

CITY OF WENATCHEE

SHORELINE MASTER PROGRAM

March 26, 2013



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SHORELINE MASTER PROGRAM

CITY OF WENATCHEE

READER'S GUIDE

Chelan County and its cities developed and adopted Shoreline Master Programs (SMPs) in 1975 for the purpose of "focusing comprehensive, coordinated planning attention at the critical land-water interface" (page 1). The current SMP (1975 SMP) was developed more than 30 years ago and much has changed along City of Wenatchee shorelines. In addition, knowledge of best development and conservation practices has evolved. There have also been changes in state laws and rules.

This SMP has been prepared to meet the requirements of the Shoreline Management Act of 1971 (RCW 90.58), the implementing state rules codified as Chapter 173-26 of the Washington Administrative Code (WAC) "State Master Program Approval/Amendment Procedures and Master Program Guidelines" that were revised in 2003, and other applicable local, state, and federal laws. As was the case in 1975 and today, the SMP is developed locally, but must meet the Shoreline Management Act and implementing state rules, and is subject to approval by the Washington State Department of Ecology (Ecology) before it can be implemented.

The SMP was prepared under a grant agreement with Ecology. For planning purposes and as part of the grant agreement, Chelan County and the cities of Cashmere, Chelan, Entiat, Leavenworth, and Wenatchee conducted nine Vision Workshops in fall 2008 to capture citizen questions, concerns, goals and aspirations regarding county and city shorelines. The Vision Workshop results have factored into the development of this SMP (see brief summary in Appendix D).

The contents of this Shoreline Master Program are structured as follows:

- Chapter 1 Authority and Purpose
- Chapter 2 Goals and Objectives
- Chapter 3 Shoreline Jurisdiction and Environment Designations
- Chapter 4 General Policies and Regulations
- Chapter 5 Shoreline Modifications and Uses
- Chapter 6 Nonconforming Structures and Uses
- Chapter 7 Shoreline Permits, Procedures and Administration
- Chapter 8 Definitions

- Appendix A: Shoreline Environment Designations Maps
- Appendix B: Critical Areas Regulations
- Appendix C: Restoration Plan
- Appendix D: Vision Workshop Summary
- Appendix E: Channel Migration Zones
- Appendix F: Public Access Plan
- Appendix G: Shoreline Inventory and Assessment
- Appendix H: Cumulative Impact Analysis

The appendices to the SMP are components of the Master Program providing either baseline data, information and processes utilized to develop and shape the form and function of the SMP; or are regulatory or programmatic components. Appendices A., the Shoreline jurisdiction boundaries and environment designation maps and Appendix B., the critical area regulations are both regulatory components of the Master Program. Appendices C through H are more programmatic in nature linked to policy and regulatory components in the SMP as a whole.

In the review and use of this SMP, the reader should keep in mind that policies are statements of principles that guide and determine present and future decisions. Regulations are rules that govern developments, uses, or activities.

When reading this SMP, it is useful to consider the definitions of the following terms:

- Shall or must: means a mandate; the action must be done.
- Should: means that the particular action is required unless there is a demonstrated, compelling reason, based on policy of the Shoreline Management Act and shoreline master program, against taking the action.
- May: means the action is acceptable, provided it conforms to the provisions of this shoreline master program and the Act.

In general, this SMP uses the word "should" in goals, objectives, and policies, and "shall" in the regulations; additional definitions are located in Chapter 8.

1 AUTHORITY AND PURPOSE

1.1The Shoreline Management Act

Washington State's citizens voted to approve the Shoreline Management Act of 1971 in November 1972. The adoption of the Shoreline Management Act (Act) recognized "that the shorelines of the state are among the most valuable and fragile of its natural resources and that there is great concern throughout the state relating to their utilization, protection, restoration, and preservation" and that "coordinated planning is necessary in order to protect the public interest associated with the shorelines of the state while, at the same time, recognizing and protecting private property rights consistent with the public interest" (RCW 90.58.020). The Act seeks to provide environmental protection for shorelines, preserve and enhance shoreline public access, and encourage appropriate development that supports water-oriented uses as follows: (RCW 90.58.020)

The legislature finds that the shorelines of the state are among the most valuable and fragile of its natural resources and that there is great concern throughout the state relating to their utilization, protection, restoration, and preservation. In addition it finds that ever increasing pressures of additional uses are being placed on the shorelines necessitating increased coordination in the management and development of the shorelines of the state. The legislature further finds that much of the shorelines of the state and the uplands adjacent thereto are in private ownership; that unrestricted construction on the privately owned or publicly owned shorelines of the state is not in the best public interest; and therefore, coordinated planning is necessary in order to protect the public interest associated with the shorelines of the state while, at the same time, recognizing and protecting private property rights consistent with the public interest. There is, therefore, a clear and urgent demand for a planned, rational, and concerted effort, jointly performed by federal, state, and local governments, to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines.

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

The legislature declares that the interest of all of the people shall be paramount in the management of shorelines of statewide significance. The department, in adopting guidelines for shorelines of statewide significance, and local government, in developing master programs for shorelines of statewide significance, shall give preference to uses in the following order of preference which:

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

- (2) Preserve the natural character of the shoreline;
- (3) Result in long term over short term benefit;
- (4) Protect the resources and ecology of the shoreline;
- (5) Increase public access to publicly owned areas of the shorelines;
- (6) Increase recreational opportunities for the public in the shoreline;
- (7) Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

In the implementation of this policy the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally. To this end uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state's shoreline. Alterations of the natural condition of the shorelines of the state, in those limited instances when authorized, shall be given priority for single family residences and their appurtenant structures, ports, shoreline recreational uses including but not limited to parks, marinas, piers, and other improvements facilitating public access to shorelines of the state, industrial and commercial developments which are particularly dependent on their location on or use of the shorelines of the state and other development that will provide an opportunity for substantial numbers of the people to enjoy the shorelines of the state. Alterations of the natural condition of the shorelines and shorelands of the state shall be recognized by the department. Shorelines and shorelands of the state shall be appropriately classified and these classifications shall be revised when circumstances warrant regardless of whether the change in circumstances occurs through man-made causes or natural causes. Any areas resulting from alterations of the natural condition of the shorelines and shorelands of the state no longer meeting the definition of "shorelines of the state" shall not be subject to the provisions of chapter 90.58 RCW.

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

Under the Act, shoreline master programs are created and implemented based on a "cooperative program of shoreline management between local government and the state" (RCW 90.58.050). The roles of local governments and the state are:

"Local government shall have the primary responsibility for initiating the planning required by this chapter and administering the regulatory program consistent with the policy and provisions of this chapter. The department [of Ecology] shall act primarily in a supportive and review capacity with an emphasis on providing assistance to local government and on insuring compliance with the policy and provisions of this chapter." (RCW 90.58.050)

1.2Authority

This SMP is enacted and administered according to the following state law and rules:

- A. The Shoreline Management Act of 1971, Chapter 90.58 RCW;
- B. State master program approval/amendment procedures and master program guidelines, WAC 173-26; and
- C. Shoreline management permit and enforcement procedures, Chapter 173-27 WAC.

1.3Applicability

- A. All proposed uses and development occurring within shoreline jurisdiction, except for items listed in B below, must conform to the intent and requirements of the laws and rules cited in Section 1.2 and this SMP whether or not a permit or other form of authorization is required. See Chapter 3 for the definition of shoreline jurisdiction and Chapter 8 for definitions of uses, activities, and development.
- B. This SMP does not apply to the following activities:
 - 1. Interior building improvements that do not change the use or occupancy;
 - 2. Routine landscape maintenance of established, ornamental landscaping, such as lawn mowing, pruning and weeding; and
 - 3. Maintenance of the following existing facilities that does not expand the affected area: septic tanks (routine cleaning), wells, and individual utility service connections.
- C. The shoreline permit procedures, policies and regulations established in this SMP shall apply to all nonfederal uses, activities, and development.
- D. This SMP applies to lands subject to nonfederal ownership, lease or easement, even though such lands may fall within the external boundaries of a federal ownership. Federal lands include, but are not limited to, National Forests, National Parks, National Wilderness Areas, and lands owned by the Federal Bureau of Land Management (BLM). The following subsections shall guide the determination of SMP applicability on federal lands:
 - 1. Federal development on federally owned land is not subject to this SMP nor required to obtain a Shoreline permit, unless otherwise required by federal law or unless the state by statute has ceded all regulatory authority over the federal ownership;
 - 2. Federal development on a federally owned lease is not subject to this SMP nor required to obtain a Shoreline permit, unless otherwise required by federal law or unless the state by statute has ceded all regulatory authority over the federal ownership as long as the development is consistent with the purpose of the lease;
 - 3. Development on federally owned land under a federal lease or easement for a non-federal activity is subject to this SMP and must obtain a Shoreline permit; for example, the SMP applies to private activities on federal land such as leases where the private citizen owns the structure but the federal government owns the land;
 - 4. Non-federal development or use on federally owned land is subject to this SMP and must obtain a Shoreline permit;
 - 5. Development on non-federal land is subject to this SMP and must obtain a Shoreline permit, even if it is leased, rented, etc. to the federal government, or it is within the boundaries of federal ownership unless the state by statute has ceded all regulatory authority over the federal ownership.
- E. As recognized by RCW 90.58.350, the provisions of this SMP shall not affect treaty rights of Indian Nations or tribes.

F. Where this Program makes reference to any RCW, WAC, or other state or federal law or regulation, the most recent amendment or current edition shall apply

1.4Purpose and Intent

The purposes of this SMP are:

- A. To promote the public health, safety, and general welfare of the community by providing comprehensive policies and effective, reasonable regulations for development, use and protection of jurisdictional shorelines; and
- B. To further assume and carry out the local government responsibilities, including planning and administering regulatory program policies and provisions; and
- C. Promote reasonable and appropriate use of the shorelines considering State and local interests defined in laws, rules, and plans as well as private property rights; and
- D. Protect against significant adverse effects to the land, its vegetation and wildlife, and the waters and their aquatic life within jurisdictional shorelines; and
- E. To give preference to those uses that are consistent with the control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon uses of the state's shoreline areas, as illustrated in use allowances of this SMP; and
- F. Reduce use conflicts by including provisions to prohibit or apply special conditions to those uses which are not consistent with the control of pollution and prevention of damage to the natural environment or are not unique to or dependent upon use of the state's shoreline, such as through application of vegetation management, water quality, restoration and similar standards. In implementing this provision, preference shall be given first to water-dependent uses, then to water-related uses and water-enjoyment uses in assigning permit types; and
- G. Assure no net loss of ecological functions associated with the shoreline; and
- H. Protect rights of navigation; and
- I. Recognize private property rights and constitutional limitations on the regulation of private property and protect those rights while implementing this SMP; and
- J. Maintain or recreate a high quality of environment along jurisdictional shorelines; and
- K. Preserve and protect fragile natural resources and cultural significant features; and
- L. Increase public access to publicly owned areas of the shorelines where increased use levels are desirable; and
- M. Protect public and private properties from adverse effects of improper development in hazardous shoreline areas; and
- N. Recognize the importance of an informed and responsible public observing basic rules of good behavior in the use and enjoyment of all shorelines; and
- O. Recognize that this SMP does not alter existing law on access to or trespass on private property and does not give the general public any right to enter private property without the owner's permission.

