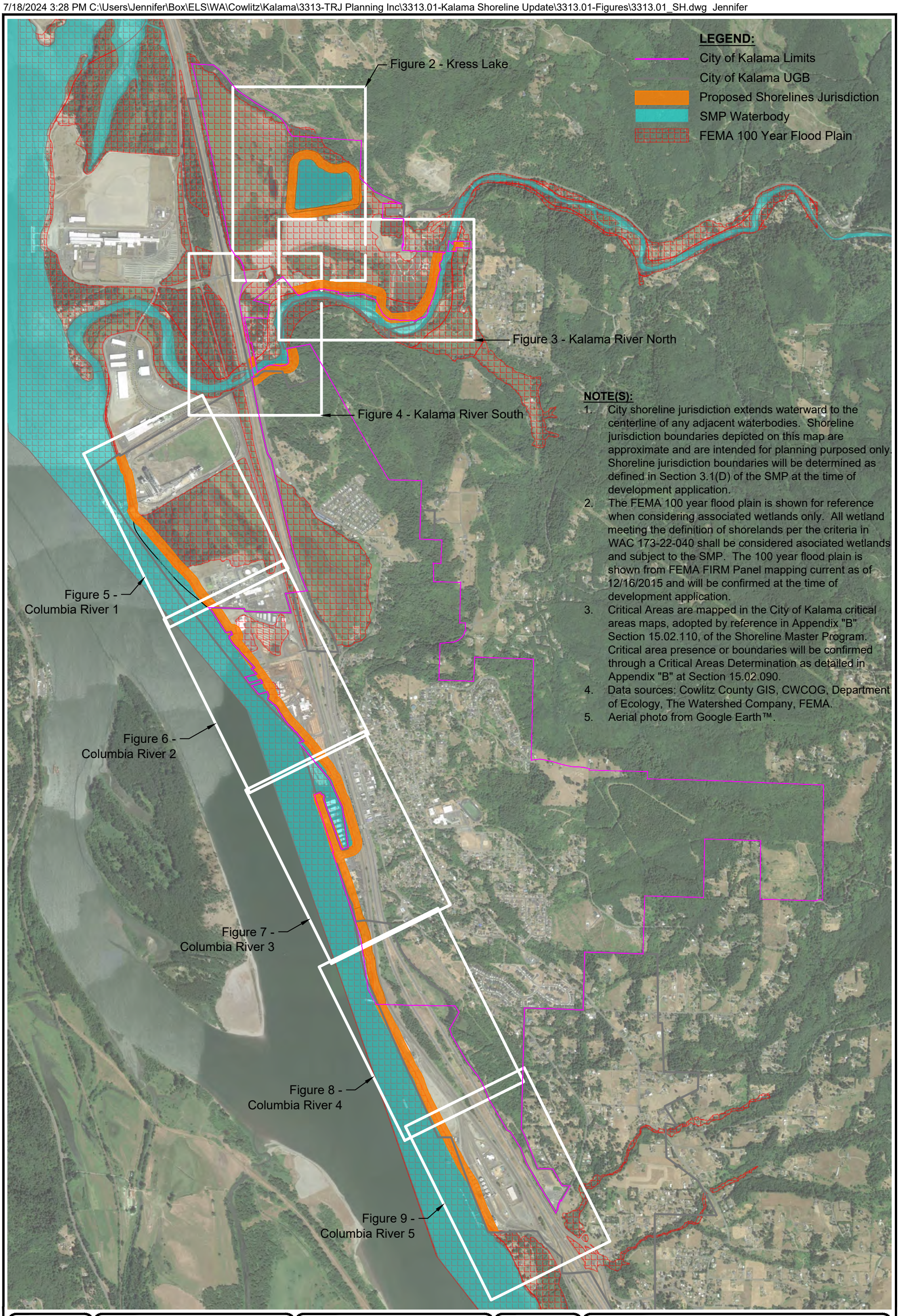
A. The provisions of this Program may be amended as provided for in RCW 90.58.120 and 90.58.200 and Chapter 173-26 WAC.

B. Proponents for amendments to the Shoreline Environment Designation Map shall bear the burden of proof for demonstrating consistency with the shoreline environment criteria of this Program, Chapter 173-26 WAC, and the goals and policies of the City of Kalama Comprehensive Plan.

C. Subsequent to final action by the City Council adopting or amending the Shoreline Master Program, official control, or amendment thereto shall be submitted to Ecology for approval. No such Master Program, official control, or amendment thereto shall become effective until approval by Ecology is obtained pursuant to RCW 90.58.90.

APPENDIX A

Shoreline Environment Designations Map



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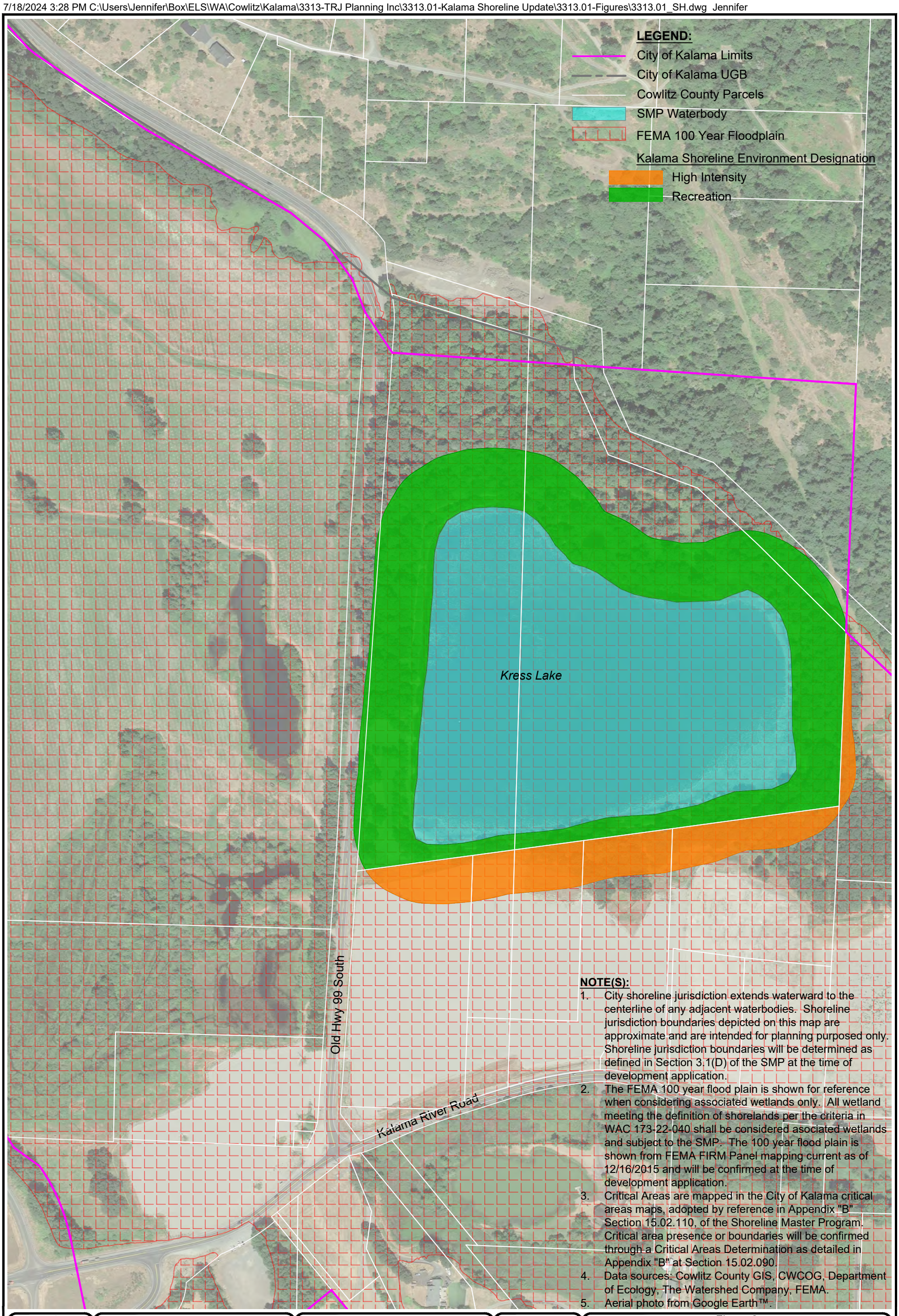
SCALE IN FEET

Ecological Land Services
1157 3rd Ave., Suite 220A
Longview, WA 98632
Phone: (360) 578-1371
Fax: (360) 414-9305
www.eco-land.com

DATE: 7/18/24
DWN: JKJ
REQ. BY: FN
PRJ. MGR: FN
CHK:
PROJECT NO: 3313.01

Figure 1
CITY OF KALAMA SHORELINES JURISDICTION OVERVIEW
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington



NOTE(S):

1. City shoreline jurisdiction extends waterward to the centerline of any adjacent waterbodies. Shoreline jurisdiction boundaries depicted on this map are approximate and are intended for planning purposed only. Shoreline jurisdiction boundaries will be determined as defined in Section 3.1(D) of the SMP at the time of development application.
2. The FEMA 100 year flood plain is shown for reference when considering associated wetlands only. All wetland meeting the definition of shorelands per the criteria in WAC 173-22-040 shall be considered asociated wetlands and subject to the SMP. The 100 year flood plain is shown from FEMA FIRM Panel mapping current as of 12/16/2015 and will be confirmed at the time of development application.
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4. Data sources: Cowlitz County GIS, CWCOG, Department of Ecology, The Watershed Company, FEMA.
5. Aerial photo from Google Earth™.

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Figure 2
KRESS LAKE
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington

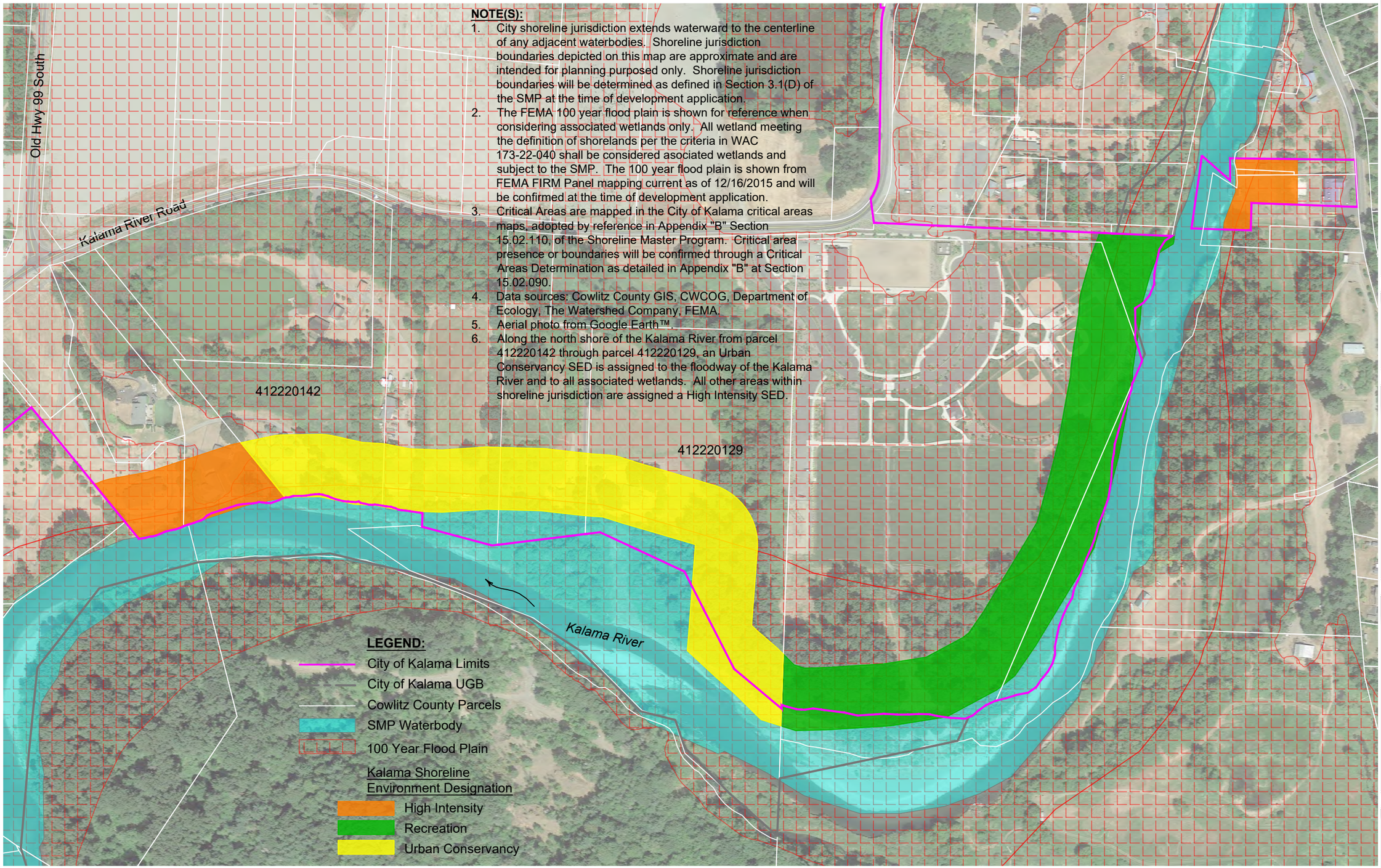

Figure 3
KALAMA RIVER NORTH
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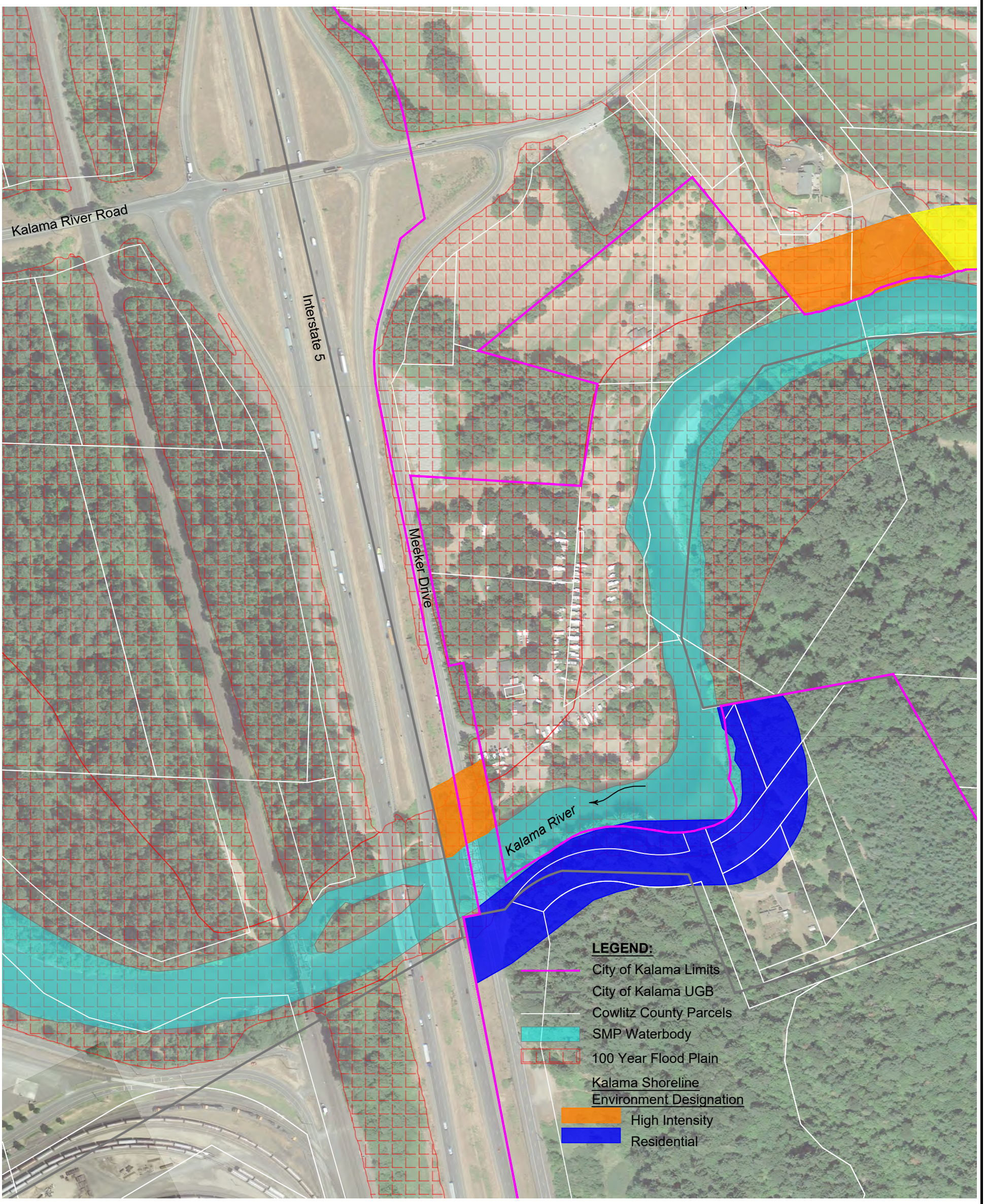

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Figure 4
KALAMA RIVER SOUTH
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington

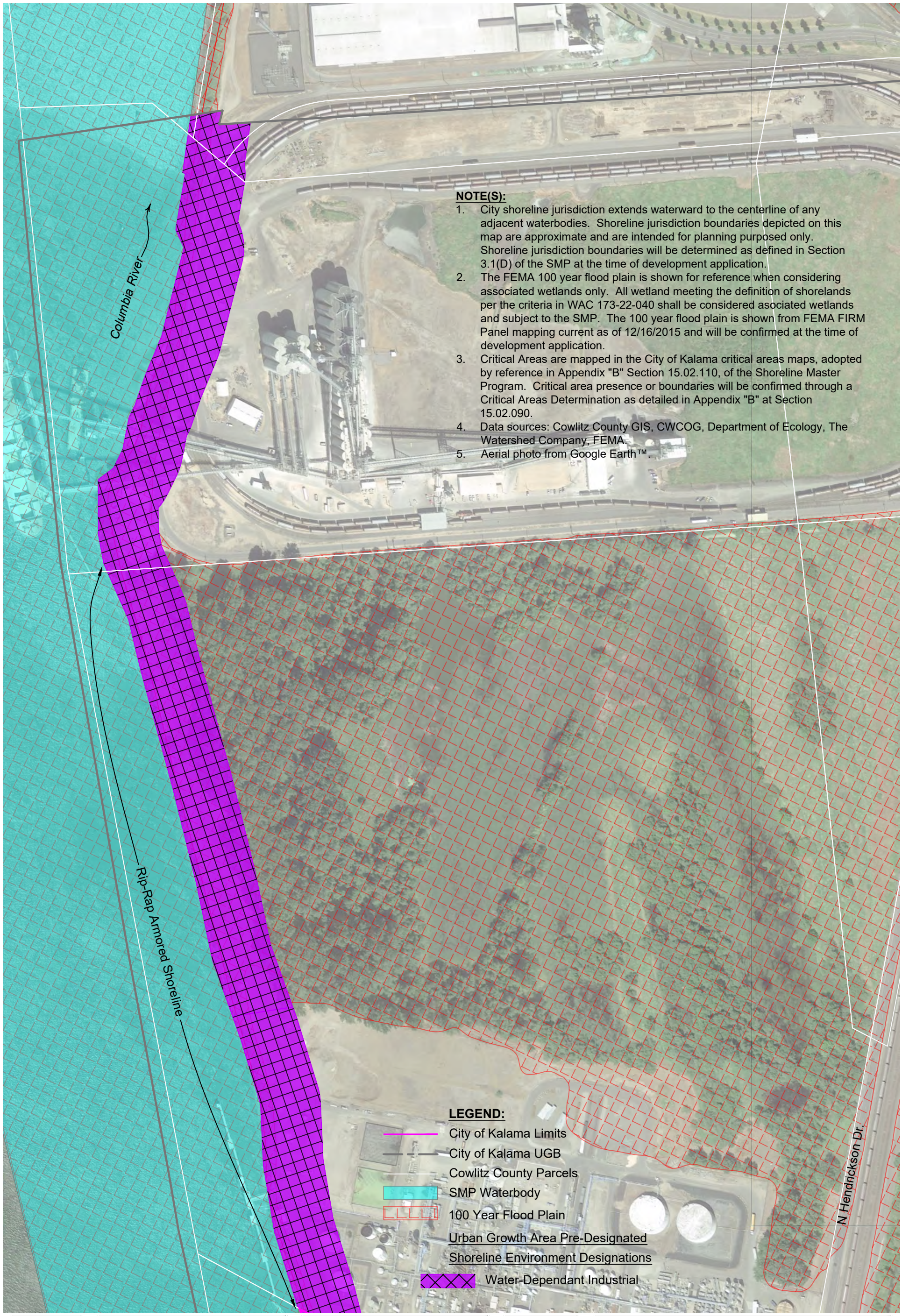

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Figure 5
COLUMBIA RIVER 1
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington

