APPENDIX A

Background and Existing Conditions

Background and Existing Conditions

The City of Kelso is located at the confluence of the Columbia and Cowlitz Rivers, and includes a portion of the Coweeman River and a portion of Owl Creek. The western border is shared with the City of Longview. The City covers 8.4 square miles, with a population of 11,925, according to the 2010 US Census.

The Comprehensive Plan for the City of Kelso was adopted in 1980, with chapter updates in 1987, 1992, and 2015. Goals in the Comprehensive Plan are directed toward ensuring economic growth and security, public access, and environmental protection. The City is currently in the process of updating its Comprehensive Plan, including regulations applicable to environmentally sensitive areas outside the jurisdiction of the Shoreline Management Act.

The NWI identifies wetlands on approximately 53 percent of shoreline jurisdiction in the assessment unit. Within the City of Kelso city limits, levees occupy 65 percent of the total shoreline length, including 100 percent of the Cowlitz River shoreline upstream of the Coweeman River and the entire west bank of the Coweeman River downstream from Allen Street Road. These levees preclude functioning floodplains in much of the City; however, a portion of the Coweeman River within the City has an active floodway, as well as in Columbia Reach 20. In total, 69 percent of the shoreline area within the assessment unit is in the mapped floodplain, of which, an additional 9 percent is within the floodway.

The levees in Kelso are owned and maintained by Cowlitz County Drainage Improvement District No. 1 (North Kelso) and Cowlitz County Consolidated Diking District No 3 (South Kelso). Both Districts are in the process of having their levees certified by the US Army Corps of Engineers and are participating in the FEMA PAL program for provisionally accepted levees.

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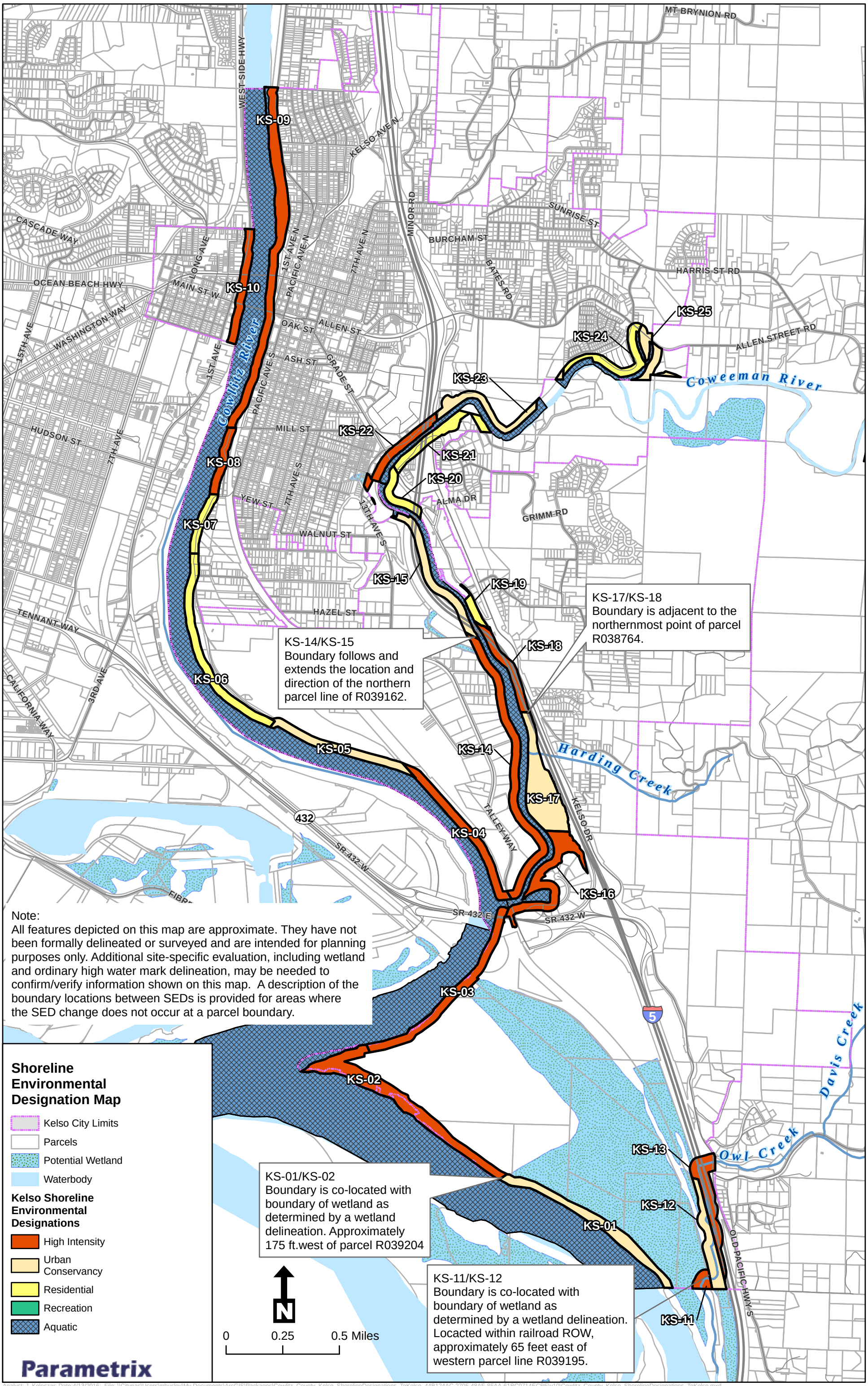

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APPENDIX C

Shorelines Critical Areas Regulations

Shorelines Critical Areas Regulation

Appendices

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1. Introduction

All new uses and development activities proposed for shoreline areas in the City of Kelso must comply with the provisions of the Washington State Shoreline Management Act (RCW 90.58), the Washington Administrative Code (WAC 173-26 and 173-27), the updated Kelso Shoreline Master Program, and the Kelso Municipal Code. In addition, it is important to note that in many instances shoreline areas under the jurisdiction of the Shoreline Management Act (SMA) also involve environmentally sensitive areas, or critical areas, that are subject to protection under the provisions of the Washington State Growth Management Act (GMA). In those instances where the requirements of both the SMA and the GMA apply, the courts have ruled that the provisions of the SMA must prevail. As a result, any new use or development activity proposed for an area under the jurisdiction of the Shoreline Management Act that also involves one or more of the protected critical areas must also comply with the following regulations in this Appendix. For new uses and development activities outside of shoreline jurisdictional shoreline areas that involve critical areas, please refer to Chapter 18.20 of the Kelso Municipal Code.

1.1 Applicability.

All development activities, including new uses of land and buildings and changes of use, must comply with all provisions of this Chapter as well as all applicable provisions of local, state, and federal law.

A. Critical areas, subject to the provisions of this Appendix shall consist of:

    1. Wetlands;

    2. Geologically Hazardous Areas;

    3. Fish and Wildlife Habitat Conservation Areas;

    4. Frequently Flooded Areas; and

    5. Critical Aquifer Recharge Areas.

B. It shall be the responsibility of property owners and applicants of proposed development activities to know the location of critical areas and jurisdictional shoreline areas on and near their property and to comply with the provisions of these regulations at all times.

    1. Property owners and applicants that may be proposing development activities in proximity of critical areas are strongly encouraged to schedule an appointment to discuss the applicability of these regulations prior to preparing and submitting land use applications to the City.

2. The City shall maintain public maps that may assist in the identification of critical areas. However, it shall be the responsibility of the property owner or applicant to identify and map all critical areas on their property.

    a. The presence of a critical area and/or its associated buffer within jurisdictional shoreline areas on a parcel triggers the requirements of these regulations, regardless of whether or not a critical area or buffer is depicted on an official map.

C. All persons proposing development in critical areas or their buffers within shoreline jurisdictional areas shall obtain the appropriate shoreline permit(s) and City approvals pursuant to these regulations prior to beginning the development. Development exempt from the shoreline substantial development permit requirements pursuant to WAC 173-27-040 are still subject to the substantive requirements of this SMP and may be required to obtain a shoreline conditional use or variance permit, pursuant to Kelso SMP Chapter 8. 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, including discharges of storm water and domestic, commercial, or industrial wastewater;

3. Subdivisions, short subdivisions, planned unit residential developments (PURDs), mobile home parks, and recreational vehicle (RV) parks;

4. Construction, reconstruction, demolition, or expansion of any structure or infrastructure;

5. Construction of any new public or private road or driveway;

6. Destroying or altering vegetation through clearing, harvesting, cutting, intentional burning, shading, or planting non-native species where these activities would alter the character of a critical area or its buffer;

7. Draining, flooding, or disturbing the water level, duration of inundation, or water table;

8. Activities causing significant adverse changes in water temperature, physical or chemical changes of water sources to wetlands or surface water systems;

9. The driving of pilings;

10. The placing of obstructions;

11. Significant vegetation removal, provided that these activities are not part of a forest practice governed under Chapter 76.09 RCW and its rules;

12. Other uses or development that results in an ecological impact to the physical, chemical, or biological characteristics of wetlands; or

13. Activities reducing the functions of buffers.

1.2 Exclusions from the Critical Areas Regulations.

A. Critical Areas Exclusions. The following development, activities, and associated uses are not subject to the requirements of the critical areas regulations in this Appendix; however, the critical areas exclusions are not exemptions from the Shoreline Master Program or the Shoreline Management Act. Consistency with the Shoreline Master Program and the Act must be met, whether or not a permit is required.

1. Development occurring within a volcanic hazard area and containing no other critical area as defined by these regulations.

2. Installation, construction, or replacement of utility lines in improved rights-of-way, not including electric substations.

3. The removal or control of noxious weeds by non-mechanical means.

4. Regular landscape maintenance of ornamental ground cover or other vegetation in a critical area or buffer area, through replanting, trimming, or continued mowing, that was disturbed prior to the effective date of this Shoreline Master Program; provided, that no further disturbance is created.

5. Minimal site investigative work required by a city, state, or federal agency, or any other applicant, such as surveys, soil logs, percolation tests, and other related activities; provided impacts on 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.

6. Passive recreational uses such as sport fishing, scientific or educational review, or similar minimum-impact, non-development activities.

7. Maintenance of intentionally created artificial wetlands or surface water systems including irrigation and drainage ditches, grass-lined swales and canals, detention facilities and landscape or ornamental amenities. Wetlands, streams, lakes, or ponds created as mitigation for approved land use activities or that provide critical habitat are not exempt and shall be regulated according to the regulations herein and the associated mitigation plan, if applicable.

1.3 General Provisions.

A. Mitigation Sequencing. Property owners or applicants shall, when designing proposed new development activities that may potentially affect critical areas, use the following measures, listed in priority order, to avoid, minimize, and/or mitigate adverse impacts:

1. Avoiding the adverse impact altogether by not taking a certain action or parts of an action or moving the proposed action;

2. Minimizing 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. Rectifying the adverse impact by repairing, rehabilitating, or restoring the affected environment;

4. Reducing or eliminating the adverse impact over time by preservation and maintenance operations during the life of the action;

5. Compensating for the adverse impact by replacing, enhancing, or providing similar substitute resources or environments; and/or

6. Monitoring the impact and taking appropriate corrective measures.

B. Critical Areas reports. If the site of a proposed development includes, is likely to include, or is adjacent to a critical area, a critical areas report, prepared by a qualified professional, shall be required (see Appendix C-4 for details).

1. The cost of preparing any required critical areas report(s) shall be borne by the applicant.

2. Critical areas reports shall be prepared by a qualified professional(s) as defined in this SMP.

3. The cost of a professional peer review of any required critical areas report shall be borne by the applicant.

4. Individual critical areas reports may be combined with other required critical areas or shoreline reports, in a format approved by the City.

C. Additional Application Requirements. In addition to the application requirements identified in the City's Shoreline Master Program, Chapter 8, Shoreline Administration and Enforcement, the following application requirements shall be met:

1. It shall be the responsibility of property owners and applicants of proposed development activities to identify all critical areas and jurisdictional shoreline areas on their property and within 300 feet of their property lines on all application materials, including a required SEPA environmental checklist.

2. If a proposed development activity that may have a potential adverse impact on a critical area does not require a shoreline permit, compliance with the provisions of these regulations, the SMP, and the Shoreline Management Act is still required and a Shoreline Letter of Exemption shall be issued to ensure compliance.

3. All land use applications submitted to the City involving critical areas must include a SEPA Checklist and, at a minimum, such information identified in WAC 173-27-180.

D. Buffer Requirements.

1. In the event that more than one buffer applies to a proposed development, the buffer affording the highest level of protection should apply where the buffers overlap.

    a. For example, if a development proposal involves a parcel that includes a jurisdictional shoreline, a jurisdictional wetland, and a non-jurisdictional fish-bearing stream there could be three different buffer requirements applicable to the site. Where the buffer areas overlap, the widest buffer area would apply, unless a lesser buffer area is approved in accordance with the provisions of these regulations.

E. Emergency Measures to Protect the Public Health and Safety. Nothing in these regulations shall prevent a public agency or a private property owner from taking emergency actions necessary to protect persons and property from immediate or urgent threats to the public health and safety.

1. Emergency measures should be limited to reasonable measures necessary to protect the public health and safety from the immediate or urgent threat.

2. The City and state and federal agencies, such as the Washington State Department of Fish and Wildlife, should be contacted as soon as is practical after the emergency action to determine whether any additional measures are required and what, if any, after-the-fact permits may be required.

3. Remediation may be required after the fact to restore the site to pre-emergency conditions. Once the immediate threat has been addressed, any adverse impacts to critical areas shall be mitigated according to the provisions found in Section 6.1 of the SMP.

4. Property owners are advised that the failure to take appropriate preventive measures; the failure to secure required permits in advance; the failure to meet conditions of approval, including the maintenance of erosion-control measures; and/or the failure to act in a timely manner may not constitute an emergency and may result in the imposition of civil penalties and/or remediation measures.

F. Performance Bonds. In an effort to ensure the successful installation, operation, and maintenance of compensatory mitigation measures or other requirements under these regulations, the City may require a performance bond(s) or comparable financial guarantee.

1. The performance bond or guarantee may be up to 150% of the estimated cost of the required improvement.

2. The duration and form of the financial guarantee shall be determined by the City in consultation with the City Attorney.

1.4 Optional Incentives for Nondevelopment of Critical Areas.

A. Introduction. This Section describes the alternatives available to property owners and incentives they may pursue in lieu of developing or altering their property under the terms and standards of these regulations. The incentives and options listed allow property owners to use any or all of the options that best suit their needs. City staff review of a selected incentive option(s) will be undertaken with the advice and consent of the applicable state agency or agencies.

B. Conservation Easement. Any person who owns property containing an identified critical area as defined by these regulations shall be entitled to place a conservation easement over that portion of the property designated a critical area by naming the city or its qualified designee under RCW 64.04.130 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.