1.5 Relationship to Other Codes, Ordinances and Plans

- A. All applicable federal, state, and local laws shall apply to properties in the shoreline jurisdiction.
- B. The responsibility for determining applicable federal, state or special district statutes and regulations and complying with the same rests with the applicant/proponent or responsible person carrying out the activity, use, or development in question.

- C. The goals, objectives and policies of this SMP shall be considered an element of the City of Wenatchee Urban Area Comprehensive Plan. All regulatory elements of this SMP, including but not limited to definitions and use regulations, shall be considered a part of the City of Wenatchee's development regulations..
- D. All local development regulations including, but not limited to, zoning and subdivision rules shall apply in addition to this SMP. Provided that the SMP includes critical areas regulations applicable only in the shoreline jurisdiction, and shall control over the City of Wenatchee's critical area regulations adopted pursuant to the Growth Management Act.
- E. In the event provisions of this SMP conflict with provisions of Federal, State, County or City regulations, the provision that is most protective of shoreline resources shall prevail, when consistent with policies set out in the Act.

1.6Liberal Construction

This SMP is exempted from the rule of strict construction and shall therefore be liberally construed to give full effect to the purposes, goals, objectives, and policies.

1.7Severability

Should any section or provision of this SMP be declared invalid, such decision shall not affect the validity of this SMP as a whole.

1.8Effective Date

This SMP and all amendments thereto shall become effective 14 days from the date of issuance of the final action letter from Ecology.

2 GOALS AND OBJECTIVES

This section contains shoreline goals and objectives. Goals express the ultimate aim of the City of Wenatchee and citizens along their shorelines. An objective identifies a measurable step that moves toward achieving a long-term goal. Goals and objectives provide a framework upon which the more detailed SMP shoreline use environments, policies, regulations, and administrative procedures are based in subsequent chapters.

2.1 Economic Development Element

Goal ED-1. Permit those commercial, industrial, recreational, and other developments requiring a shoreline location which may contribute to the economic well-being of the City of Wenatchee.

Objective ED-1.1. Encourage shoreline development that has a positive effect upon community economic and social activities.

Objective ED-1.2. Promote new water-dependent, water-related, and water-enjoyment economic development.

Goal ED-2. Encourage the protection and restoration of unique, fragile, and scenic elements in shoreline areas as a means to promote long-term economic well-being.

Objective ED-2.1. Promote environmental education.

2.2 Public Access Element

Goal PA-1. Ensure public access to shorelines:

- Is safe, convenient and diversified;
- Makes provisions for public access to publicly owned shoreline jurisdiction areas;
- Avoids endangering life or adverse effects on property or fragile natural features;
- Minimizes conflicts between the public and private property;
- Enables the public to enjoy the physical and aesthetic qualities of natural shorelines of the state which shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally;
- Is designed for persons with disabilities, where feasible, consistent with federal standards: and
- Maintains the natural conditions of the shorelines of the state except, in those limited instances where alteration may be allowed only when development provides an opportunity for a substantial number of people to enjoy the shorelines of the state.

Objective PA-1.1. Increase public access to shorelines, particularly on public properties, by developing and implementing parks, recreation, and trails plans.

Objective PA-1.2. Require public access as part of public shoreline development where appropriate.

Objective PA-1.3. Require and/or encourage public access as part of private shoreline development in accordance with adopted shoreline public access plans, where appropriate and in compliance with constitutional limitations.

Objective PA-1.4. Protect and enhance visual and physical access to shorelines.

Objective PA-1.5. Assure that public access improvements do not result in a net loss of shoreline ecological functions.

Goal PA-2. Goal Expand opportunities for public enjoyment of shoreline access.

Objective PA-2.1. Encourage development of public access by using tools such as acquisition of land, incentives, enhancement of existing public land where public access could be developed, etc.

Goal PA-3. Preserve and enhance Wenatchee's system of waterfront park and trails.

2.3 Recreation Element

Goal REC-1. Promote diverse, convenient, and adequate recreational opportunities along public shorelines for local residents and visitors.

Objective REC-1.1. Encourage cooperation among public agencies, non-profit groups, and private landowners and developers to increase and diversify recreational opportunities.

Objective REC-1.2. Ensure shoreline recreation facilities are preserved and enlarged as necessary to serve projected City growth in accordance with adopted levels of service.

Objective REC-1.3. Ensure recreation facilities are designed for persons with disabilities, where feasible, consistent with federal standards.

2.4 Circulation Element

Goal CIRC-1. Since major transportation and utility systems pre-exist near many shorelines, minimize conflicts between these systems and shoreline uses when considering circulation additions or modifications.

Objective CIRC-1.1. Encourage multiple modes of transportation.

Objective CIRC-1.2. Promote non-motorized travel and public access opportunities.

Objective CIRC-1.3. Encourage water-dependent transportation where appropriate.

Objective CIRC-1.4. Promote the design of new or expanded road corridors for motorized vehicles outside of shoreline jurisdiction unless there is no reasonably feasible alternative or location.

Objective CIRC-1.5. Promote the design of new utilities outside shoreline jurisdiction unless water crossings are unavoidable or utilities are required for authorized shoreline uses consistent with this SMP.

2.5 Shoreline Use Element

Goal LU-1. Assure an appropriate pattern of sound development in suitable locations without diminishing the quality of the environment along shorelines.

Objective LU-1.1. Give preference along the shoreline to water-oriented and single-family residential uses, consistent with the control of pollution and prevention of damage to the natural environment.

Objective LU-1.2. Encourage shoreline uses and development that enhance and/or increase public access to the shoreline or provide significant public benefit.

Goal LU-2. Protect current agricultural activities occurring on agricultural land. Provide for new agricultural uses that are located and designed to assure no net loss of ecological functions and that do not have a significant adverse impact on other shoreline resources and values..

Goal LU-3. Encourage positive redevelopment that enhances the community's most precious resource – its waterfront.

2.6 Conservation Element

Goal CONS-1. Protect shoreline resources by:

- Preserving unique and fragile environments, and scenic elements such as views of natural features that support area tourism;
- Conserving non-renewable natural resources; and
- Managing renewable resources such as timber, water, and wildlife.

Objective CONS-1.1. Provide for no net loss of shoreline ecological function.

Goal CONS-2. Encourage the restoration of shoreline areas which have been modified, blighted, or otherwise disrupted by natural or human activities.

Objective CONS-2.1. Ensure restoration and enhancement is consistent with and prioritized based on adopted watershed and basin plans. (Recognizes County and City watershed and restoration plans;)

Goal CONS-3. Upgrade the environmental quality of the shoreline and larger waterfront area.

2.7 Historic, Cultural, Scientific, and Educational Element

Goal HIST-1. Protect and restore areas having significant historic, cultural, educational or scientific values.

Objective HIST-1.1. Work with property owners to preserve significant natural and scenic resources, environmentally sensitive areas, and significant historic and cultural resources.

Goal HIST-2. Protect shoreline features to prevent the destruction of, or damage to, any site having archaeological, historic, cultural, or scientific value through coordination and consultation with the appropriate local, state, tribal and federal authorities.

Objective HIST-2.1. Protect sites in collaboration with appropriate tribal, state, federal, and local governments and affected property owners. Encourage cooperation among public and private parties in the identification, protection, and management of cultural resources.

Objective HIST-2.2. When and/or where appropriate, make access to such sites available to parties of interest. Design and manage access to such sites in a manner that gives maximum protection to the resource.

Objective HIST-2.3. Provide opportunities for education related to archaeological, historical and cultural features when and/or where appropriate and incorporate into public and private management efforts, programs and development.

2.8 Flood Hazard Prevention Element

Goal FLOOD-1. Recognize the hydrologic functions of floodplains, and protect frequently flooded areas.

Objective FLOOD-1.1. Avoid or mitigate land use practices that may impede the flow of floodwater or cause danger to life or property. Mitigate the loss of floodplain storage capacity to avoid greater impact of flooding downstream.

Objective FLOOD-1.2. Implement the 100-year floodplain designations of the Federal Emergency Management Agency and the National Flood Insurance Program.

Objective FLOOD-1.3. Seek to map areas that are potential flood hazard areas and/or have experienced historical flooding events, but are not currently included in the Federal Emergency Management Agency's mapping efforts. Work with the Federal Emergency Management Agency to correct maps that are inaccurate.

Objective FLOOD-1.4. Prepare and implement channel migration zone plans.

Objective FLOOD-1.5. Coordinate shoreline jurisdiction flood hazard prevention policies and regulations with Growth Management Act provisions to protect critical areas including frequently flooded areas.

3 SHORELINE JURISDICTION AND ENVIRONMENT DESIGNATIONS

3.1 Shoreline Jurisdiction

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the State plus their associated "shorelands." The waterbodies designated as shorelines of the State are streams whose mean annual flow is 20 cubic feet per second (cfs) or greater and lakes whose area is greater than 20 acres. Certain shoreline waterbodies and their associated shorelands have elevated status under the Act if they are lakes equal to or larger than 1,000 acres or they are streams and rivers in Eastern Washington that are "...downstream of a point where the annual flow is measured at two hundred cubic feet per second or more, or those portions of rivers east of the crest of the Cascade range downstream from the first three hundred square miles of drainage area, whichever is longer" (RCW 90.58.) These waterbodies are considered to be "shorelines of statewide significance," and have unique supplemental provisions outlined in Section 3.4. The City of Wenatchee contains two shorelines: the Columbia River and the Wenatchee River; both water bodies are a Shoreline of Statewide Significance.

The City of Wenatchee has adopted the following jurisdictional shoreline boundary in this SMP:

Those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark of the Columbia and Wenatchee rivers; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the Columbia and Wenatchee rivers which are subject to the provisions of the Shoreline Management Act and this SMP."

The upstream extent of shoreline jurisdiction for streams and those lakes that meet shoreline criteria are indicated on the Official Shoreline Maps included in Appendix A. The purpose of the Official Shoreline Maps is to identify Environment Designations (Section 3.2 below). The maps only approximately identify or depict the lateral extent of shoreline jurisdiction. The actual lateral extent of the shoreline jurisdiction shall be determined on a case-by-case basis based on the location of the ordinary high water mark (OHWM), floodway, and presence of associated wetlands.

In circumstances where shoreline jurisdiction does not include an entire parcel, only that portion of the parcel and any use, activity or development on that portion of the parcel is subject to this Shoreline Master Program.

3.2 Environment Designations

3.2.1 Environment Designation System

This SMP is intended to meet the WAC requirements. It states that:

Master programs shall contain a system to classify shoreline areas into specific environment designations. This classification system shall be based on the existing use pattern, the biological and physical character of the shoreline, and the goals and aspirations of the community as expressed through comprehensive plans as well as the criteria in this section.

This SMP is consistent with WAC requirements, deviating from specific WAC guidelines with respect only to some environment designation names, or the addition of new environment designations where such provides local government with opportunity to provide further, but complementary, designations consistent with existing land management plans. Each environment designation contains a purpose statement, designation criteria, and management policies components.