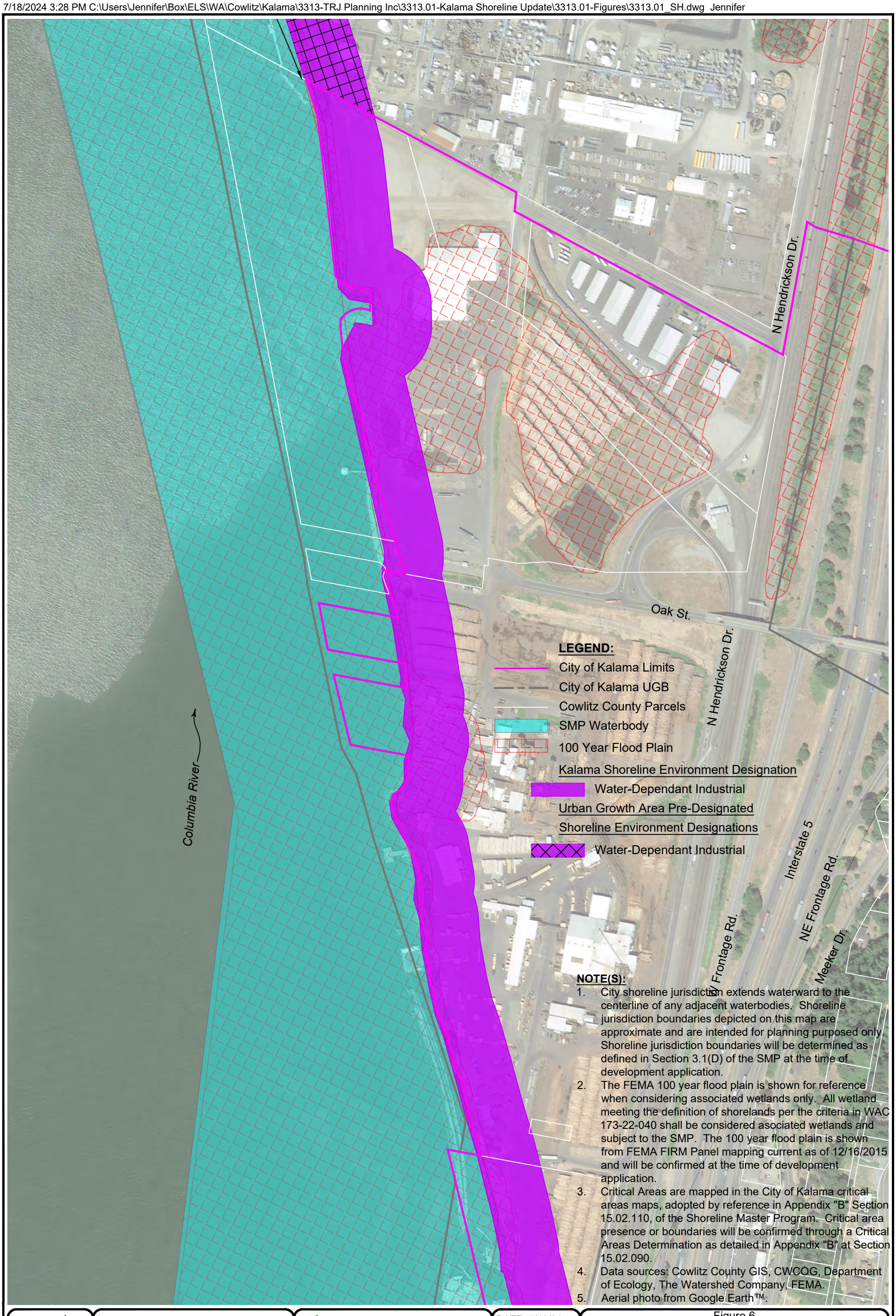

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Figure 6
COLUMBIA RIVER 2
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington

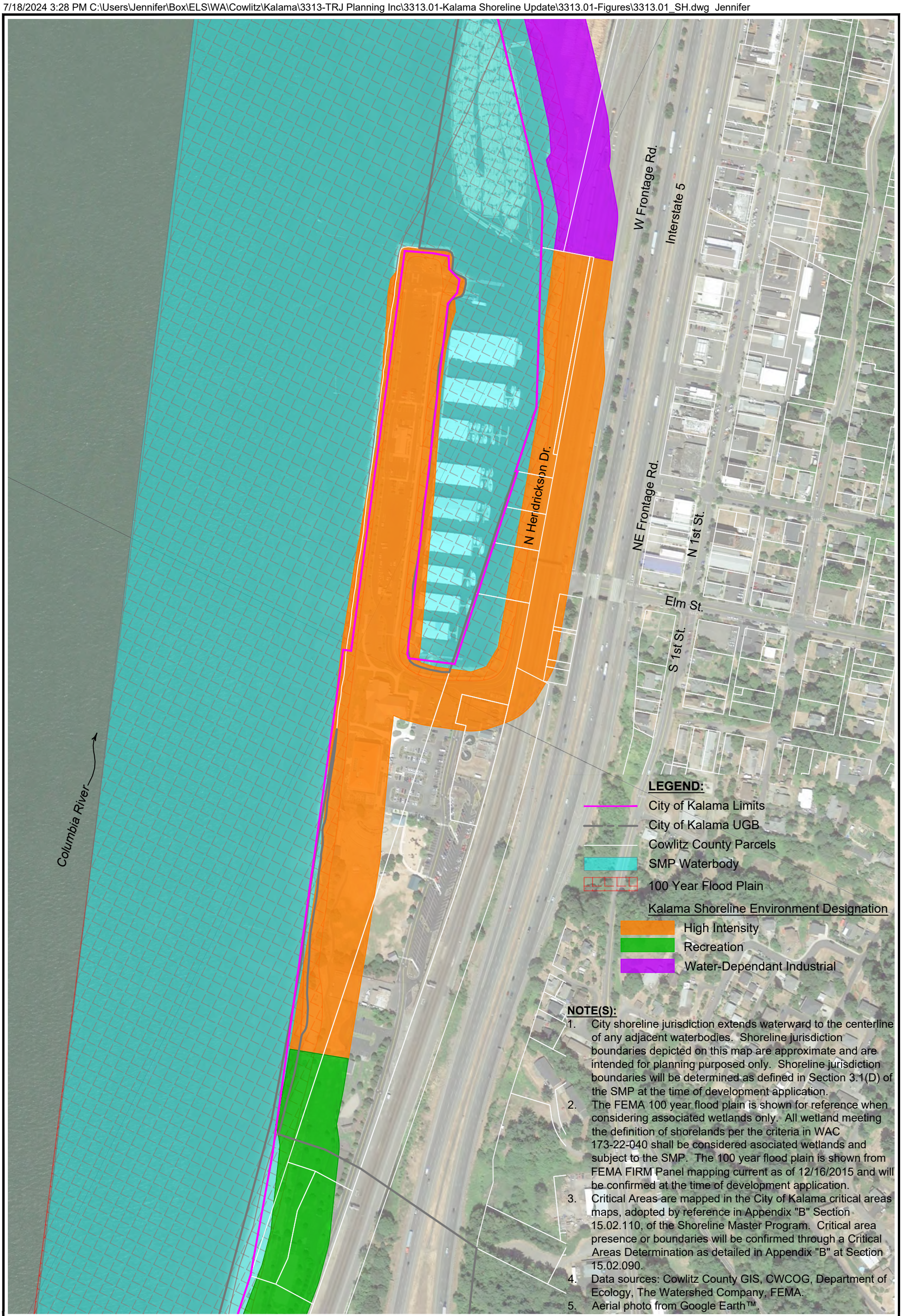

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Figure 7
COLUMBIA RIVER 3
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington

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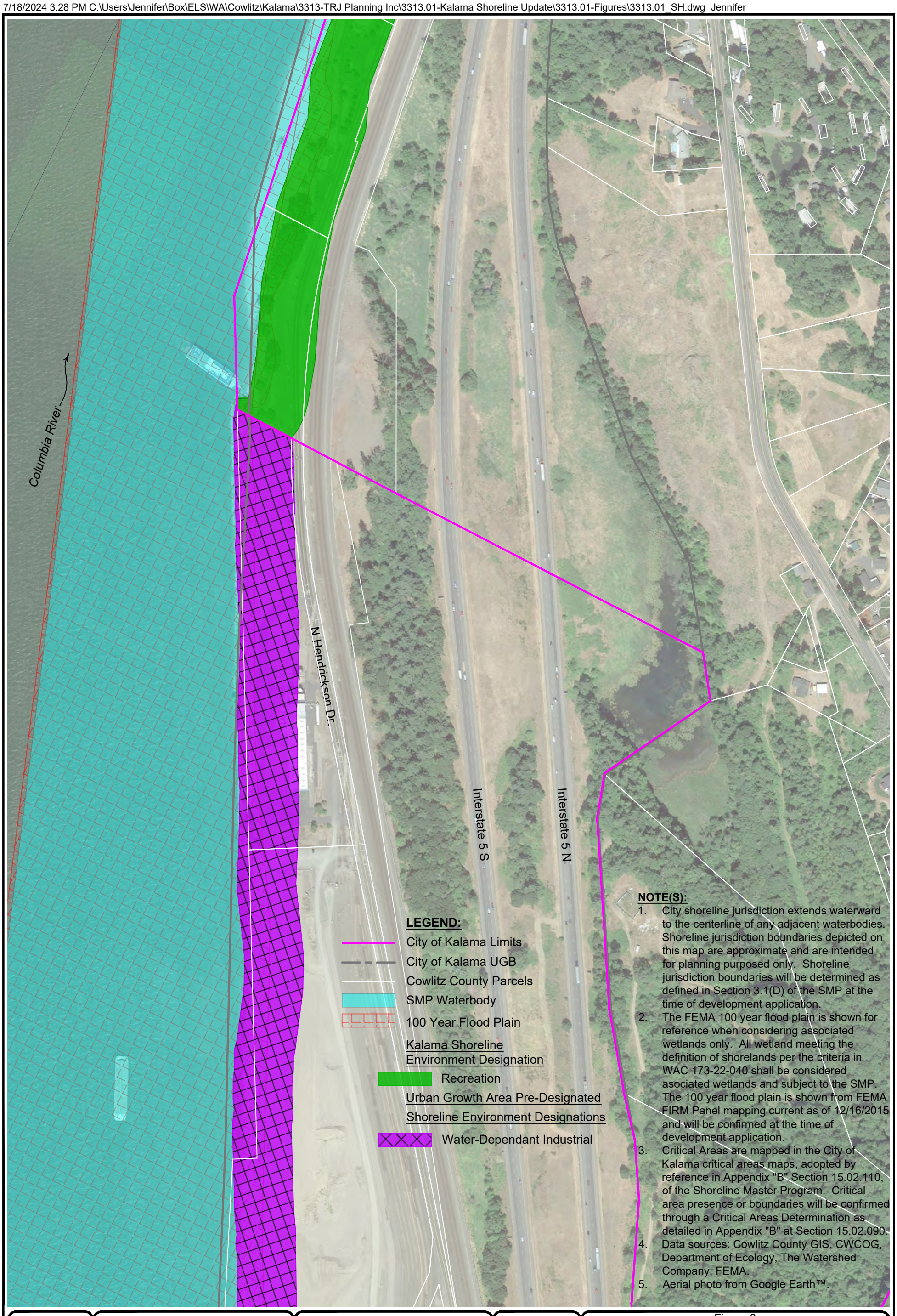

LEGEND:

- City of Kalama Limits
- City of Kalama UGB
- Cowlitz County Parcels
- SMP Waterbody
- 100 Year Flood Plain

Kalama Shoreline Environment Designation

- Recreation

Urban Growth Area Pre-Designated Shoreline Environment Designations

- Water-Dependant Industrial

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Figure 8
COLUMBIA RIVER 4
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington

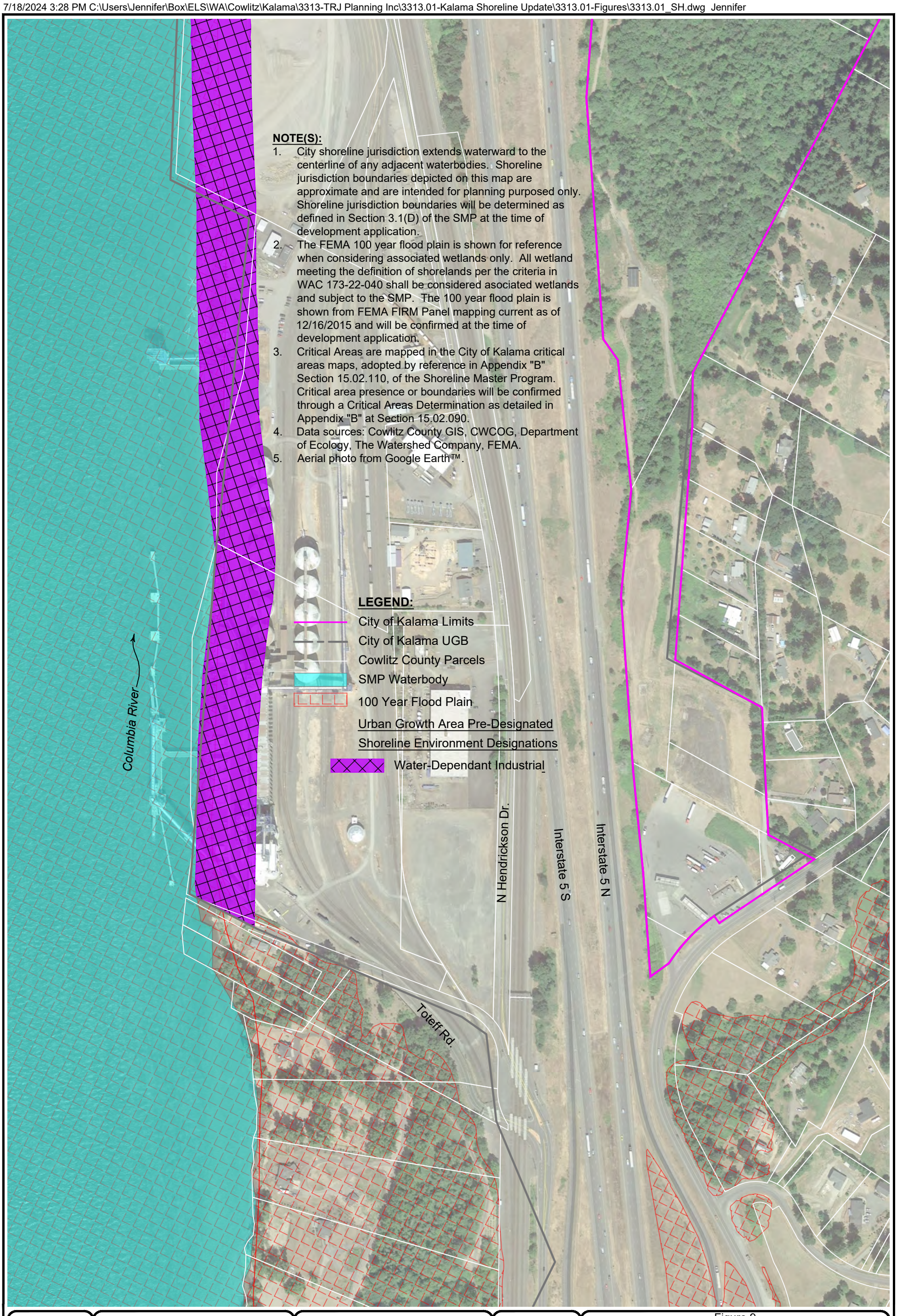

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Figure 9
COLUMBIA RIVER 5
Kalama Shorelines Update
TRJ Planning
City of Kalama, Cowlitz County, Washington

APPENDIX B

Critical Areas Regulations for Application in Shoreline Jurisdiction

Appendix “B”

15.02.010 - Title.

The title of this chapter is the "City of Kalama Critical Areas Regulations for critical areas in shoreline jurisdiction."

15.02.020 - Preamble.

A. The city is responding to state mandates contained in the Growth Management Act, RCW 36.70A.060, by developing and adopting this chapter which classifies, designates, regulates and protects the function and values of critical areas. The city believes it important to strike a balance between critical land protection, private property rights and economic development and diversification. Consequently, this chapter has been designed to encourage landowners to protect critical areas 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.

B. A limited amount of scientific data is available to address all critical areas within the city. As more information becomes available, it will be incorporated.

15.02.030 - Purpose and intent.

A. The state of Washington's Growth Management Act requires the city to adopt development regulations affecting certain types of land to assure the conservation of such areas. This chapter is intended to comply with the state mandate. "Critical areas" include: wetlands, aquifer recharge areas, geologically hazardous areas, fish and wildlife habitat, and 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 regulation for the protection of these lands and areas are, therefore, necessary to protect the public health, safety and general welfare of Kalama's citizens. This chapter also describes the process used to determine if a critical area exists on or adjacent to a particular parcel of land. The process includes the use of maps, physical inspections and other methods of fact-finding. It is the intent of the city to use the best available science and data in making a critical area determination.

B. With respect to particular critical areas, the city finds as follows:

    1. Wetlands provide numerous valuable functions, including but not limited to providing wildlife and fish habitat, water quality enhancement, flood and erosion control, aquifer recharge and discharge, shoreline stabilization, research and education opportunities, and recreation.

    2. 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 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 severity of conditions and areas of geological concern, which may only require a minimal amount of geological information with recommendations for site development.

3. 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 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 for fish and wildlife; maintaining and promoting diversity of species and habitat; maintaining air and water quality; controlling erosion; recreation, education and scientific study and aesthetic appreciation; and providing neighborhood separation and visual diversity within urban areas.

5. 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 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 water courses.

C. It is the intent of this chapter to:

1. Implement the goals, objectives and policies of the environmental and land use elements of the city of Kalama's comprehensive plan;

2. Comply with the requirements of the Growth Management Act (RCW 36.70A) and mandate such rules and guidelines;

3. Coordinate Kalama's critical area protection activities and programs with those of other jurisdictions;

4. Assist land owners by providing incentives for critical area protection.

15.02.040 - Authority.

This chapter is adopted under the authority of Chapter 36.70A RCW.

15.02.050 - Definitions.

For the purposes of this chapter, the following definitions shall apply unless the context clearly requires otherwise.

"Adjacent to" means immediately adjoining (in contact with the boundary of the subject area) or within a distance that is less than that needed to separate activities from critical areas to ensure protection of the function and values of the critical areas. Adjacent to shall mean 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 setback width and building setbacks;

3. A distance equal to or less than one-half mile (two thousand six hundred forty feet) from a bald eagle's nest;

4. A distance equal to or less than three hundred 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 two hundred feet from a critical aquifer recharge area.

"Agricultural activities (existing and ongoing)" means those activities involved in the production of crops and livestock, including but not limited to operation and maintenance of existing farm and stock ponds or drainage systems, irrigation systems, changes between agricultural activities, and maintenance or repair of existing serviceable structures and facilities, as allowed under Kalama Municipal Code Chapter 17.21, Large-Lot Estates. Activities which bring an area into agricultural use are not part of an ongoing activity. An activity ceases to be ongoing when the area on which it was conducted has been converted to a nonagricultural use, or has been unattended for five years. Forest practices are not included in this definition.

"Alluvial fan" means 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.

"Alteration" means a human-induced action which materially affects a regulated critical area or associated buffer, such as a physical change to the existing condition of land or improvements, including but not limited to: construction, clearing, filling and grading.

"Applicant" means the person, party, firm, corporation, Indian tribe, or federal, state or local government, or any other entity that proposes any activity that could affect a critical area.

"Aquifer recharge area" means areas where water infiltrates the soil and percolates through it and surface rocks, to the groundwater.

"Best available science" means current scientific information used in the process to designate, protect, or restore critical areas, that is derived from a valid scientific process as defined by WAC 365-195-900 through 925.

"Best management practices" means systems of practices and management measures that: (1) control soil loss and reduce water quality degradation caused by nutrients, animal waste and toxins; (2) control the movement of sediment and erosion caused by land alteration activities; (3) avoid adverse impacts to surface and ground water quality, flow and circulation patterns; and (4) avoid adverse impacts to the chemical, physical and biological characteristics of a critical area.