C. Density Transfer. The City shall allow transfer of density for residential uses from lands containing critical areas within shoreline jurisdiction, as defined by these regulations, when developed pursuant to Chapter 16.36 of the Kelso Municipal Code, this SMP, and the Shoreline Management Act. Residential density may be transferred only from a critical area to an area on the same site that is not a critical area.

D. Density Credits. For development proposals on lands determined to contain critical areas as defined by these regulations, the City shall determine allowable dwelling units for residential development proposals based on the formula below:

Percentage of Site in Critical Area	Density Credit
1–30	90%
31–60	70%
61–90	50%

The density credit can be applied only within the development proposal site. The applicant may reduce lot sizes below the minimum required for that zoning district (RSF, RMF) to accommodate the transfer of density, but it cannot change the residential uses permitted in the zone.

Example: Size of proposed development site is 10 acres. Zone is RSF-15 Residential Single Family. Lot size is 15,000 square feet or 2.9 units per acre. (10 acres is 435,600 square feet; 435,600 divided by 15,000 square feet equals 29 lots). There are three acres of critical areas on the 10-acre site, or 30 percent of the total site area. The density credit according to the above table is 90 percent. The allowable adjustment is 29 lots multiplied by 90 percent, which equals 26 lots on the remaining seven acres. Note: without the density credit, the developer would exclude the three-acre critical area from development. The site would be seven acres at 15,000 square feet, and would allow 20 lots.

1.5 Permits.

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

1.6 Relationship to Other Regulations.

A. These critical areas regulations shall apply within shoreline jurisdiction in addition to zoning and Shoreline Environment Designations adopted by the City.

B. Any individual critical area adjoined by another type of critical area shall have the buffer and meet the requirements that provide the most protection to the critical areas involved. When any provision of these regulations or any other existing regulation, easement, covenant, or deed restriction conflicts with these regulations, that which provides the most protection to the critical areas shall apply.

C. These critical areas regulations shall apply concurrently with review conducted under this SMP and State Environmental Policy Act (SEPA), as locally adopted. Any conditions required pursuant to these regulations shall be included in the SEPA review and threshold determination and any required shoreline permit.

2. Critical Area Wetlands

A. Identification of wetlands and delineation of their boundaries pursuant to these regulations shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplements. All areas both within the City and within the shoreline jurisdiction, per RCW 90.58, meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of these regulations. Wetland delineations are valid for five (5) years; after such date the City shall determine whether a revision or additional assessment is necessary.

B. Wetland Rating. Wetlands shall be rated according to the Washington Department of Ecology wetland rating system, as set forth in the *Washington State Wetland Rating System for Western Washington: 2014 Update* (Ecology Publication #14-06-007), or as revised. The descriptions of wetland categories according to the Rating System are as follows:

1. **Category I.** Category I wetlands are: (1) relatively undisturbed estuarine wetlands larger than 1 acre; (2) wetlands of high conservation value that are identified by scientists of the Washington Natural Heritage Program/DNR; (3) bogs; (4) mature and old-growth forested wetlands larger than 1 acre; (5) wetlands in coastal lagoons; (6) interdunal wetlands that score 8 or 9 habitat points and are larger than 1 acre; and (7) wetlands that perform many functions well (scoring 23 points or more). These wetlands: (1) represent unique or rare wetland types; (2) are more sensitive to disturbance than most wetlands; (3) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or (4) provide a high level of functions.

2. **Category II.** Category II wetlands are: (1) estuarine wetlands smaller than 1 acre, or disturbed estuarine wetlands larger than 1 acre; (2) interdunal wetlands larger than 1 acre or those found in a mosaic of wetlands; or (3) wetlands with a moderately high level of functions (scoring between 20 and 22 points).

3. **Category III.** Category III wetlands are: (1) wetlands with a moderate level of functions (scoring between 16 and 19 points); (2) can often be adequately replaced with a well-planned mitigation project; and (3) interdunal wetlands between 0.1 and 1 acre. Wetlands scoring between 16 and 19 points generally have been disturbed in some ways and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.

4. **Category IV.** Category IV wetlands have the lowest levels of functions (scoring fewer than 16 points) and are often heavily disturbed. These are wetlands that we should be able to replace, or in some cases to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These

wetlands may provide some important functions, and should be protected to some degree.

C. Development Limitations—Alterations of Wetlands. Alteration of all wetlands shall be fully mitigated and not be allowed unless mitigation sequencing has been followed. Regulated development shall conform with and be governed by the following:

1. Alteration of Category I wetlands is prohibited unless the alteration would improve habitat to threatened or endangered species occupying the habitat. This improvement of both functions and values must be demonstrated within the wetland critical areas report and the mitigation plan. A qualified expert may use best professional judgment to design a plan to allow such alterations to Category I wetlands.

2. Alteration of Category II wetlands may be allowed only when it is demonstrated by a qualified expert through a wetlands site assessment that any of the following criteria are met:

    a. Public benefit will accrue through the alteration, and no reasonable and practical alternative to the alteration exists through on-site design or through acquisition of additional area; or

    b. The alteration would enhance 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 function or value of the wetland as indicated within the wetland critical areas report and the mitigation plan.

3. Alteration of Category III wetlands may be allowed only when it is demonstrated through a wetlands site evaluation that any of the following criteria are met:

    a. Public benefit will accrue through the alteration and absence of reasonable practicable alternative.

    b. No reasonable and practical alternative to the alteration exists through on-site design.

    c. The impacts are fully mitigated.

4. Alteration of Category IV wetlands may be allowed if feasible alternatives cannot be identified during the site plan review process, state and federal regulatory agencies concur with allowing the alteration, and impacts are fully mitigated.

5. Activities Allowed in Wetlands. The activities listed below are allowed in wetlands, subject to all requirements in the Shoreline Master Program. These activities do not require submission of a critical areas report, except where such activities would result in a reduction or loss of the functions and values of a wetland or wetland buffer. These activities include:

a. Conservation or preservation of soil, water, vegetation, fish, shellfish, and/or other wildlife that does not entail changing the structure or functions of the existing wetland.

b. The harvesting of wild crops in a manner that is not injurious to natural reproduction of such crops, and provided the harvesting does not require tilling of soil, planting of crops, chemical applications, or alteration of the wetland by changing existing topography, water conditions, or water sources.

c. Enhancement of a wetland through the removal of nonnative, invasive plant species. Removal of invasive plant species shall be restricted to hand removal unless permits from the appropriate regulatory agencies have been obtained for approved biological or chemical treatments. All removed plant material shall be taken away from the site and appropriately disposed of. Plants that appear on the Washington State Noxious Weed Control Board list of noxious weeds must be handled and disposed of according to a noxious weed control plan appropriate to that species. Re-vegetation using hand-held equipment with appropriate native species at natural densities is allowed in conjunction with removal of invasive plant species.

d. Educational and scientific research activities that do not degrade the critical area.

D. Wetland Buffers. Wetland buffers shall be designated in accordance the following:

1. Buffers are required for all wetlands. Wetland buffer widths are established in Table 1-A of this Section.

2. Buffer widths shall be measured perpendicular to the delineated boundaries of the regulated wetland and extend the required distance.

3. The standard buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community, or the buffer should be widened to ensure that adequate functions of the buffer are provided.

4. If an applicant chooses not to apply the mitigation measures in Table 1-B, then a 33% increase in the width of all buffers is required. For example, a 75-foot buffer with the mitigation measures would be a 100-foot buffer without them.

5. The authorization of variable buffer widths intended to protect the functions of the wetland shall be based on a wetland assessment conducted by a qualified wetland professional, to evaluate the impact of current and proposed land use on the wetland. Wetland functions include but are not limited to flood control

functions, ground and surface water aquifer recharge functions, and sediment retention and pollution control functions (refer to Subsection E of this Section for buffer averaging).

6. Wetland buffer widths intended to protect fish and wildlife habitat shall be based on Table 1-A.

7. Buffer widths can be reduced below the minimums when site-specific, abrupt topographical changes such as cliffs, or human-made features such as levees, dikes, railroads, or streets, indicate that extending the buffer beyond such features will not improve wetland protection.

Table 1-A. Wetland Buffer Requirements within Shoreline Jurisdiction

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

Buffer widths in Table 1-A require the mitigation measures below in Table 1-B, where applicable.

Table 1-B. Required measures to minimize impacts to wetlands in Shoreline Management Act Jurisdiction

Disturbance	Required Measures to Minimize Impacts
Lights	• Direct lights away from wetland
Noise	• Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry or mining, establish an additional 10-ft heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic runoff	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 ft of wetland

Disturbance	Required Measures to Minimize Impacts
	• Apply integrated pest management
Stormwater runoff	• Retrofit stormwater detention and treatment for roads and existing adjacent development • Prevent channelized flow from lawns that directly enters the buffer • Use low-intensity development techniques (per PSAT publication on LID techniques)
Change in water regime	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and human disturbance	• Use privacy fencing OR plant dense native vegetation to delineate buffer edge and to discourage disturbance • Place wetland and its buffer in a separate tract or protect with a conservation easement
Dust	• Use best management practices to control dust
Disruption of corridors or connections	• Maintain connections to offsite areas that are undisturbed • Restore corridors or connections to offsite habitats by replanting

E. Wetland Buffer Width Averaging

1. Buffer widths may be modified by averaging buffer widths or by enhancing buffer quality as set forth herein:

   a. Buffer width averaging shall be allowed only where:

      i. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a “dual-rated” wetland with a Category I area adjacent to a lower-rated area.

      ii. The buffer is increased adjacent to the higher-functioning area of habitat or more-sensitive portion of the wetland and decreased adjacent to the lower-functioning or less-sensitive portion as demonstrated by a critical areas report from a qualified wetland professional.

      iii. The total area of the buffer after averaging is equal to the area required without averaging.

      iv. The buffer at its narrowest point is never less than either three-quarters of the required width or seventy-five (75) feet for Categories I and II, fifty (50) feet for Category III, and twenty-five (25) feet for Category IV, whichever is greater.

   b. Averaging to allow reasonable use of a parcel may be permitted when all of the following are met:

      i. There are no feasible alternatives to the site design that could be accomplished without buffer averaging.

ii. The averaged buffer will not result in degradation of the wetland's functions and values as demonstrated by a critical areas report from a qualified wetland professional.

iii. The total buffer area after averaging is equal to the area required without averaging.

iv. The buffer at its narrowest point is never less than either three-quarters of the required width or seventy-five (75) feet for Categories I and II, fifty (50) feet for Category III, and twenty-five (25) feet for Category IV, whichever is greater.

2. Notwithstanding the reductions permitted in Subsections E.1.a and b of this Section, buffer widths shall not be reduced by more than twenty-five percent of the required buffer or to less than twenty-five (25) feet, whichever is wider.

3. The minimum buffer width stated in Table 1-A of this Section shall not be required to be increased more than one hundred twenty-five percent (buffer width times 1.25) when the qualified wetland professional determines, based upon a site-specific wetland analysis, that impacts on the wetland from a proposed development can be mitigated only by a greater buffer width. The standard wetland buffer width shall be increased:

   a. When the adjacent land is susceptible to severe erosion, and erosion-control measures will not effectively prevent adverse wetland impacts; or

   b. When the standard buffer has minimal or degraded vegetative cover that cannot be improved through enhancement; or

   c. When the minimum buffer for a wetland extends into an area with a slope of greater than fifteen percent, the buffer shall be the greater of:

      i. The minimum buffer for that particular wetland; or

      ii. Twenty-five (25) feet beyond the point where the slope becomes fifteen (15) percent or less.

4. Required buffers shall not prevent all reasonable use of property. A shoreline variance from buffer width requirements may be granted provided that the applicant meets the variance criteria in WAC 173-27-170.

5. All shoreline variances shall be in accordance with the Shoreline Master Program and the Shoreline Management Act.

F. Activities Allowed in a Wetland Buffer Zone. The following uses may be allowed within a wetland buffer in accordance with the review procedures of this Appendix C, provided they are not prohibited by any other applicable law and they are

conducted in a manner so as to minimize impacts to the buffer and adjacent wetland:

1. Passive Recreation Development Activity. Passive recreation facilities (such as constructed walkways, trails, and viewing platforms) designed and in accordance with an approved critical area assessment, including:

    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 five (5) feet wide. The design and construction of walkways and trails shall avoid impacts to established native woody vegetation. Raised boardwalks utilizing nontreated pilings are acceptable;

    b. Wildlife viewing structures less than 200 square feet.

2. 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 twenty-five (25) percent of the buffer of Category III or IV wetlands provided that:

    a. No other location is feasible; and

    b. The location of such facilities will not degrade the functions or values of the wetland.

3. 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.

4. Normal and routine maintenance and repair of any existing public or private facilities within an existing right-of-way, provided that the maintenance or repair does not increase the footprint or use of the facility or right-of-way.

5. Non-Conforming Uses. Repair and maintenance of non-conforming uses or structures, where legally established within the buffer, provided they do not increase the degree of nonconformity.

G. Mitigation Standards.

1. All adverse impacts to wetlands and buffers as identified in the wetlands critical areas report shall be specified in a mitigation plan consistent with Kelso development standards, be prepared by a qualified expert, and be consistent with the standards outlined in Table 2.

Table 2. Wetland Mitigation Ratios within the jurisdiction of the Shoreline Management Act (RCW 90.58)

Category and Type of Wetland	Creation or Re-establishment	Rehabilitation	Enhancement
Category I: Bog, Natural Heritage site	Not considered possible	Case by case	Case by case
Category I: Mature Forested	6:1	12:1	24:1
Category I: Based on functions	4:1	8:1	16:1
Category II	3:1	6:1	12:1
Category III	2:1	4:1	8:1
Category IV	1.5:1	3:1	6:1

2. Buffer Mitigation Ratios. Impacts to buffers shall be mitigated at a 1:1 ratio. Compensatory buffer mitigation shall replace those buffer functions lost from development.

3. Mitigation Sequencing. Before impacting any wetland or its buffer, an applicant shall demonstrate that the following actions have been taken. Actions are listed in the order of priority:

   a. Avoid the impact altogether by not taking a certain action or parts of an action.

   b. Minimize impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.

   c. Rectify the impact by repairing, rehabilitating, or restoring the affected environment.

   d. Reduce or eliminate the impact over time by preservation and maintenance operations.

   e. Compensate for the impact by replacing, enhancing, or providing substitute resources or environments.

   f. Monitor the required compensation and take remedial or corrective measures when necessary.