3.2.2 Official Shoreline Maps and Unmapped or Undesignated Shorelines

- A. Appendix A (Shoreline Jurisdiction Boundaries and Environment Designations Maps) includes a hard copy of the Official Shoreline Maps at the time of SMP adoption, which illustrate the delineation of shoreline jurisdiction and environment designations in the City of Wenatchee and the Wenatchee Urban Growth Area. The electronic files of the Official Shoreline Maps will be considered the official version and may be updated administratively or through an SMP amendment as indicated below. The Department of Ecology will be provided with electronic files of the Official Shoreline Maps when any updates are made.
- B. As stated above, Appendix A includes shoreline jurisdiction and environmental designations for the Wenatchee Urban Growth Area (UGA). This is called predesignation and is allowed under WAC 173-26-150. The intent of pre-designation is to complete the evaluation and analysis for the Urban Growth Areas during the SMP update. The benefit to property owners and the City is that during any annexation process a Shoreline Master Program update process will not have to be completed as required in WAC 173-26-160.
- C. Any areas within shoreline jurisdiction that are not mapped and/or designated due to minor mapping inaccuracies in the lateral extent of shoreline jurisdiction from the shoreline waterbody related to site-specific surveys of ordinary high water mark, floodway, and/or floodplain are automatically assigned the category of the contiguous waterward shoreline environment designation. In the event that mapping results in an undesignated associated wetland, that wetland shall be assigned an Urban Conservancy environment designation. Correction of these minor mapping inaccuracies may be made and incorporated into the Official Shoreline Maps without an SMP amendment.
- D. All other areas of shoreline jurisdiction that were neither mapped as jurisdiction nor assigned an environment designation shall be assigned an Urban Conservancy designation, until the shoreline designation can be changed through an SMP amendment process conducted consistent with WAC 173-26-100 and SMP Chapter 7.
- E. The actual location of the OHWM, floodplain, floodway, and wetland boundaries must be determined at the time a development is proposed. Wetland boundary and ordinary high water mark determinations are valid for five years from the date the determination is made. Floodplain and floodway boundaries should be assessed using the most recently revised and locally adopted FEMA maps. If the City does not adopt FEMA maps, the most current, accurate and complete scientific and technical information available

- and applicable shall be used. Revisions to the Official Shoreline Maps may be made using the information gathered per this Section without an SMP amendment.
- F. In addition, any property shown in shoreline jurisdiction that does not meet the criteria for shoreline jurisdiction (e.g., is more than 200 feet from the OHWM or floodway, is no longer in floodplain as documented by a Letter of Map Revision from FEMA, and does not contain associated wetlands) shall not be subject to the requirements of this SMP. Revisions to the Official Shoreline Maps may be made as outlined in this Section E without an SMP amendment.

3.2.3 Interpretation of Environment Designation Boundaries

- A. If disagreement develops as to the exact location of an environment designation boundary line, the Official Shoreline Maps shall prevail consistent with the following rules:
 - 1. Boundaries indicated as approximately following lot, tract, or section lines shall be so construed.
 - 2. In cases where boundary line adjustments or subdivisions occur, the designation applied to the parent parcel prior to the boundary line adjustment or subdivision shall not change as a result. The shoreline designation can only be changed through an SMP amendment.
 - 3. Boundaries indicated as approximately following roads or railways shall be respectively construed to follow the nearest right-of-way edge.
 - 4. Boundaries indicated as approximately parallel to or extensions of features indicated in (1), (2), or (3) above shall be so construed.
- B. In the event of an environment designation mapping error where the SMP update or amendment record, including the public hearing process, is clear in term of the correct environment designation to apply to a property, the Shoreline Administrator shall apply the environment designation approved through the SMP Update or Amendment process and correct the map. Appeals of such interpretations may be filed pursuant to Section 7.11. If the use environment criteria were misapplied, but the map does not show an unintentional error, a SMP amendment may be obtained consistent with WAC 173-26-100 and Chapter 7.
- C. All shoreline areas waterward of the OHWM shall be designated Aquatic.
- D. Upland environment designations shall apply to shorelands.
- E. Only one environment designation shall apply to a given shoreland area. In the case of parallel designations, designations shall be divided along an identified linear feature and the boundary shall be clearly noted on the map (for example: existing property lines).

3.2.4 Wenatchee Environment Designations

- A. Urban Conservancy
 - 1. Purpose
 - The purpose of the "Urban Conservancy" environment is to protect and restore ecological functions of open space, floodplain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses.
 - 2. Designation Criteria
 An "Urban Conservancy" environment designation will be assigned to shorelines
 that are within areas planned for development that are compatible with

maintaining or restoring the ecological functions of the area, and that are not generally suitable for water-dependent uses other than those uses that support public access and recreation that are suitable for water-related or water-enjoyment uses; that may be designated as open space, floodplain or other sensitive areas that should not be more intensively developed; and those that retain important ecological functions, even though partially developed.

3. Management Policies

Development within the "Urban Conservancy" environment shall be consistent with the following policies:

- a. Uses that preserve the natural character of the area or promote preservation of open space, floodplain or sensitive lands either directly or over the long term should be the primary allowed uses. Uses that result in restoration of ecological functions should be allowed if the use is otherwise compatible with the purpose of the environment and the setting.
- b. Standards should be established for shoreline stabilization measures, vegetation conservation, water quality, and shoreline modifications within the "Urban Conservancy" designation. These standards shall ensure that new development does not result in a net loss of shoreline ecological functions or further degrade other shoreline values.
- c. Public access and public recreation objectives should be implemented whenever feasible and significant ecological impacts can be mitigated.
- d. Water-oriented uses should be given priority over nonwater-oriented uses. For shoreline areas adjacent to commercially navigable waters, water-dependent uses should be given highest priority.

B. Shoreline Residential

1. Purpose

a. The purpose of the "Shoreline Residential" environment is to accommodate residential development and appurtenant structures that are consistent with this chapter. An additional purpose is to provide appropriate public access and recreational uses.

2. Designation Criteria

a. A "Shoreline Residential" environment designation will be assigned to shorelands if they are predominantly single-family or multi-family residential development or are planned for residential development.

3. Management Policies

Development within the "Shoreline Residential" environment shall be consistent with the following policies:

- a. Commercial development should be limited to water-oriented uses and not conflict with the residential character of lands in the "Shoreline Residential" environment.
- b. Water-oriented recreational uses should be allowed.
- c. Adequate land area and services should be provided.
- d. Land division and development should be permitted only 1) when adequate buffers are provided to protect ecological functions and 2) where there is adequate access, water, sewage disposal, and utilities systems, and public services available and 3) where the environment can support the proposed use in a manner which protects or restores the ecological functions.

- e. Development standards for buffers, shoreline stabilization, vegetation conservation, critical area protection, and water quality should be established to protect and, where significant ecological degradation has occurred, restore ecological functions over time.
- f. Multi-family and multi-lot residential and recreational developments should seek to provide public access to the shoreline and joint-use community recreational facilities.
- g. New residential development should be located and designed so that future shoreline stabilization is not required.

C. Waterfront Park

1. Purpose

a. The purpose of the "Waterfront Park" environment is to ensure appropriate management and development of existing and future public parks and recreation areas.

2. Designation Criteria

a. A "Waterfront Park" environment designation will be assigned to existing or planned public parks or public lands intended to accommodate public access and recreational developments that are compatible with maintaining or restoring the ecological functions of the area, and that are not generally suitable for commercial or industrial water-dependent uses.

3. Management Policies

Development within the "Waterfront Park" environment shall be consistent with the following policies:

- a. Public access and public recreation objectives should be implemented in parks or other public lands located within the City or its UGA whenever feasible and when any significant ecological impacts can be mitigated.
- b. When considering park and urban recreational development proposals, water-oriented uses and their accessory uses should be given priority over nonwater-oriented uses. Nonwater-oriented uses should be allowed when located upland of other water-oriented uses or when the nonwater-oriented use would not conflict with or preclude implementation of planned water-oriented uses.
- c. New or expanded development within the Waterfront Park designation should not result in a net loss of shoreline ecological functions or further degrade other shoreline values. Park-specific development standards should be established for vegetation conservation, water quality, and shoreline modifications.

D. High Intensity

1. Purpose

a. The purpose of the "High Intensity" environment is to provide for variety of urban uses such as high-intensity water-oriented commercial, transportation, industrial, and mixed uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded.

2. Designation Criteria

a. A "High Intensity" environment designation will be assigned to shorelands designated for commercial, industrial, or mixed use within the City and its

UGA if they currently support or are suitable and planned for high-intensity commercial, industrial, institutional, or mixed commercial and residential uses that either include, or do not detract from, the potential for water-oriented uses, shoreline restoration and/or public access.

3. Management Policies

Development within the "High Intensity" environment shall be consistent with the following policies:

- a. In the High Intensity environment, first priority should be given to water-dependent uses. Second priority should be given to water-related and water-enjoyment uses. Nonwater-oriented uses may be allowed in limited situations where they do not conflict with or limit opportunities for water-oriented uses or on sites where there is no direct access to the shoreline in accordance with this SMP.
- b. Where feasible, visual and physical shoreline public access should be required as provided for in Section 4.4 of this SMP.
- c. Aesthetic objectives should be actively implemented in development proposals by means of measures such as sign control regulations, appropriate site layout and orientation of buildings, and screening and architectural standards.
- d. No net loss of shoreline ecological functions should occur as a result of new development. When applicable, new development should include environmental cleanup and restoration of the shoreline.
- e. Full utilization of existing urban areas should be achieved before considering expanding this environment designation through future SMP amendments. Reasonable long-range projections of regional economic need should guide the amount of shoreline designated "High Intensity." During an analysis of shoreline uses, consideration should be given to the potential for displacement of nonwater-oriented uses with water-oriented uses when analyzing full utilization of urban waterfronts and before considering expansion of such areas. In order to make maximum use of the available shoreline resource and to accommodate future water-oriented uses, shoreline restoration and/or public access, the redevelopment and renewal of substandard, degraded, obsolete urban shoreline areas should be encouraged.
- f. The City has estimated economic development potential of its community as part of its waterfront planning efforts, and this provides an indication of utilization of urban areas. The City should update this analysis as part of its eight-year review of the SMP.

E. Aquatic

- 1. Purpose
 - a. The purpose of the "Aquatic" environment is to protect, restore, and manage the unique characteristics and resources of the areas waterward of the OHWM.
- 2. Designation Criteria
 - a. An "Aquatic" environment designation will be assigned to shoreline areas waterward of the OHWM.
- 3. Management Polices

Development within the "Aquatic" environment shall be consistent with the following policies:

- a. New over-water structures should be prohibited except for water-dependent uses, public access, necessary shoreline crossings, or ecological restoration.
- b. The size of new over-water structures should be limited to the minimum necessary to support the structure's intended use.
- c. In order to reduce the impacts of shoreline development and increase effective use of water resources, multiple uses of over-water facilities should be encouraged.
- d. All developments and uses on navigable waters or their beds should be located and designed to minimize interference with surface navigation, to consider impacts to public views, and to allow for the safe, unobstructed passage of fish and wildlife, particularly those species dependent on migration.
- e. Uses that adversely impact the ecological functions of critical freshwater habitats should not be allowed. Where those uses are necessary to achieve the objectives of RCW 90.58.020, their impacts shall be mitigated according to the sequence defined in Section 4.2, Ecological Protection and Critical Areas.
- f. Shoreline uses and modifications should be designed and managed to prevent degradation of water quality and alteration of natural hydrographic conditions.