"Buffer" or "buffer area" means an area established to protect the integrity or functions and values of a critical area from potential adverse impacts.

"Chemical applications" means the application of herbicides, pesticides, organic or mineral-derived fertilizers, or other hazardous substances.

"Clearing" means the removal of trees, brush, grass, ground cover, or other vegetative matter from a site.

"Conservation easement" means an interest or right of use over a property, less than fee simple, to protect, preserve, maintain, improve, restore, limit the future use of, or conserve for open space purposes, any land or improvement on the land.

"Council" means the Kalama city council.

"Critical area" means and includes the following areas and ecosystems: (1) wetlands; (2) areas with a critical recharging effect on aquifers used for potable water; (3) fish and wildlife habitat conservation areas as defined in; (4) frequently flooded areas; and (5) geologically hazardous areas.

"Development" means a construction project involving property improvement or a change of physical character within the site; the act of using land for building or extractive purposes. "Development" shall include, but shall not be limited to, the activities identified in Section 15.02.060 of this chapter.

"Development intensities" for the purpose of Section 15.02.120 of this chapter, development intensities shall consist of two types:

1. High Intensity. Any use or activity with a high probability of disturbing a wetland and wetland fauna and flora, including but not limited to, construction of buildings, roads, and other improvements, land clearing and loud noises.
2. Low Intensity. Any use activity with a low probability of disturbing a wetland and wetland fauna and flora.

"Enhancement" means actions performed to improve the condition or functions and values of an existing viable wetland or buffer, or fish and wildlife habitat area or buffer. Enhancement actions include but are not limited to increasing plant diversity, increasing fish and wildlife habitat, installing environmentally compatible erosion controls, and removing invasive plant species such as milfoil and loosestrife.

Erosion Hazard Area. See "Geologic hazard areas."

"Excavation" means the mechanical removal of earth material.

Existing and On-going Agricultural Activities. See "Agricultural activities."

"Fill material" means a deposit of earth or other natural or man-made material placed by artificial means.

"Filling" means the act of placing fill material (on any critical area) including temporary stockpiling of fill material.

"Fish and wildlife habitat conservation areas" means those areas identified as being of critical importance to maintenance of fish and wildlife including those listed in Table 15.02.130-1.

"Floodway" means those portions of the area 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.

"Frequently flooded areas" are lands in the flood plain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater.

"Geologic hazard areas" means areas susceptible to erosion, landslide, seismic, volcanic, or other geologic events (see Section 15.02.150 of this chapter for classifications).

"Grading" means an excavating and/or filling of the earth's surface or combination thereof.

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

"Hydrologic unit (watershed)" means an area of land above or upstream from a specific point on a stream, which is enclosed by a topographic divide such that direct surface runoff from precipitation normally drains by gravity into the stream or the area above the specified point on a stream.

"Indigenous" means any native species of plant or wildlife that occurs naturally on a particular site or area.

"Lake" means a naturally existing or artificially created body of standing water, including reservoirs, twenty acres or greater in size, which exists on a year-round basis and occurs in a depression of land or expanded part of a stream.

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

"Landslide" means the abrupt downslope movement of a mass of soil or rock.

Landslide Hazard Area. See Section 15.02.150(D).

"Liquefaction" is a process in which soil loses strength, and behaves like a liquid.

"Mitigation" means an action designed to replace project-induced critical area losses or impacts; including, but not limited to, avoiding, minimizing, or compensating for adverse wetland impacts. Mitigation in order of preference:

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;
6. "In-kind mitigation" means replacement of 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;
7. "Out-of-kind mitigation" means replacement of surface water systems or wetlands with substitute surface water systems or wetlands with characteristics which do not closely approximate those destroyed or degraded by a regulated activity.

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

"Open space" means land classified as open space under Chapter 84.34 RCW for its current use value and placed in open space tax assessment.

"Pond" means a naturally existing or artificially created body of standing water under twenty acres, which exists on a year-round basis and occurs in a depression of land or expanded part of a stream.

"Primary association of a species" includes its breeding areas, nesting areas, primary foraging areas, and primary migration corridors.

"Priority habitat" means those habitat types or elements with unique or significant value to a diverse assemblage of species. A priority habitat may consist of a unique vegetation type or dominant plant species, a described successional stage, or a specific structural element.

"Qualified professional" means a person who has received a degree form an accredited college or university in a field necessary to identify and evaluate a particular critical area, and/or a person who is professionally trained, licensed and certified in such field(s). Areas of technical expertise shall generally be as follows: wetlands biology or ecology (for wetlands); stream and/or fisheries biology or ecology (for streams); wildlife biology or ecology (for critical habitat); or a Washington State licensed geologist, hydrogeologist or engineering geologist (most frequently referred to as a geotechnical engineer). A qualified wetland professional shall be certified by the Society of Wetland Scientists as a professional wetland science or wetland professional in training. When a landscape or planting plan is required by these regulations, a qualified professional is one who has demonstrated expertise in the use of indigenous plant species, slope stabilization, and arboricultural practices. A qualified professional shall be required to demonstrate the basis for their qualifications, and submit copies of past reports that have been accepted by other jurisdictions on critical area permit applications. A demonstration of qualifications may include, but shall not be limited to submission of a copy of professional certification, such as either a graduate certificate or state license.

"Regulated activity" for the purposes of this chapter (other regulations can or may apply as well) means activities occurring in a critical area or associated buffer that are subject to the provisions of this chapter. See regulated activities in KMC Section 15.02.060.

"Restoration" means efforts performed to reestablish functional values and characteristics of a critical area that have been destroyed or degraded by past alterations (e.g., filling or grading).

"Riparian habitat" means areas adjacent to aquatic systems with flowing water that contain elements of both aquatic and terrestrial ecosystems that mutually influence each other. The width of these areas extends to that portion of the terrestrial landscape that directly influences the aquatic ecosystem by providing shade, fine or large woody material, nutrients, organic and inorganic debris, terrestrial insects, or habitat for riparian-associated wildlife. Widths shall be measured from the ordinary high water mark. It includes the entire extent of the floodplain and the extent of vegetation adapted to wet conditions as well as adjacent upland plant communities that directly influence the stream system. Riparian habitat areas include those riparian areas severely altered or damaged due to human development activities.

"Shorelands and shoreland areas" means those lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred feet from such floodways; and all wetlands and river deltas associated with the streams, lakes and tidal waters which are subject to the provisions of Chapter 90.58 RCW.

"Site" means any parcel 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 regulated activity occurs.

"Slope" means 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

fifteen to thirty percent constitute areas of geologic concerns. Slopes greater than thirty percent constitute potential areas of geological hazard.

"Snag" means any dead, partially dead, or defective (cull) tree at least ten feet tall and twelve inches in diameter at breast height.

"Snag-rich areas" means areas that are characterized by the presence of relatively high numbers of large diameter (> twenty inches dbh) snags, in varying states of decay, suitable for use by broad and diverse groups of wildlife. Snag-rich areas include naturally regenerated (un-managed) 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.

"Streams" means water contained within a channel, either perennial or intermittent, and classified according to WAC 222-16-030 or WAC 222-16-031. Streams also include natural watercourses modified by man. Streams do not include irrigation ditches, waste ways, drains, outfalls, operational spillways, channels, stormwater runoff facilities or other wholly artificial watercourses, except those that directly result from the modification to a natural watercourse.

"Talus slope" means a slope formed by the accumulation of rock debris at the bottom of steep slopes or cliffs.

"Utility line" means 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.

Volcanic Hazard Area. See "Geologic hazard areas."

"Wetland" means areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically 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 nonwetland 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 to mitigate the conversion of wetlands.

"Wetland functions" are determined by physical, chemical and biological characteristics and include but are not limited to: fish and wildlife habitat, aquifer recharge and discharge, water quality, shoreline stabilization, and flood and erosion control.

"Wetland value" means wetland processes or attributes that are valuable or beneficial to society.

15.02.060 - Applicability/regulated activities.

A. All persons proposing development in critical areas or their buffers within shoreline jurisdiction shall first obtain a critical areas determination (see 15.02.090 of this Appendix B) and comply with other requirements of this Appendix B.

B. Development activities shall include, but are not limited to the following:

   1. Removing, clearing, grading, excavating, disturbing, or dredging soil, sand, gravel, minerals, organic matter or materials of any kind;

2. Dumping, discharging or filling with any material;
3. Subdivisions, short subdivisions, planned unit developments (PUDs), manufactured housing parks and RV parks;
4. Construction, reconstruction, demolition or alteration of the size of any structure or infrastructure;
5. Construction of any new public or private road or driveway;
6. Destroying, planting or altering vegetation through clearing, harvesting, cutting, intentional burning, shading, or planting nonnative species where these activities would alter the character of a critical area, or its buffer;
7. Draining, flooding, or disturbing the water level or water table;
8. Activities causing adverse changes in water temperature, physical or chemical changes of water sources to wetlands or surface water systems;
9. Chemical applications that are determined by the city and/or the Department of Fish and Wildlife to be harmful to wetland habitat, riparian corridors associated with surface water systems, or wildlife or fish life.

15.02.070 –Activities Not Subject to Critical Area Provisions

Exemptions in shoreline jurisdiction are addressed by the provisions in SMP Section 3.2. These exemptions only apply to the critical areas provisions in exhibit "B" and do not modify permit requirements under the SMP. Additional requirements may be included in the SMP findings for these exempted activities if required to achieve no net loss of ecological function.

A. The policies, regulations, and procedures of this chapter do not apply to those activities and uses conducted pursuant to the Washington State Forest Practices Act and its rules and regulations, RCW 76.09 and WAC 222, where state law specifically limits local authority, except with regard to developments and conversions requiring local approval, and when the city is the lead agency for environmental review;

B. Existing and on-going agricultural activities not involving chemical applications as defined in this chapter;

C. Development occurring within a seismic hazard area as described in Section 15.02.150(D)(3) and containing no other critical area as defined by this chapter;

D. Development occurring within frequently flooded areas and containing no other critical area as defined by this chapter, provided, the development meets the requirements of Kalama Municipal Code Chapter 14.16, Floodplain Management;

E. Maintenance, operation, reconstruction of existing public and private roads, streets, driveways, utility lines and facilities, and existing public buildings and facilities provided that reconstruction of any such facilities does not extend outside the previously disturbed portions of the right-of-way or building lot lines;

F. Exterior alterations to existing single-family residential structures comprising up to twenty-five percent of the existing building's footprint, but not to exceed five hundred square feet, if such alteration or construction does not involve the excavation of materials from any adjacent slope

which is greater than fifteen percent, and if such alteration does not extend further into a critical area;

G. For lands not involving wetlands, wildlife habitats, designated endangered species areas, or slopes greater than fifteen percent, excavation, grading, and filling the following would be exempted:

   1. If the excavation is less than two feet in depth or does not create a cut slope greater than five feet in height and steeper than one unit vertical in one and one-half units horizontal (sixty-six and seven tenths percent slope) and does not exceed fifty cubic yards,

   2. Fill is less than one foot in depth and placed on natural terrain with a slope flatter than one unit vertical in five units horizontal (twenty percent slope), or less than three feet in depth, not intended to support structures, that does not exceed fifty cubic yards on any one lot and does not obstruct a drainage course (as stated in the 1997 edition of the Uniform Building Code Appendix Chapter 33.3306.02(9));

H. The removal or control of vegetation posing a strong likelihood of hazard to life or property and the removal or control of noxious weeds not involving broadcast chemical application, excavation, use of mechanical tools, and/or flooding, provided there are no adverse impacts to slope stability;

I. Maintenance of ground cover or other vegetation in a critical area or buffer area that was disturbed prior to January 2000, provided that, no further disturbance is created;

J. Minimal site investigative work required by the city, state or a federal agency, or any other applicant such as surveys, soil logs, percolation tests, and other related activities, provided that impacts on environmentally critical areas are minimized and disturbed areas are restored to the pre-existing level of function and value within one year after tests are concluded;

K. Passive recreational uses, sport fishing or hunting, scientific or educational review, or similar minimum impact, nondevelopment activities;

L. Maintenance of intentionally created artificial wetlands or surface water systems including irrigation and drainage ditches, grass-lined swales and canals, detention facilities, farm ponds, and landscape or ornamental amenities. Wetlands, natural streams, natural streams that are channelized, 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 the mitigation plan;

M. Emergency actions;

   1. Emergency actions which must be undertaken immediately or for which there is insufficient time for full compliance with this chapter when it is necessary to:

      a. Prevent an imminent threat to public health or safety,

      b. Prevent imminent danger to public or private property, or

      c. Prevent an imminent threat of serious environmental degradation;

   2. In the event a person or emergency agency determines that the need to take emergency action is so urgent that there is insufficient time for review by the city, such emergency action may be taken immediately, as long as the following requirements are observed:

      a. Work is limited to the minimum work necessary to alleviate the emergency,

b. For emergency work within waters of the state, the person or agency undertaking such action will receive verbal hydraulic permit approval from the Washington Department of Fish and Wildlife prior to beginning any work,

c. The person or agency undertaking such action shall notify the city within one working day following the commencement of the emergency activity. Following such notification, the city shall determine if the action taken was within the scope of the emergency actions allowed in this subsection. If the city determines that the action taken or a portion of the action taken is beyond the scope of allowed emergency actions, the city may initiate enforcement action, as set forth in KMC Section 15.20.200,

d. Upon completion of the emergency repair or restoration work, all damage to the critical area shall be fully restored;

N. Construction of structures on lots with slopes of greater than fifteen percent and outside of all other critical areas and critical area buffers, if the city receives a report prepared in the last five years by a qualified professional who has examined the site and the report clearly states that construction on the site will not cause any geologic hazards, to the proposed building or surrounding properties.

15.02.080 - 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 this chapter. The incentives and options listed allow property owners to use any or all of the options that best suit their needs.

B. Open Space. Any person who owns an identified critical area as defined by this chapter may apply for current use assessment pursuant to Cowlitz County Code Chapter 18.52, the Cowlitz County Open Space Ordinance, and RCW 84.34, Open Space, Agriculture, and Timber Lands—Current Use Assessment-Conservation Futures.

C. Conservation Easement. Any person who owns an identified critical area as defined by this chapter shall be entitled to place a conservation easement over that portion of the property designated a critical area by naming the city or its qualified designee under RCW 64.04.130 (Interests in land for purposes of conservation, protection, preservation, etc.—Ownership by certain entities—Conveyances) as beneficiary of the conservation easement. 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 process for conservation easement or density incentives, subsection E of this section.

D. Density Adjustments. The city shall allow transfer of density for residential uses from lands containing critical areas, as defined by this chapter, when developed pursuant to Kalama Municipal Code Chapter 16.18, Planned Unit Development. Residential density may only be transferred 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 this chapter, the city shall determine allowable dwelling units for residential development proposals based on the formula below.

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%

The density adjustment can only be applied 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 (residential designation) to accommodate the transfer of density by following the procedures set forth in the Kalama Municipal Code Chapter 16.10.

E. The process for conservation easement or density incentives will be as follows:

1. Contents of Application. Record owners of real property seeking relief under this section shall file with the city council an application for a conservation easement, density incentives or adjustments.

2. Contents of Application. The applicant is responsible for submitting a complete and accurate application. A complete application shall include:

    a. Completed master application and/or any required supplement sheets signed by the owner of the property;

    b. A map drawn to scale, showing the following information:

        i. Name, address and telephone number of the property owners(s),

        ii. Name, address and telephone number of the preparer of the application,

iii. Date of submittal,

iv. North arrow,

v. Property boundary lines,

vi. A legal description of the property,

vii. A description of the nature, size and location of each critical area located on the property, as determined by a qualified professional,

viii. All existing and/or public and private roads, sewer, and water lines, wells, county utilities, easements, water courses, lakes, springs, drainage facilities, on-site sewage disposal drainfield areas, on and within one hundred feet of the property boundaries,

ix. The boundaries of all lands reserved in the deeds for the common uses of the property owners.

3. City Staff Action. The city clerk-treasurer, director of public works and city planner shall determine if the application is complete within twenty-eight days. If additional information is necessary, the application shall be returned to the property owner, together with a list identifying the deficiencies. When the application is complete, the city staff shall determine whether all or part of the property is in fact subject to any critical area regulations in this chapter. Staff shall forward written findings to the council.

4. Council Decision. Within thirty days of receipt of the staff's findings, the council shall make the final determination on whether all or part of the property is subject to this chapter. For conservation easement applications, if the council determines that all or part of the property is subject to this chapter, the council shall consider the acceptance of a conservation easement, as beneficiary on behalf of the city or its qualified designee under RCW 64.04.130, over that portion of the property subject to this chapter to the extent requested by the record owner of the property. The grantee of a conservation easement must agree to execute the easement form approved by the city attorney. For density incentive applications, the council shall consider a requested density transfer subject to its final approval of a preliminary subdivision plat. The application for density transfer must be submitted as a part of the preliminary plat application.

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 and local agencies authorized to exchange the subject land. The process for land exchange involving the city of Kalama will be as follows: all applications for land exchanges must be filed in accordance with the requirements of this section. 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.

1. Contents of Application. The applicant is responsible for submitting a complete and accurate application. A complete application shall include:

a. Completed master application and/or any required supplement sheets signed by the record owner of the property;

b. A map, drawn to scale, showing the following information:

i. Name, address and telephone number of the property owners(s),

ii. Name, address and telephone number of the preparer of the application,

iii. Date of submittal,

iv. North arrow,

v. Property boundary lines and dimensions,

vi. Legal description of the property,

vii. Description of the nature, size and location of each critical area located on the property, as determined by a qualified professional,

viii. All existing public or private roads, sewer and water lines, wells, city utilities, easements, water courses, lakes, springs, drainage facilities, on-site sewage disposal drainfield areas, on and within one hundred feet of the property boundaries,

ix. The boundaries of all lands reserved in the deeds for the common uses of the property owners,

x. A written appraisal from a licensed appraiser of the city's choice, providing the fair market value of the properties,

xi. An environmental assessment of the property, indicating the presence or absence of environmental contaminants. The city shall commission the assessment at the property owner's cost.

2. City Staff Action. The City Administrator or designee shall determine if the application is complete within twenty-eight days. If additional information is necessary, the application shall be returned to the property owner, together with a list identifying the deficiencies. Staff shall forward written findings to the council.

3. Council Action. The city council shall hold a public hearing to review all property owner requests, pursuant to this section. Notice of public hearing shall be made at least thirty 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 three hundred feet of the subject property boundaries thirty days prior to the hearing. And, two or more notices shall be posted in the vicinity of the subject property ten days prior to the hearing. Procedures for land exchanges may be subject to additional notice and advertising requirements.

4. Following the public hearing, the council shall issue its written decision, with findings. There shall be no deadline for the city council's decision on land exchanges, which shall be completely discretionary.

15.02.090 - Critical areas determination.

A determination of critical areas is required for all land use or development applications. Staff will conduct an environmental review, based on existing in-house data and an on-site inspection, to determine if critical areas exist on or are adjacent to a parcel and whether the site or project is exempted as provided in Section 15.02.070 of this chapter.

A. Complete Application for Critical Area Determination. A complete application for a critical area determination will include all of the following:

1. A completed master application with applicable land use application, including a critical area checklist;
2. A vicinity map;
3. A site drawing showing property boundaries, and existing plus proposed development locations on-site;
4. A critical area determination fee.

B. Staff Determination of a Critical Area. A critical area determination is made by the city staff, without a public hearing. The determination will be based upon:
1. Review of the critical area determination application, together with any optional critical area study submitted by the applicant;
2. Review of materials and information compiled by the city of Kalama, including any consultant report the city may commission; and
3. On-site inspection of the property.

C. Issuance of Determination of Critical Area. The determination shall be in writing and shall be provided to the applicant and property owner of record, if different than the applicant. When a critical area exists, a critical area determination notice will be issued. A property owner may request a redetermination by the staff once in any twelve-month period, subject to fees, when a change in physical conditions or government institutional actions warrant such redetermination. Formal appeal may be made in accordance with this section.

15.02.100 - Critical area review.

If the critical area determination reveals that there is a critical area(s) on the property subject to the underlying land use or development permit, an application for a critical area review must be submitted. No development or activity may take place on the property with critical areas except in conformance with this chapter and an issued shoreline authorization.

A determination of critical areas is required for all land-use or development applications. Staff will conduct an environmental review, based on existing in-house data and an on-site inspection, to determine whether critical areas exist on or are adjacent to a parcel that is the subject of the application and whether Appendix B applies to the critical area or activity as outlined in Section 15.02.060 of this Appendix B. No separate permit is required for a development proposal that requires review and/or approval under this Shoreline Master Program.