4. Requirements for Compensatory Mitigation:

    a. Compensatory mitigation for alterations to wetlands shall be used only for impacts that cannot be avoided or minimized and shall achieve equivalent or greater biologic functions. Compensatory mitigation plans shall be consistent with *Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans--Version 1*, (Ecology Publication #06-06-011b, Olympia, WA, March 2006 or as revised) and *Selecting Wetland Mitigation Sites Using a Watershed Approach* (Western Washington) (Publication #09-06-32, Olympia, WA, December 2009).

    b. Mitigation ratios shall be consistent with the ratios in Table 2.

    c. As an alternative to the ratios in Table 2, the Credit/Debit method may be used. To more fully protect functions and values, the City may allow mitigation based on the "credit/debit" method developed by the Department of Ecology in "*Calculating Credits and Debits for Compensatory Mitigation in Wetlands of Western Washington: Final Report*," (Ecology Publication #10-06-011, Olympia, WA, March 2012), or as revised.

    d. The area where the mitigation occurred and any associated buffer shall be located in a critical area tract or a conservation easement.

    e. Monitoring. Mitigation monitoring shall be required for a period necessary to establish that performance standards have been met, but not for less than five years. If a scrub-shrub or forested vegetation community is proposed, monitoring may be required for ten years or more. The project mitigation plan shall include monitoring elements that ensure certainty of success for the project's natural resource values and functions. If the mitigation goals are not attained within the initial five-year period, the applicant remains responsible for restoration of the natural resource values and functions until the mitigation goals in the mitigation plan are achieved.

5. 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.

6. Mitigation actions shall address functions affected by the alteration to achieve functional equivalency or improvement, and shall provide similar wetland functions as those lost except when:

    a. The lost wetland provides minimal functions as determined by a site-specific function assessment 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.

7. Mitigation Preference. Mitigation actions that require compensation by replacing, enhancing or substitution, shall occur in the following order of preference:

    a. Restoration (re-establishment and rehabilitation) of 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 (establishment) of wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of non-native species. Establishment results in a gain in wetland acres. This should be attempted only when there is an adequate source of water and it can be shown that the surface and subsurface hydrologic regime is conducive to the wetland community that is anticipated in the design.

        If a site is not available for wetland restoration to compensate for expected wetland and/or buffer impacts, the approval authority may authorize creation of a wetland and buffer upon demonstration by the applicant's qualified wetland scientist that:

        i. The hydrology and soil conditions at the proposed mitigation site are conducive for sustaining the proposed wetland and that creation of a wetland at the site will not likely cause hydrologic problems elsewhere;

        ii. The proposed mitigation site does not contain invasive plants or noxious weeds or that such vegetation will be completely eradicated at the site;

iii. Adjacent land uses and site conditions do not jeopardize the viability of the proposed wetland and buffer (e.g., due to the presence of invasive plants or noxious weeds, stormwater runoff, noise, light, or other impacts); and

iv. The proposed wetland and buffer will eventually be self-sustaining with little or no long-term maintenance.

c. Enhancement of significantly degraded wetlands in combination with restoration or creation. Enhancement should be part of a mitigation package that includes replacing the altered area and meeting appropriate ratio requirements. Enhancement is undertaken for specified purposes such as water quality improvement, flood water retention, or wildlife habitat. Enhancement alone will result in a loss of wetland acreage and is less effective at replacing the functions lost. Applicants proposing to enhance wetlands or associated buffers shall demonstrate:

i. How the proposed enhancement will increase the wetland's/buffer's functions;

ii. How this increase in function will adequately compensate for the impacts; and

iii. How all other existing wetland functions at the mitigation site will be protected.

d. Preservation. Preservation of high-quality, at-risk wetlands as compensation is generally acceptable when done in combination with restoration, creation, or enhancement, provided that a minimum of 1:1 acreage replacement is provided by re-establishment or creation. Ratios for preservation in combination with other forms of mitigation generally range from 10:1 to 20:1, as determined on a case-by-case basis, depending on the quality of the wetlands being altered and the quality of the wetlands being preserved.

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

i. The area proposed for preservation is of high quality. The following features may be indicative of high-quality sites:

(A) Category I or II wetland rating (using the wetland rating system for Western Washington)
(B) Rare wetland type (for example, bogs, mature forested wetlands, estuarine wetlands)
(C) The presence of habitat for priority or locally important wildlife species.

(D) Priority sites in an adopted watershed plan.

ii. Wetland impacts will not have a significant adverse impact on habitat for listed fish, or other ESA listed species.

iii. There is no net loss of habitat functions within the watershed or basin.

iv. Mitigation ratios for preservation as the sole means of mitigation shall generally start at 20:1. Specific ratios should depend upon the significance of the preservation project and the quality of the wetland resources lost.

v. Permanent preservation of the wetland and buffer will be provided through a conservation easement or tract held by a land trust.

vi. The impact area is small (generally <½ acre) and/or impacts are occurring to a low-functioning system (Category III or IV wetland).

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

9. Wetland Mitigation Banks.

   a. Credits from a wetland mitigation bank may be approved for use as compensation for unavoidable impacts to wetlands when:

      i. The bank is certified under state rules;

      ii. The City determines that the wetland mitigation bank provides appropriate compensation for the authorized impacts; and

      iii. The proposed use of credits is consistent with the terms and conditions of the certified bank instrument.

   b. Replacement ratios for projects using bank credits shall be consistent with replacement ratios specified in the certified bank instrument.

   c. Credits from a certified wetland mitigation bank may be used to compensate for impacts located within the service area specified in the certified bank instrument. In some cases, the service area of the bank may include portions of more than one adjacent drainage basin for specific wetland functions.

10. When an applicant proposes to alter or eliminate a regulated wetland, the applicant shall be required to replace or enhance the function and value of the wetland. Compensatory mitigation for alterations to wetlands shall be used only for impacts that cannot be avoided or minimized and shall achieve equivalent or greater biologic functions. Compensatory mitigation plans shall be consistent with Wetland Mitigation in Washington State – Part 2: Developing Mitigation

Plans (Versions 1), Ecology Publication #06-06-11b, Olympia, WA, March 2006 or as revised.

H. Mitigation bonding may be required at the discretion of the city staff to ensure design and construction of compensatory mitigation projects.

3. 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:

Classifications WAC 365-190-130	Description
(1) Areas with which state designated endangered, threatened, or sensitive species have a primary association. Example: Coweeman River	Areas which, if significantly altered, may reduce the likelihood that the species will reproduce over the long term. Habitats associated with these species are those identified by the Washington Department of Fish and Wildlife's Habitat and Species Maps, as amended. These habitats are designated as critical areas, where endangered, threatened, and sensitive species are verified to have a primary association.
(2) Species and habitats of local importance	Habitat: Unique or significant habitats which regionally rare wildlife species depend upon and that have high wildlife concentrations, including: 1. Caves, 2. Talus slopes, 3. Snag rich areas (outside forest practices). 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.
(3) Smelt spawning areas.	The entire length of the Cowlitz River adjacent to the city of Kelso is smelt spawning territory.
(4) Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat.	Naturally occurring ponds with a surface area of less than twenty acres but greater than one acre. Naturally occurring ponds do not include ponds deliberately created from dry sites such as canals, detention facilities, wastewater treatment facilities, farm ponds, temporary construction ponds (of less than three years' duration), and landscape amenities. However, naturally occurring ponds may include those artificial ponds intentionally created from dry areas in order to mitigate conversion of ponds, if permitted by a regulatory authority.
(5) Waters of the state.	Waters of the state shall be those defined in WAC 222-16-030, Forest Practices Board, Definitions, with the following revisions: (a) Type S Water – all waters, as inventoried as “shorelines of the state” under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW including periodically inundated areas of their associated wetlands. (b) Type F Water – means segments of natural waters, which are not classified as Type S Water and have fish, wildlife, or human use. These are segments of natural water and periodically inundated areas of their associated wetlands. (c) Type Np Water – means all segments of natural waters within defined channels that are perennial nonfish habitat streams. Perennial streams are waters that do not go dry any time of a year of normal rainfall. However, for the purpose of water typing, Type Np Waters include the intermittent dry portions of the perennial channel below the uppermost point of perennial flow. (d) Type Ns Water – means all segments of natural waters within defined channels that are not Type S, F, or Np Waters. These are

Classifications WAC 365-190-130	Description
	seasonal, nonfish habitat streams in which surface flow is not present for at least some portion of a year of normal rainfall and are not located downstream from any stream reach that is a Type Np Water. Ns Waters must be physically connected by an aboveground channel system to Type S, F, or N Waters.
(6) Lakes, ponds, streams, and rivers planted with game fish by a governmental agency or tribal entity.	The Cowlitz River is planted with game fish by governmental agencies.
(7) State natural area preserves and natural resource conservation areas.	Currently, there are no natural resource conservation areas within the City of Kelso.
(8) Unintentionally created ponds.	Ponds with a surface area of less than twenty (20) acres, but greater than one (1) acre.

B. Development Performance Standards. Development or regulated activity shall conform to and be governed by the following items in this Section. Mitigation plans including most current, accurate, and complete scientific and technical information available should be developed by a qualified fish and wildlife biologist.

1. 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.

2. Consider habitat in site planning and design.

3. Locate buildings and structures in a manner that preserves the habitat or minimizes adverse impacts.

4. 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.

5. Use native species in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers.

6. Emphasize heterogeneity and structural diversity of vegetation in landscaping.

7. Remove and/or control any noxious or undesirable species of plants.

8. Preserve trees to the extent possible, preferably in consolidated areas.

9. 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.

10. Preserve the natural hydraulic and ecological functions of drainage systems.

11. Preserve critical fish and wildlife habitat areas through maintenance of stable channels; adequate flow levels; and management of stormwater runoff, erosion, and sedimentation.

12. Manage access to critical fish and wildlife habitat areas to protect species that are sensitive to human disturbance.

13. Maintain or enhance water quality through control of runoff and use of best management practices.

C. Overlap of Critical Areas. Section 1.6, Relationship to Other Regulations, notwithstanding, if a fish or wildlife habitat classification is determined to be a wetland, the most protective measures will apply.

D. Habitat Management Plan—Classification 1 Only. A habitat management plan shall be required (Appendix C-5) if the regulated activity is within two hundred fifty feet of a Classification 1 habitat area, or identified within one thousand feet of a point location (nests, dens, etc.) for a Classification 1 habitat area. Areas identified landward of the dike are exempt from HMP requirements for aquatic species.

1. The habitat management plan will be prepared by a qualified expert in a format consistent with Appendix C-5.

2. Habitat management plans will be sent to the Washington State Department of Fish and Wildlife and other state and federal agencies with jurisdiction for comment with the SEPA checklist.

E. Habitat Protection for Classification 2. Protection for these habitat areas shall be through the development performance standards listed above.

F. Habitat Protection for Classifications 4, 5, and 6. Protection for these habitat areas shall be required through the Shoreline Management Act, the Federal Clean Water Act, and the State Hydraulic Code and/or best management practices. Within Classification 5, Type 1, 2, and 3 waters are regulated streams, as defined in WAC 222-16-030, Forest Practices Board, Definitions.

G. The stream typing system as provided in WAC 222-16-030 as hereafter amended shall be utilized for stream classification. The Department of Natural Resources stream classification maps shall be used to determine classification unless the critical areas report provides a basis for reclassification. The City may consult with the Department of Natural Resources and Washington Department of Fish and Wildlife to gain concurrence on any change in classification.

H. The following standard buffers shall apply to the waterbodies classified in F and G, above. Buffers shall be measured horizontally and perpendicular from the OHWM:

Table 3. Water Body Buffers within Shoreline Management Act Jurisdiction

Stream	RHA Buffer Width (feet)
Type S Water	Refer to Table 4
Type F Water (Type 2)	150
Type F Water (Type 3)	100
Type Np Water	50
Type Ns Water	50

Table 4. Reach-Specific Shoreline Buffers

Reach Number	Water Body	Shoreline Environment Designation	Buffer
KS-01	Columbia River	Urban Conservancy	150 ft. (Water-oriented) 200 ft. (Non-water-oriented)
KS-02	Columbia River	High-Intensity	100 ft. (Water-oriented) 150 ft. (Non-water-oriented)
KS-03	Cowlitz River	High-Intensity	100 ft. (Water-oriented) 150 ft. (Non-water-oriented)
KS-04	Cowlitz River	High-Intensity	From the OHWM to the boundary of the existing railroad right-of-way.
KS-05	Cowlitz River	Urban Conservancy	From the OHWM to the waterward toe of the levee.
KS-06	Cowlitz River	Residential	50 ft.
KS-07	Cowlitz River	Residential	From the OHWM to the waterward toe of the levee.
KS-08	Cowlitz River	High-Intensity	25 ft. (Water-oriented) 75 ft. (Non-water-oriented) From the OHWM to the waterward toe of the levee, as applicable.
KS-09	Cowlitz River	High-Intensity	From the OHWM to the waterward toe of the levee.
KS-10	Cowlitz River	High-Intensity	From the OHWM to the waterward toe of the levee.
KS-11	Owl Creek	High-Intensity	150 ft.
KS-12	Owl Creek	Urban Conservancy	From the OHWM to the boundary of the right-of-way.
KS-13	Owl Creek	High-Intensity	From the OHWM to the boundary of the right-of-way.
KS-14	Coweeman River	High-Intensity	From the OHWM to the waterward toe of the levee.
KS-15	Coweeman River	High-Intensity	From the OHWM to the waterward toe of the levee.
KS-16	Coweeman River	High-Intensity	50 ft.

Reach Number	Water Body	Shoreline Environment Designation	Buffer
KS-17	Coweeman River	Urban Conservancy	200 ft.
KS-18	Coweeman River	High-Intensity	From the OHWM to the Boundary of the right-of-way.
KS-19	Coweeman River	Residential	100 ft.
KS-20	Coweeman River	Residential	100 ft.
KS-21	Coweeman River	Residential	100 ft.
KS-22	Coweeman River	High-Intensity	From the OHWM to the waterward toe of the levee.
KS-23	Coweeman River	Urban Conservancy	From the OHWM to the waterward toe of the levee.
KS-24	Coweeman River	Residential	From the OHWM to the waterward toe of the levee.
KS-25	Coweeman River	Residential	150 ft.; Or, from the OHWM to the waterward toe of the levee, as applicable.

I. Buffer widths assume that the buffer is vegetated with a native plant community appropriate for the ecoregion. If the existing buffer is unvegetated, sparsely vegetated, or vegetated with invasive species that do not perform needed functions, the buffer should either be planted to create the appropriate plant community or the buffer should be widened to ensure that adequate functions of the buffer are provided.

J. Buffer averaging may be allowed where the applicant demonstrates:

1. There are no feasible alternatives to the site design that could be accomplished without buffer averaging;

2. Within the existing buffer there are areas with significant differences in characteristics that affect its habitat functions and would not be addressed by revegetation;

3. The buffer is increased adjacent to the higher-functioning area of habitat or more sensitive portion of the water body and decreased adjacent to the lower functioning or less sensitive portion;

4. The buffer averaging does not reduce the functions or values of the water body or riparian habitat, or the buffer averaging, in conjunction with vegetation enhancement, increases the habitat function;

5. The total area of the buffer after averaging is equal to the area required without averaging and all increases in buffer dimension for averaging are generally parallel to the water's edge; and

6. The buffer at its narrowest point is never less than seventy-five (75) percent of the required width; unless an existing human improvement that cannot be feasibly relocated is located closer to the water body.