3.3 Shoreline Use Preferences

3.3.1 Use Preferences

The following order of preference shall be given to uses:

- (1) Recognize and protect the statewide interest over local interest;
- (2) Preserve the natural character of the shoreline;
- (3) Result in long term over short term benefit;
- (4) Protect the resources and ecology of the shoreline;
- (5) Increase public access to publicly owned areas of the shorelines;
- (6) Increase recreational opportunities for the public in the shoreline;
- (7) Provide for any other element as deemed appropriate or necessary.

Uses that are not consistent with these preferences should not be permitted on shorelines of statewide significance.

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

3.3.2 Policies

The following management and administrative policies are hereby adopted for this SMP. The City will base decisions administering this SMP in order of decreasing priority of the following policies:

- A. Recognize and protect the state-wide interest over local interest.
 - 1. Solicit comments and opinions from groups and individuals representing state-wide interests by circulating amendments to the Master Program, and any proposed amendments affecting Shorelines of Statewide Significance, to state agencies, affected Tribes, adjacent local governments' officials, citizen's advisory committees, and state-wide interest groups.
 - 2. Recognize and take into account state agencies' policies, programs and recommendations in developing and administering use regulations and in approving shoreline permits.
 - 3. Solicit comments, opinions and advice from individuals with expertise in ecology and other scientific fields pertinent to shoreline management.
- B. Preserve the natural character of the shoreline.
 - 1. Designate and administer shoreline environments and use regulations to protect and restore the ecology and environment of the shoreline as a result of human intrusions on shorelines.
 - 2. Restore, enhance, and/or redevelop those areas where intensive development already exists in order to reduce adverse impact on the environment and to accommodate future growth rather than allowing high-intensity uses to extend into low-intensity use or underdeveloped areas.
 - 3. Protect and restore existing diversity of vegetation and habitat values, wetlands, and riparian corridors associated with shoreline areas.
 - 4. Protect and restore habitats for State-listed "priority species."
- C. Support actions that result in long-term benefits over short-term benefits.
 - 1. Evaluate the short-term economic gain or convenience of developments relative to the long-term and potentially costly impairments to the natural shoreline.
 - 2. Preserve resources and values of shorelines of statewide significance for future generations and restrict or prohibit development that would irretrievably damage shoreline resources.
 - 3. Ensure the long-term protection of ecological resources of statewide importance, such as anadromous fish habitats, forage fish spawning and rearing areas, and unique environments.
- D. Protect the resources and ecology of the shoreline.
 - 1. All shoreline development should be located, designed, constructed and managed consistent with mitigation sequencing provisions outlined in Section 4.2 to minimize adverse impacts to regionally important wildlife resources, including spawning, nesting, rearing and habitat areas, and migratory routes and result in no net loss of shoreline ecosystems and ecosystem-wide processes.
 - 2. Actively promote aesthetic considerations when contemplating new development, redevelopment of existing facilities, or general enhancement of shoreline areas.
- E. Increase public access to publicly owned areas of the shoreline.
 - 1. Give priority to developing paths and trails to shoreline areas and linear access along the shorelines, especially those trail corridors that would be a regional recreational and transportation resource.

- 2. Locate development landward of the OHWM so that access is enhanced and opportunities for access are not precluded.
- 3. Increase public access opportunities for those with disabilities consistent with the Americans with Disabilities Act.
- 4. Provide incentives to landowners that provide shoreline public access, such as development incentives, tax reductions, or other measures.
- F. Increase recreational opportunities for the public on the shoreline.
 - 1. Plan for and encourage development of facilities for public recreational use of the shoreline, including facilities for boating, swimming, fishing, and other water-oriented activities.
 - 2. Reserve areas for lodging and related facilities on uplands with provisions for appropriate public access to the shoreline.

3.3.3 Use Matrix and Development Standards

- A. Table 1 indicates which uses and modifications may be allowed or are prohibited in shoreline jurisdiction within each shoreline environment. Accessory uses shall be subject to the same shoreline permit process and SMP provisions as its primary use. Where there is a conflict between the chart and the written provisions in this SMP, the written provisions shall apply.
- B. An accessory use shall not be established on a property prior to the establishment of its primary use.
- C. Authorized uses and modifications are only allowed in shoreline jurisdiction where the underlying zoning allows for it and in accordance with the policies and regulations of this SMP.
- D. Any use, development or modification that is listed as a Conditional Use or is an unlisted/unclassified use pursuant to this SMP shall require a Conditional Use Permit. A determination as to whether the Conditional Use also requires a Substantial Development Permit shall be determined in conformance with Chapter 7 of this SMP.
- E. Uses and modifications identified as "Permitted" may require either a Substantial Development Permit or may be exempt from the requirement to obtain a Substantial Development Permit, as outlined in Chapter 7, Shoreline Permits, Procedures and Administration. Exempted uses and modifications, however, are not exempt from the Act or this SMP, and must be consistent with the applicable policies and provisions.
- F. If any part of a proposed development is not eligible for exemption, then a Shoreline Permit is required for the entire proposed development.
- G. To preserve the existing and planned character of the shoreline consistent with the purposes of the shoreline environment designations, shoreline development standards regarding lot frontage, side setbacks, and height are provided in Table 2. In addition, shoreline developments shall comply with all density, lot area, setback and other dimensional requirements of the city's zoning and subdivision codes.
- H. When a development or use is proposed that does not comply with the shoreline buffer, lot frontage, side yard setback, and other dimensional performance standards of this SMP not otherwise allowed by administrative reduction or administrative modification, such development or use can only be authorized by approval of a Variance. Departures from the maximum height limit shall be subject to approval of a Shoreline Conditional Use Permit consistent with Section 5.1.2.

- I. When locating a use in the aquatic environment, if the adjacent upland shoreline environment designation contains more restrictive standards for the same use, the most restrictive standard shall apply, see Table 1.
- J. The permit processes indicated below for each use or modification applies to new, expanded, modified or replacement uses and modifications. In addition, the following also applies:
 - 1. For those uses and modifications that meet one of the exemptions outlined in Section 7.6.3, Exemptions; a Shoreline Permit is not required if Table 1 indicates "P."
 - 2. If "C" is listed for the use or modification, that use or modification requires a Conditional Use Permit regardless of exemption criteria.
 - 3. Those structures installed to protect or restore ecological functions, such as woody debris installed in streams, may be processed as a Substantial Development Permit. See Section 4.5.2, 4.2.2., and Appendices B and C for what it means to restore ecological function.
 - 4. When the use is also commercial, it is also subject to Commercial use standards and matrix allowances.

TABLE 1 SHORELINE USE AND MODIFICATION MATRIX FOR THE CITY OF WENATCHEE.

The chart is coded according to the following legend:					
P = Permitted, may be subject to Shoreline Substantial Development Permit or shoreline exemption requirements					
C = Conditional Use					
~ = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	ıcy	ntial			
(-) = Subject to use limitations in Chapter 5; otherwise prohibited	Urban Conservancy	Shoreline Residential	Waterfront Park	ensity	
n/a = This use is not applicable in the corresponding environment designation	Urban C	Shorelin	Waterfro	High Intensity	Aquatic
Resource Uses					
Agriculture	P	Р	~	Р	~
Aquaculture	С	~	~	Р	Р
Forest Practices	~	~	~	~	~
Mining					
Upland mining outside or inside of CMZ/ floodplain	~	~	~	~	~
In-water mining (commercial)	~	~	~	~	~
In-water mining (recreational)	~	~	~	~	~
Boating Facilities: Marinas and Boat Launches					
Joint use docks	~	~	~	~	~
Community piers/ docks	~	~	Р	Р	Р
Marinas and commercial piers/ docks	P	~	Р	Р	P
Public boat launch	P	С	Р	Р	P
Commercial boat launch	С	~	Р	Р	Р

The chart is coded according to the following legend:						
P = Permitted, may be subject to Shoreline Substantial Development Permit or shoreline exemption requirements						
C = Conditional Use						
~ = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	ncy	ential	· ·			
(-) = Subject to use limitations in Chapter 5; otherwise prohibited	onserva	e Resid	nt Park	ensity		
n/a = This use is not applicable in the corresponding environment designation	Urban Conservancy	Shoreline Residential	Waterfront Park	High Intensity	Aquatic	
Private community boat launch	С	С	С	С	С	
Breakwaters/jetties/rock weirs/groins	С	С	С	С	С	
Commercial Uses	Commercial Uses					
Water-oriented uses	Water-oriented uses					
Mixed use residential	~	~	Р	Р	~	
Mixed use commercial	~	~	Р	Р	~	
Commercial Development	~	~	Р	Р	~	
Non-water-oriented uses						
Commercial Development	~	~	P(-)	P(-)	~	
Mixed use commercial	~	~	P(-)	P(-)	~	
Mixed use residential	~	~	P(-)	P(-)	~	
Dredging and dredge materials disposal						
Dredging	n/a	n/a	~n/a	n/a	P(-)	
In-water disposal	n/a	n/a	n/a	n/a	С	
Upland disposal outside of CMZ/ floodplain	С	Р	Р	Р	~	
Upland disposal inside of CMZ/ floodplain	С	С	С	С	~	

The chart is coded according to the following legend: P = Permitted, may be subject to Shoreline Substantial Development Permit or shoreline exemption requirements C = Conditional Use ~ = Prohibited; the use is not eligible for a Variance or Conditional Use Permit (-) = Subject to use limitations in Chapter 5; otherwise prohibited n/a = This use is not applicable in the corresponding environment designation	Urban Conservancy	Shoreline Residential	Waterfront Park	High Intensity	Aquatic
Fill	1		1		
Upland outside of CMZ/ floodplain	Р	Р	Р	Р	~
Upland inside of CMZ/ floodplain	С	С	С	С	~
Ecological restoration	Р	P	Р	Р	Р
Fill waterward of the ordinary high water mark	n/a	n/a	n/a	n/a	С
Industrial Uses					
Water-dependent Industrial Development	~	~	~	Р	С
Water-related Industrial Development	~	~	~	Р	~
Non-water-oriented uses	~	~	~	P(-)	~
Institutional/Public Facility	С	С	P	P	~
Essential Public Facilities	P	P	P	Р	Р
In-Water Structures	n/a	n/a	n/a	n/a	Р
Recreational Uses					
Boat Clubs	P	~	P	P	~
Managed open space, parks	P	P	P	P	~
Natural open space	P	P	P	Р	Р

The chart is coded according to the following legend:					
P = Permitted, may be subject to Shoreline Substantial Development Permit or shoreline exemption requirements					
C = Conditional Use					
~ = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	ncy	ential			
(-) = Subject to use limitations in Chapter 5; otherwise prohibited	onserva	e Resid	nt Park	ensity	
n/a = This use is not applicable in the corresponding environment designation	Urban Conservancy	Shoreline Residential	Waterfront Park	High Intensity	Aquatic
Recreational vehicle parks	~	~	Р	Р	~
Residential Uses					
Single-family	Р	Р	~	~	~
Multi-family, duplex or attached dwelling units	~	Р	٧	Р	~
Manufactured/ Mobile Home Park	~	Р	~	Р	~
Over-water, Floating, Liveaboards	~	~	~	~	~
Shoreline habitat and natural systems enhancement projects	Р	Р	Р	Р	Р
Shoreline Stabilization					
Hard structural shoreline stabilization	С	~	С	С	С
Soft structural shoreline stabilization	Р	~	Р	Р	Р
Flood Hazard Reduction					
Dikes, levees	С	С	С	С	~
Transportation and Parking					
Local and Regional Transportation	P(-)	P(-)	P(-)	P(-)	С

The chart is coded according to the following legend:					
P = Permitted, may be subject to Shoreline Substantial Development Permit or shoreline exemption requirements					
C = Conditional Use					
~ = Prohibited; the use is not eligible for a Variance or Conditional Use Permit	ncy	ential			
(-) = Subject to use limitations in Chapter 5; otherwise prohibited	Urban Conservancy	Shoreline Residential	Waterfront Park	tensity	
n/a = This use is not applicable in the corresponding environment designation	Urban C	Shorelir	Waterfre	High Intensity	Aquatic
Transportation facilities serving a specific approved use	Р	Р	Р	Р	С
Parking facilities serving a specific approved use	С	С	Р	Р	~
Parking	~	~	~	~	~
Utilities					
Small Facility	P	Р	Р	Р	С
Large Facility	P	P	P	Р	С

TABLE 2 SHORELINE DEVELOPMENT STANDARDS MATRIX FOR THE CITY OF WENATCHEE.