All applicable critical areas requirements in Appendix B shall be incorporated into a Shoreline Substantial Development Permit (SSDP), Shoreline Conditional Use Permit (SCUP), Shoreline Variance, or LOE as applicable, and the applicable shoreline permit or LOE shall be obtained prior to undertaking any development activity regulated by the SMP.

A. Critical Area Application. A complete application for a critical area review shall consist of the following:
1. A Detailed Site Plan Drawn to Scale. The site plan should clearly show the following information:

a. North arrow,

b. Property boundary line and dimensions,

c. Location and dimensions of all existing and proposed development or alternations, 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,

d. All critical areas, buffers and the development proposal with dimensions,

e. Limits of any areas to be cleared;

2. A copy of the determination of critical area issued by the city showing it having been recorded through the county auditor's office;

3. A stormwater management plan for the project with consideration of the drainage impacts based on "best management practices";

4. Critical area report(s) addressing the specific critical area(s) on the site including all information as defined in the applicable Appendix(s) B through E. This report must also include the following:

a. The date the report was prepared, no more than five (5) years prior to the date of the shoreline permit application

b. The names, and qualifications of all person(s) preparing the report,

c. The professional qualifications of the person(s) preparing the report,

d. The dates and documentation of any fieldwork performed on the site,

e. A statement verifying the accuracy of the report, as well as all assumptions relied upon in the report,

f. An assessment of the probable cumulative impacts to critical areas resulting from development of the site,

g. Analysis of site development alternatives and impact avoidance,

h. Analysis of impact minimization, if applicable;

i. Compensatory mitigation for unavoidable impacts, if applicable; and

h. A SEPA environmental checklist, unless the proposal is categorically exempt under KMC 15.04.110 or WAC 197-11-800, and the following critical areas are not impacted:

i. Geologic hazard area,

ii. Wetlands,

iii. Riparian habitat area;

5. A permit fee.

B. Critical Area Approval Criteria. An application for a site containing a critical area shall demonstrate compliance with all of the following criteria in order to be approved:

1. The proposed alteration, activity or development proposal must satisfy all standards for alterations, activities or development in critical areas, as set forth in this chapter;

2. The proposed mitigation shall be supported by sufficient evidence to demonstrate that the mitigation will protect the critical area, and ensure no net loss of critical habitat value or functions; and

3. The proposed alteration, activity or development proposal shall be consistent with all other applicable codes.

C. Decisions on proposed critical area impacts shall be made as part of the associated shoreline permit or shoreline exemption. Appeals shall be as authorized under the Shoreline Management Act.

15.02.105 - Relationship to other regulations.

Areas characterized by a particular critical area may also be subject to other regulations due to the overlap of multiple functions of critical areas. In the event of any conflict between these regulations and any other regulations of the city, the regulations which provide the greater protection for critical areas shall apply. No permit granted pursuant to this chapter shall remove applicant's obligation to comply in all respects with the applicable provision of any other federal, state or local law or regulation.

15.02.110 - Critical area inventory maps.

A. The approximate location and extent of critical areas and lands within the city planning area are shown on the maps adopted as part of this chapter. These maps are based on the best available information and are 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 the city may be required to confirm the existence of a critical area. The city will update information and resource material when new data is available and updates are feasible.

B. 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 15.02.110-1

Summary of Map Sources

Topic	Map/Data Sources
Geologically Hazardous Areas	1. Washington Geologic Information Portal (http://wdfw.wa.gov/mapping/phs/), WA State Department of Natural Resources, as amended. 2. Seismic Design Category Maps for Residential Construction in Washington, WA State Department of Natural Resources, 2007. 3. Cowlitz County General Soils Map, USDA Natural Resource Conservation Service, 2006 or as amended. 4. Seismic Hazard Maps, USGS, 2014 or as amended.

	5. Liquefaction Susceptibility Map of Cowlitz County, Washington, WA State Department of Natural Resources, 2004 or as amended. 6. Other WA State Department of Natural Resource Maps—when available.
Frequently Flooded Areas	7. FEMA, National Flood Insurance Program, Flood Insurance Rate Maps.
Critical Aquifer Recharge Areas (CARA's)	8. Updated CARA Designation, Cowlitz County GIS Department, 2016.
Wetlands	7. National Wetlands Inventory – Wetlands Mapper (online), U.S. Department of Interior, Fish and Wildlife Service, as amended.
Fish and Wildlife Habitat Conservation Areas	8. Priority Habitat and Species (PHS) on the Web (online), WA State Department of Fish and Wildlife, as amended. 9. SalmonScape (online), WA State Department of Fish and Wildlife, as amended. 10. WSDOT Fish Passage Barriers (online), Washington State Department of Transportation (WSDOT), as amended. 11. The National Map – Hydrography (online), USGS, as amended. 12. Forest Practices Application Mapping Tool (online), WA State Department of Natural Resources, as amended.

15.02.120 - Critical area wetlands.

A. Wetland physical functions include but are not limited to:

   1. Flood control functions;
   2. Fish and wildlife habitat environments;
   3. Ground and surface water aquifer recharge functions;
   4. Sediment retention and pollution control functions.

B. Wetland Delineation. For the purposes of this section, wetland delineations shall be performed in accordance with the approved federal wetland delineation manual and applicable regional supplements .

C. Wetland Classification. Wetlands shall be rated according to the Washington State Wetland Rating System for Western Washington 2014 Update (Washington State Department of Ecology, October 2014), as amended.

   1. Category I. Wetlands with the highest level of functions (scoring 23 points or more) that are too difficult to replace. In addition, wetlands that represent a unique or rare wetland type, are more sensitive to disturbance than most wetlands, and/or are relatively undisturbed and contain

ecological attributes that are impossible to replace within a human lifetime, including the following within the City of Kalama:

a. Wetlands of high conservation value (formerly known as natural heritage wetlands);

b. Bogs; and/or

c. Wetlands with mature and old-growth forests.

2. Category II. Wetlands with high level of some functions (scoring 20-22 points) that are difficult, though not impossible, to replace.

3. Category III. Wetlands with moderate level of functions (scoring 16-19 points) that can often be adequately replaced with well-planned mitigation.

4. Category IV. Wetlands with the lowest level of functions (scoring less than 16 points) that are able to be replaced or improved.

D. Development Limitations - Alterations of Wetlands. Alteration of wetlands may be authorized only through a Shoreline Variance and subject to the following standards:

1. Alteration of Category I wetlands is prohibited unless the alteration would improve or maintain the existing wetland function and value, or the alteration would create a higher value or less common wetland type which would improve the functions or values of the wetland as indicated within the wetland technical study and the mitigation plan, developed by a qualified wetland professional.

2. Alteration of Category II,III, and IV wetlands may be allowed only when it is demonstrated, by a qualified wetland professional, through a wetlands site assessment that any of the following criteria are met:

a. Public benefit will accrue through the alteration;

b. No reasonable and practical alternative to the alteration exists through on-site design; or

c. The alteration would improve or maintain the existing wetland function and value, or the alteration would create a higher value or less common wetland type with more functions and values as indicated within the wetland technical study and the mitigation plan.

E. Wetland Buffers. The purpose of a buffer is to provide appropriate protection to any identified wetland to maintain the structure, function, and values of the wetland system.

1. Buffers are required for all wetlands (see Definitions for " wetland" definition). Wetland buffer widths are established, based on the wetland category, as follows:

Table 15.02.120-1

Wetland Buffers

Categories	Buffer Width (in feet)	
I	300	

II	300	
III	150	
IV	50	

2. Buffer widths shall be measured perpendicular to the delineated boundaries of the regulated wetland and extend horizontally the required distance.

3. Buffers may exclude areas that are functionally and effectively disconnected from the wetland by an existing public or private road or legally established development, as determined by the City Administrator or their designee. Functionally and effectively disconnected means that the road or other substantial improvement blocks the protective measures provided by a buffer.

   Significant improvements shall include developed public infrastructure such as roads and railroads, and private improvements such as homes or commercial structures. Where questions exist regarding whether an improvement functionally disconnects the buffer, the City Administrator of their designee may require a Critical Area Report to analyze and document the buffer functionality.

4. Buffer widths may be reduced on a case-by-case basis when it is determined to the satisfaction of the city that a smaller area is adequate to protect the wetland functions and values based on site-specific characteristics. Applicants for a "buffer width reduction request" shall submit to the city a wetland report as described in Appendix "C" of this chapter at the same time they submit all other development applications. In no case shall the standard buffer width be reduced by more than twenty-five percent, or the buffer width be less than fifty feet except for buffers for category IV wetlands. The city shall require a minimum of five-year monitoring program to be developed to the satisfaction of the city. The monitoring program shall require that annual "reports" be submitted to the city for evaluation and approval. Subsequent corrective actions may be required if adverse impacts to wetlands are discovered during the monitoring period. The following information must be placed in the "wetland report" supporting the reduction of any buffer:

   a. The wetland report provides sound rationale for the reduced buffer based on the best available science. The rationale is supported by the Washington State Department of Ecology and the Department of Fish and Wildlife;

   b. The existing buffer area is well-vegetated with native species and has less than ten percent slopes; and

   c. No direct or indirect, short-term or long-term, adverse impacts to wetlands are identified by the Washington State Department of Ecology or the Department of Fish and Wildlife, resulting from the proposed reduction of the wetland buffer and the subsequent proposed development of the site in question.

F. Buffer Width Alterations - Wetland Buffer Adjustments and Width Averaging.

1. Requests for alterations to the wetland buffer widths may be applied for in accordance with procedures as set forth in Kalama Municipal Code Section 17.52.030, Application.

2. The City Administrator, may grant alterations to the regulated buffer widths as set forth in this section, provided, that the applicant has not applied for a wetland buffer width reduction, and where it can be shown, through a report prepared by a qualified wetlands professional that granting the variance will not negatively impact the required enhancements, functions and values of the wetland the buffer it is intended to protect.

3. One of the ways that the buffer widths may be modified or altered is by averaging (decreasing or increasing) the buffer width. For example, if the widest width in a proposed buffer is fifty feet and the narrowest width is twenty-five feet, the average width would be thirty-seven feet, six inches wide.

4. The hearings examiner can grant the buffer width averaging only if the applicant can demonstrate to the city through a report as set forth in subsection E, buffer width reductions, of this section prepared by a qualified wetlands specialist, all of the following:

    a. The buffer width averaging will not adversely impact the function and/or values of the wetland;

    b. Low intensity land uses will be adjacent to the reduced buffer widths;

    c. The total area contained within the averaged buffer is equal to the required minimum within the standard buffer;

    d. In no instance will the buffer width be reduced more than twenty-five percent or be less than fifty feet for any stormwater drainage way or a wetland site; and

    e. The buffer area proposed to be designated in buffer width averaging shall be contiguous to the original buffer area and shall not include on-site septic systems, public or private roadways, structures, or aboveground utilities. Existing disturbed areas may not be approved for use as a buffer averaging area.

G. Activities Allowed in a Wetland Buffer. Activities within a buffer zone may be allowed if prior to undertaking any activity in the buffer, the applicant demonstrates that the activity has no adverse impact on the function of buffer zones as follows:

1. All Activities in the Wetland Buffer

    a. Impacts to the buffer and adjacent wetland are minimized; and

    b. Impacts to the buffer and adjacent wetland are fully mitigated to achieve no net loss in wetland functions or values as a result of the activity in the wetland buffer.

2. Passive Recreation Development Activity. Passive recreation facilities designed and in accordance with an approved critical area assessment, including, but not limited to:

    a. Walkways and trails; provided, that those pathways are generally parallel to the perimeter of the wetland, are located in the outer 25 percent of the buffer area, are constructed with a surface that does not interfere with the soil permeability, and the surface of which is no more than eight feet wide. The design and construction of walkways and trails shall avoid impacts to established native woody vegetation. Raised boardwalks utilizing non-treated pilings are acceptable;

    b. Wildlife viewing structures less than 200 square feet.

3. Stormwater Management Facilities. Stormwater management facilities are not allowed in buffers of Category I or II wetlands. Stormwater management facilities, limited to stormwater dispersion outfalls and bioswales, may be allowed within the outer 25 percent of the buffer of Category III or IV wetlands or may encroach farther into buffer at discretion of the City Administrator or designee, provided that no other location is feasible, and is supported by a critical area report.

4. Utility Transmission Facilities. Utility facilities which carry liquid petroleum products or any other hazardous substance as defined in Chapter 173-303 WAC may be permitted within wetland buffers only when demonstrated by a qualified professional that the design, location, and monitoring of the proposed facility will not cause adverse effects to the buffer or wetland.

5. Utility Drilling. Drilling for utilities/utility corridors under a buffer, with entrance/exit portals located completely outside of the wetland buffer boundary, provided that the drilling does not interrupt the groundwater connection to the wetland or percolation of surface water down through the soil column. Specific studies by a hydrologist are necessary to determine whether the groundwater connection to the wetland or percolation of surface water down through the soil column is disturbed.

6. Nonconforming Uses. Repair, maintenance, or alteration of nonconforming uses or structures not otherwise exempt from the regulations of chapter per KMC 15.02.070 and where legally established within the buffer, provided they do not increase the degree of nonconformity.

7. Other Activities in the Wetland Buffer. All activities in the wetland buffer not specified by KMC 15.02.120(G)(2) through (6) shall only be allowed provide that no other location is feasible.

H. Wetland Mitigation Standards.

1. Mitigation for alterations to wetlands shall achieve equivalent or greater wetland functions. Mitigation plans shall be consistent with Wetland Mitigation in Washington State, Part 1 (Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, U.S. Environmental Protection Agency Region 10, Version 2, April 2021).

2. Wetland mitigation actions shall not result in a net loss of wetland areas except when the following criteria are met:

   a. The lost wetland area provides minimal functions and the mitigation action(s) results in a net gain in wetland functions as determined by a site-specific function assessment; or

   b. The loss of wetland area provides minimal functions as determined by a site-specific function assessment and other replacement habitats provide greater benefits to the functioning of the watershed, such as riparian habitat restoration and enhancement.

3. Mitigation actions shall address functions affected by the alteration to achieve functional equivalency or improvement. The goal shall be for the compensatory mitigation to provide similar wetland functions as those lost, except when either :

   a. The lost wetland area provides minimal functions, and the proposed mitigation action(s) will provide equal or greater functions or will provide functions shown to be limiting within a watershed through a formal watershed assessment plan or protocol; or

   b. Out-of-kind replacement will best meet formally identified regional goals such as replacement of historically diminished wetland types.

4. Mitigation Types and Sequencing. Mitigation actions that require compensation shall occur in the following order of preference:

    a. Restoration. Restoring (re-establishing or rehabilitating) wetlands on upland sites that were formerly wetlands or are significantly degraded wetlands.

        i. 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.

        ii. 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.

    b. Creation. Creating wetland on disturbed upland sites such as those with vegetative cover consisting primarily of non-native species. 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. No proposed mitigation site characteristic completely inhibits the success of invasive plants or noxious weed control consistent with approved mitigation plan performance standards;

        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.

    c. Enhancement. Enhancing wetlands.

        i. Impacts to wetlands may be mitigated by enhancement of existing significantly degraded wetlands. Applicants proposing to enhance wetlands must produce a critical area report that identifies how enhancement will increase the functions of the degraded wetland, how this increase will adequately mitigate for the loss of wetland area and function at the impact site, and how all other existing wetland functions at the mitigation site will be protected.

    d. Preservation. Preserving high-quality wetlands that are under imminent threat.

        i. Preservation as mitigation is acceptable when done in combination with restoration, creation or enhancement, unless the preservation criteria of KMC 15.02.120.H.4.d.ii are met. A minimum of one-to-one acreage replacement shall be provided by restoration or creation and the criteria below shall be met:

            (1). The impact area is small, and/or impacts are to a category III or IV wetland;

(2). Preservation of high quality system occurs in the same Water Resource Inventory Area (WRIA) or watershed basin as the wetland impact;

(3). Preservation sites include buffer areas adequate to protect the habitat and its functions from encroachment and degradation; and

(4). Mitigation ratios for preservation in combination with other forms of mitigation shall range from ten-to-one to twenty-to-one, as determined by the city, depending on the quality of the wetlands being mitigated and the quality of the wetlands being preserved.

ii. Preservation of at-risk, high-quality habitat may be considered as the sole means of mitigation for wetland impacts when all of the following criteria are met:

(1). Preservation is used as a form of mitigation only after the standard sequencing of mitigation (avoid, minimize, and then compensate) has been applied;

(2). Creation, restoration, and enhancement opportunities have also been considered, and preservation is the best mitigation option;

(3). The impact area is small and/or impacts are to a category III or IV wetland;

(4). Preservation of a high quality system occurs in the same Water Resource Inventory Area (WRIA) or a watershed where the wetland impact occurs;

(5). Preservation sites include buffer areas adequate to protect the habitat and its functions from encroachment and degradation;

(6). The preservation site is determined to be under imminent threat, specifically, sites with the potential to experience a high rate of undesirable ecological change due to on- or off-site activities. "Potential" includes planned, or likely actions that are not adequately protected under existing regulations (for example, logging of forested wetlands); and

(7). The area proposed for preservation is of high quality and critical for the health of the watershed or basin. Some of the following features may be indicative of high quality sites:

• Category I or II wetland rating,

• Rare wetland type (for example, bogs, mature forested wetlands, estuaries),

• Habitat for threatened or endangered species,

• Wetland type that is rare in the area,

• Provides biological and/or hydrological connectivity,

• High regional or watershed importance (for example, listed as priority site in watershed plan), and

• Large size with or with potential for supporting high species diversity (plants and/or animals) and/or high abundance.

iii. Mitigation ratios for preservation as the sole means of mitigation shall range from ten-to-one to twenty-to-one, as determined by a qualified wetlands expert, depending on

the quality of wetlands being mitigated and the quality of the wetlands being preserved.

5. Mitigation Ratios.

   a. The following ratios shall apply to on-site creation or re-establishment, rehabilitation, and/or enhancement, timed prior to or concurrent with alteration, and has a high probability of success. These ratios do not apply to remedial actions resulting from unauthorized alterations; greater ratios shall apply in those cases.

Table 15.02.120-2

Type of Wetland	Minimum Ratio of Mitigation to Altered Wetland		
	Creation or Re-establishment	Rehabilitation	Enhancement
Category I			
Bog or wetlands of high conservation value	Not considered possible	Case by case ratio by City Administrator or designee with regulatory agency coordination	Case by case ratio by City Administrator or designee with regulatory agency coordination
Mature forested	6:1	12:1	24:1
Other	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

b. The city may increase the ratios under the following circumstances:

i. Uncertainty exists as to the probable success of the proposed restoration or creation;

ii. A significant period of time will elapse between impact and replication of wetland functions;

iii. Proposed mitigation will result in a lower category wetland or reduced functions relative to the wetland being impacted; or

iv. The impact was an unauthorized impact.

c. The city may decrease these ratios under the following circumstances:

i. Documentation by a qualified wetlands specialist demonstrates that the proposed mitigation actions have a very high likelihood of success;

ii. Documentation by a qualified wetlands specialist demonstrates that the proposed mitigation actions will provide functions and values that are significantly greater than the wetland being impacted; or

iii. The proposed mitigation actions are conducted in advance of the impact and have been shown to be successful.

d. Credit/Debit Method. To more fully protect functions and values, and as an alternative to the mitigation ratios found in Table 15.02.120-2, the city may allow mitigation based on the "credit/debit" method per Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report (Washington State Department of Ecology, March 2012).

e. Wetland Mitigation Banks. The use of credits from a state- and/or federal-certified wetland mitigation bank is permitted as an alternative to providing on-site mitigation at the ratio specified in this section, provided the criteria of KMC 15.02.120.H.6 are met. Replacement ratios for projects using bank credits shall be consistent with replacement ratios and service areas specified in the certified bank instrument.

6. Mitigation actions shall be conducted within the same sub-drainage basin and on the site as the alteration except when all of the following apply:

a. There are no reasonable on-site or in sub-drainage basin opportunities or on-site and in sub-drainage basin opportunities do not have a high likelihood of success due to development pressures, adjacent land uses, or on-site buffers or connectivity are inadequate;

b. Off-site mitigation has a greater likelihood of providing equal or improved wetland functions than the impacted wetland; and

c. Off-site locations shall be in the same sub-drainage basin and the same Water Resource Inventory Area (WRIA) unless:

i. The impact is located near the boundary of a WRIA; or

ii. Established regional or water shed goals for water quality, flood or conveyance, habitat or other wetland functions have been established and strongly justify location or mitigation at another site.

d. The city may authorize a one time temporary delay, up to one hundred twenty days, in completing minor construction and landscaping when environmental and/or seasonal conditions could produce a high probability of failure or significant construction difficulties. 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, and 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 mitigation plan. The justification must be verified and approved by the city, and include a bond in the form approved by the city attorney.