K. The following uses are allowed in water body buffers and building setbacks in all SEDs consistent with Table 7-1 of the SMP, provided that mitigation sequencing is demonstrated and any adverse impacts to ecological functions are mitigated.

1. Water-dependent uses. Water-dependent uses, modifications and activities, including public access, may be located in shoreline buffers at the water's edge without obtaining a Shoreline Variance, provided the project submittal includes a Critical Area Report (see Appendices C-1 through C-4 of this Appendix C), and the project otherwise complies with this Program.

2. Accessories to water-dependent uses (not including parking lots). Uses, developments and activities accessory to water-dependent uses shall be located outside any applicable standard or reduced shoreline buffer unless at least one of the following is met:

   a. Proximity to the water-dependent project elements is critical to the successful implementation of the facility's purpose and the elements are supportive of the water-dependent use (e.g., a road to a boat launch facility);

   b. Recreational development with a primary use to access or enjoy the water is already legally established in parks or on other public lands, and the proposed accessory use does not conflict with or limit opportunities for other water-oriented uses; or

   c. The primary water-dependent use or activity is located on a parcel entirely or substantially encumbered by the required buffer.

   In these circumstances, uses and modifications accessory to water-dependent uses must be designed and located to minimize intrusion into the buffer. All other accessory uses, developments and activities proposed to be located in a shoreline buffer must obtain a Shoreline Variance unless otherwise allowed by other regulations in this Section or in this SMP.

3. Shoreline residential access. A private access pathway constructed of pervious materials may be installed, a maximum of four (4) feet wide, through the shoreline buffer to the OHWM. Impervious materials may be used only as needed to comply with ADA requirements to construct a safe, tiered pathway down a slope. A railing may be installed on one edge of the pathway, a maximum of 36 inches tall and of open construction. Pathways to the shoreline should take the most direct route feasible consistent with any applicable ADA standards.

4. Linear transportation and utility crossings. New linear transportation and utility crossings may be located in shoreline buffers without obtaining a Shoreline Variance, provided the project complies with all other provisions of this Program.

L. Habitat Protection for Classification 7 (see Section 3.A). Protection for state natural area preserves and natural resource conservation area habitats will be achieved through assistance from the Washington State Department of Natural Resources, Department of Fish and Wildlife, and the Department of Ecology.

M. Habitat Protection for Classification 8 (see Section 3.A). Protection for habitat provided by unintentionally created ponds shall be through Section 1.2, Exclusions from the Critical Areas Regulations.

4. Frequently Flooded Critical Areas

A. Frequently Flooded Area Classifications and Designation. All lands identified in Section 18.12.070 of the Kelso Municipal Code, as amended, and approved by the City, as within the one-hundred-year floodplain are designated as frequently flooded areas.

B. Development Limitations. All development within designated frequently flooded areas shall comply with Chapter 18.12 of the Kelso Municipal Code (KMC), in effect on the date that this SMP was formally approved by the Department of Ecology, with the exception that development subject to KMC 18.12.320(B) must also be demonstrated to:

   1. Not cause further limitation of channel migration; and

   2. Include appropriate protection of ecological functions.

5. Geologic Hazard Areas

This Section acknowledges the application of other relevant codes and regulations, which may require mutual compliance.

A. For all regulated activities proposed within designated landslide, erosion, seismic and mine hazard areas, a geotechnical assessment or an erosion hazard assessment prepared by a qualified expert shall be submitted and coordinated with International Building Code requirements. (See Appendices C-1 and C-2.)

B. If the geotechnical assessment indicates an inability of the site to accommodate the proposed activity without special measures or precautions as determined by a qualified expert, the City may require a geotechnical report. (See Appendix C-3.)

C. The following define the different types of geologic hazard areas:

1. Erosion Hazard Areas. Erosion hazard areas are those areas identified by the presence of soils that are recognized as having a severe erosion hazard by the Natural Resources Conservation Service, Cowlitz Area, Washington.

2. Landslide Hazard Areas. Landslide hazard areas are those areas meeting any of the following criteria:

a. Areas of historic failure, such as areas designated as quaternary slumps, earthflows, mudflows, or landslides;

b. Any area with the following:

i. Steep hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock, that has or exhibits evidence of springs or groundwater seepage;

ii. Slopes that are parallel or sub-parallel to planes of weakness, such as bedding planes, joint systems, and fault planes;

iii. Slopes having gradients greater than eighty percent and subject to rock fall during seismic shaking;

iv. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action;

v. Areas located in a canyon, on an active alluvial fan, or that are presently subject to inundation by debris flows or catastrophic flooding;

vi. Areas identified as being medium or high probability of slope instability based on Washington State Department of Natural Resources soils based stability model or the most current map adopted by the city and filed with the city clerk;

vii. Areas identified as being medium or high probability of slope instability based on field visits along with reasonable assumption of city planning staff or other qualified experts with localized knowledge of present site conditions.

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 International Building Code (IBC/IRC).

4. Mine Hazard Areas. For the purposes of this classification mine hazard areas are:

   a. Abandoned mines and/or workings where locations are known.

   b. Abandoned mines and/or workings where exact locations are unknown, but based upon the best available information there is good cause to believe it is within an area that may be reasonably delineated.

5. Volcanic Hazard Areas. For the purposes of this classification, all volcanic mudflow hazard areas shall be identified as the five-hundred-year floodplain areas identified in FEMA maps.

D. Development within geologic hazard areas shall meet the following requirements:

1. Development Standards for Landslide Hazard Areas and Erosion Hazard Areas. Any allowed or regulated activity on areas identified as landslide or erosion hazards or their buffers shall conform to the following standards:

   a. Buffers.

      i. An undisturbed fifty-foot buffer, as measured on the surface, is required from the top, toe, and along all sides of any existing landslide or eroded area, within a critical area;

      ii. Based on the results of the geotechnical assessment, the director may increase or decrease the buffer or require additional areas including buffers as indicated; and

      iii. The buffer shall be clearly staked before and during any construction or clearing.

b. General Design Guidelines.

   i. Structures should be clustered where possible to reduce disturbance and removal of vegetation;

   ii. Foundations should conform to the natural contours of the slope; and

   iii. Roads, walkways, and parking areas should be designed to parallel the natural contours of the site.

c. Grading.

   i. Clearing, grading, and other construction activities shall not aggravate or result in slope instability or surface sloughing;

   ii. Undergrowth shall be retained to the maximum extent feasible;

   iii. No dead vegetation (slash), fill, or other foreign material shall be placed within a landslide or erosion hazard area, other than that approved for bank stabilization or if such fill is consistent with authorized activities specified in a geotechnical report; and

   iv. Minimize ground disturbance to the maximum extent feasible by not allowing clearing from May 1st to October 1st of every year.

d. Erosion Control.

   i. There shall be minimum disturbance of trees and vegetation in order to reduce erosion and maintain existing stability of hazard areas;

   ii. Vegetation removal on the slopes of banks 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 site prior to the placement of fill;

   iv. Thinning of limbs of individual trees is preferred over tree removal as a means to provide a view corridor; and

   v. Vegetative cover or engineered ground covers shall be placed on any disturbed surface to the extent feasible.

e. Drainage.

   i. 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, and provided with an energy-dissipating device

at the toe for discharge to a swale or other acceptable natural drainage areas; and

ii. Stormwater retention and detention systems, including percolation systems utilizing buried pipe, require a geotechnical assessment that indicates such a system shall not affect slope stability and require the systems to be designed by a licensed civil engineer. The licensed civil engineer shall also certify that the systems are installed as designed.

f. Sewage Disposal System Drainfields. For the purpose of landslide or hazard areas, the sewage disposal drainfields shall be located outside of the hazard area buffer, unless otherwise justified by a qualified geotechnical engineer. The septic system drainfield must be in compliance with all local government health regulations.

2. Development Standards—Seismic Hazard Areas. All development within areas that meet the classification for seismic hazard areas shall comply with the International Building Code. A critical areas permit is not required by these regulations for seismic hazards.

3. Development Standards—Mine Hazard Areas. Development adjacent to a mine hazard area is prohibited unless the applicant can demonstrate the development will be safe. If a proposal is located adjacent to a mine hazard area, a geotechnical assessment may be required.

4. Development Standards—Volcanic Hazard Areas. Development shall comply with existing Federal Emergency Management Agency regulations for floodplain management. A critical areas permit is not required by these regulations for development in a volcanic hazard area.

5. Designations. Lands in the city meeting the classification criteria for geologic hazard areas are hereby designated, under RCW 36.70A, as geologic hazard areas designated on the city's geologic hazard map.

6. Critical Aquifer Recharge Areas

A. Classification—Critical Aquifer Recharge Areas

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

2. High Susceptibility. Areas, identified on the aquifer recharge map, with a very high susceptibility to contamination of the underlying aquifer due to high soil permeability and high water table.

B. Regulated Activities. The following activities are regulated in critical aquifer recharge areas located within jurisdictional shoreline areas:

1. Aboveground and Underground Storage Tanks and Vaults. Aboveground or underground storage tanks or vaults for the storage of hazardous substances or dangerous wastes as defined in WAC 173-303, Dangerous Waste Regulations, or any other substances, solids, or liquids in quantities identified by the county health department, consistent with WAC 173-303, as a risk to groundwater quality shall conform to the Uniform Fire Code, WAC 173-360, and underground storage tank regulations.

2. Utility Transmission Facilities. Utility facilities that carry liquid petroleum products or any other hazardous substance as defined in WAC 173-303.

3. Land Divisions. Subdivisions, short subdivisions and other divisions of land will be evaluated for their impact on groundwater quality within the aquifer recharge areas. The following measures may be required:

a. An analysis of the potential contaminate loading;

b. Alternative site designs, phased development and/or groundwater quality monitoring;

c. Open spaces within development proposals; and/or

d. Community/public water systems and community drainfields.

C. Hydrogeologic Testing and Site Evaluation.

1. Hydrogeologic testing and site evaluation may be required for any regulated activity. If federal or state regulations require hydrogeologic testing, the City may waive the requirement for additional testing; provided, the director has adequate factual information to evaluate the proposal.

2. If hydrogeologic testing and site evaluation are required, they shall be conducted by a qualified expert and must include but not be limited to the requirements in Appendix C-6.

3. Development that negatively impacts the quality of critical aquifer recharge areas shall be prohibited unless the hydrogeologic testing and site evaluation satisfactorily demonstrate that significant adverse impacts will be mitigated.

7. Mitigation Plan Performance Standards

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

A. Mitigation in order of preference is as follows:

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

B. When a mitigation plan is required it shall be approved by the City prior to any site disturbance. The City may seek assistance from resource agencies prior to making a decision. At a minimum the plan shall meet the following standards:

1. The mitigation plan shall be prepared by qualified expert and shall be acceptable to the City;
    a. The mitigation plan shall include:
        i. An assessment of the existing function and values of the critical area;
        ii. The functions and values that will be lost; and
        iii. The critical area's expected functions and values after mitigation.
    b. Objectives shall be stated in measurable terms, if feasible;
    c. The mitigation plan shall specify and describe how functions and values will be replaced;
    d. 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;

e. 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;

f. 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; and

g. When considering off-site mitigation, preference should be given to using alternative mitigation, such as a mitigation bank, an in-lieu fee program, or advance mitigation.

C. Restoration shall be required when a critical area has been altered prior to project approval.

APPENDIX C-1 — Geotechnical Assessments

A. The applicant must submit a geotechnical assessment prepared by a qualified expert.

B. The geotechnical assessment shall typically include at a minimum the following:

   1. A discussion of the surface and subsurface geologic conditions of the site;

   2. A site plan of the area delineating all areas of the site subject to landslide hazards based on mapping and criteria; and

   3. A contour map of the proposed site, at a reasonable scale (not smaller than one inch equals two hundred feet) which clearly delineates slopes for ranges between fifteen and twenty-nine percent and thirty percent and greater, and includes figures for area coverage of each slope category on the site. If any springs or seeps are present, their location should be indicated on the map.

C. Site Evaluation. Evaluation of the ability of the site to accommodate the proposed activity.

APPENDIX C-2 —Erosion Hazard Assessments (Stream/Hillsides)

The applicant must submit an erosion hazard assessment prepared by a qualified expert.

A. The erosion hazard assessment shall typically include, at a minimum, the following:

   1. An overview of existing channel characteristics and stream hydraulics at the subject property;

   2. An assessment of the probability for stream induced erosion to occur on the subject property and the estimated extent of the property that would be affected;

   3. A site map of the property, drawn to scale, delineating the relationship of the stream to the property, and existing erosion areas and/or potential erosion areas, and the proposed development, including structural dimensions;

   4. A cross-section map, drawn to scale and at five-foot contour intervals from the edge of the river's surface to the furthest landward boundary of the property, and including the proposed development; and

   5. Site Evaluation. Evaluation of the ability of the site to accommodate the proposed activity.

B. Hillsides. In addition to the basic critical area report requirements, a critical area report for an erosion hazard or landslide hazard area associated with hillsides shall include the following information at a minimum:

   1. Site Plan. The report shall include a copy of the site plan for the proposal showing:

      a. The height of slope, slope gradient, and cross section of the project area;

      b. The location of springs, seeps, or other surface expressions of groundwater on or within two hundred feet of the project area or that have potential to be affected by the proposal. A distance of two hundred feet is suggested so that geological features that might affect the proposal are included in the critical area report. It may be necessary to include features further than two hundred feet from the project area in some instances, such as a series of related geological features that extend more than two hundred feet; and

      c. The location and description of surface water runoff.

   2. Geotechnical Analysis. The geotechnical analysis shall specifically include:

      a. A description of the extent and type of vegetative cover;

b. An estimate of load capacity including surface and groundwater conditions, public and private sewage disposal systems, fills and excavations and all structural development;

c. An estimate of slope stability and the effect construction and placement of structures will have on the slope over the estimated life of the structure;

d. An estimate of the bluff retreat rate that recognizes and reflects potential catastrophic events such as seismic activity or a one-hundred-year storm event;

e. Consideration of the run-out hazard of landslide debris and/or the impacts of landslide run-out on down slope properties;

f. A study of slope stability including an analysis of proposed angles of cut and fill and site grading;

g. Recommendations for building limitations, structural foundations, and an estimate of foundation settlement; and

h. An analysis of proposed surface and subsurface drainage, and the vulnerability of the site to erosion.

6. Erosion and Sediment Control Plan. For any development proposal on a site containing an erosion hazard area, an erosion and sediment control plan shall be required. The erosion and sediment control plan shall be prepared in compliance with requirements set forth in the locally adopted stormwater management regulations.