Note: All dimensions are in feet. n/a = not applicable	Urban Conservancy	Shoreline Residential	Waterfront Park	High Intensity	Aquatic
Shoreline Lot Frontage Minimum ^a	60	45	0	0	n/a
Side Yard Setback Minimum ^b	5	5	0	0	n/a
Height Limit Maximum ^c	35	30/60 ^d	50	90	35

- ^a Shoreline frontages are based on the zoning code, though some of the underlying zones do not have lot width standards. 60 feet is based on the Residential Moderate lot width, and 45 feet is based on the Residential High standard. The City's shorelines are unlikely to see much new subdivision activity.
- ^b The City's residential side setbacks generally range from 5 to 6 feet in the zoning code, except in the Waterfront Mixed Use zone they are zero.
- ^c The City believes there are overriding considerations and that few residences would be affected by a greater height in certain areas of the City's Shoreline (See Height regulations in Section 5.1.2 and see Appendix G: Inventory and Assessment and Appendix E: Height Analysis Figure 1).
- ^d The lower range applies to single-family dwellings while the upper range applies to multi-family developments.

4 GENERAL POLICIES AND REGULATIONS

Chapter 4 presents general policies and regulations that apply to any developments, uses, or activities in any environment designation in order to protect environmental and cultural resources, reduce likelihood of harm to life or property from hazardous conditions, and promote access to shorelines.

Each section includes policies and regulations. Policies are statements of principles that guide and determine present and future decisions. Regulations are rules that govern developments, uses, or activities.

Shoreline application requirements are found in Chapter 7 of this SMP. Chapter 4 may contain specific submittal requirements that must accompany certain applications.

4.1 Archaeological and Historic Resources

4.1.1 Policies

- A. Preservation, Restoration, Education. Whenever possible, archeological or historic sites should be permanently preserved for scientific study and public observation.
- B. Impact Avoidance. Due to the limited and irreplaceable nature of the resource(s), prevent the destruction of or damage to any site having historic, cultural, scientific, or educational value as identified by the appropriate authorities, including affected Indian tribes and the Washington State Department of Archaeology and Historic Preservation, or that have been inadvertently uncovered.
- C. Any proposed site development and/or associated site demolition work should be planned and carried out so as to avoid impacts to the cultural resource or to provide appropriate mitigation.
- D. Consultation. Consultation with professional archaeologists and historians is encouraged to identify areas containing potentially valuable archaeological data, and to establish procedures for salvaging data. Appropriate agencies to consult include, but are not limited to, the Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Colville Reservation, and the Washington State Department of Archaeology and Historic Preservation (DAHP).
- E. Adjacent Cultural Site. If development or demolition is proposed abutting an identified historic, cultural or archaeological site, then the proposed development should be designed and operated so as to be compatible with continued protection of the historic, cultural or archaeological site.

4.1.2 Regulations

- A. An archaeological resource site inspection and/or evaluation is required by a professional archaeologist in coordination with affected Indian Tribes where known archaeological resources are present. Properties near a site known to contain historic, cultural, or archaeological resource(s) shall require a cultural resource site assessment.
- B. Archaeological sites located both in and outside shoreline jurisdiction are subject to Chapter 27.44 RCW (Indian graves and records) and Chapter 27.53 RCW (Archaeological sites and records) and development or uses that may impact such sites shall comply with Chapter 25-48 WAC, as well as the provisions of this Master Program.
- C. Uncovered Archaeological Resources. Developers and property owners shall immediately stop work and notify the City of Wenatchee, the Washington State Department of Archaeology and Historic Preservation, and affected Indian tribes if archaeological resources are uncovered during excavation.
- D. If a cultural resource site assessment identifies the presence of significant historic or archaeological resources, a cultural resource management plan shall be prepared by a professional archaeological or historic preservation professional. In addition, a permit or other requirements administered by the Washington State Department of Archaeology and Historic Preservation pursuant to RCW 27.44 and RCW 27.53 may apply.

4.2 Ecological Protection and Critical Areas

4.2.1 Policies

- A. No net loss of ecological functions. Shoreline use and development should prevent or mitigate adverse impacts, assure no net loss of ecological functions and processes relative to the existing condition, protect critical areas designated in Appendix B of this SMP and protect established shoreline buffers in a manner consistent with all relevant constitutional and other legal limitations on the regulation of private property.
- B. Evaluating potential for adverse impacts. In assessing the potential for new uses and developments to cause adverse impacts on ecological functions or processes, the City should take into account all of the following:
 - 1. Effects on ecological functions and ecosystem processes; and
 - 2. Effects that occur on-site and effects that may occur off-site; and
 - 3. Short-term effects and long-term effects; and
 - 4. Direct effects of the project and indirect effects; and
 - 5. Individual effects of the project and the incremental or cumulative effects resulting from the project added to other past, present, and reasonably foreseeable future actions; and
 - 6. Compensatory mitigation actions that offset adverse impacts of the development action and/or use.
- C. Development standards should protect functions. Development standards for density, shoreline frontage, buffers, impervious surface, shoreline stabilization, vegetation conservation, critical areas, and water quality should protect existing shoreline ecological functions and processes. During permit review, the Shoreline Administrator should consider expected impacts associated with proposed shoreline development when assessing compliance with this policy.

4.2.2 Regulations

- A. Identification and Analysis: All projects shall identify the ecological functions associated with and in the vicinity of the subject property (200 feet or extent of the adjoining critical area), including but not limited to critical areas and fresh water habitat. And, analyze potential adverse impacts to identified ecological functions. As part of the analysis of potential impacts, the applicant shall apply mitigation sequencing. In accordance with Appendix B, Critical Area Regulations, the applicant is required to coordinate with the city prior to application submittal and onsite development in order to determine the potential presence of critical areas and to prepare any required studies and plans
- B. Mitigation sequencing. Applicants shall demonstrate all reasonable efforts have been taken to avoid, minimize and then mitigate potential adverse impacts to ecological function resulting from new development and redevelopment in shorelines in the following sequence of steps listed in prioritized order:
 - 1. Avoiding the impact altogether by not taking a certain action or parts of an action;
 - 2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;
 - 3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of the initiation of the project;
 - 4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
 - 5. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments: and
 - 6. Monitoring the impact and the compensation projects and taking appropriate corrective measures.

Lower priority measures shall be applied only where higher priority measures are determined to be infeasible or inapplicable.

- C. Mitigation and Management Plan. Mitigation shall be required for all projects within shoreline jurisdiction that have adverse impacts resulting in a net loss of ecological functions, including those waterward of the OHWM. The following standards apply to projects that adversely impact any ecological function:
 - 1. Where impacts to shoreline ecological functions are identified or proposed and after mitigation sequencing has been applied, mitigation shall be designed and documented in a mitigation and management plan to result in no net loss of ecological functions.
 - 2. In determining the extent and type of mitigation appropriate for the development, the plan shall evaluate the ecological processes that affect and influence critical area structure and function within the watershed or sub-basin; the individual and cumulative effects of the action upon the functions of the critical area and associated watershed; and note observed or predicted trends regarding specific wetland types in the watershed, in light of natural and human processes.
 - 3. Mitigation and management plans shall be prepared by a qualified professional with expertise in the effected ecological function, as defined by the SMP. 4. The mitigation and management plan shall identify how impacts from the proposed

- project shall be mitigated, as well as the necessary monitoring and contingency actions for the continued maintenance of the affected ecological functions, critical area or buffer.
- 5. Mitigation and management plans shall, at minimum, describe the following in detail:
 - i. The existing and anticipated post-project conditions; and
 - ii. The ecological functions impacted with the corresponding development action; and
 - iii. The proposed actions that will ensure no net loss of identified ecological functions prior to mitigation; and
 - iv. How mitigation sequencing was applied; and
 - v. How the mitigation proposed will ensure no net loss of ecological functions to the maximum extent practicable; and
 - vi. A mitigation and management plan should include a site maps and drawings that identify the above items discussed in i-v above. The site maps and drawings should follow the same requirements identified in the JARPA application guidance for site maps and drawings; and
 - vii. A detailed discussion of surface and subsurface hydrologic features both on and adjacent to the site where the review authority determines appropriate; and
 - viii. A description of the vegetation in the critical area, buffer or associated with the effected ecological function on the overall project site and adjacent to the site: and
 - ix. A discussion of any federal, state or local management recommendations which have been developed for the species or habitats in the area; and
 - x. A plan which explains how any adverse impacts created by the proposed development will be mitigated to ensure no net loss of ecological function; and
 - xi. Where the provisions of Appendix B, Critical Area Regulations of this SMP or Section 4.5 Vegetation Conservation and Shoreline Buffers apply, a specific discussion of conformance with those standards and inclusion of any required studies as a component of the mitigation and management plan; and
 - xii. A detailed discussion of on-going management practices which will protect the ecological functions, critical area or buffer after the project site has been fully developed, including monitoring, contingency, maintenance and surety programs as provided for in Section 4.2.2C(14), Performance Standards; and
 - xiii. A narrative which addresses Section 4.2.2C(2-4).
- 6. Mitigation measures specified in the mitigation plan shall be maintained over the life of the use and/or development. Additionally, mitigation within designated critical areas and buffers is subject to the requirements of Appendix B, Critical Area Regulations.
- 7. Where opportunities to mitigate in kind and on site are not available or adequate, the mitigation and management plan may include off-site or out-of-kind mitigation, or a fee in lieu restoration. A fee in lieu maybe assessed through SEPA or RCW82.02.020 where appropriate. When off-site mitigation is proposed,