7. Where feasible, mitigation projects shall be completed prior to activities that will disturb all other cases, mitigation shall be completed immediately following disturbance and prior to use or occupancy of the activity or development. Construction of mitigation projects shall be timed to reduce impacts to existing wildlife and flora.

8. 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.

15.02.130 - Fish and wildlife habitat conservation areas.

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 15.02.130-1:

Table 15.02.130-1

Classification	Description
(1) Areas with which state or 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 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.	Habitat: Includes seasonal ranges or habitat elements with which a given species has a primary association, and which if altered, may reduce the likelihood that the species will maintain and reproduce over the long-term. These may be areas of high relative density or species richness, breeding habitat, winter range, and movement corridors. These may also include habitats that are of limited

	availability or high vulnerability to alteration, such as cliffs, talus and wetlands; and
	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. Kalama's species of local importance include the western pond turtle, western painted turtle, blacktail deer, bobcat, raccoon, and bear.
(3) Commercial and recreational shell fish areas.	There is recreational crawfish fishery in Kalama.
(4) Kelp and eelgrass beds; herring and smelt spawning areas.	There are no kelp, eelgrass beds, or herring spawning areas known to occur in Kalama. The Washington State Hydraulic Code guidelines and information from the Washington State Department of Fish and Wildlife are used to identify smelt spawning areas.
(5) Naturally occurring ponds under twenty 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 man-made 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. Kalama has one existing stormwater detention pond of long-term existence which borders I-5.
(6) Waters of the state.	Waters of the state shall be those defined in WAC 222-16-030 and 031, Forest Practices Board, and 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. Kalama borders the Columbia River and Kalama River.

(8) State natural area preserves and natural resource conservation areas.	Currently, there are no known areas in the city of Kalama.
(9) Unintentionally created ponds.	Ponds with a surface area of less than 20 acres, but greater than one acre. No known ponds of this nature are located in Kalama.

B. Development Performance Standards. Regulated development, as described in Section 15.02.060 of this chapter, shall conform and be governed by the following items in this subsection, and in subsections C through H of this section. When impacts to critical fish and wildlife habitat cannot be avoided, the performance standards contained in this section shall be used to develop plans submitted for regulated activities. Shoreline authorizations within fish and wildlife habitat conservation areas may be approved with conditions, approved or denied based on the following performance standards.

1. Develop a mitigation site plan and design scheme showing the following:
    a. Locate buildings and structures in a manner that preserves the habitat or minimizes adverse impacts;
    b. Locate passive pedestrian recreation facilities, including permeable walkways, trails, and viewing platforms, in the outer 25 percent of non-riparian habitat and riparian habitat areas and avoid the removal of mature trees.
    b. 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;
    c. Use native species in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers;
    d. Emphasize diversity in selection of plant materials and structure of landscaping;
    e. Remove and/or control any noxious, or undesirable species of plants as identified by the Cowlitz County weed control board;
    f. Demonstrate how existing trees will be preserved, preferably in groves;
    g. Preserve and introduce native plant species which serve as food, shelter from climatic extremes and predators, and structure and cover for reproduction and rearing of young for critical wildlife;
    h. Preserve the natural hydraulic and ecological functions of drainage systems;
    i. Preserve critical fish and wildlife habitat areas through maintenance of stable channels, adequate low flows, management of stormwater runoff, erosion and sedimentation;
    j. Manage access to critical fish and wildlife habitat areas to protect species which are sensitive to human disturbance;
    k. Maintain or enhance water quality through control of runoff and use of best management practices.

C. Habitat Protection for Classification 1. A habitat management plan (Appendix D) will be required if the regulated activity is within a classification 1 habitat area, or identified within one thousand three hundred feet from an endangered, threatened, candidate or sensitive species point or habitat locations in classification 1 habitat area.

1. Habitat Management Plan Requirements.

a. The habitat management plan will be prepared by a qualified professional in coordination with the Washington State Department of Fish and Wildlife. (See Appendix D at the end of this chapter).

b. Habitat management plans will be sent to the Washington State Department of Fish and Wildlife and other appropriate state and federal agencies for comment with the SEPA checklist.

D. Habitat Protection for Classification 2. (Table 15.02.130-1) Protection for these habitat areas shall be through the development performance standards in this section in coordination with the Washington State Department of Fish and Wildlife.

E. Habitat Protection for Classifications 3 and 4. (Table 15.02.130-1) Protection of these areas shall be coordinated with the Washington State Department of Fish and Wildlife.

F. Habitat Protection for Classifications 5, 6, 7 and 9. (Table 15.02.130-1) These classifications shall require riparian habitat areas as shown on Table 15.02.130-2 unless bordered by a riparian wetland, in which case the riparian habitat area shall consist of the wetland and buffer required by Table 15.02.120-2 of this chapter. Activities within these areas and buffers will require a critical areas review and shoreline authorization. Within classification 6—types S, F, Np, and Ns waters shall also be protected as defined in WACs 222-16-030 and 031, Forest Practices Board, Definitions.

G. Habitat Protection for Classification 8. Protection for state natural area preserves and natural resource

H. Riparian Habitat Areas. Unless permitted under subsection B of this section or otherwise allowed in this title, all structures and activities shall be located outside of the riparian habitat areas.

1. Establishment of Riparian Habitat Areas. Riparian habitat areas shall be established for habitats that include aquatic and terrestrial ecosystems that mutually benefit each other, and that are located adjacent to rivers, perennial or intermittent streams, drainage ways, seeps, and springs.

2. Riparian Habitat Area Widths. Riparian habitat area widths are shown in the table in KMC Table 15.02.120-2. A riparian habitat area shall have the width specified unless a greater width is required pursuant in subsection I or a lesser width is allowed pursuant to subsection J or K. Widths shall be measured outward in each direction, on the horizontal plane, from the ordinary high water mark. Riparian areas should be sufficiently wide to achieve the full range of riparian and aquatic ecosystem functions, which include but are not limited to protection of instream fish habitat through control of temperature and sedimentation in streams; preservation of fish and wildlife habitat; and connection of riparian wildlife habitat to other habitats.

Table 15.02.130-2

Riparian Habitat Areas

Water Types	Minimum RHA Widths
Type S	Per City of Kalama Shoreline Master Program (SMP) adopted under Chapter 15.08 KMC
Type F (channel >20 feet wide, as measured per WAC 222-16-030(5)(f))	150 feet
Type F (channel ≤ 20 feet wide, as measured per WAC 222-16-030(5)(f))	100 feet
Type Np	100 feet
Type Ns	50 feet
Any stream type that is culverted or buried is not subject to limits at that site	0 feet

I. Increased Riparian Habitat Area Widths. The recommended riparian habitat area widths shall be increased, as follows:

1. When the environmental review determines that the recommended width is insufficient to prevent habitat degradation and to protect the structure and functions of the habitat area;
2. When the frequently flooded area exceeds the recommended riparian habitat area width, the riparian habitat area shall extend to the outer edge of the frequently flooded area;
3. When the channel migration zone exceeds the recommended riparian habitat area width, the riparian habitat area shall extend to the outer edge of the channel migration zone;
4. When the habitat area is in an area of high blowdown potential, the riparian habitat area shall be expanded an additional fifty feet on the windward side; and
5. When the habitat area is with an erosion or landslide hazard area, or buffer, the riparian habitat area shall be the recommended distance, or the erosion or landslide hazard area or buffer, whichever is greater.

J. Riparian Habitat Area Width Averaging. The city may allow the recommended riparian habitat area width to be averaged in accordance with critical area report prepared by a qualified professional only if:

1. The width reduction will not reduce stream or habitat functions, including those of nonfish habitat;
2. The width reduction will not degrade the habitat, including habitat for anadromous fish;

3. The proposal will provide additional habitat protection;

4. The total area contained in the riparian habitat area of each stream on the development proposal site is not decreased;

5. The minimum riparian habitat area width is not reduced by more than fifty percent in any one location and shall never be smaller than twenty-five feet wide in any one location;

6. The width reduction will not be located within another critical area or associated buffer; and

7. The reduced riparian habitat area width is supported by best available science.

K. Isolated Riparian Habitat Areas. The city may exclude isolated riparian habitat areas on non-shoreline waterbodies from the riparian habitat area provisions of KMC 15.02.130.H and L provided:

1. Impervious surfaces from previous development, roadways, or flood control structures isolate the riparian habitat area from providing habitat, water quality, or other functions to rivers, perennial or intermittent streams, drainage ways, seeps, and springs; and

2. Riparian habitat area is provided between the ordinary high water mark to the impervious surfaces or toe of the flood control structures;

3. Stream and habitat functions, including those of nonfish habitat, is not reduced;

4. Additional habitat protection is provided over existing conditions;

5. The isolated riparian habitat area is not located within another critical area or associated buffer; and

6. Exclusion of the isolated riparian habitat areas is supported by best available science.

L. Riparian Habitat Mitigation. Mitigation of adverse impacts to riparian habitat areas shall result in equivalent functions and values on a per function basis, be located as near the alteration as feasible, and be located in the same sub-drainage basin as the habitat impacted.

15.02.140 - Frequently flooded critical areas.

A. Frequently Flooded Area Classifications and Designation. All lands identified in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, as amended, and approved by the city, as within the one hundred-year floodplain are designated as frequently flooded areas. These maps are based on the following:

1. Flood Insurance Study—City of Kalama.

B. Development Limitations. All development within designated frequently flooded areas shall comply with the city of Kalama's floodplain management ordinance, Chapter 14.16, as now or hereafter amended.

15.02.150 - Geologic hazard areas.

A. Geologically hazardous areas are those areas susceptible to erosion, sliding, earthquake, or other geological events that pose a threat to the health and safety of citizens when incompatible development is sited in areas of significant hazard. Areas susceptible to one or more of the following types of hazards shall be designated as a geologically hazardous area:

1. Erosion hazard;

2. Landslide hazard;
3. Seismic hazard;
4. Mine hazard;
5. Other geological events.

B. Classifications of Geologically Hazard Areas. Geologic hazard areas fall within two classifications:

1. Areas of Geological Concern. Slopes between fifteen percent to thirty percent or areas where there is documentation that geological hazard exists.
2. Areas of Potential Geological Hazard. Slopes greater than thirty percent, or areas where no documentation exists as to the presence or absence of a geological hazard.

C. Additional Requirements for Geologically Hazardous Areas.

1. A critical areas report for a geologically hazardous area shall be prepared by a qualified engineer or geologist, licensed in the state of Washington, with experience analyzing geologic, hydrologic, and ground water flow and has experience preparing reports for the relevant type of hazard.

D. Designations of Specific Hazard Areas.

1. Landslide Hazard Areas.
    a. Areas of historic failure, such as areas designated as quaternary slumps, earthflows, mudflows or landslides; or
    b. Area with any of the following:
        i. Slope greater than fifteen percent;
        ii. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and
        iii. Springs or ground water seepage.
    c. Slopes that are parallel or sub-parallel to planes of weakness; such as bedding planes, joint systems, and fault planes.
    d. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action;
    e. Areas located in a canyon, on an active alluvial fan, or that are presently subject to inundation by debris flows or catastrophic flooding;
    f.
    g. Slopes that are greater than thirty percent and higher than ten feet, unless slopes are previously engineered;
    h. 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.
2. 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 U.S. Department of Agriculture Soil Conservation Service, Cowlitz Area, Washington.

3. 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).

4. Mine Hazard Areas. For the purposes of this classification, mine hazard areas are:

    a. Abandoned mines, shafts, tunnels and/or workings where locations are known;

    b. 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;

    c. Abandoned powder magazines or bunkers.

5. Volcanic Hazard Areas. For the purposes of this classification, volcanic hazard areas are areas subject to pyroclastic flows, lava flows, and inundation by debris flows, lahars, mudflows, or related flooding resulting from volcanic activity.

E. Development Standards.

1. Development Standards for Landslide Hazard and Erosion Hazard Designations. 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:

    a. Grading. The city has adopted Chapter 33 of the Appendix to the 1997 Uniform Building Code, Excavation and Grading. The applicable section in the latest version of the Building Code adopted by the city applies unless the activity is exempted, an excavation and grading permit is required.

        i. Clearing, grading and other construction activities shall not aggravate or result in slope instability or surface sloughing.

        ii. Slope disturbance shall be minimized. Clearing, grading or filling of landslide or erosion hazard areas shall be limited to the period between April 1st and October 1st, unless the applicant provides an erosion control plan (approved by the city) that specifically identifies methods of erosion control for wet-weather conditions.

        iii. All authorized clearing for roads and utilities shall be limited to the minimum necessary to construct the engineered design.

        iv. Undergrowth and vegetation shall be retained to the maximum extent feasible.

        v. 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 geological report.

    b. Landslide Hazard Area Buffers. Landslide hazard areas shall require minimum buffers from the top, toe, and sides of slopes, as set forth below:

        i. Slopes that are greater than thirty percent and higher than ten feet and all other landslide hazard areas: twenty-five feet, unless the buffer is reduced or alterations of the slope are approved based on the City's review and concurrence with a geotechnical report demonstrating that no adverse impact will result from the buffer reduction or slope alteration.

c. Alterations of Erosion Hazard Areas. Compliance with Kalama Municipal Code Chapter 14.18, Erosion Control, is required and includes the use of best management practices (BMP).

i. Disturbance of trees and vegetation shall be minimized to reduce erosion and maintain existing stability of hazard areas.

ii. Vegetation removal on the slopes of waterways between the ordinary high-water mark and the top of the banks shall be minimized because of the potential for erosion.

iii. Vegetation and organic soil material shall be removed from fill sites prior to the placement of fill.

iv. Thinning of limbs of individual trees is preferred over tree removal as a means to provide view corridors.

v. Vegetative cover or engineered ground covers shall be placed on any disturbed surface to the extent feasible, unless other stabilization measures including, but not limited to armoring, are used.

vi. Drainage. Surface drainage, including downspouts, 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. An energy-dissipating device at the toe for discharge to a swale or other acceptable natural drainage areas.

vii. Stormwater retention and detention systems, including percolation systems utilizing buried pipe, are prohibited unless a geological report determines slope stability shall not be affected. The systems shall be designed by a qualified professional. The qualified professional shall also certify that the systems are installed as designed.

viii. The proposed project will not increase the rate of surface water discharge or sedimentation and will not decrease the adjacent property slope stability.

ix. Setbacks. A hazardous area setback is required from the top, toe and along all sides of any existing landslide or erosion hazard areas, as determined in the geological report.

(A) Based on the results of the geological report, the city may increase or decrease the setback as indicated.

(B) The setback shall be clearly staked before and during any construction or clearing.

x. 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 justified by a qualified professional and approved by the city. The placement of all sanitary sewage lines must be in compliance with all local government health regulations.

xi. 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.

2. Development Standards—Seismic Hazard Areas. All development within areas that meet the classification for seismic hazard areas shall comply with the latest version of the building code adopted by the city.

3. Development Standards—Mine Hazard Areas. Development adjacent to a mine hazard is prohibited unless the applicant can demonstrate the development will be safe. If a proposal is located adjacent to a mine hazard area, a geological report may be required.

4. Development Standards—Volcanic Hazard Areas. Development within a Volcanic Hazard Area must provide an evacuation and emergency management plan approved by the City Administrator or their designee. At a minimum, the evacuation and emergency plan must demonstrate that the evacuation route has been determined to not contain any other potential natural hazards, such as landslide or flood hazards, that could cause a blockage or destruction of the evacuation route during an event (i.e., seismic event triggers a landslide that results in the evacuation route becoming impassible).

15.02.160 - Critical aquifer recharge areas.

A. Critical Aquifer Recharge Areas (CARA's) - Location. Critical aquifer recharge areas are determined by the combined effects of soil types and hydrogeology and are those areas located within Group A and Group B 10-Year Time of Travel Wellhead Protection Areas (WHPA's) per the Cowlitz County CARA's Map (2016).

1. Classification - Adoption by Reference. Critical aquifer recharge areas shall be classified per Cowlitz County Code (CCC) Section 19.15.160 Subsection A through Subsection B, which is hereby adopted by reference.

B. Regulated Activities - Adoption by Reference. Activities in critical aquifer recharge areas shall be regulated by Cowlitz County Code (CCC) Section 19.15.160 Subsection D through Subsection F, which is hereby adopted by reference.

C. Hydrogeologic Testing and Site Evaluation - Adoption by Reference. Critical area assessments shall be consistent with Cowlitz County Code (CCC) Section 19.15.160 Subsection C, which is hereby adopted by reference.

15.02.170 - Mitigation plan performance standards.

A. Mitigation Planning Requirements. All critical areas mitigation projects required pursuant to this chapter either as a permit condition or as the result of an enforcement action shall follow a mitigation plan prepared by or on behalf of the applicant and approved by the city council

B. When a mitigation plan is required, the planning commission shall hold a public hearing. Prior to the public hearing, resource agencies shall be notified of the mitigation plan and any comments shall be considered by the planning commission during the public hearing. The city council shall make the final decision on the mitigation plan, which shall be based on satisfaction of the following standards:

1. The mitigation plan shall be prepared by an applicant or qualified professional.
2. The mitigation plan shall include:
    a. An assessment of the existing function and values of the critical area;
    b. The functions and values that will be lost;
    c. The critical area's expected functions and values after mitigation.
3. Objectives shall be stated in measurable terms, if feasible.
4. The mitigation plan shall specify and describe how functions and values will be replaced.
5. 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.
6. 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.
7. 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.

C. Restoration shall be required when a critical area has been altered by the landowner after the adoption of the critical areas ordinance and prior to project approval or when a critical area is temporarily affected by construction or any other temporary phase of a project.

15.02.180 - Reasonable use exception.

This provision does not apply in shoreline jurisdiction. A shoreline Variance Permit is required. See SMP section 8.6.

15.02.190 - Appeals.

An appeal of a critical areas determination, critical areas review or any decision issued under a critical areas review shall be consistent with section 8.5.11 of the Kalama SMP.

15.02.200 - Enforcement.

This chapter will be enforced as set forth in section 8.7 of the SMP.

15.02.210 - Fees.

Fees for administering the provisions of this chapter shall be as set by resolution of the city council. These fees are in addition to any other applicable application fees. Actual costs include but are not limited to, copies, postage, publication costs, city planner fees, and any outside consultant fees.

15.02.220 - Liability for damages.

This chapter shall not be construed to hold the Kalama city council, or any officer or employee thereof, responsible for any damages to persons or property by reason of the certification, inspection or noninspection of any building, equipment or property as herein authorized. The purpose of this code is not to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms of this code.

15.02.230 - Review.

The effects and operations of this chapter shall be reviewed by the Kalama planning commission twelve months after the date of adoption. Subsequent reviews will be completed as necessary by the planning commission. The planning commission shall make recommendations for changes and amendments it deems necessary to the Kalama city council.

15.02.240 - Adoption by reference.

Pursuant to RCW 35A.12.140, one copy of RCW 64.04.130; RCW 84.34.020(2); and RCW 76.09; and one copy of WAC 173.303; WAC 173.360; WAC 222; WAC 232-12-011; and WAC 365-195-900 are hereby adopted by reference, these statutes are on file with the Kalama city clerk-treasurer for use and examination by the public.

APPENDIX A

Critical Area Reviews. If the critical area determination reveals that there is a critical area(s) on or adjacent to the property subject to the underlying shoreline permit or shoreline exemption, no development or activity may take place on the property within or adjacent to the critical areas except in conformance with this Appendix B and an issued shoreline permit or exemption. In addition to the submittal requirements for a shoreline permit identified in WAC 173-27-180, a complete application for project in shoreline jurisdiction that includes critical areas or buffers shall consist of the following:

1. A Detailed Site Plan Drawn to Scale. The site plan should clearly show the following information:
    a. North arrow,
    b. Property boundary line and dimensions,
    c. Location and dimensions of all existing and proposed development or alternations, 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,
    d. All critical areas, buffers and the development proposal with dimensions,
    e. Limits of any areas to be cleared;
2. A copy of the determination of critical area issued by the city showing it having been recorded through the county auditor's office;
3. A stormwater management plan for the project with consideration of the drainage impacts based on "best management practices";
4. Critical area report(s) addressing the specific critical area(s) on the site including all information as defined in the applicable Appendix(s) B through E. This report must also include the following:

a. The date the report was prepared,

b. The names, and qualifications of all person(s) preparing the report,

c. The professional qualifications of the person(s) preparing the report,

d. The dates and documentation of any fieldwork preformed on the site,

e. A statement verifying the accuracy of the report, as well as all assumptions relied upon in the report,

f. An assessment of the probable cumulative impacts to critical areas resulting from development of the site,

g. Analysis of site development alternatives,

h. A SEPA environmental checklist if the site is located within any of the following:

i. Geologic hazard area,

ii. Wetlands,

iii. Riparian habitat area;

5. A permit fee.

APPENDIX B

Geological Hazard Area Reports. All areas found to contain or adjoin a geologically hazardous area as set forth in Section 15.02.150 of this chapter shall submit a critical areas report prepared by a qualified professional that contains an assessment of the geological hazards. All items requested must be addressed in the report. If an item is not applicable to an application then indicate NA and why it is not applicable. The reports shall include all of the following:

Part 1—For all applications.