7. Drainage Plan. The report shall include a drainage plan for the collection, transport, treatment, discharge and/or recycle of water prepared in accordance with the locally adopted surface water management plan. The drainage plan should consider on-site septic system disposal volumes where the additional volume will affect the erosion or landslide hazard area.

8. Mitigation Plans. Hazard and environmental mitigation plans for erosion and landslide hazard areas shall include the location and methods of drainage, surface water management, locations and methods of erosion control, a vegetation management and/or replanting plan and/or other means for maintaining long-term soil stability.

9. Monitoring Surface Waters. If the community development director determines that there is a significant risk of damage to downstream receiving waters due to potential erosion from the site, based on the size of the project, the proximity to the receiving waters, or the sensitivity of the receiving waters, the critical area report shall include a plan to monitor the surface water discharge from the site.

The monitoring plan shall include a recommended schedule for submitting monitoring reports to the city of Kelso.

APPENDIX C-3—Geotechnical Report

The geotechnical report shall typically include at a minimum the following. Technical justification shall be provided where the qualified expert does not deem any information applicable.

A. Site Geology Information Required.

1. Topographic Data. Contour map of proposed site at a scale of one inch equals two hundred feet, which 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, groundwater 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.

B. Geotechnical Engineering Information Required.

1. Slope stability studies and opinion of slope stability;

2. Proposed angles of cut and fill slopes and site grading requirements;

3. Structural foundation requirements and estimated foundation settlements;

4. Soil compaction criteria;

5. Proposed surface and subsurface drainage;

6. Lateral earth pressures;

7. Erosion vulnerability of site;

8. Suitability for fill;

9. Laboratory data and soil index properties for soil samples; and

10. Building limitations.

C. Site Evaluation. Evaluation of the ability of the site to accommodate the proposed activity.

Where a valid geotechnical report has been prepared within the last five years for a specific site, and where the proposed activity and surrounding site conditions are unchanged, said report may be utilized and a new assessment may not be required.

APPENDIX C-4 —Wetland critical areas report

A wetland critical areas report shall include the following. If the qualified expert deems any of the following information to be inapplicable, he or she shall provide technical justification.

A. Narrative. The report narrative must include all of the following:

1. The name and contact information of the applicant;
2. The name, qualifications, and contact information of the primary author(s) of the wetland critical area report;
3. Location information (legal description, parcel number and address);
4. Site characteristics, including topography, total acreage, delineated wetland acreage, other water bodies, vegetation, soil types, etc.;
5. Identification and characterization of all critical areas, water bodies, shorelines, floodplains, and buffers on or adjacent to the proposed project area. For areas off site of the project site, estimate conditions within 300 feet of the project boundaries using the best available information;
6. Identification of the wetland's rating as defined in these regulations;
7. Analysis of functions and values of existing wetlands and buffers, including flood control, water quality, aquifer recharge, fish and wildlife habitat, and hydrologic characteristics;
8. A complete description of the proposed project and its potential impacts, including an estimation of acreages of impacts to wetlands and buffers based on the field delineation and survey, and any impacts due to hydroperiod alterations;
9. Discussion of project alternatives, including any feasible options for total avoidance of impacts to wetland areas and buffers;
10. A wetland buffer width recommendation and rationale for all wetlands on or adjacent to the site, if different from buffers required in these regulations;
11. If mitigation for wetland impacts is proposed, a description and analysis of that mitigation; and
12. A conservation strategy for habitat and native vegetation that addresses methods to protect and enhance on-site habitat and wetland functions.

B. Vicinity map drawn to scale and including a north arrow, public roads, and other known landmarks in the vicinity.

C. National Wetlands Inventory Map (U.S. Fish and Wildlife Service) and/or a Cowlitz County wetland inventory map identifying wetlands on or adjacent to the site.

D. Site map drawn to a usable scale, one inch equals one hundred feet or better, and including a north arrow and all of the following requirements:

1. Site boundary/property lines and dimensions;

2. Wetland boundaries based upon a qualified wetland professional's delineation, and depicting sample points and differing wetland types if any;

3. Recommended wetland buffer boundary;

4. Buffers for off-site critical areas that extend onto the project site;

5. Internal property lines such as rights-of-way, easements, etc.;

6. Existing physical features of the site, including buildings and other structures, fences, roads, utilities, parking lots, etc.;

7. The location of the development proposal, including grading and clearing limits; and

8. Topographical variations.

E. An on-site wetland delineation report, including data sheets, prepared by a qualified expert. The wetland boundaries shall be staked and flagged. The report shall include:

1. A description of the methodologies used to conduct the wetland delineations and ratings, including references;

2. Photos documenting that the wetland boundaries have been staked and flagged; and

3. Wetland rating forms, including a description of and score for each function, per Wetland Ratings Section (Section 2.B) of these regulations; hydrogeomorphic classification; wetland acreage based on a professional survey from the field delineation (acreages for on-site portion and estimates for entire wetland area including off-site portions, if field delineation of the off-site portion is infeasible); Cowardin classification of vegetation communities; habitat elements; soil conditions based on site assessment and/or soil survey information; and to the extent possible, hydrologic information such as location and condition of inlets/outlets (if they can be legally accessed), estimated water depths within the wetland, and estimated hydroperiod patterns based on visual cues (e.g., algal mats, drift lines, flood debris, etc.). Provide acreage estimates, classifications, and ratings based on entire wetland complexes, not only the portion present on the proposed project site;

F. Documentation of any other field work performed on the site, e.g., baseline hydrologic data, etc.

G. A copy of the site plan sheet(s) for the project must be included with the written report and must include, at a minimum:

1. Maps (to scale) depicting delineated and surveyed wetland and required buffers on site, including buffers for off-site critical areas that extend onto the project site; the development proposal; other critical areas; grading and clearing limits; and areas of proposed impacts to wetlands and/or buffers (include square footage estimates).

2. A depiction of the proposed stormwater management facilities and outlets (to scale) for the development, including estimated areas of intrusion into the buffers of any critical areas.

APPENDIX C-5 —Habitat Management Plan Requirements

At a minimum, the habitat management plan shall typically contain the following information. Technical justification shall be provided where the qualified expert does not deem any information applicable.

A. 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.

B. A description of the critical wildlife habitat for the identified species known or expected to be located on-site or immediately adjacent to the subject property.

C. A site plan that clearly identifies and delineates critical fish and wildlife habitats found on-site or immediately adjacent to the subject property.

D. An evaluation of the project's effects on critical fish and wildlife habitat both on and adjacent to the subject property.

E. A summary of any federal, state, or local management recommendations that have been developed for the critical fish or wildlife species or habitats located at the site.

F. A statement of measures proposed to preserve existing habitats and restore area degraded as a result of proposed activities.

G. A description of proposed measures that mitigate the impacts of the project.

H. An evaluation of ongoing 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 C-6 —Hydrogeologic Testing and Site Evaluation

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

A. A characterization of the site and its relationship to the aquifer and evaluation of the ability of the site to accommodate the proposed activity.

B. A discussion of the effects of the proposed project on groundwater quality and quantity.

C. Recommendations on appropriate mitigation, if any, to assure that there shall be no significant degradation of groundwater quality or quantity.

D. In addition, the testing and evaluation must include, but not be limited to, an analysis of:

    1. Geologic setting and soils information of 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 groundwater flow, direction and gradient.

    6. Surface water locations within one thousand feet of the site.

APPENDIX D

Shoreline 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;

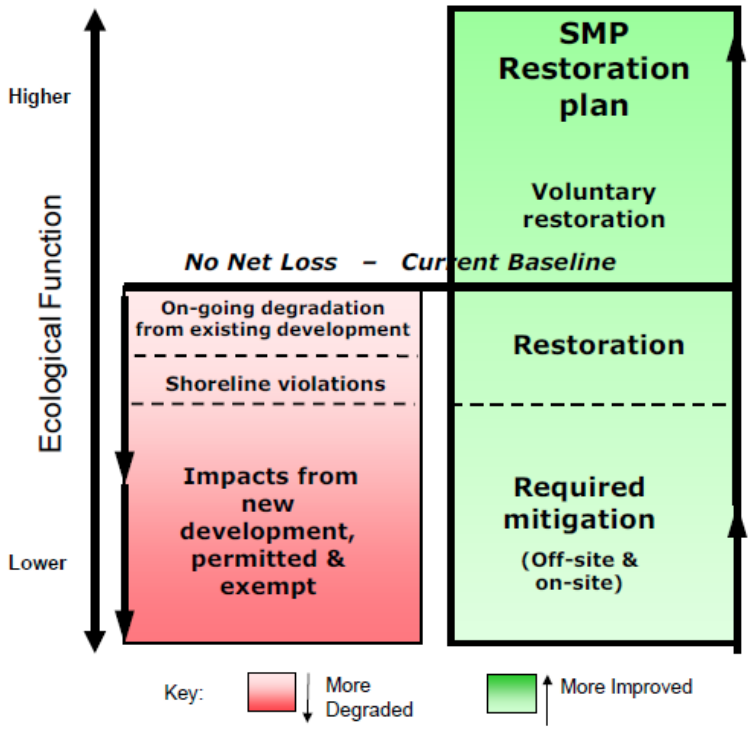

Figure 1. Diagram of the role of restoration relative to achieving the SMP standard of "no net loss" of ecological functions (Ecology 2010)

(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.

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9. LIST OF ACRONYMS AND ABBREVIATIONS

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

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

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.

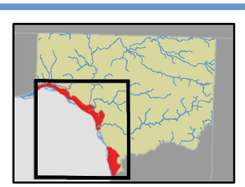
Data sources: Cowlitz County, City of Castle Rock, City of Woodland, Lower Columbia Fish Recovery Board, Habitat Work Schedule, Department of Ecology, Tetra Tech, PRISM, USGS, Interfluve, PacifiCorp, The Watershed Company.

0 1 2 4 Miles

Date: 6/24/2013
Name: Restoration_Plan_2013-06-11

The Watershed Company
Parametrix

All features depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/ verify information shown on this map.



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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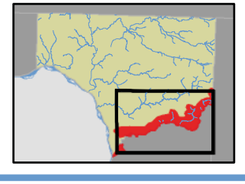

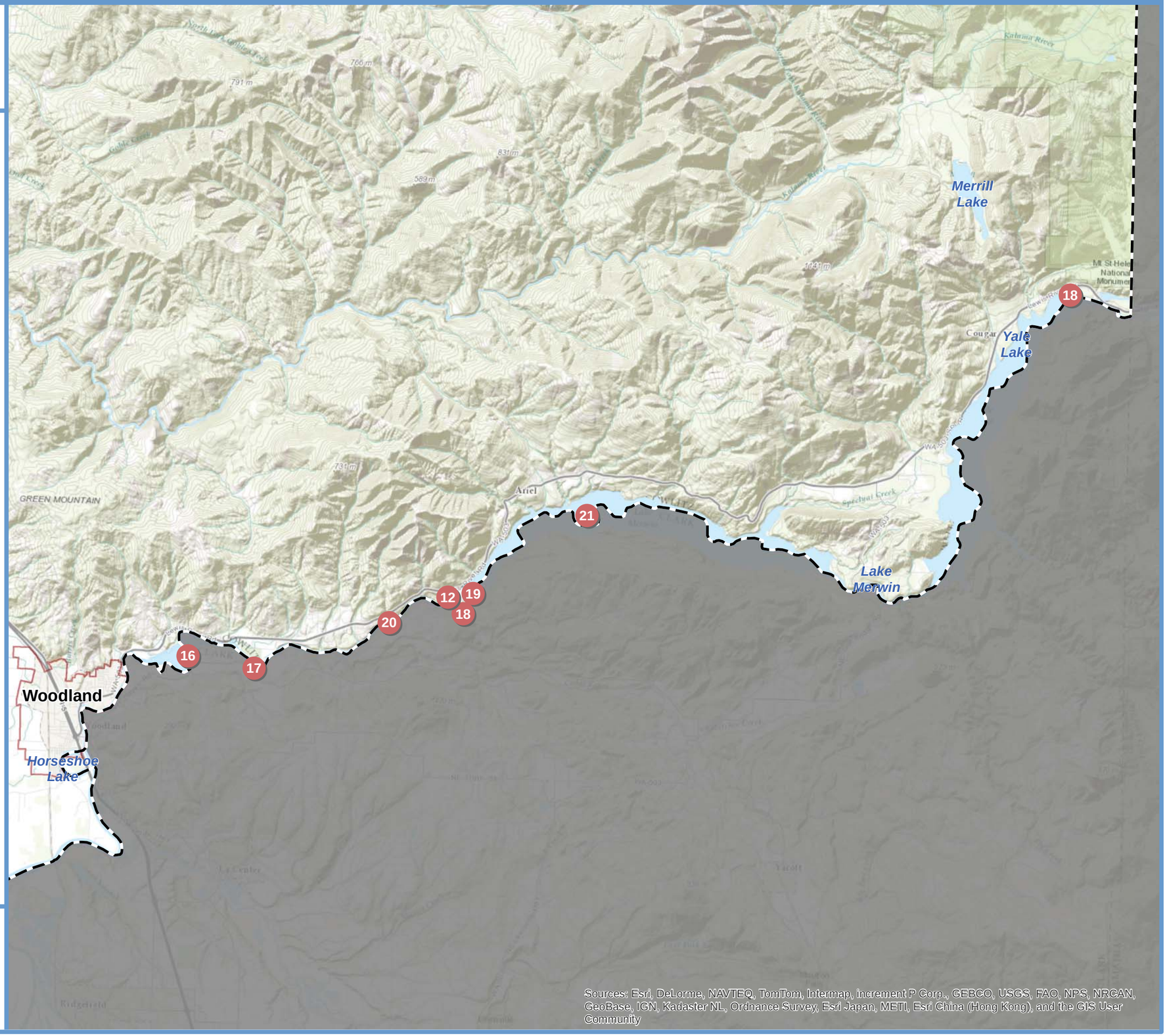

RESTORATION PLAN

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		

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0 0.3 0.6 1.2 Miles

Date: 6/24/2013
Name: Restoration_Plan_2013-06-11

THE WATERSHED COMPANY

Parametrix

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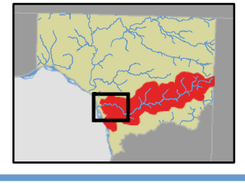