- projects included in the Restoration Plan found in Appendix C of this SMP shall be considered first.
- 8. All mitigation and management plans shall identify and permanently protect mitigation by means of a conservation easement or similar legal instrument that identifies the mitigation (such as an approved mitigation and management plan diagram/site plan) and is recorded with the County Auditor.
- 9. When a mitigation and management plan for approval of a buffer reduction is required, applicants must record a notice to title of the final plan and corresponding City permit number, in a form acceptable to the City and recorded with the County Auditor.
- 10. Alternative mitigation. Applicants may submit an alternative mitigation and management plan that demonstrates how an alternative mitigation approach meets the no net loss of ecological functions standard for the impacted ecological functions and critical areas. At a minimum, mitigation and management plans must contain information about existing and anticipated post-project conditions with a discussion of how the alternative mitigation approach is consistent with best available science, the SMA and this SMP.
- 11. Location of mitigation. When compensatory measures are appropriate pursuant to the mitigation priority sequence above, preferential consideration shall be given to measures that replace the impacted functions directly and in the immediate vicinity of the impact. Offsite mitigation within the watershed may be authorized if it would have a greater positive impact on ecological functions as demonstrated by an analysis of the Shoreline Restoration Plan and applicable provisions that may be in a WRIA or comprehensive resource management plans applicable to the area of impact.
 - i. The City may accept previous restoration actions that meet the provisions established in the mitigation option chart, provided the previous action was: voluntary, occurred on the site within the previous five years and after the effective date of this SMP, and that all other provisions are completed. Mitigation shall be designed and documented in a mitigation and management plan per section 4.2.2(C). The reduction allowance for previously completed actions may only be applied once on the subject property. Mitigation credit for prior restoration activities shall be determined upon application for the impacting project, and shall at a minimum, be commensurate with the proposed level of impact unless additional compensatory mitigation is provided.
 - ii. Previous actions (meeting measures identified in Table 3: Shoreline Mitigation Options) and mitigation measures may not be applied if they are required by federal, state, or the City either through specific regulation or as mitigation or are offered as mitigation for other actions or impacts.
 - 12. Compensatory mitigation ratios. Compensatory mitigation shall be used when impacts to wetlands, aquatic habitat, shoreline or fish and wildlife habitat conservation area buffers are unavoidable. Compensatory mitigation shall restore, create rehabilitate or enhance equivalent or greater ecological functions. Minimum requirements for wetland compensatory mitigation are established in Appendix B, Critical Area Regulations. Onsite mitigation ratios, (mitigation amount:disturbed area), shall be at a minimum ratio of 1:1 for development within aquatic habitat

and shoreline buffers. A ratio of 2:1 shall apply to native vegetation removal within those areas.

- 13. Mitigation for diverse, high quality habitat or offsite mitigation may require a higher level of mitigation. Minimum mitigation ratios have been established for tree removal under Section 4.5 Vegetation and Conservation and Shoreline Buffers. Mitigation and management plans shall evaluate the need for a higher mitigation ratio on a site by site basis, dependent upon the ecological functions and values provided by that habitat. Recommendations by resource agencies in evaluating appropriate mitigation shall be encouraged.
- 14. Performance Standards. The following performance standards shall apply to compensatory mitigation projects:
 - i. The mitigation site shall be maintained to ensure the management and mitigation plan objectives are successful. Maintenance shall ensure 100% survival after the first year and 80% survival during the following 4 years, for each canopy layer, (i.e. herb, shrubs/small trees, and trees).
 - ii. Mitigation must be installed no later than the next growing season after completion of site improvements, unless otherwise approved by the Administrator.
 - iii. Where necessary, a permanent means of irrigation shall be installed for the mitigation plantings that are designed by a landscape architect or equivalent professional, as approved by the Administrator. The design shall meet the specific needs of the native vegetation.
 - iv. Monitoring reports by a qualified professional must include verification that the planting areas have less than 20% total non-native /invasive plant cover consisting of exotic and/or invasive species. Exotic and invasive species may include any species on the state noxious weed list, or considered a noxious or problem weed by the Natural Conservation Services Department or local conservation districts. Site monitoring visits shall be completed between the time periods of June 1st September 15th.
 - v. Onsite monitoring and monitoring reports shall be submitted to the City of Wenatchee Community and Economic Development Department 1 year after mitigation installation; 3 years after mitigation installation; and 5 years after mitigation installation. The length of time involved in monitoring and monitoring reports may be increased by the Administrator for a development project on a case-by-case basis when longer monitoring time is necessary to establish or re-establish functions and values of the mitigation site. Monitoring reports shall be submitted by a qualified professional. The qualified professional must verify that the conditions of approval and provisions in the mitigation and management plan have been satisfied.
 - vi. Mitigation sites shall be maintained to ensure that the mitigation and management plan objectives are successful. Maintenance shall include corrective actions to rectify problems, include rigorous, as-needed elimination of undesirable plants; protection of shrubs and small trees from competition by grasses and herbaceous plants, and repair and replacement of any dead plants. If mitigation plantings are disturbed by beaver, corrective action will require the use of materials and approaches consistent

- with recommendations from the Washington State Department of Fish and Wildlife, WDFW.
- vii. Sequential release of funds associated with the surety agreement shall be reviewed for conformance with the conditions of approval and the mitigation and management plan. Release of funds may occur in increments of 1/3 for substantial conformance with the plan and conditions of approval. Verification of conformance with the provisions of the mitigation and management plan and conditions of approval after 1 year of mitigation installation shall also allow for the full release of funds associated with irrigation systems, clearing and grubbing and any soil amendments. If the standards that are not met are only minimally out of compliance and contingency actions are actively being pursued by the property owner to bring the project into compliance, the City may choose to consider a partial release of the scheduled increment. Non-compliance can result in one or more of the following actions: carry over of the surety amount to the next review period; use of funds to remedy the nonconformance; scheduling a hearing with the Hearing Examiner to review conformance with the conditions of approval and to determine what actions may be appropriate.
- D. Prior to site development and or building permit issuance, a performance surety agreement in conformance with Chapter 7 of this SMP, must be entered into by the property owner and the City of Wenatchee. The surety agreement must include the complete costs for the mitigation and monitoring which may include but not be limited to: the cost of installation, delivery, plant material, soil amendments, permanent irrigation, seed mix, and 3 monitoring visits and reports by a qualified professional, including Washington State Sales Tax. The City of Wenatchee must approve the quote for said improvements. Cumulative effects.
 - 1. In review of applications for Shoreline Conditional Use Permits and Shoreline Variances, the City shall consider the cumulative impacts of individual uses and developments, including preferred uses and uses that are exempt from permit requirements, when determining whether a proposed use or development could cause a net loss of ecological functions. The geographic scope of the analysis shall include the shoreline waterbody potentially affected by the proposal within the bounds of the City's geographic authority, unless the Shoreline Administrator determines that a larger or smaller area of analysis is appropriate.
 - 2. The City shall have the authority to require the applicant/proponent to prepare special studies, assessments and analyses as necessary to identify and address cumulative impacts including, but not limited to, impacts on fish and wildlife habitat, public access/use, aesthetics, and other shoreline attributes.
 - 3. Proponents of shoreline use and development shall take the following factors into account when assessing cumulative impacts:
 - a. Current ecological functions and human factors influencing shoreline natural processes; and
 - b. Reasonably foreseeable future use and development of the shoreline; and
 - c. Beneficial effects of any established regulatory programs under other local, state, and federal laws; and
 - d. Mitigation measures implemented in conjunction with the proposed project must avoid, reduce, and/or compensate for adverse impacts.

- 4. The City shall add conditions as needed based on the findings of 1 3 above to address any adverse cumulative effects, and may prohibit any use or development that would result in unmitigated adverse cumulative impacts.
- E. Restoration is not required. Developments shall not be required to provide mitigation in excess of that necessary to assure that development will result in no net loss of shoreline ecological functions and will not have a significant adverse impact on other shoreline functions fostered by the policy of the Act unless an impaired ecological function identified in the Inventory and Assessment Analysis in Appendix G is impacted.
- F. Protection of critical areas and buffers. Any critical areas found within shoreline jurisdiction, such as wetlands, frequently flooded areas, geologically hazardous areas, fish and wildlife habitat conservation areas, and critical aquifer recharge areas, shall be regulated by applicable provisions of this SMP and Appendix B, Critical Areas Regulations. Critical area and buffers located outside of shoreline jurisdiction are not regulated by this SMP, including Appendix B.
- G. Shoreline Mitigation Options. When a mitigation and management plan is required, plan elements may include one or more of the mitigation options provided in the chart below to achieve an equal or greater protection of ecological functions as determined by a qualified professional.

TABLE 3 SHORELINE MITIGATION OPTIONS

Tabl	e 3 Shoreline Mitigation Options
Wate	er Related Conditions or Actions
1	Presence of non-structural or soft structural shoreline stabilization measures located at, below, or within 5 feet landward of the OHWM along a percent of the linear shoreline frontage of the subject property. This can include the removal of an existing hard structural shoreline stabilization measure and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography and substrate composition. If this option is selected, the applicant is not eligible for future hard structural shoreline stabilization.
2	Opening and restoring of previously piped on-site watercourse with a native planted buffer on both sides of the stream and must not encumber adjacent properties without express written permission of the adjacent property owner. A qualified professional must design opened watercourses to support the length and width of the proposed open watercourse.
3	Existing hard structural shoreline stabilization measures are setback from the OHWM more than five (5) feet and/are sloped at a maximum 3 vertical (v): 1 horizontal (h) angle to provide dissipation of wave energy and increase the quality or quantity of near shore habitat.
4	Install large woody debris, plant and maintain aquatic emergent vegetation, or restore aquatic substrate depending on the site's particular ecological condition and needs.
5	Implement any other enhancement measure indicated by the Shoreline Restoration Plan, to an extent proportional to the proposed project's impacts.
Upla	nd Related Conditions or Actions
6	Develop and implement a City-approved shoreline native vegetation enhancement plan. The City may approve, on a case by case basis, enhancement plans that include the removal of

Table	e 3 Shoreline Mitigation Options
	terrestrial and aquatic invasive species provided that best management practices are taken to control erosion and minimize exposure of toxic materials.
7	Installation of pervious material for a percent of all new pollution generating surfaces such as driveways, parking or private roads that allows water to pass through at rates similar to predeveloped conditions.
8	Restoring or preserving native vegetation for a percent of the total lot area remaining outside of the reduced buffer, the developed footprint, and any critical areas and their associated buffers.
9	Implement any other enhancement measure indicated by the Shoreline Restoration Plan, to an extent proportional to the proposed project's impacts.

4.3 Flood Hazard Reduction

The following provisions apply only in shoreline jurisdiction to actions taken to reduce flood damage or hazard and to uses, development, and shoreline modifications that may increase flood hazards. Flood hazard reduction measures may consist of nonstructural measures, such as shoreline buffers, land use controls, wetland restoration, dike removal, use relocation, biotechnical measures, and storm water management programs, and of structural measures, such as dikes, levees, revetments, floodwalls, channel realignment, and elevation of structures consistent with the National Flood Insurance Program.