1. The applicant must submit all information required by KMC 15.02.090 (Appendix A);

2. A description of the surface and subsurface geology, hydrology, soils, and vegetation found in the project area and in all hazard areas within two hundred feet of the project sited shall be addressed in the report;

3. Erosion vulnerability of site;

4. A site plan of the area delineating the following:

a. The type and extent of the geologic hazard areas, and any other critical areas and buffers on, adjacent to, within two hundred feet of or that are likely to impact the proposal,

b. Proposed development, including the location of existing and proposed structures, fill, storage of materials, and drainage facilities, with dimensions indicating distances to the floodplain,

c. Clearing limits,

d. An overview of the existing channel or drainage way characteristics and stream hydraulics at the subject property;

5. An assessment of the probability for storm-induced erosion to occur along the drainage way on the subject property and the estimated extent of the property that would be affected;

6. A recommendation for the minimum no-disturbance buffer and minimum building setback from any geological hazard based upon the geological analysis.

Part 2—For all applications involving large multiple lot developments such as subdivisions, small lot developments, planned unit developments, manufactured home parks, apartments or condominiums, or large commercial or industrial developments as well as any application for property located within or adjacent to a known geological hazard area. Additional information required:

1. Topographic data—contour map of proposed site at a scale of 1":200', that clearly delineates the slopes between fifteen and twenty-nine percent and thirty percent and greater, including figures for area coverage of each slope category on the site;

2. Subsurface data—boring logs and exploratory methods, soil and rock stratigraphy, ground water levels including seasonal changes;

3. Site history—description of any prior grading, soil instability or slope failure;

4. Seismic hazard—data concerning the vulnerability of the site to seismic events;

5. Slope stability studies and opinion of slope stability;

6. Proposed angles of cut and fill slopes and site grading requirements;

7. Structural foundation requirements and estimated foundation settlements;

8. Soil compaction criteria;

9. Proposed surface and subsurface drainage;

10. A cross-section map, drawn to scale and at five-foot contour intervals, from the edge of the stream or drainage way or river's surface to the furthest landward boundary of the property, and including the proposed development;

11. Lateral earth pressures;

12. Suitability for fill;

13. Laboratory data and soil index properties for soil samples;

14. Building limitations; and

15. Site evaluation: evaluation of the ability of the site to accommodate the proposed activity. Where a valid geological report has been prepared within the last five years for a specific site, and where the proposed activity and surrounding site conditions are unchanged, such report may be referenced in a new report.

APPENDIX C

Wetland Report. All areas found to contain or adjoin a wetland as set forth in Section 15.02.120 of this chapter shall submit a critical areas report prepared by a qualified professional. All items required by the report must be addressed in the report. If an item is not applicable to an application then indicate NA and why it is not applicable. The report shall include all of the following:

1. The applicant must submit all information required by KMC 15.02.090 (Appendix A);
2. An on-site wetland delineation performed by a qualified professional as defined in Section 15.02.050. The wetland boundaries shall be staked and flagged. The recommended wetland buffer shall be staked and flagged with different colored flags than those used for the wetland delineation;
3. In addition to the requirements of Appendix A the site plan shall include the following:
    a. Wetland boundaries based upon a wetland professional's delineation and depicting sample points and differing wetland types if any,
    b. Recommended wetland buffer boundary,
    c. Internal property lines such as rights-of-way, easements, etc.,
    d. Topographical variations;
4. The final report must include each of the following:
    a. Site characteristics including topography, total acreage, delineated wetland acreage, other water bodies, vegetation, soil types, etc., and distances to and sizes of other off-site wetlands and water bodies within one-quarter mile of the subject wetland,
    b. Identification of the wetland's classification as defined in this Chapter 15.02, including the rationale for selecting the wetland category,
    c. Analysis of functional values of existing wetlands, including flood control, water quality, aquifer recharge, fish and wildlife habitat, and hydrologic characteristics,
    d. A complete description of the proposed project and its potential impacts to the wetland and, if applicable, adjacent off-site wetlands, including construction impacts,
    e. Discussion of project alternatives including total avoidance of impacts to wetland areas,
    f. If mitigation for wetland impacts is proposed, a description and analysis of that mitigation,
    g. A wetland buffer recommendation and rationale for the buffer size determination and activities that could be and should not be allowed within the buffer zone.

APPENDIX D

Habitat Management Report Requirements. All areas found to contain or adjoin a habitat conservation area as set forth in Section 15.02.130 of this chapter shall submit a critical areas report prepared by a qualified professional. All items required by the report must be addressed in the report. If an item is not applicable to an application then indicate NA and why it is not applicable. The report shall include all of the following:

1. The applicant must submit all information required by KMC 15.02.090 (Appendix A);
2. A description of state or federally designated endangered, threatened or sensitive fish or wildlife species, or species of local importance, on-site or adjacent to the subject property within a distance typical of the normal range of the species;
3. A description of the critical wildlife habitat for the identified specifies known or expected to be located on-site or immediately adjacent to the subject property;

4. The site plan as required in Appendix A shall clearly identify and delineate critical fish and wildlife habitats;
5. An evaluation of the project's effects on critical fish and wildlife habitat both on and adjacent to the subject property;
6. 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;
7. A statement of measures proposed to preserve existing habitats and restore area degraded as a result of proposed activities;
8. A description of proposed measures that mitigate the impacts of the project;
9. An evaluation of on-going management practices which will protect critical fish and wildlife habitat after the project site has been fully developed, including proposed monitoring and maintenance programs of the subject property.

APPENDIX E

Aquifer Recharge Areas (15.02.160) Hydrogeologic Testing and Site Evaluation. If hydrogeologic testing and site evaluation are required, they shall be conducted by a qualified professional and include the following. All items required by the report must be addressed in the report. If an item is not applicable to an application then indicate NA and why it is not applicable.

1. A characterization of the site and its relationship to the aquifer and evaluation of the ability of the site to accommodate the proposed activity;
2. A discussion of the effects of the proposed project on ground water quality and quantity; and
3. Recommendations on appropriate mitigation, if any, to assure that there shall be no degradation of ground water quality or quantity.

In addition, the testing and evaluation must include, but not be limited to, an analysis of:

1. Geologic setting and soils information of 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/transmissivity);
5. Local ground water flow, direction and gradient;
6. Surface water locations within one thousand feet of the site.

APPENDIX C

Shoreline Restoration Plan

City of Kalama
2021 Shorelines Master Program Update
Shoreline Restoration Plan Addendum

10/8/2021

Addendum Prepared by Ecological Land Services and TRJ planning

Purpose of report and background

This addendum is intended to update and supplement the *Shoreline Restoration Plan, for Shorelines in Cowlitz County and the Cities of Castle Rock, Kalama, Kelso, and Woodland* prepared by The Watershed Company in April 2015, edited June of 2015. This addendum only addresses changes and additional information for the shorelines within the City of Kalama and is intended to supplement the information in that report. Changes are presented by section and the numbering is maintained from the original document. The remaining sections of that report remain valid as previously written for this project.

Existing Conditions

3.1.3 Kalama River Assessment Unit

This section discusses the entire assessment unit, which includes the lower 10 miles within the city of Kalama. This area was addressed in the Assessment Analysis Addendum prepared in October of 2021 by TRJ Planning and Ecological Land Services. The characterization of that section of the reach remains heavily impacted by constructed armoring and levees. In addition, the analysis shows that that reach has also been subject to additional permitting for construction of a regional park and shows signs of additional use by neighboring residential properties. The channelization and presence of large woody debris remains poor as a deterrent to flooding.

3.3 City of Kalama

The function of the Shoreline within the City of Kalama has continued to be characterized by armored shorelines and stream corridors of varying conditions. The Columbia and Kalama Rivers have been utilized for a variety of residential, industrial and recreational opportunities. Recent changes to the Kalama River Shoreline include the construction of a regional park and sports fields. The Columbia River shoreline has included ongoing development of the hotel and a small restaurant (Ales Pointe Pub) and a recently permitted Small Vessel Cruise dock. Recent beach nourishment through dredged sands placement along the Columbia River shoreline in

front of the Marine Park of the Port of Kalama is beneficial to both aquatic habitat and human recreational activities.

The updated assessment for the Kalama shorelines says:
"Areas with potential restoration opportunities in the City of Kalama lie mainly around Kress Lakealong the Kalama River and portions of the Columbia River. A portion of the land around Kress Lake, which is primarily forested, is under a mitigation agreement with the State of Washington. The land along the north and south banks of the Kalama River, west of 1-5 and the BNSF Railroad also presents a potential mitigation opportunity. Both projects are proposed as mitigation, meaning that they would be restored to compensate for an action that negatively affects ecological functions. As such, mitigation projects are not truly restoration projects, and the projects may or may not result in a net gain in ecological functions. Other restoration opportunities along the Kalama River and Kress Lake include planting of native vegetation, removal or suppression of invasive plant species, and removal of unnecessary human-built structures. Addition of large wood for fish habitat is also a potential restoration action in appropriate locations along the riverbank. On the Columbia River, Corps-sponsored beach nourishment projects in front of the Marine Park of the Port of Kalama return sediment to the riverbank and improve shallow water conditions for juvenile fish outmigration. Future opportunities for beach nourishment on the Columbia River will be available as long as river channel dredging maintenance programs continue."

4. Existing County and City Programs

4.3 City of Kalama

The City of Kalama updated the Comprehensive Plan in November of 2016. This update included a growth management area and included future land use designations for those areas for zoning and comprehensive planning use. The Comprehensive plan includes the following goals that support critical area restoration and protection:

1. Encourage a pattern of community development in concert with the land's capability to support such development, to avoid hazard areas and preserve unique natural and scenic areas.
2. Preserve the natural and scenic amenities that define Kalama and provide a distinct and unique quality of life.
3. Encourage the location of safe, environmentally responsible industries in the Port of Kalama industrial area.
4. Carefully consider environmental matters in the decision-making process, while seeking to create and maintain a sustainable urban environment.
5. 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.

6. Seek to restore natural systems and environmental functions that have been lost or degraded, when feasible.
7. Consider and evaluate the cumulative impacts of land use and policy decisions on the environment and balance them with other plan goals and policies.
8. Encourage economic enterprises that will support and enhance the community and will result in minimal environmental impact.
9. Conserve and protect groundwater and maintain good quality surface water.

6. Potential Projects

6.1.3 Kalama River Assessment Unit

Unchanged from previous proposal

6.3 City of Kalama

The list of projects remains unchanged.

The City of Kalama adopted an updated Critical Areas Ordinance in June of 2017 which updated the regulations within Kalama to reflect current Best Management Practices. Exhibit "B" incorporated into this update of the Shoreline Master Program reflects the most current critical areas regulations within the City and will ensure mitigation for impacts will continue in alignment with the previous 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

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY • CASTLE ROCK • KALAMA • KELSO • WOODLAND

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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)). Secondarily, 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;

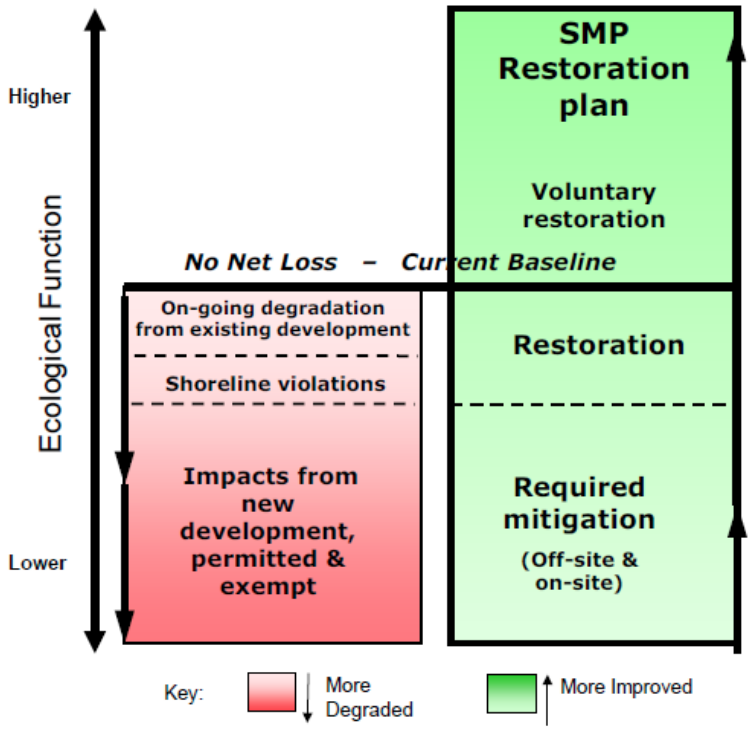

Figure 1. Diagram of the role of restoration relative to achieving the SMP standard of "no net loss" of ecological functions (Ecology 2010)

(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.

8. REFERENCES

AMEC Earth and Environmental. 2010. North Fork Toutle Fish Passage and Sediment Assessment. Prepared for the Lower Columbia Fish Recovery Board.

Chehalis Basin Partnership Habitat Work Group. 2008. The Chehalis Basin Salmon Habitat Restoration and Preservation Work Plan WRIA 22 and 23. Updated September 2008.

Cowlitz County. 2012. Six Year Transportation Improvement Program: 2013-2018.

HDR and Cramer Fish Sciences. 2009. Abernathy and Germany Creeks Intensively Monitored Treatment Plan. Prepared for the Lower Columbia Fish Recovery Board, January 2009.

Inter-Fluve. 2011. Abernathy Creek Project Design: Final Design Report. Prepared for the Lower Columbia Fish Recovery Board, June 2011.

Inter-Fluve, Stillwater Sciences, and Berger ABAM. 2009. Lewis River- Eagle Island: Project Identification and Design. Prepared for Lower Columbia Fish Recovery Board, December 2009.

Lower Columbia Fish Recovery Board. 2010a. Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan.

Lower Columbia Fish Recovery Board. 2010b. 2010 Habitat Strategy. Available at: http://www.lcfrb.gen.wa.us/2010%20Habitat%20Strategy/2010%20HWS.htm. [Accessed March 8, 2013]

Lower Columbia Fish Recovery Board. 2010c. Research, Monitoring, and Evaluation Program for Lower Columbia Salmon and Steelhead.

Lower Columbia Estuary Partnership. 2011. Lower Columbia River Estuary Plan: 2011 Comprehensive Conservation and Management Plan Update.

MPC and EA Blumen. 2010. Final Vision Report: Cowlitz County Comprehensive Plan Visioning Process. Prepared for Cowlitz County, November 2010.

PacifiCorp and PUD #1 of Cowlitz County. 2004. Joint Explanatory Statement for the Lewis River Hydroelectric Project Settlement Agreement. Merwin (P-935), Yale (P- 2071), Swift No. 1 (P-2111), Swift No. 2 (P-2213).

Powers, P. and M. Tyler. 2009. Lower Kalama River Off-Channel Habitat Assessment. Prepared for the Lower Columbia Fish Enhancement Group and Lower Columbia Fish Recovery Board.

R2 Resource Consultants, Inc. and Mobrand Biometrics, Inc. (R2 and MBI). 2004. Kalama, Washougal and Lewis River Habitat Assessments. Prepared for the Lower Columbia Fish Recovery Board.

RW Beck. 2000. Comprehensive Flood and Drainage Management Plan. Prepared for the City of Woodland.

TetraTech. 2007. Lower Cowlitz River and Floodplain Habitat Restoration Project Siting and Design: Final Revised Report. Prepared for the Lower Columbia Fish Enhancement Group and Lower Columbia Fish Recovery Board.

The Watershed Company and Parametrix. September 2012. DRAFT Shoreline Analysis Report for Shorelines in Cowlitz County and the Cities of Castle Rock, Kalama, Kelso, and Woodland. Prepared for the Cowlitz-Wahkiakum Council of Governments, Kelso, WA.

U.S. Army Corps of Engineers (Corps). 2013. Lower Columbia Ecosystem Restoration General Investigation, Department of Ecology Briefing. February 26, 2013.

U.S. Army Corps of Engineers (Corps). 2012. Review Plan for Lower Columbia River Ecosystem Restoration, Oregon and Washington General Investigation, Feasibility Study. December 3, 2012.

Wade, G. 2000a. Salmon and Steelhead Habitat Limiting Factors: Water Resource Inventory Area 26- Final Report. Prepared for the Washington State Conservation Commission.

Wade, G. 2000b. Salmon and Steelhead Habitat Limiting Factors: Water Resource Inventory Area 27- Final Report. Prepared for the Washington State Conservation Commission.

Wade, G. 2002. Salmon and Steelhead Habitat Limiting Factors: Water Resource Inventory Area 25- Final Report. Prepared for the Washington State Conservation Commission.

Zimmerman, M., K. Krueger, B. Ehinger, P. Roni, B. Bilby, J. Walters, and T. Quinn. 2012. Intensively Monitored Watersheds Program: An Updated Plan to Monitor Fish and Habitat Responses to Restoration Actions in the Lower Columbia Watersheds.

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

APPENDIX A

Map of Potential Restoration Project Sites

RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Columbia River Assessment Unit

1. Protect existing rearing habitat to ensure no further degradation. H
2. Increase shallow water peripheral and side channel habitats toward historic levels. H
3. Restore connectivity between river and floodplain, tidally influenced reaches of tributaries, as well as in-river habitats. H
4. Reduce predation mortality on emigrating juveniles. M
5. Reduce contaminant exposure of emigrating juveniles. W
6. Document the interaction between emigrating juvenile salmonids and introduced species; minimize negative interactions. R M
7. Develop an understanding of emigrating juvenile salmonid life history diversity and habitat use in the lower mainstem, estuary, and plume. R
8. Maintain favorable water flow and temperature throughout migration period. Y W
9. Reduce predation mortality on migrating adults. M
10. Protect existing spawning habitat to ensure no further net degradation. A G
11. Maintain favorable water flow and temperature throughout mainstem spawning and incubation period. Y W

00 Site specific project (mapped)
00. Non-site specific project (unmapped)

Restoration Action Types

- H Habitat-related
- W Water quality
- M Management
- Y Hydrologic
- P Fish passage
- A Habitat acquisition and/or protection
- R Research and investigation
- G Regulatory
- O Outreach

Notes: Project locations are estimated only. Please refer to the Cowlitz County Restoration Plan document for more details.

Data sources: Cowlitz County, City of Castle Rock, City of Woodland, Lower Columbia Fish Recovery Board, Habitat Work Schedule, Department of Ecology, Tetra Tech, PRISM, USGS, Interfluve, PacifiCorp, The Watershed Company.

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Date: 6/24/2013
Name: Restoration_Plan_2013-06-11

The Watershed Company
Parametrix

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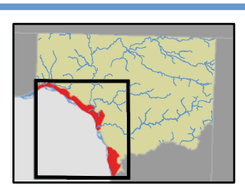

RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Lewis River Assessment Unit

12. Manage regulated stream flows to provide for critical components of the natural flow regime Y G
13. Conduct floodplain restoration where feasible along the mainstem and in major tributaries that have experienced channel confinement. Build partnerships with landowners and agencies and provide financial incentives H O
14. Address water quality issues through the development and implementation of water quality clean-up plans (TMDLs) W G
15. Limit intensive recreational use of the mainstem Lewis during critical periods A G
16. Instream large woody debris, riparian, and side-channel enhancement in the Eagle Island area. H
17. Off Channel habitat enhancement at RM 13 H
18. Anadromous fish passage at Merwin and Swift dams. P
19. Continue to install large woody debris below Merwin Dam. H
20. Monitor and maintain gravel conditions below Merwin Dam for spawning habitat. M H
21. Monitor predator relationships in Lake Merwin and manage as necessary. M
22. Continue to manage wildlife habitat and forest resources per the integrated Wildlife Habitat Management Plans M G
23. WRIA 27/28 Nutrient Enhancement. Disperse surplus hatchery salmon carcasses in high-priority mainstem and tributary habitat. M

00 Site specific project (mapped)
00. Non-site specific project (unmapped)

Restoration Action Types

H	Habitat-related	A	Habitat acquisition and/or protection
W	Water quality	R	Research and investigation
M	Management	G	Regulatory
Y	Hydrologic	O	Outreach
P	Fish passage		

Notes: Project locations are estimated only. Please refer to the Cowlitz County Restoration Plan document for more details.