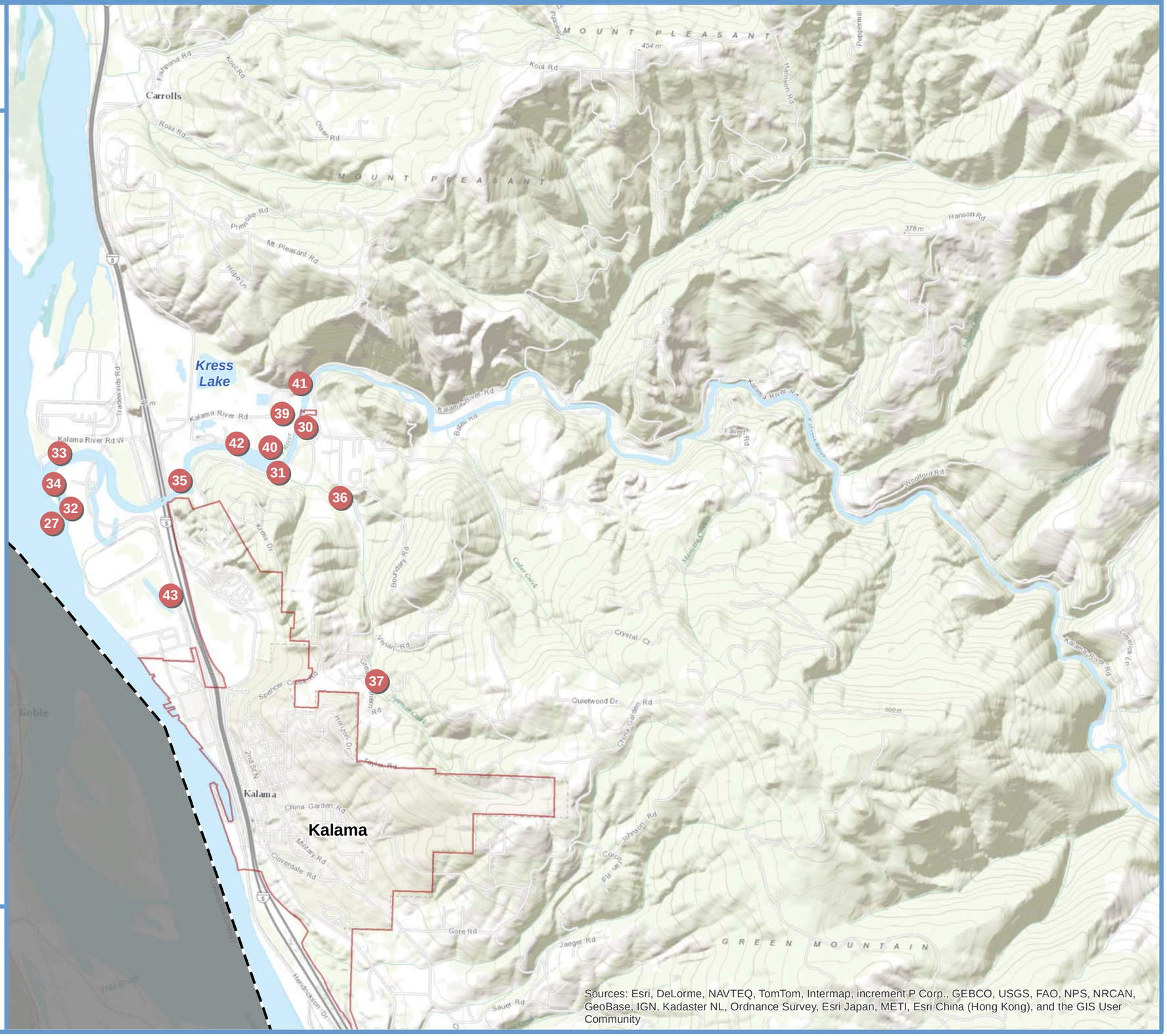

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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
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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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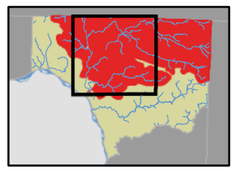

RESTORATION PLAN

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

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.

0 0.75 1.5 3 Miles

Date: 6/24/2013
Name: Restoration_Plan_2013-06-11

THE WATERSHED COMPANY
Parametrix

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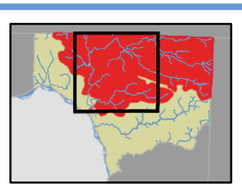

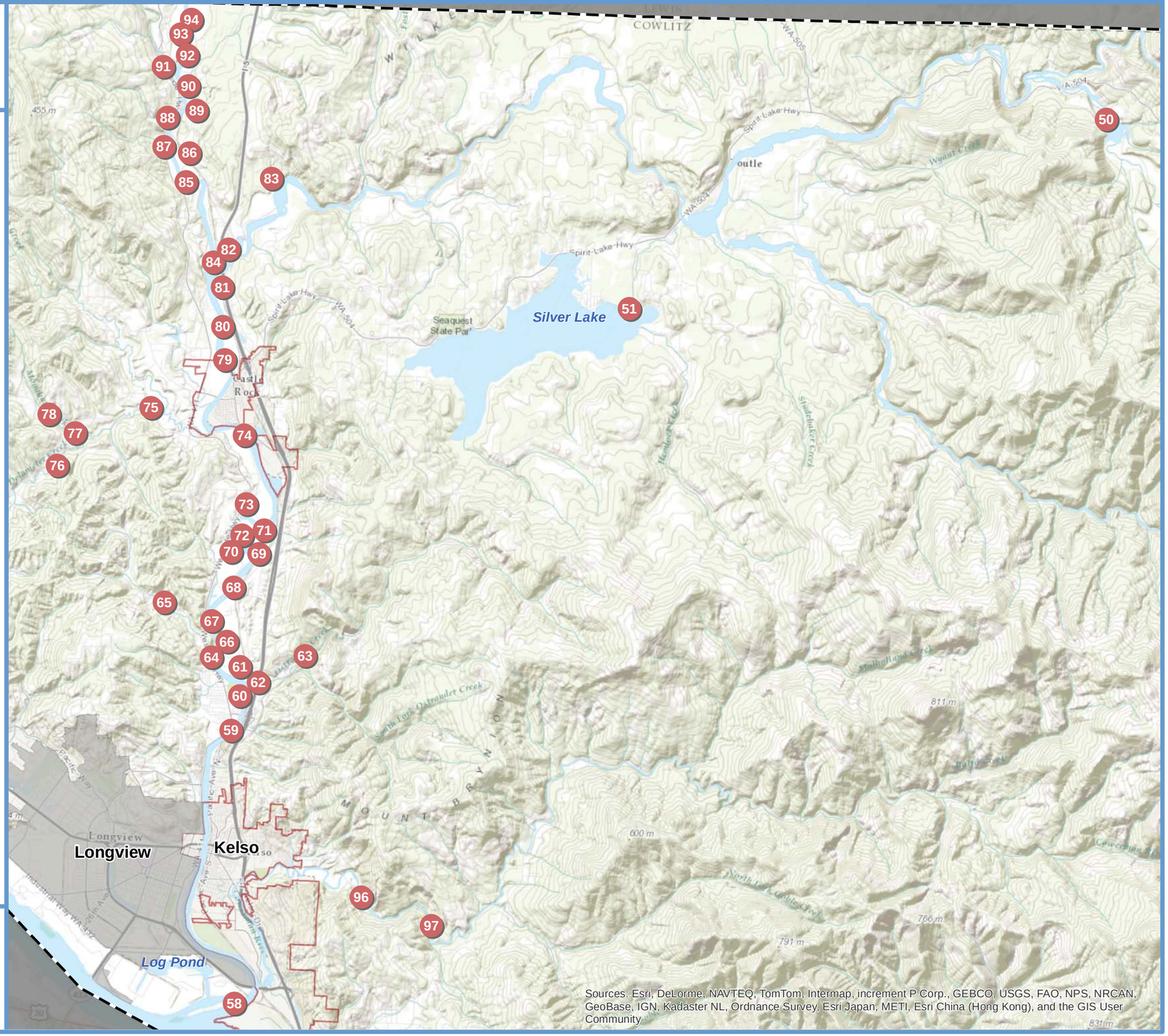

RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

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

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The Watershed Company
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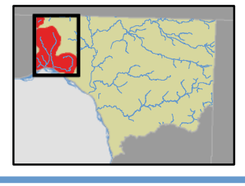

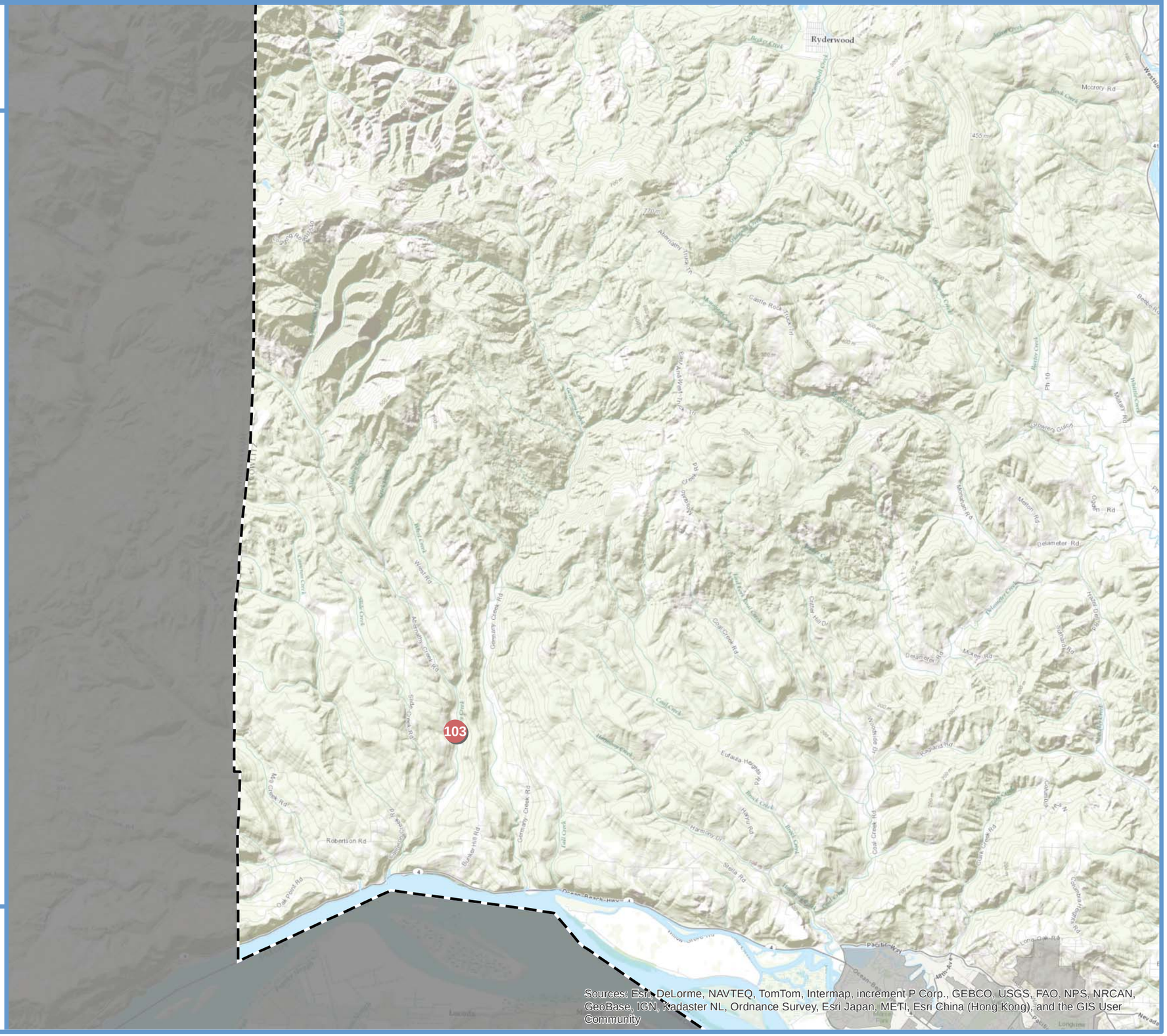

RESTORATION PLAN

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
- R Research and investigation
- G Regulatory
- O Outreach

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0 0.15 0.3 0.6 Miles

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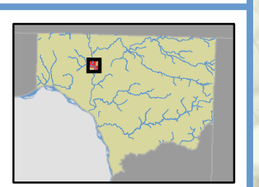

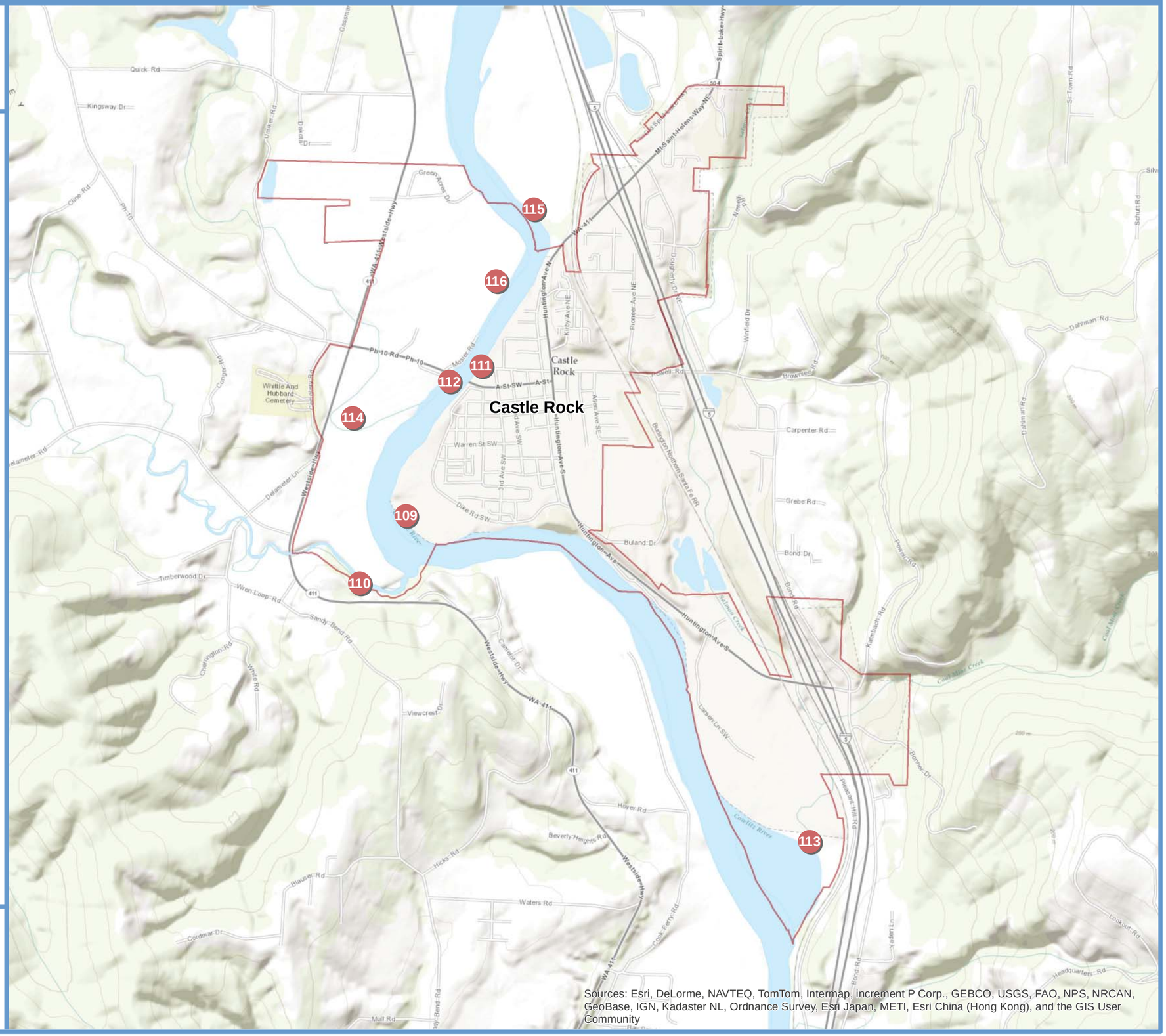

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community

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
- G Regulatory
- O Outreach