Although some flood hazard reduction measures may serve a dual function as shoreline stabilization, their primary purpose is to control the location of flood waters directly. Alternatively, the primary purpose of shoreline stabilization measures is to prevent erosion of land from currents and waves originating in the shoreline waterbody (rather than upland sources of erosion), which is a more indirect control of the location of flood and non-flood water. Shoreline stabilization is addressed in Section 5.16.

The City of Wenatchee implements flood hazard reduction through the following means:

- Plans and Policies: Growth Management Act comprehensive plans, Multi-Jurisdiction Natural Hazard Mitigation Plan, watershed plans, and channel migration zone plans have been developed by Chelan County, the Cities, and other agencies and address flood hazard reduction policies, programs, restoration actions, and other capital improvements.
- Regulations: critical area, floodplain and stormwater regulations.

4.3.1 Policies

A. Implement flood hazard plans and regulations. The City should ensure public and private development applications site and design flood control measures consistent with appropriate engineering principles, including guidelines of the Natural Resource Conservation Service, the U.S. Army Corps of Engineers, Chelan County Multi-Jurisdiction Natural Hazard Mitigation Plan, watershed plans, channel migration zone plans, restoration plans, critical area regulations, floodplain regulations, and

- stormwater management plans and regulations in order to prevent flood damage, maintain the natural hydraulic capacity of floodways, and conserve limited resources such as fish habitat, water, and soil.
- B. No net loss of ecological functions. Flood protection measures should result in no net loss of ecological functions and ecosystem-wide processes associated with rivers, streams and lakes. Cumulative impacts associated with flood protection measures should be considered.
- C. Non-structural methods preferred. Where feasible, non-structural methods to protect, enhance, and restore shoreline ecological functions and processes and other shoreline resources should be encouraged as an alternative to structural flood control works. Non-structural methods may include, but are not limited to, shoreline buffers, land use controls, use relocation, wetland restoration, dike removal, biotechnical measures, stormwater management programs, land or easement acquisition, voluntary protection and enhancement projects, or incentive programs.
- D. Avoid structural flood control works. New or expanding development or uses in shoreline jurisdiction, including subdivision of land, that would likely require structural flood control works, such as dikes, levees, revetments, floodwalls, channel realignment, gabions or rip-rap, within a river, channel migration zone, floodway, or lake should not be allowed.
- E. When non-structural flood control is infeasible. New structural flood control works should only be allowed in shoreline jurisdiction when it can be demonstrated by a scientific and engineering analysis that they are necessary to protect existing development or mitigate or resolve existing stormwater problems, that impacts to ecological functions and priority species and habitats can be successfully mitigated so as to assure no net loss, that appropriate vegetation conservation actions are undertaken, and where non-structural flood hazard reduction measures are infeasible.
- F. Bioengineered flood control works. The City should facilitate returning river and stream corridors to more natural hydrological conditions. Unless otherwise determined infeasible by federal or state agencies with permit authority or by the Shoreline Administrator, flood control works should be bioengineered to enhance ecological functions, create a more natural appearance, improve ecological processes, and provide more flexibility for long-term shoreline management.
- G. Avoid damage to other properties. Flood control works and shoreline uses, development, and modifications should be located, designed, constructed and maintained so their resultant effects on geo-hydraulic shoreline processes will not cause significant damage to other properties or shoreline resources, and so that the physical integrity of the shoreline corridor is maintained.

4.3.2 Regulations

A. Avoid increase in flood hazards. Development in floodplains within shoreline jurisdiction shall, consistent with adopted flood hazard plans and regulations, avoid significantly or cumulatively increasing flood hazards. Development shall be consistent with all City of Wenatchee regulations including critical areas regulations (SMP Appendix B), stormwater regulations (Section 4.6), in-water structure regulations (Section 5.6), as well as guidelines of the Natural Resource Conservation Service, the U.S. Army Corps of Engineers, and the Multi-Jurisdiction Natural Hazard Mitigation Plan

- B. Channel migration zone (CMZ) Maps.
 - 1. Channel migration zone maps are included in Appendix E of this SMP. These maps show complete coverage of shoreline waterbodies in the City of Wenatchee that have potential for channel migration within shoreline jurisdiction. These maps shall be utilized in shoreline application reviews.
 - 2. Applicants for shoreline development or modification may submit a site-specific channel migration zone study if they do not agree with the mapping in Appendix E.
- C. Documentation. Documentation of alternate channel migration zone boundaries may include, but is not limited to, historic aerial photographs, topographic mapping, flooding records, and field verification.
- D. Uses and activities authorized in floodway or CMZ. The following uses and activities may be authorized in shoreline jurisdiction where appropriate and/or necessary within the channel migration zone (CMZ) or floodway:
 - 1. Actions that protect or restore the ecosystem-wide processes or ecological functions or development with a primary purpose of protecting or restoring ecological functions and ecosystem-wide processes.
 - 2. Forest practices in compliance with the Washington State Forest Practices Act and its implementing rules.
 - 3. Existing and ongoing agricultural practices provided that no new restrictions to channel movement occur.
 - 4. Bridges, utility lines, public stormwater facilities and outfalls, and other public utility and transportation structures where no other feasible alternative exists or the alternative would result in unreasonable and disproportionate costs and the long-term maintenance or repair costs are not significantly different between options inside or outside of the floodway or channel migration zone. For the purposes of this section "unreasonable and disproportionate" means that locations outside of the floodway or channel migration zone would add more than 20% to the total project cost.
 - 5. Repair and maintenance of an existing legally established use or structure, provided that channel migration is not further limited, or flood hazards to other uses increased, and provided that such actions do not cause significant ecological impacts.
 - 6. New development in incorporated municipalities and designated urban growth areas, as defined in Chapter 36.70A RCW, located upland of existing structures that prevent active channel movement and flooding.
 - 7. Modifications or additions to an existing nonagricultural legal use provided that channel migration is not further limited and provided that such actions do not cause significant ecological impacts.
 - 8. Measures to reduce shoreline erosion, provided that it is demonstrated that the erosion rate exceeds that which would normally occur in a natural condition, that the measures do not interfere with fluvial hydrological and geo-morphological processes normally acting in natural conditions, and that the measures include appropriate mitigation of impacts to ecological functions associated with the river or stream.
- E. Structural flood hazard reduction measures. New structural flood hazard reduction measures in shoreline jurisdiction shall be allowed only when it can be demonstrated by

- a scientific and engineering analysis that they are necessary to protect existing development, that nonstructural measures are not feasible, that impacts on ecological functions and priority species and habitats can be successfully mitigated so as to assure no net loss, and that appropriate vegetation conservation actions are undertaken consistent with this SMP. Structural flood hazard reduction measures shall be consistent with the City's comprehensive flood hazard management plan and/or Multi-Jurisdiction Natural Hazard Mitigation Plan.
- F. Placement of structural flood hazard reduction measures. New structural flood hazard reduction measures in shoreline jurisdiction shall be placed landward of associated wetlands and designated shoreline buffers, except for actions that increase ecological functions, such as wetland restoration; provided no other alternative to reduce flood hazard to existing development is feasible. The need for, and analysis of feasible alternatives to, structural improvements shall be documented through a geotechnical analysis.
- G. New development and subdivisions. New development or subdivisions in shoreline jurisdiction shall only be approved when it can be reasonably foreseeable that the development or use would not require structural flood hazard reduction measures to be implemented within the channel migration zone or floodway during the life of the development or use consistent with the following:
 - 1. Floodway: New development and subdivisions shall be subject to applicable floodway regulations in Appendix B.
 - 2. Channel Migration Zone: New development and subdivision in shoreline jurisdiction on lots containing channel migration zones shall also be subject to Appendix B, Critical Areas Regulations for geologically hazardous areas, and Appendix E, Channel Migration Zone Maps.
 - a. New development in the channel migration zone within shoreline jurisdiction is allowed subject to:
 - i. Structures are located on an existing legal lot created prior to the effective date of this SMP;
 - ii. A feasible alternative location outside of the channel migration zone is not available on-site; and
 - iii. To the extent feasible, the structure and supporting infrastructure is located the farthest distance from the OHWM, unless the applicant can demonstrate that an alternative location is the least subject to risk
 - b. New subdivisions in the channel migration zone within shoreline jurisdiction may be approved subject to the following design standards:
 - i. Each lot created within the subdivision shall contain five-thousand square feet or more of buildable land either outside of the channel migration zone or inside the channel migration zone but outside of areas that might require new structural flood hazard protection measures; for the purposes of this section, buildable means capable of supporting a dwelling and necessary associated accessory structures and improvements such as access and septic facilities. Channel migration zone areas can be included in total lot area required by zoning provided the buildable area meets the criteria specified above.

- a) Open Space Lots or Tracts: Open space lots or tracts are not subject to the minimum lot size in Section (1) above.
- b) Boundary Line Adjustments: Boundary line adjustments in a channel migration zone shall not result in a lot, tract or parcel smaller than the minimum size required by the zoning and subdivision code and this SMP; provided that whenever any one or more lots involved in the proposed adjustment are smaller than the allowable minimum size, the change may be approved so long as the adjustment does not increase the existing nonconformity in consideration of applicable regulations and standards.
- ii. Access to all lots that must cross the channel migration zone in shoreline jurisdiction shall be consolidated in a single location, and shall be accomplished using measures that have the least adverse impact on channel migration, such as a bridge; and
- iii. All other infrastructure is located outside the channel migration zone except infrastructure may be allowed in the channel migration zone if feasible alternative location is not available on-site and the infrastructure is located the farthest distance from the OHWM.
- H. The removal of gravel for flood control is only allowed if biological and geomorphological study demonstrates a long term benefit to flood hazard reduction, no net loss of ecological functions, and extraction is part of a comprehensive flood management solution.

4.4 Public Access

4.4.1 Policies

- A. Types of public access. Public access includes both physical and visual approaches to shorelines. Scattered, small access points with low levels of alteration are preferred by some recreationalists for certain uses (e.g., fishing), but not others (e.g., RV camping, swim beaches, picnicking, event facilities).
- B. Increase public access where appropriate. The City should seek to increase the amount and diversity of public access to shorelines consistent with shoreline public access plans, the natural shoreline character, property rights, public rights under the Public Trust Doctrine¹, and public safety.
- C. Priorities. Public access should be maintained, enhanced, and increased in accordance with the following priorities unless found infeasible or unconstitutional:
 - 1. Maintain existing public access sites and facilities, rights of way, and easements.
 - 2. Provide new or enhance existing public access opportunities on existing public lands and easements.

¹ The "public trust doctrine" is a common law principle holding that "the waters of the state are a public resource owned by and available to all citizens equally for the purposes of navigation, conducting commerce, fishing, recreation and similar uses." While the doctrine "protect(s) public use of navigable water bodies below the ordinary high water mark," the doctrine "does not allow the public to trespass over privately owned uplands to access the tidelands." See:

http://www.ecy.wa.gov/programs/sea/sma/laws_rules/public_trust.html.