Data sources: Cowlitz County, City of Castle Rock, City of Woodland, Lower Columbia Fish Recovery Board, Habitat Work Schedule, Department of Ecology, Tetra Tech, PRISM, USGS, Interfluve, PacifiCorp, The Watershed Company.

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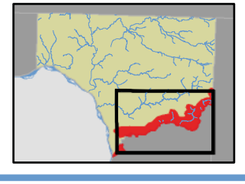

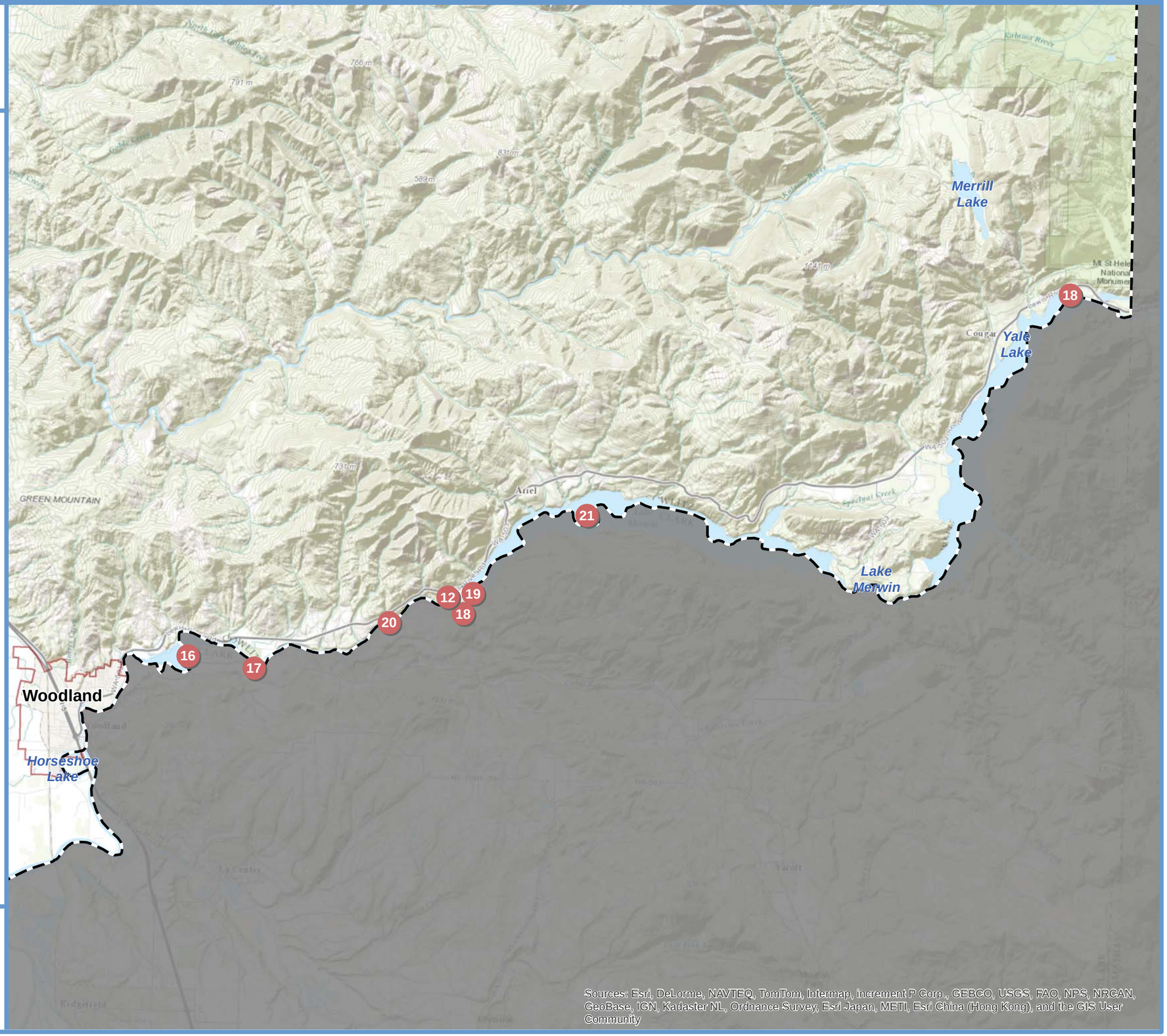

RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Kalama River Assessment Unit

24. 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 G

25. 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 G H O

26. Assess, upgrade, and replace on-site sewage systems that may be contributing to water quality impairment W

27. Address potential low-flow and thermal passage problems on the bar at the mouth of the Kalama Y W P

27 Assess and look for solutions to gravel and debris buildup near the mouths of tributaries in the upper river R P

29. Look for opportunities to increase and enhance off-channel and rearing habitat within the lower Kalama River H

30 Ledgett Groundwater Channel, Left bank at RM 2.5. Create 10,400 sq. meters of year round rearing habitat with a potential for some spawning habitat. H

31 Pipeline Removal and LWD, Left bank at RM 2.2 H

32 Low Water Fish Passage, Left bank at RM 0. P Y

33 Lower Kalama Reach 1A Tidal Design: Install large wood structures to increase salmonid rearing and holding cover at the mouth of the Kalama River. H

34 Port Tidal and Backwater Channels, Left bank at RM 0.1 H

35 Lower Kalama Habitat Enhancement. Install approximately 12 wood structures to improve and expand pool and riffle habitat; restore 5 acres of riparian habitat; enhance 500 feet of existing side channel with woody debris. H

36 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 H

37 Fish Passage Culvert, Spencer Creek at RM 1.8 P

38. 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) R H

39 Port of Kalama Groundwater Channel, Right bank at RM 2.2. Create off-channel rearing habitat. H

40 GW Channel System (private), Right bank at RM 2.1 H

41 Riprap Removal/Floodplain Reconnection, Right bank at RM 2.4 H

42 Active Side Channel, Right bank at RM 1.8 H

43 Improve hydrologic and habitat connectivity from the Columbia River to wetlands just east of Interstate-5. H Y

44. WRIA 27/28 Nutrient Enhancement. Dispersal of surplus hatchery salmon carcasses in high-priority mainstem and tributary habitat. M

00 Site specific project (mapped)

00. Non-site specific project (unmapped)

Restoration Action Types

H	Habitat-related	A	Habitat acquisition and/or protection
W	Water quality	R	Research and investigation
M	Management	G	Regulatory
Y	Hydrologic	O	Outreach
P	Fish passage		

Notes: Project locations are estimated only. Please refer to the Cowlitz County Restoration Plan document for more details.

Data sources: Cowlitz County, City of Castle Rock, City of Woodland, Lower Columbia Fish Recovery Board, Habitat Work Schedule, Department of Ecology, Tetra Tech, PRISM, USGS, Interfluve, PacifiCorp, The Watershed Company.

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Date: 6/24/2013
Name: Restoration_Plan_2013-06-11

THE WATERSHED COMPANY

Parametrix

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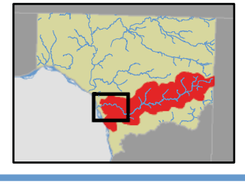

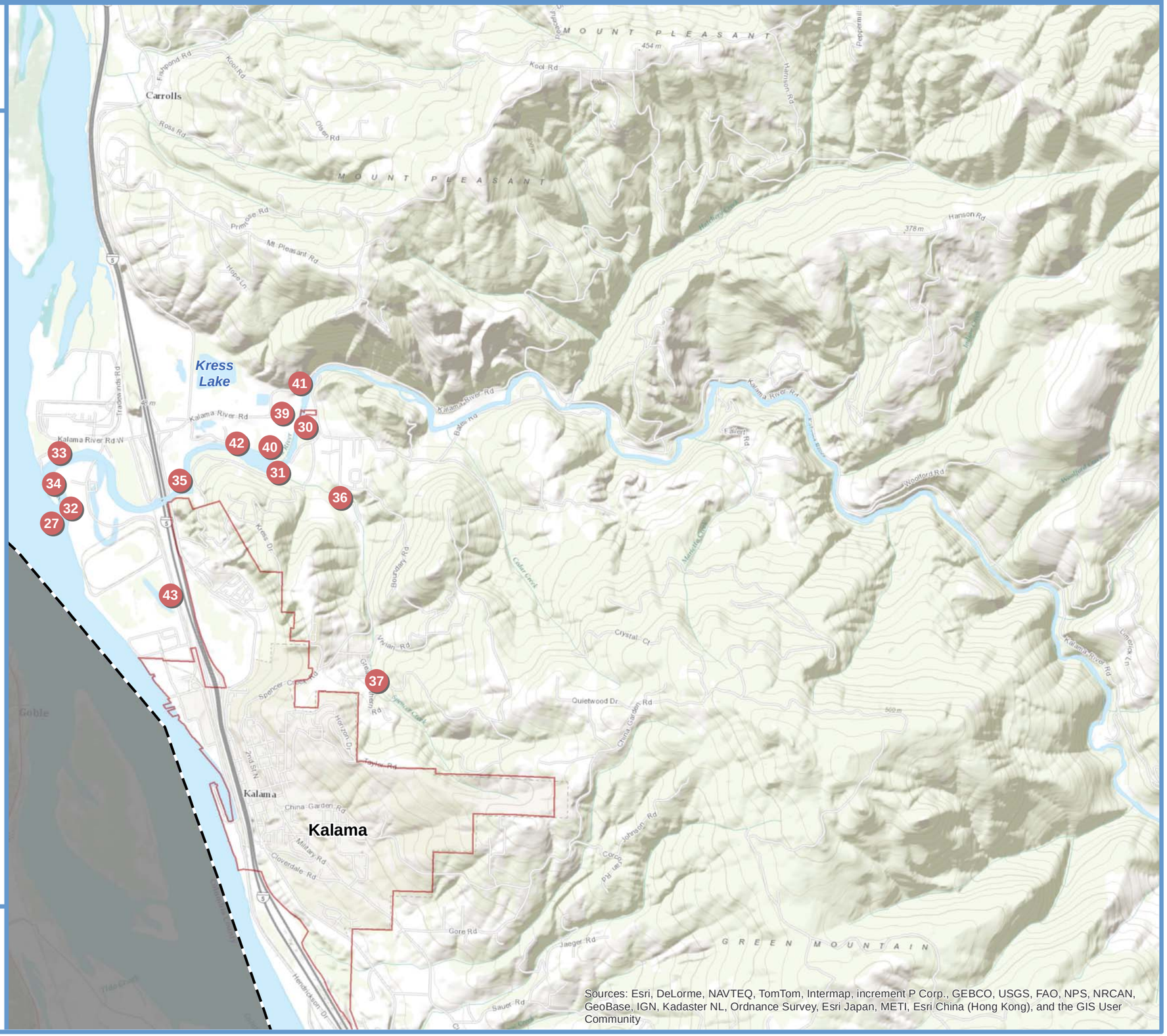

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RESTORATION PLAN

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Cowlitz River Assessment Unit

45. Manage regulated stream flows Y G
46. Monitor and notify FERC of significant license violations, enforce and encourage implementation of section 7 R
47. Conduct floodplain restoration along the mainstem and in major tributaries H R O
48. Expand local government Comprehensive Planning G
49. Assess, upgrade, and replace on-site sewage systems W
50. Address fish passage and sediment issues at the Sediment Retention Structure on the NF Toutle. P W
51. Assess and, if possible, alter the Silver Lake Dam to increase flows in Outlet Creek Y P
52. Manage federal forest lands according to the Northwest Forest Plan. G
53. Address temperature impairments through TMDLs W
54. Assess, repair, and where possible, decommission roads W
55. Look for opportunities to increase LWD supplies in stream systems. R H
56. Replant degraded riparian areas with native conifers. H
57. Address fish passage barriers in the Toutle River and tributaries P R
58. Cowlitz RM 0.5 RB remove dredged materials, create riparian/wetland bench H
59. Cowlitz RM 7.3 RB remove dredged materials, create riparian/floodplain bench, construct setback levee if necessary. H
60. Cowlitz RM 8.5 RB set back levee, revegetate riparian/floodplain bench H
61. Cowlitz RM 9.0 LB rdredged materials removal, create riparian/floodplain bench H
62. Place LWD and vegetate with willows (mouth of Ostrander Creek) H
63. Remove noxious weeds and restore riparian zone H
64. Cowlitz RM 9.7 RB bar and island enhancement H
65. Culvert replacement on Leckler Creek at Hazel Dell Road P
66. Cowlitz RM 9.8 LB riparian restoration H
67. Cowlitz RM 10.5 LB riparian restoration H
68. Cowlitz RM 11.2 LB bar and island enhancement H
69. Cowlitz RM 12.5 LB side channel restoration and enhancement H
70. Cowlitz RM 12.5 RB riparian restoration H

(continued on next map)

00 Site specific project (mapped)

00. Non-site specific project (unmapped)

Restoration Action Types

- H Habitat-related
- W Water quality
- M Management
- Y Hydrologic
- P Fish passage
- A Habitat acquisition and/or protection
- R Research and investigation
- G Regulatory
- O Outreach

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0 0.75 1.5 3 Miles

Date: 6/24/2013
Name: Restoration_Plan_2013-06-11

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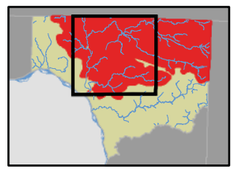

RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Cowlitz River Assessment Unit

(continued from previous map)

71 Cowlitz RM 13.5 LB riparian restoration H
72 Cowlitz RM 14.0 LB side channel restoration and enhancement H
73 Cowlitz RM 14.5 RB side channel restoration and enhancement H
74 Cowlitz RM 16.0 RB side channel restoration and enhancement H
75 Delameter Creek Culvert replacement at Delameter Road P
76 Fence off Delameter Creek from livestock and restore riparian at RM 4 H
77 Monahan Creek Culvert replacement at Delameter Road P
78 Monahan Creek Riparian restoration H
79 Cowlitz RM 18.5 LB remove dredged materials, create riparian/floodplain bench H
80 Cowlitz RM 18.8 RB bar and island enhancement H
81 Cowlitz RM 19.8 LB remove dredged materials, create riparian/floodplain bench H
82 Toutle RM 0.2 RB remove dredged materials, create riparian/floodplain bench H
83 Toutle RM 3.2 RB Off-channel restoration and enhancement H
84 Cowlitz RM 20.2 LB remove dredged materials, create riparian/floodplain bench H
85 Cowlitz RM 22.2 LB remove dredged materials, create riparian/floodplain bench H
86 Cowlitz RM 23.0 LB off-channel and floodplain restoration H
87 Cowlitz RM 23.2 RB bar and island enhancement H
88 Rock Creek Culvert replacement at West Side Highway. P
89 Remove water control structure, reconnect Hill Creek, revegetation H
90 Cowlitz RM 24.5 LB riparian restoration H
91 Lower Olequa Creek enhancement H
92 Acquire easements in active channel migration area. A
93 Cowlitz RM 25.0 side channel restoration and enhancement H
94 Cowlitz RM 26.0 LB riparian restoration H
95. Cowlitz River habitat enhancements upstream of Cowlitz County H
96 Connect gravel ponds and other off-channel areas H
97 Coweeman Bedrock Channel Restoration H
98. Coweeman riparian vegetation enhancement and knotweed control H
99. Explore opportunities to enhance shoreline habitat where bank armoring exists H

00 Site specific project (mapped)
00. Non-site specific project (unmapped)

Restoration Action Types

H Habitat-related
W Water quality
M Management
Y Hydrologic
P Fish passage
A Habitat acquisition and/or protection
R Research and investigation
G Regulatory
O Outreach

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0 0.75 1.5 3 Miles

Date: 6/24/2013
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THE WATERSHED COMPANY
Parametrix

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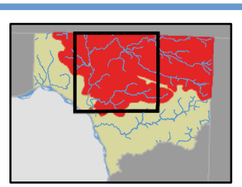

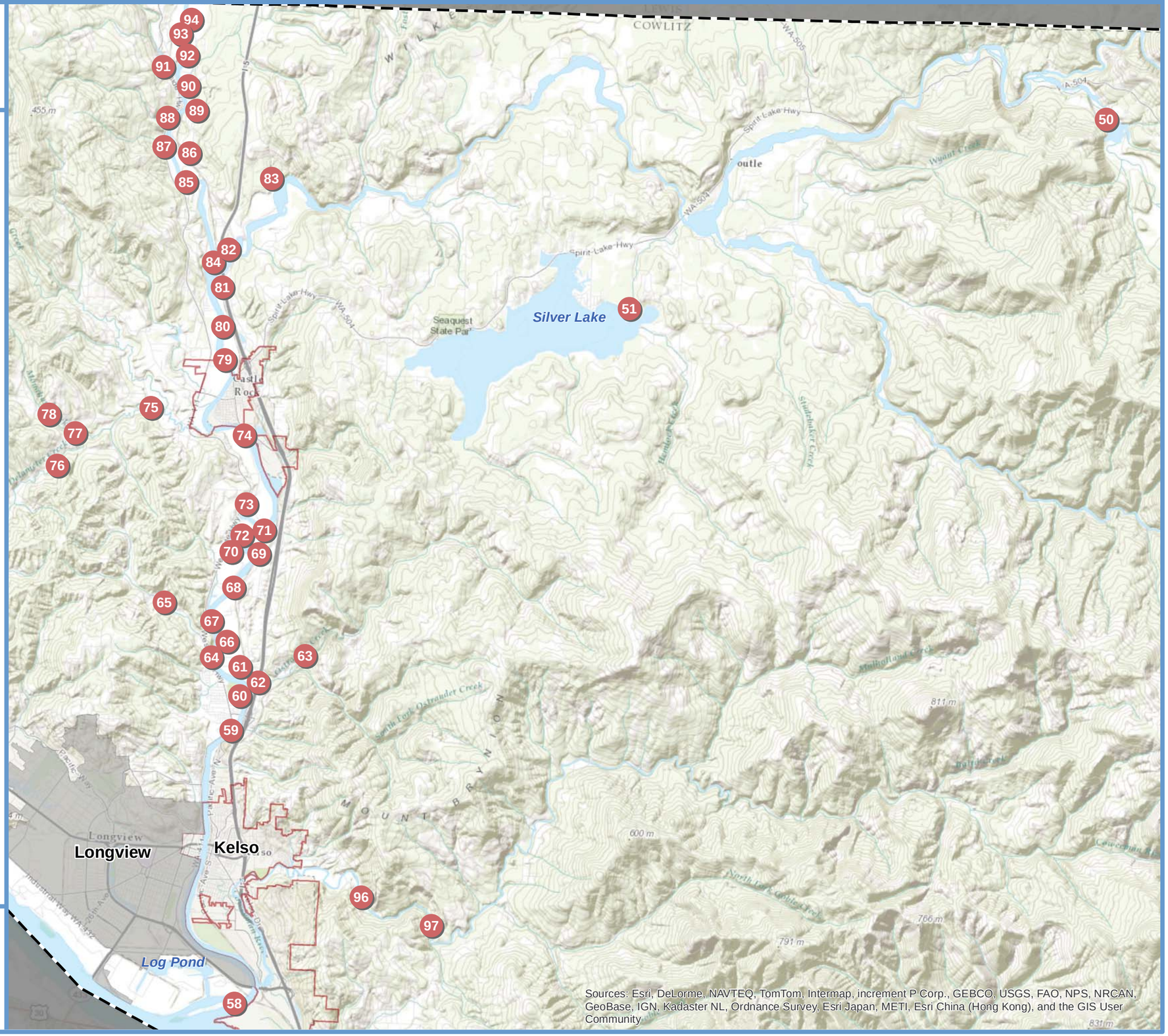

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RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Mill, Abernethy, Germany Assessment Unit

100. Seize opportunities to conduct voluntary floodplain restoration on lands being phased out of agricultural production. Survey landowners, build partnerships, and provide financial incentives. O