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0 0.15 0.3 0.6 Miles

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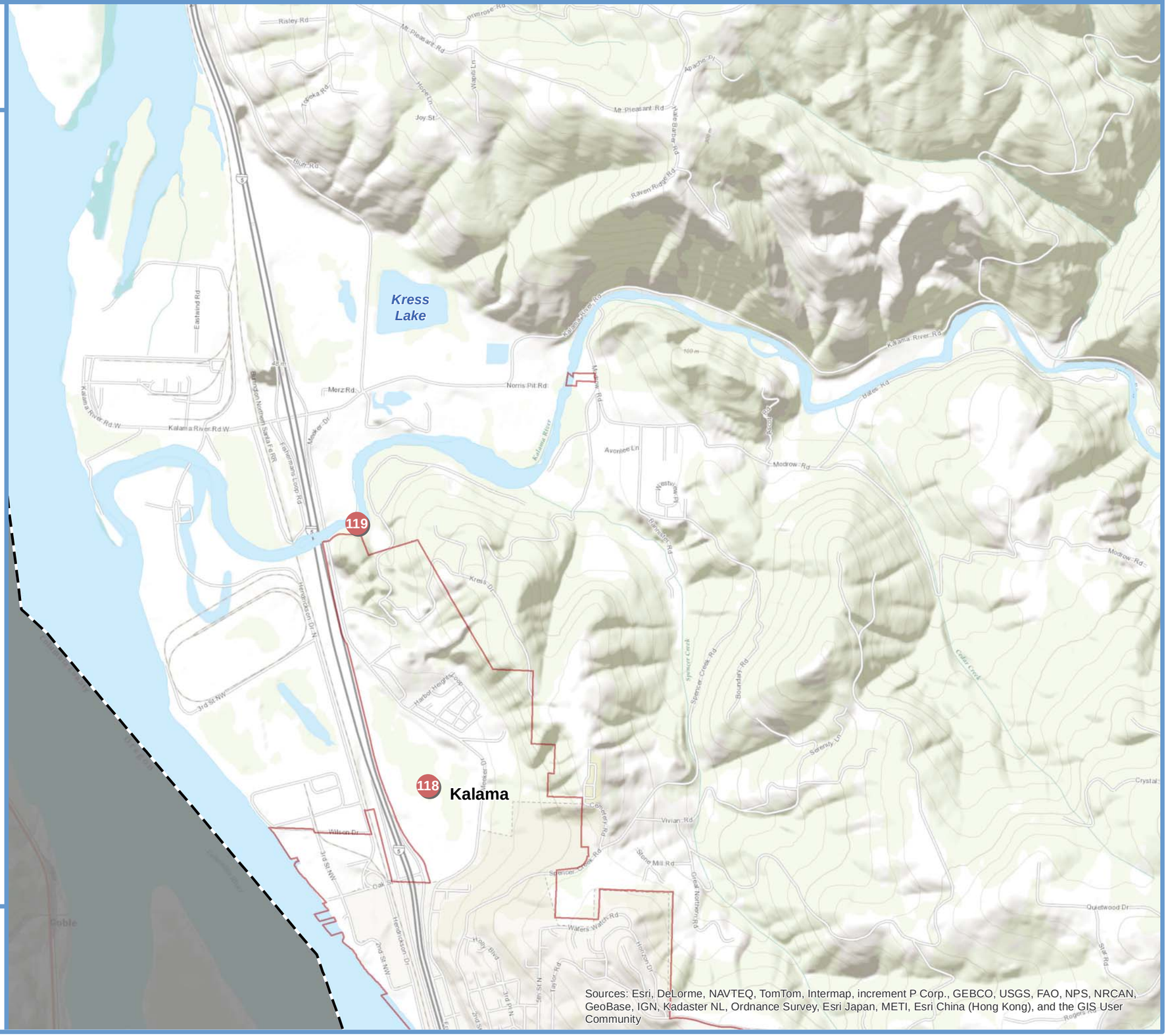

RESTORATION PLAN

Cowlitz County Partnership
Shoreline Master Program Update
COWLITZ COUNTY · CASTLE ROCK · KALAMA · KELSO · WOODLAND

COWLITZ COUNTY SHORELINE MASTER PROGRAM

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
W	Water quality	R	Research and investigation
M	Management	G	Regulatory
Y	Hydrologic	O	Outreach
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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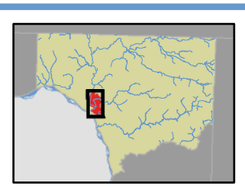

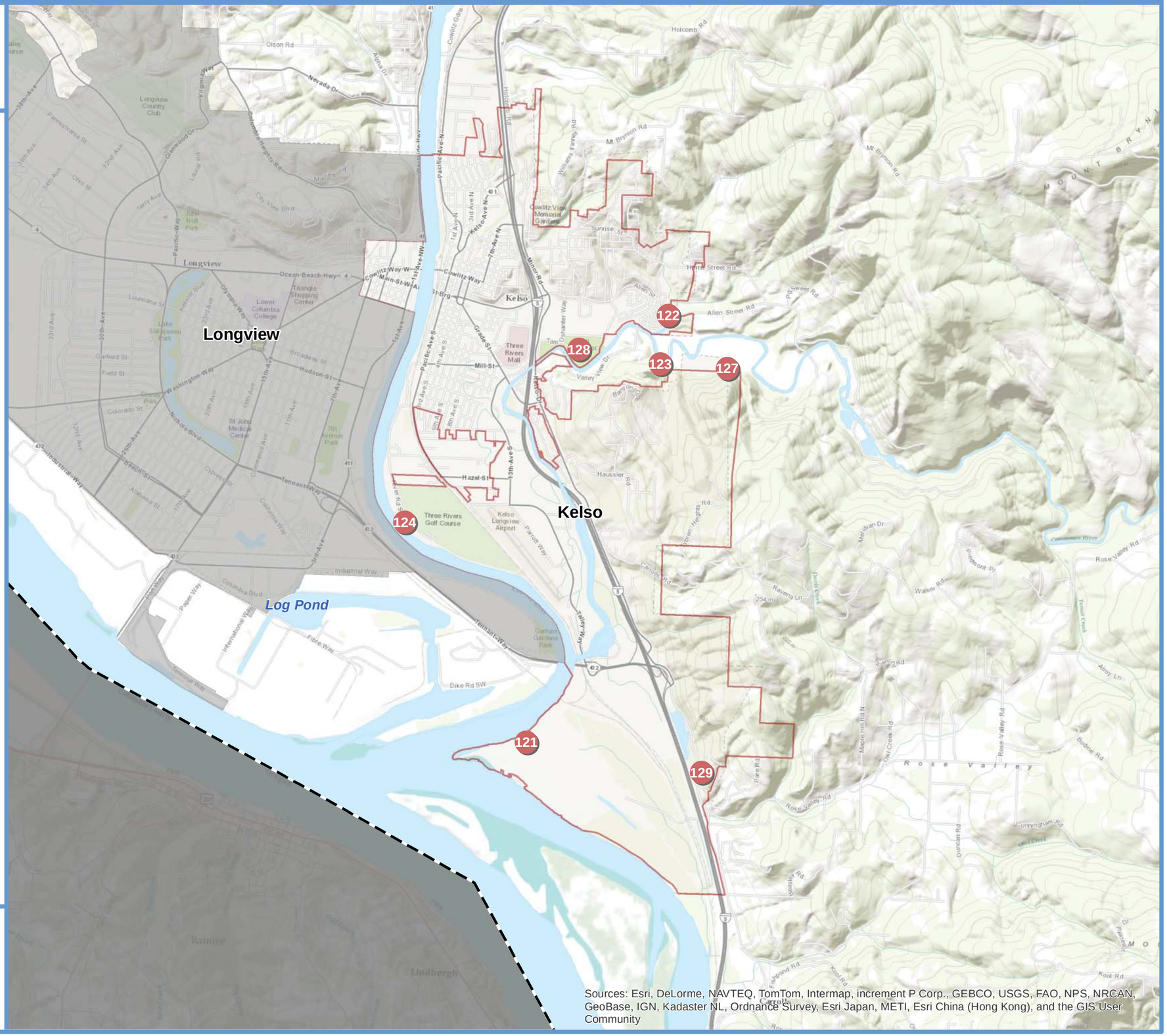

RESTORATION PLAN

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
Y	Hydrologic	O	Outreach
P	Fish passage		

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0 0.175 0.35 0.7 Miles

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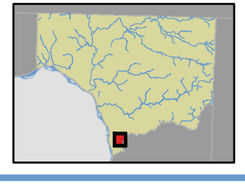

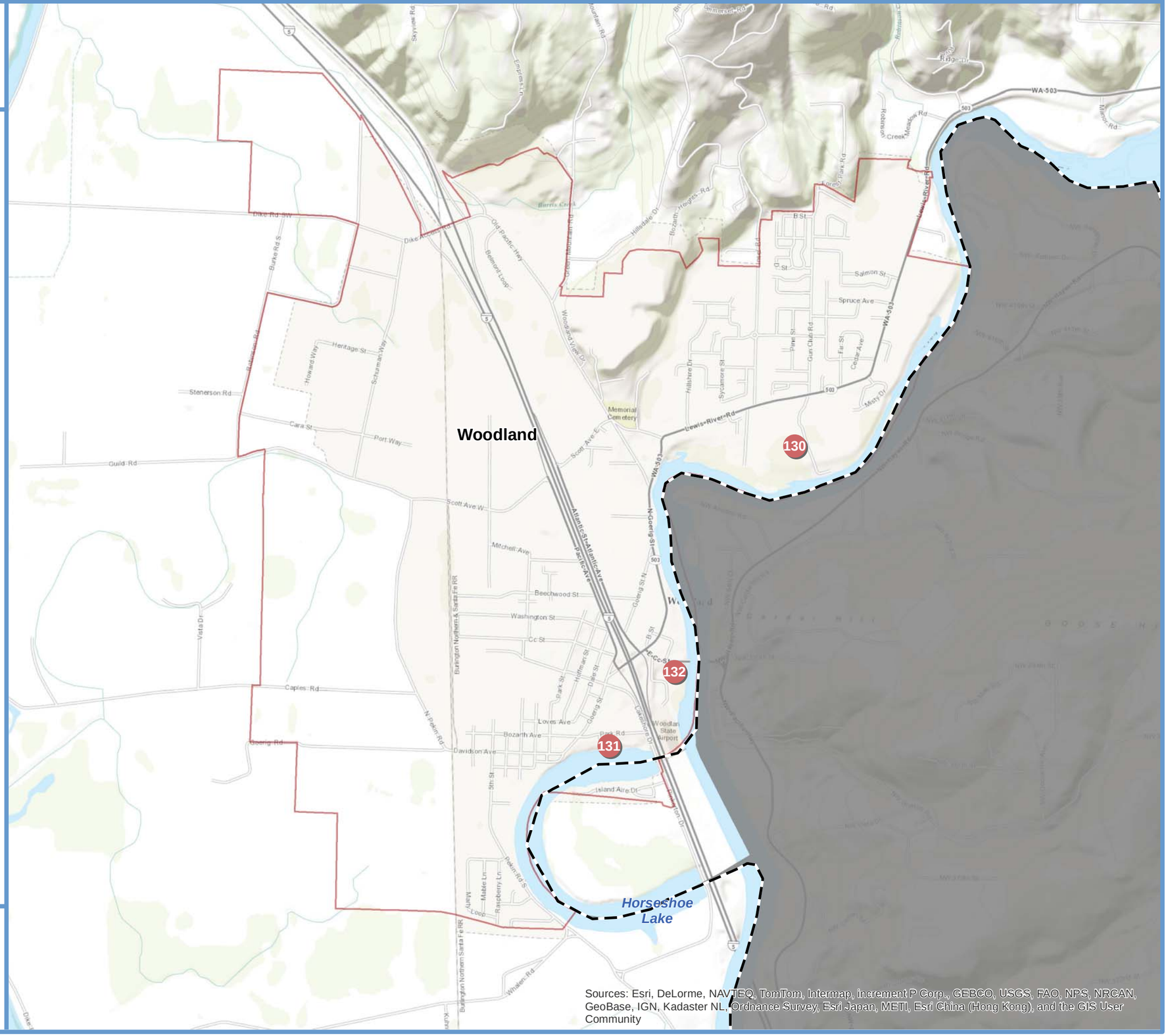

APPENDIX E

Exemptions from a Shoreline Substantial Development Permit

Introduction

Substantial development as defined by this program and RCW 90.58.030 requires approval from the City through a Shoreline Substantial Development Permit (SSDP) unless:

A. The substantial development is below the threshold levels established in WAC 173-27-040(2), Developments Exempt from Substantial Development Permit Requirement, listed below; or

B. The substantial development is one of the actions described in WAC 173-27-045, Developments Not Subject to the Shoreline Management Act, listed below.

In all cases, if WAC 173-27-040 or WAC 173-27-045 are amended, the amended version supersedes the lists of exemptions provided below.

Any person claiming exemption from the permit requirements of this Program as a result of the exemptions specified in this section shall make application for a Shoreline Letter of Exemption (SLE) as described in Chapter 8 of this Program.

If any part of a proposed development is not eligible for exemption, then a shoreline permit is required for the entire proposed development project.

Any development which occurs within the regulated shorelines of the state, whether it requires a permit or not, must be consistent with the intent of the Act and this Program.

WAC 173-27-040(2) –

Developments Exempt from Substantial Development Permit Requirement

[Statutory Authority: RCW 90.58.030 (3)(e), 90.58.045, 90.58.065, 90.58.140(9), 90.58.143, 90.58.147, 90.58.200, 90.58.355, 90.58.390, 90.58.515, 43.21K.080, 71.09.250, 71.09.342, 77.55.181, 89.08.460, chapters 70.105D, 80.50 RCW. WSR 07-02-086 (Order 05-12), § 173-27-040, filed 1/2/07, effective 2/2/07. Statutory Authority: RCW 90.58.140(3) and [90.58].200. WSR 96-20-075 (Order 95-17), § 173-27-040, filed 9/30/96, effective 10/31/96.]

(2) The following developments shall not require substantial development permits:

(a) Any development of which the total cost or fair market value, whichever is higher, does not exceed five thousand dollars, if such development does not materially interfere with the normal public use of the water or shorelines of the state. The dollar threshold established in this subsection must be adjusted for inflation by the office of financial management every five years, beginning July 1, 2007, based upon changes in the consumer price index during that time period. "Consumer price index" means, for any calendar year, that year's annual average consumer price index, Seattle, Washington area, for urban wage earners and clerical workers, all items, compiled by the Bureau of Labor and Statistics,

United States Department of Labor. The office of financial management must calculate the new dollar threshold and transmit it to the office of the code reviser for publication in the *Washington State Register* at least one month before the new dollar threshold is to take effect. For purposes of determining whether or not a permit is required, the total cost or fair market value shall be based on the value of development that is occurring on shorelines of the state as defined in RCW 90.58.030 (2)(c). The total cost or fair market value of the development shall include the fair market value of any donated, contributed or found labor, equipment or materials;

(b) Normal maintenance or repair of existing structures or developments, including damage by accident, fire or elements. "Normal maintenance" includes those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition. "Normal repair" means to restore a development to a state comparable to its original condition, including but not limited to its size, shape, configuration, location and external appearance, within a reasonable period after decay or partial destruction, except where repair causes substantial adverse effects to shoreline resource or environment. Replacement of a structure or development may be authorized as repair where such replacement is the common method of repair for the type of structure or development and the replacement structure or development is comparable to the original structure or development including but not limited to its size, shape, configuration, location and external appearance and the replacement does not cause substantial adverse effects to shoreline resources or environment;

(c) Construction of the normal protective bulkhead common to single-family residences. A "normal protective" bulkhead includes those structural and nonstructural developments installed at or near, and parallel to, the ordinary high water mark for the sole purpose of protecting an existing single-family residence and appurtenant structures from loss or damage by erosion. A normal protective bulkhead is not exempt if constructed for the purpose of creating dry land. When a vertical or near vertical wall is being constructed or reconstructed, not more than one cubic yard of fill per one foot of wall may be used as backfill. When an existing bulkhead is being repaired by construction of a vertical wall fronting the existing wall, it shall be constructed no further waterward of the existing bulkhead than is necessary for construction of new footings. When a bulkhead has deteriorated such that an ordinary high water mark has been established by the presence and action of water landward of the bulkhead then the replacement bulkhead must be located at or near the actual ordinary high water mark. Beach nourishment and bioengineered erosion control projects may be considered a normal protective bulkhead when any structural elements are consistent with the above requirements and when the project has been approved by the department of fish and wildlife.

(d) Emergency construction necessary to protect property from damage by the elements. An "emergency" is an unanticipated and imminent threat to public health, safety, or the environment which requires immediate action within a time too short to allow full compliance with this chapter. Emergency construction does not include development of new permanent protective structures where none previously existed. Where new protective

structures are deemed by the administrator to be the appropriate means to address the emergency situation, upon abatement of the emergency situation the new structure shall be removed or any permit which would have been required, absent an emergency, pursuant to chapter 90.58 RCW, these regulations, or the local master program, obtained. All emergency construction shall be consistent with the policies of chapter 90.58 RCW and the local master program. As a general matter, flooding or other seasonal events that can be anticipated and may occur but that are not imminent are not an emergency;

(e) Construction and practices normal or necessary for farming, irrigation, and ranching activities, including agricultural service roads and utilities on shorelands, construction of a barn or similar agricultural structure, and the construction and maintenance of irrigation structures including but not limited to head gates, pumping facilities, and irrigation channels: Provided, that a feedlot of any size, all processing plants, other activities of a commercial nature, alteration of the contour of the shorelands by leveling or filling other than that which results from normal cultivation, shall not be considered normal or necessary farming or ranching activities. A feedlot shall be an enclosure or facility used or capable of being used for feeding livestock hay, grain, silage, or other livestock feed, but shall not include land for growing crops or vegetation for livestock feeding and/or grazing, nor shall it include normal livestock wintering operations;

(f) Construction or modification of navigational aids such as channel markers and anchor buoys;

(g) Construction on shorelands by an owner, lessee or contract purchaser of a single-family residence for their own use or for the use of their family, which residence does not exceed a height of thirty-five feet above average grade level and which meets all requirements of the state agency or local government having jurisdiction thereof, other than requirements imposed pursuant to chapter 90.58 RCW. "Single-family residence" means a detached dwelling designed for and occupied by one family including those structures and developments within a contiguous ownership which are a normal appurtenance. An "appurtenance" is necessarily connected to the use and enjoyment of a single-family residence and is located landward of the ordinary high water mark and the perimeter of a wetland. On a statewide basis, normal appurtenances include a garage; deck; driveway; utilities; fences; installation of a septic tank and drainfield and grading which does not exceed two hundred fifty cubic yards and which does not involve placement of fill in any wetland or waterward of the ordinary high water mark. Local circumstances may dictate additional interpretations of normal appurtenances which shall be set forth and regulated within the applicable master program. Construction authorized under this exemption shall be located landward of the ordinary high water mark;

(h) Construction of a dock, including a community dock, designed for pleasure craft only, for the private noncommercial use of the owner, lessee, or contract purchaser of single-family and multiple-family residences. A dock is a landing and moorage facility for watercraft and does not include recreational decks, storage facilities or other appurtenances. This exception applies if either:

(i) In salt waters, the fair market value of the dock does not exceed two thousand five hundred dollars; or

(ii) In fresh waters the fair market value of the dock does not exceed ten thousand dollars, but if subsequent construction having a fair market value exceeding two thousand five hundred dollars occurs within five years of completion of the prior construction, the subsequent construction shall be considered a substantial development for the purpose of this chapter.

For purposes of this section salt water shall include the tidally influenced marine and estuarine water areas of the state including the Pacific Ocean, Strait of Juan de Fuca, Strait of Georgia and Puget Sound and all bays and inlets associated with any of the above;

(i) Operation, maintenance, or construction of canals, waterways, drains, reservoirs, or other facilities that now exist or are hereafter created or developed as a part of an irrigation system for the primary purpose of making use of system waters, including return flow and artificially stored groundwater from the irrigation of lands;

(j) The marking of property lines or corners on state-owned lands, when such marking does not significantly interfere with normal public use of the surface of the water;

(k) Operation and maintenance of any system of dikes, ditches, drains, or other facilities existing on September 8, 1975, which were created, developed or utilized primarily as a part of an agricultural drainage or diking system;

(l) Any project with a certification from the governor pursuant to chapter 80.50 RCW;

(m) Site exploration and investigation activities that are prerequisite to preparation of an application for development authorization under this chapter, if:

(i) The activity does not interfere with the normal public use of the surface waters;

(ii) The activity will have no significant adverse impact on the environment including but not limited to fish, wildlife, fish or wildlife habitat, water quality, and aesthetic values;

(iii) The activity does not involve the installation of any structure, and upon completion of the activity the vegetation and land configuration of the site are restored to conditions existing before the activity;

(iv) A private entity seeking development authorization under this section first posts a performance bond or provides other evidence of financial responsibility to the local jurisdiction to ensure that the site is restored to preexisting conditions; and

(v) The activity is not subject to the permit requirements of RCW 90.58.550;

(n) The process of removing or controlling aquatic noxious weeds, as defined in RCW 17.26.020, through the use of an herbicide or other treatment methods applicable to weed control that are recommended by a final environmental impact statement published by the

department of agriculture or the department of ecology jointly with other state agencies under chapter 43.21C RCW;

(o) Watershed restoration projects as defined herein. Local government shall review the projects for consistency with the shoreline master program in an expeditious manner and shall issue its decision along with any conditions within forty-five days of receiving all materials necessary to review the request for exemption from the applicant. No fee may be charged for accepting and processing requests for exemption for watershed restoration projects as used in this section.

(i) "Watershed restoration project" means a public or private project authorized by the sponsor of a watershed restoration plan that implements the plan or a part of the plan and consists of one or more of the following activities:

(A) A project that involves less than ten miles of streamreach, in which less than twenty-five cubic yards of sand, gravel, or soil is removed, imported, disturbed or discharged, and in which no existing vegetation is removed except as minimally necessary to facilitate additional plantings;

(B) A project for the restoration of an eroded or unstable stream bank 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; or

(C) A project primarily designed to improve fish and wildlife habitat, remove or reduce impediments to migration of fish, or enhance the fishery resource available for use by all of the citizens of the state, provided that any structure, other than a bridge or culvert or instream habitat enhancement structure associated with the project, is less than two hundred square feet in floor area and is located above the ordinary high water mark of the stream.

(ii) "Watershed restoration plan" means a plan, developed or sponsored by the department of fish and wildlife, the department of ecology, the department of natural resources, the department of transportation, a federally recognized Indian tribe acting within and pursuant to its authority, a city, a county, or a conservation district that provides a general program and implementation measures or actions for the preservation, restoration, re-creation, or enhancement of the natural resources, character, and ecology of a stream, stream segment, drainage area, or watershed for which agency and public review has been conducted pursuant to chapter 43.21C RCW, the State Environmental Policy Act;

(p) A public or private project that is designed to improve fish or wildlife habitat or fish passage, when all of the following apply:

(i) The project has been approved in writing by the department of fish and wildlife;

(ii) The project has received hydraulic project approval by the department of fish and wildlife pursuant to chapter 77.55 RCW; and

(iii) The local government has determined that the project is substantially consistent with the local shoreline master program. The local government shall make such determination in a timely manner and provide it by letter to the project proponent.

Fish habitat enhancement projects that conform to the provisions of RCW 77.55.181 are determined to be consistent with local shoreline master programs, as follows:

(A) In order to receive the permit review and approval process created in this section, a fish habitat enhancement project must meet the criteria under (p)(iii)(A)(I) and (II) of this subsection:

(I) A fish habitat enhancement project must be a project to accomplish one or more of the following tasks:

- Elimination of human-made fish passage barriers, including culvert repair and replacement;
- Restoration of an eroded or unstable streambank employing the principle 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; or
- Placement of woody debris or other instream structures that benefit naturally reproducing fish stocks.

The department of fish and wildlife shall develop size or scale threshold tests to determine if projects accomplishing any of these tasks should be evaluated under the process created in this section or under other project review and approval processes. A project proposal shall not be reviewed under the process created in this section if the department determines that the scale of the project raises concerns regarding public health and safety; and

(II) A fish habitat enhancement project must be approved in one of the following ways:

- By the department of fish and wildlife pursuant to chapter 77.95 or 77.100 RCW;
- By the sponsor of a watershed restoration plan as provided in chapter 89.08 RCW;
- By the department as a department of fish and wildlife-sponsored fish habitat enhancement or restoration project;
- Through the review and approval process for the jobs for the environment program;
- Through the review and approval process for conservation district-sponsored projects, where the project complies with design standards established by the conservation commission through interagency agreement with the United States Fish and Wildlife Service and the natural resource conservation service;

- Through a formal grant program established by the legislature or the department of fish and wildlife for fish habitat enhancement or restoration; and
- Through other formal review and approval processes established by the legislature.

(B) Fish habitat enhancement projects meeting the criteria of (p)(iii)(A) of this subsection are expected to result in beneficial impacts to the environment. Decisions pertaining to fish habitat enhancement projects meeting the criteria of (p)(iii)(A) of this subsection and being reviewed and approved according to the provisions of this section are not subject to the requirements of RCW 43.21C.030 (2)(c).

(C)(I) A hydraulic project approval permit is required for projects that meet the criteria of (p)(iii)(A) of this subsection and are being reviewed and approved under this section. An applicant shall use a joint aquatic resource permit application form developed by the office of regulatory assistance to apply for approval under this chapter. On the same day, the applicant shall provide copies of the completed application form to the department of fish and wildlife and to each appropriate local government. Local governments shall accept the application as notice of the proposed project. The department of fish and wildlife shall provide a fifteen-day comment period during which it will receive comments regarding environmental impacts. Within forty-five days, the department shall either issue a permit, with or without conditions, deny approval, or make a determination that the review and approval process created by this section is not appropriate for the proposed project. The department shall base this determination on identification during the comment period of adverse impacts that cannot be mitigated by the conditioning of a permit. If the department determines that the review and approval process created by this section is not appropriate for the proposed project, the department shall notify the applicant and the appropriate local governments of its determination. The applicant may reapply for approval of the project under other review and approval processes.

(II) Any person aggrieved by the approval, denial, conditioning, or modification of a permit under this section may formally appeal the decision to the hydraulic appeals board pursuant to the provisions of this chapter.

(D) No local government may require permits or charge fees for fish habitat enhancement projects that meet the criteria of (p)(iii)(A) of this subsection and that are reviewed and approved according to the provisions of this section.

WAC 173-27-045 –

Developments Not Subject to the Shoreline Management Act

[Statutory Authority: RCW 90.58.030 (3)(e), 90.58.045, 90.58.065, 90.58.140(9), 90.58.143, 90.58.147, 90.58.200, 90.58.355, 90.58.390, 90.58.515, 43.21K.080, 71.09.250, 71.09.342,

77.55.181, 89.08.460, chapters 70.105D, 80.50 RCW. WSR 07-02-086 (Order 05-12), § 173-27-045, filed 1/2/07, effective 2/2/07.]

Certain developments are not required to meet requirements of the Shoreline Management Act as follows:

(1) Pursuant to RCW 90.58.390, certain secure community transition facilities are not subject to the Shoreline Management Act. An emergency has been caused by the need to expeditiously site facilities to house sexually violent predators who have been committed under chapter 71.09 RCW. To meet this emergency, secure community transition facilities sited pursuant to the preemption provisions of RCW 71.09.342 and secure facilities sited pursuant to the preemption provisions of RCW 71.09.250 are not subject to the provisions of this chapter.

This section expires June 30, 2009.

(2) Pursuant to RCW 90.58.045 regarding environmental excellence program agreements, notwithstanding any other provision of law, any legal requirement under the Shoreline Management Act, including any standard, limitation, rule, or order is superseded and replaced in accordance with the terms and provisions of an environmental excellence program agreement, entered into under chapter 43.21K RCW.

(3) Pursuant to RCW 90.58.355 regarding hazardous substance remedial actions, the procedural requirements of the Shoreline Management Act shall not apply to 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. The department of ecology shall ensure compliance with the substantive requirements of chapter 90.58 RCW, chapter 173-26 WAC and the local master program through the consent decree, order, or agreed order issued pursuant to chapter 70.105D RCW, or during the department-conducted remedial action, through the procedures developed by the department pursuant to RCW 70.105D.090.

(4) The holder of a certification from the governor pursuant to chapter 80.50 RCW shall not be required to obtain a permit under chapter 90.58 RCW.