101. Assess, upgrade, and replace on-site sewage systems that may be contributing to water quality impairment W

102. Address fish passage barriers, particularly in Germany and Coal Creeks where 30-34% of the habitat is blocked P

103 Enhance off channel habitat in Abernathy Creek near Sarah Creek, Two Bridges and Abernathy hatchery sites. H

104 Enhance off channel habitat in Germany Creek. H

105. Construct engineered log jams and enhance riparian areas to produce future large woody debris in Abernathy and Germany Creeks. H

106. 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. R H

107. 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, and the residential areas of Mill Creek. H

108. Germany Creek Nutrient Enhancement. Placement of salmon carcass analogs and monitoring of salmon population response. M

00 Site specific project (mapped)
00. Non-site specific project (unmapped)

Restoration Action Types

H	Habitat-related	A	Habitat acquisition and/or protection
W	Water quality	R	Research and investigation
M	Management	G	Regulatory
Y	Hydrologic	O	Outreach
P	Fish passage		

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0 0.5 1 2 Miles

Date: 6/24/2013
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The Watershed Company
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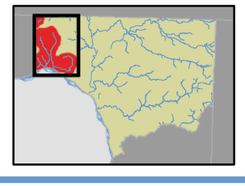

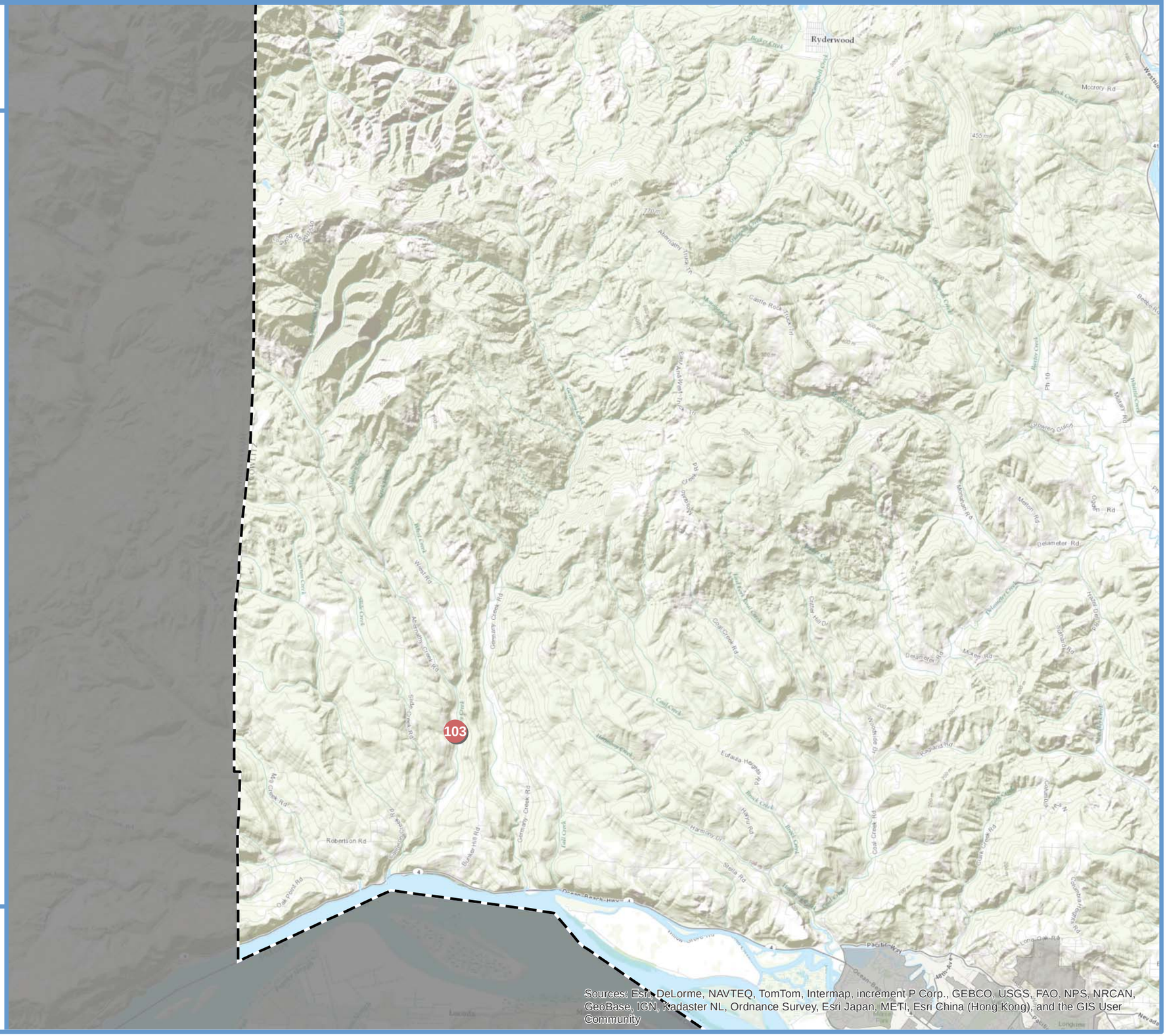

RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Castle Rock Assessment Unit

109 Cowlitz RM 16.7 left bank bar and island enhancement: Enhance bar with LWD and riparian plantings and promote side channel maintenance H

110 Cowlitz RM 16.8 right bank tributary enhancement: Create riparian bench, place LWD and riparian restoration along lower end of Arkansas Creek H

111 Cowlitz RM 17.0 left bank riparian restoration: Setback or slope back levees and create riparian bench along Castle Rock H

112 Cowlitz RM 17.0 right bank riparian restoration: Setback or slope back levees and create riparian bench along Castle Rock H

113 Cowlitz RM 15.0 left bank bar enhancement: Enhance low bar and Sandy Creek and backwater by placing wood and minor excavation. H

114 Channel and riparian restoration at lower Whittle Creek: Remove invasive species, revegetate, remeander channel. H

115 Reconnect backwater channel and place LWD at Janisch Creek, just north of the City limits. Consider remeandering the creek away from railroad tracks. H

116 Restore and enhance riparian vegetation along the Cowlitz River, including School District site. H

00 Site specific project (mapped)

00. Non-site specific project (unmapped)

Restoration Action Types

- H Habitat-related
- W Water quality
- M Management
- Y Hydrologic
- P Fish passage
- A Habitat acquisition and/or protection
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0 0.15 0.3 0.6 Miles

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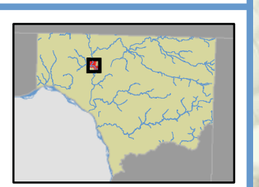

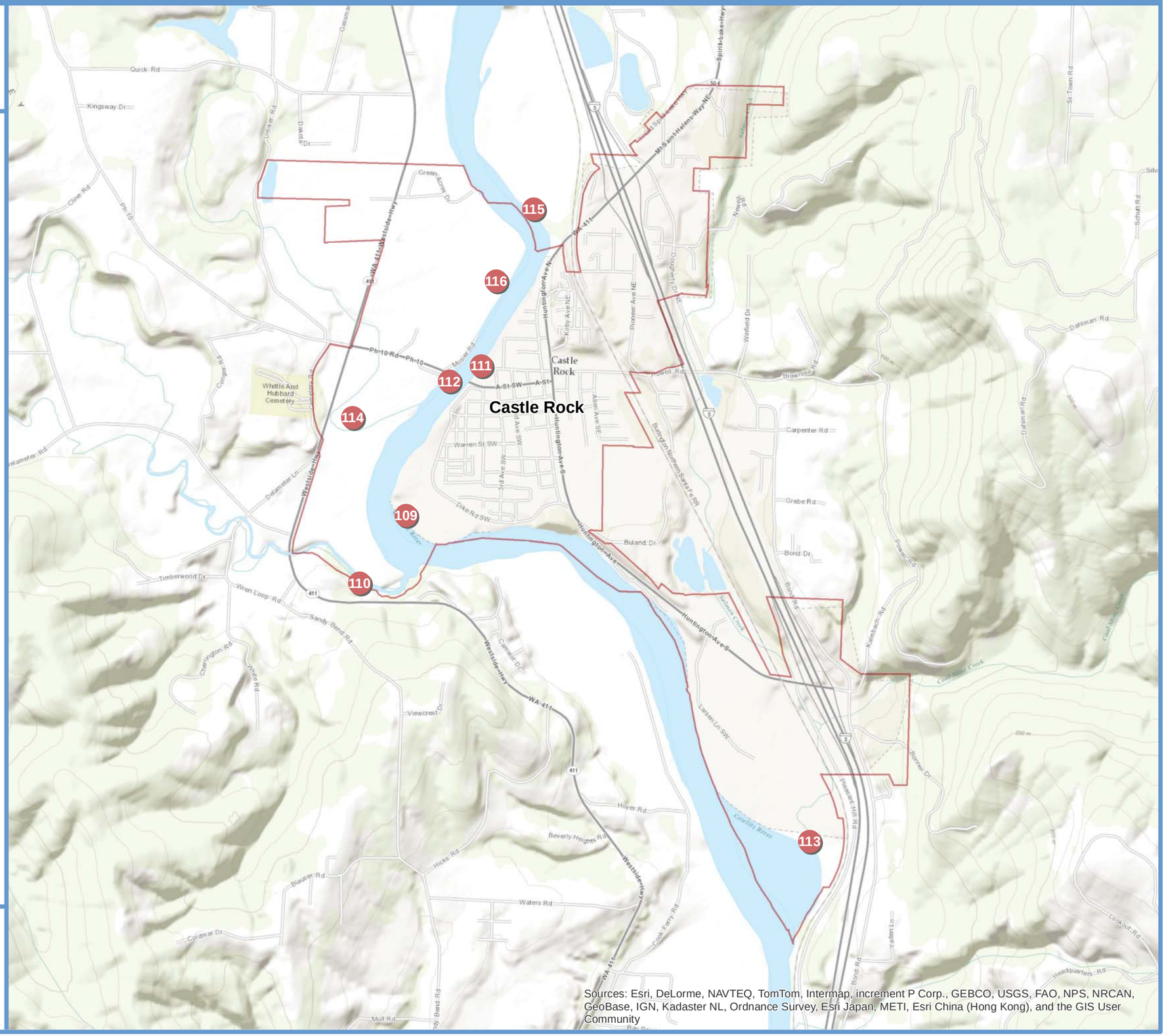

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RESTORATION PLAN

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Kalama Assessment Unit

117. 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 H O

118 Improve hydrologic and habitat connectivity from the Columbia River to wetlands just east of Interstate-5. Y H

119 Look for opportunities to increase and enhance off-channel and rearing habitat within the lower Kalama River Groundwater Channel, Left bank at RM 1.4 R H

120. 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) R H

121. 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) R H

00 Site specific project (mapped)

00. Non-site specific project (unmapped)

Restoration Action Types

- H Habitat-related
- W Water quality
- M Management
- Y Hydrologic
- P Fish passage
- A Habitat acquisition and/or protection
- R Research and investigation
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0 0.15 0.3 0.6 Miles

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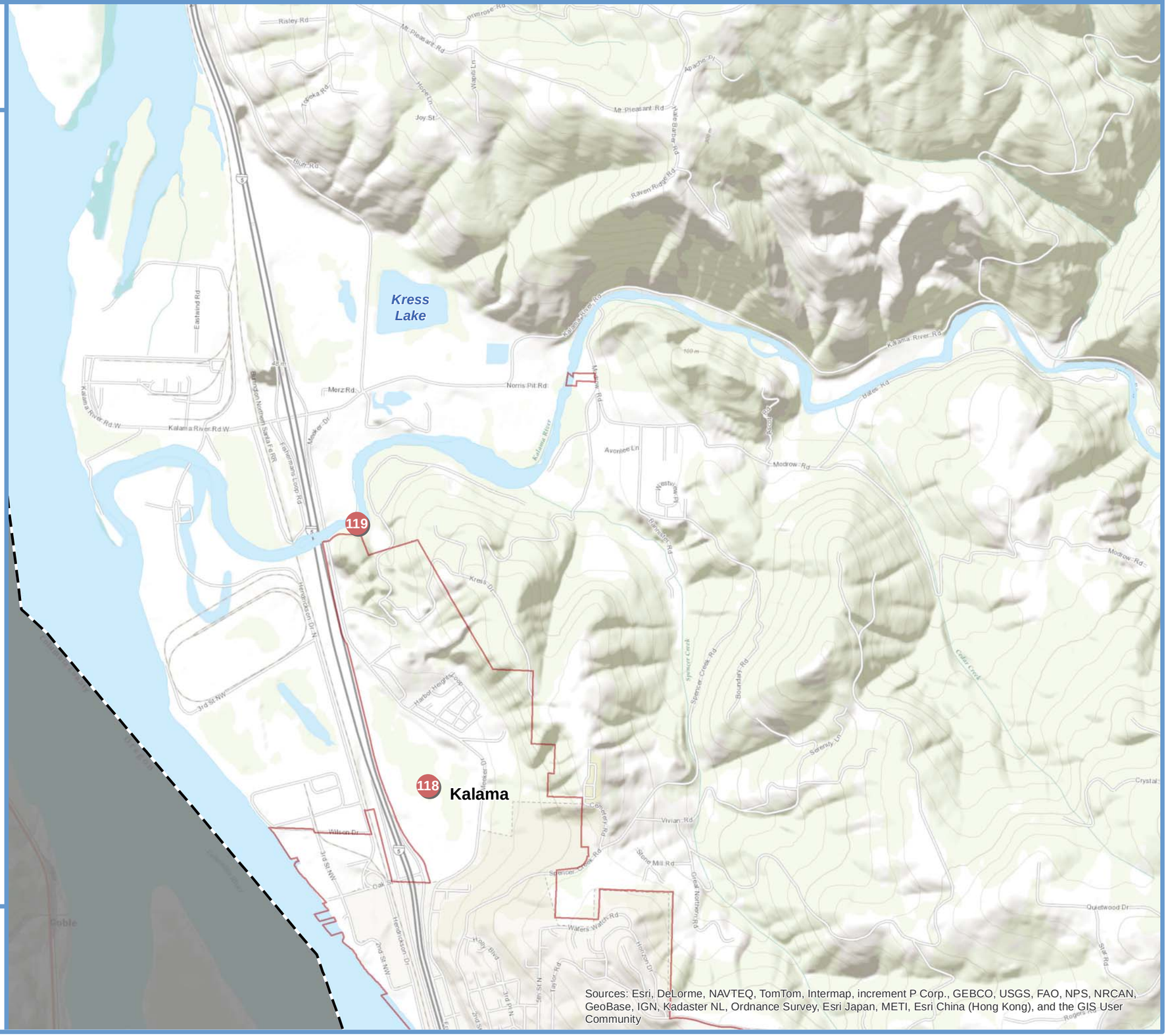

RESTORATION PLAN

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Shoreline Master Program Update
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COWLITZ COUNTY SHORELINE MASTER PROGRAM

Kelso Assessment Unit

121 Cowlitz RM 1.0 Left Bank Side channel restoration and enhancement: Remove some dredged materials and reconnect side channel, create riparian bench. H

122 Coweeman RM 3.5 Right Bank Tributary enhancement: Reconnect remnant oxbow and restore riparian zone. H

123 Coweeman RM 4.0 Tributary enhancement: Place LWD for sediment trapping, cover, and in-stream enhancement upstream of levees. H

124 Cowlitz RM 3.0 Left Bank Riparian restoration: Slope back banks to create riparian bench; remove riprap; revegetate with riparian species. H

126 Conduct floodplain restoration where feasible along the Cowlitz River. In particular, consider restoration of floodplain and riparian functions at former dredge disposal sites. H

127 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. H A R

128 Plant native trees and shrubs along the shoreline at Tam O'Shanter Park. Consider opportunities for interpretive signage. H O

129 Explore opportunities to improve hydrologic and habitat connectivity from the Columbia River to Owl Creek and associated wetlands just east of Interstate-5. R H

130. 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) R H

00 Site specific project (mapped)

00. Non-site specific project (unmapped)

Restoration Action Types

H	Habitat-related	A	Habitat acquisition and/or protection
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P	Fish passage		

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0 0.35 0.7 1.4 Miles

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The Watershed Company

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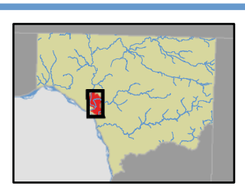

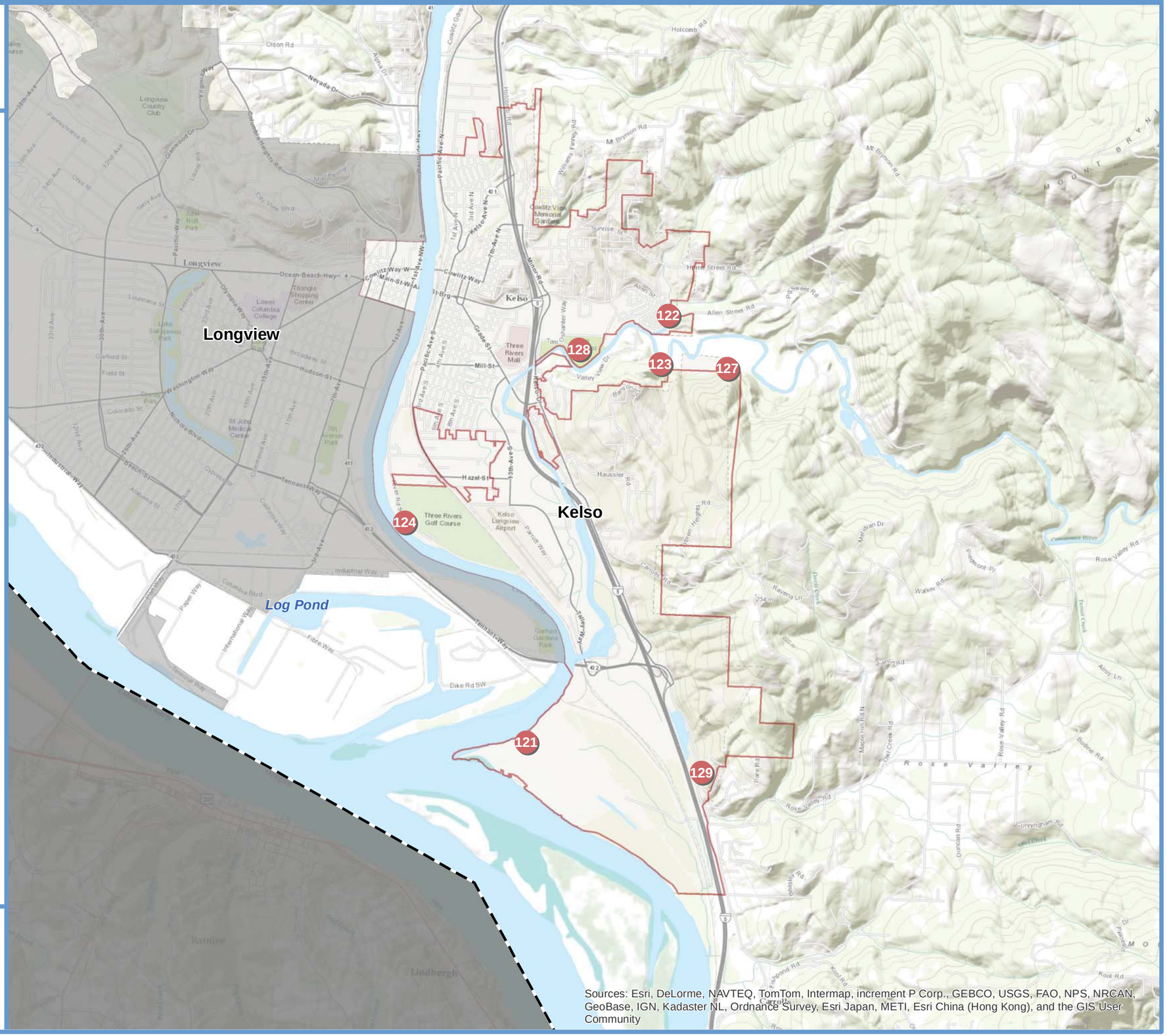

RESTORATION PLAN

COWLITZ COUNTY SHORELINE MASTER PROGRAM

Woodland Assessment Unit

130 Maintain and restore riparian vegetation within the designated floodway. H

131 Plant shoreline vegetation at Horseshoe Lake Park. H

132 Remove invasive vegetation and replant with native vegetation south of the CC Street Bridge. H

00 Site specific project (mapped)

00. Non-site specific project (unmapped)

Restoration Action Types

H	Habitat-related	A	Habitat acquisition and/or protection
W	Water quality	R	Research and investigation
M	Management	G	Regulatory
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0 0.175 0.35 0.7 Miles

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