- 3. Acquire property or easements to add public access opportunities to implement adopted public access plans and/or to recognize opportunities to protect areas that hold unique value for public enjoyment.
- 4. Encourage public access and public view corridors to shorelines as part of shoreline development activities.
- D. Findings. The City should require public access in private development projects where the City can demonstrate nexus, proportionality and reasonable necessity for the public access requirement.
- E. Implementation. The City should implement the shoreline public access plan contained in Appendix F to meet growing resident and tourist populations. Implementation strategies should address public access and recreation standards and a capital improvement program. The City should periodically review the shoreline public access plan, at a minimum every eight years. (RCW 90.58.080)
- F. Public access exceptions. Public access should not be required where it is demonstrated to be infeasible due to reasons of incompatible uses, safety, security, or impact to the shoreline environment or due to constitutional or other legal limitations that may be applicable.
- G. Willing property owners. Local governments and other agencies should seek willing property owners to participate in public access projects, such as through voluntary agreements such as conservation easements and trail easements.
- H. Respect private property. Public access does not include the right to enter upon or cross private property, except on dedicated public rights-of-way or easements or where development is specifically designed to accommodate public access. The design of public access should minimize potential impacts to private property and individual privacy. This may include providing a physical separation to reinforce the distinction between public and private space, and may be achieved by providing signage, adequate space, and/or through screening with landscape planting or fences.
- I. Safety and environment. Public access should be designed consistent with public safety objectives. Public access design should also conserve or protect natural amenities. Where public access is determined to be incompatible due to reasons of safety, security, or impact to the shoreline, the proponent should consider alternate methods of providing public access, such as offsite improvements, viewing platforms, separation of uses through site planning and design and restricting hours of public access. Off-site public access improvements may be allowed if such improvements would provide a greater public benefit and reduce safety and environmental impacts.
- J. Visual access. As views to shorelines contribute to quality of life, tourism economy, and property values, the following should be considered:
 - 1. The City of Wenatchee should provide visual access to the water whenever possible by developing viewpoints where the topography prevents direct access.
 - 2. New development should consider the following:
 - a. Views from Public Properties and Significant Numbers of Single Family Dwellings: Flexible development standards, such as height, bulk, scale, setbacks, lighting, and view corridors, should be established to assure preservation of unique, fragile, and scenic elements and to protect existing views from public property or large numbers of residences, particularly where development would exceed three stories in height.

- b. Private views of the shoreline are not expressly protected, particularly when development is less than 35 feet in height. Property owners concerned with the protection of views from private properties are encouraged to obtain view easements, purchase intervening property, or seek other means of minimizing view obstruction.
- K. Roads, streets, and alleys abutting bodies of water. Roads, streets, and alleys abutting bodies of water should be preserved, maintained, consolidated enhanced, and/or created for public access. Vacations of roads, streets, and alleys should be discouraged and only allowed in strict compliance with RCW 35.79.035 (Streets and Alleys).
- L. Accessibility. Public access should be provided as close as possible to the water's edge without causing significant ecological impacts and should be designed in accordance with the Americans with Disabilities Act.
- M. Waterfront Area. The City of Wenatchee should recognize that the Wenatchee waterfront is a unique regional recreational resource and enhance waterfront activities and amenities specifically related to the shoreline environment.
- N. Waterfront Subarea Plan. The City of Wenatchee should implement the adopted Waterfront Sub Area Plan policies and projects for parks, trails, and public access.
- O. Waterfront Park. The City of Wenatchee should protect the environmental integrity of the waterfront trail and park. Specifically:
 - 1. Minimize the loss of open space and landscaped areas within the park.
 - 2. Expand and improve the waterfront trail, where necessary, to support usage and minimize conflicts between different types of users.
 - 3. Design park improvements to complement and enhance surrounding park features.

4.4.2 Regulations

- A. The City's shoreline public access plan provides for a connected network of parks and open space connected by trails. The City's public access planning process provided in Appendix F provides more effective public access than individual project requirements for public access. The City shall review shoreline developments for consistency with the Shoreline Public Access Plan in Appendix F.
- B. Public Access. Where existing public access is not consistent with the Shoreline Public Access Plan, shoreline public access shall be required for the following types of shoreline land uses and activities:
 - 1. Shoreline recreation pursuant to Section 5.13;
 - 2. New structural public flood hazard reduction measures, such as dikes and levees;
 - 3. Shoreline development by public entities, including local governments, port districts, state agencies, and public utility districts; and
 - 4. New marinas when water-enjoyment uses are associated with the marina.
 - 5. Residential subdivisions creating five or more lots or multifamily developments of five or more units;
 - 6. Nonwater-oriented commercial uses; and/or
 - 7. Nonwater-oriented industrial uses.
- C. Exceptions: Public access shall not be required for applicant(s)/proponent(s) that demonstrate to the satisfaction of the City at least two of the following criteria are met and that alternatives have been considered per criteria 7.
 - 1. The development consists of less than five dwellings or lots;

- 2. Unavoidable health or safety hazards to the public exist and cannot be prevented by any practical means;
- 3. Inherent security requirements of the use cannot be satisfied through the application of alternative design features or other solutions;
- 4. Significant environmental impacts will result from the public access that cannot be mitigated;
- 5. Significant undue and unavoidable conflict between any access provisions and the proposed use and/or adjacent uses would occur and cannot be mitigated;
- 6. The subject site is separated from the shoreline waterbody by intervening public or private improvements such as highways, railroads, existing structures, or similar significant intervening improvements;
- 7. Except in the case of 1 and 6 above, all feasible alternatives have been exhausted, including, but not limited to:
 - a. Where physical access is not feasible, providing for visual access instead;
 - b. Regulating access by such means as limiting hours of use to daylight hours;
 - c. Designing separation of uses and activities, i.e., fences, terracing, hedges, landscaping, signage, etc.; or
 - d. Provision of an off-site public access or a fee-in-lieu pursuant to Section D below that allows public access at a site physically separated from, but capable of serving the proposal.
- D. Off-site Public Access or Fee-in-Lieu.
 - 1. Off-site public access may be permitted by the City where it results in an equal or greater public benefit than on-site public access, or when on-site limitations of security, environment, or feasibility are present. Off-site public access may be visual or physical in nature. Off-site public access may include, but is not limited to, enhancing a nearby public property (e.g. existing public recreation site; existing public access; road, street or alley abutting a body of water; or similar) in accordance with City standards; providing, improving or enhancing public access on another property under the control of the applicant/proponent; or another equivalent measure.
 - 2. Instead of on-site or off-site public access improvements, the City may require or an applicant may propose a fee-in-lieu. A fee-in-lieu may be assessed through the SEPA process or RCW 82.02.020, where appropriate, such as where the off-site improvement is best accomplished by the City at a later date or better implements the City's Shoreline Public Access Plan in Appendix F. The cost of providing the off-site public access shall be proportionate to the total long-term cost of the proposed development. The fee-in-lieu agreements or mitigation measures shall address the responsibility and cost for operation and maintenance.
- E. Design Standards. Public access shall be designed in accordance with City of Wenatchee Parks and Recreation Department Park Design Standards and Development Policies. Public Access standards to be used most frequently in shoreline areas are trails. The following are the trail standards anticipated to be used the most:
 - 1. Primary Trails. A primary trail is paved and has a minimum improved surface width of 10 feet with a one foot clear area on each side of the paved surface.
 - 2. Pathway. A pathway has a minimum width of four (4) feet.
- F. Buffering Private Property. Public access facilities shall be compatible with adjacent private properties through the use of buffering or other techniques to define the

- separation between public and private space, including by not limited to: natural elements such as logs, vegetation, and elevation separations.
- G. Connectivity. Physical public access shall be designed to connect to existing or future public access features on adjacent or abutting properties, or shall connect to existing public rights-of-way, consistent with design and safety standards.
- H. Roads, Streets, and Alleys. The City may not vacate any road, street, or alley abutting a body of water except as provided under RCW 35.79.035.
- I. Conditions of Approval. The City may condition public access proposals to ensure compatibility with the Shoreline Public Access Plan in Appendix F, compatibility with existing public access or transportation facilities, address environmental conditions or environmental impacts, and compatibility with adjacent properties. Conditions may include but are not limited to the following:
 - 1. Use materials appropriate to the character and environmental condition;
 - 2. Include barrier free designs to meet Americans with Disabilities Act;
 - 3. Provide auxiliary facilities such as parking, restrooms, refuse containers or other amenities;
 - 4. Provide landscaping;
 - 5. Provide signage with the appropriate identification and hours of access;
 - 6. Establish operation and maintenance responsibilities;
 - 7. Identify dedication and recording requirements;
 - 8. Determine timing of public access installation in relation to the construction of the proposal; and
 - 9. Determine ongoing availability to the public or community for which it is designed.

4.5 Vegetation Conservation and Shoreline Buffers

4.5.1 Policies

- A. Conserve shoreline vegetation. Where new developments, uses and/or redevelopments are proposed, shoreline vegetation, both upland and waterward of the OHWM, should be conserved to maintain shoreline ecological functions and processes. Vegetation conservation and restoration should be used to mitigate the direct, indirect and cumulative impacts of shoreline development, wherever feasible. Important functions of shoreline vegetation include, but are not limited to:
 - 1. Providing shade necessary to maintain water temperatures required by salmonids and other organisms that require cool water for all or a portion of their life cycles.
 - 2. Regulating microclimate in riparian and near shore areas.
 - 3. Providing organic inputs necessary for aquatic life, including providing food in the form of various insects and other benthic macro invertebrates.
 - 4. Stabilizing banks, minimizing erosion and sedimentation, and reducing the occurrence and severity of landslides.
 - 5. Reducing fine sediment input into the aquatic environment by minimizing erosion, aiding infiltration, and retaining runoff.
 - 6. Improving water quality through filtration and vegetative uptake of nutrients and pollutants.

- 7. Providing a source of large woody debris to moderate flows, create hydraulic roughness, form pools, and increase structural diversity for salmonids and other species.
- 8. Providing habitat elements for riparian-associated and aquatic species, including downed wood, snags, migratory corridors, breeding and rearing sites, food, and/or cover.
 - A. Shoreline buffers. Regulations for shoreline buffers should be developed consistent with SMA objectives to protect existing ecological functions, accommodate water-oriented and preferred uses, recognize existing development patterns, and minimize creation of non-conforming uses and developments.
 - B. Native plant list. The City should maintain a list of suggested native plants to be utilized in restoration or mitigation plantings. Property owners may choose species from this list when native plants are desired or required, or may use other native species identified by the Washington Native Plant Society, Washington Department of Natural Resources Natural Heritage Program, Washington Department of Fish and Wildlife, or other agency or entity that has expertise.
 - C. Noxious and invasive weeds. Encourage management and control of noxious and invasive weeds. Control of such species should be done in a manner that retains onsite native vegetation, provides for erosion control, and protects water quality. Use of non-toxic or natural controls is preferred.

4.5.2 Regulations

- A. Conserve vegetation. Shoreline developments shall address conservation and maintenance of vegetation through compliance with this Section. Uses and modifications must be designed and located to ensure that the development will not result in a net loss of shoreline ecological functions or have significant adverse impacts to shoreline uses and vegetation, resources, and values provided for in RCW 90.58.020.
- B. Adverse impacts on vegetation. Adverse impacts to shoreline vegetation are considered to occur when vegetation is removed that would reduce the performance of any of the functions listed in SMP Section 4.5.1.A.
 - 1. For example, the following actions would be considered an adverse impact, except when part of an approved restoration plan:
 - a. Removal or alteration of native plant communities in shoreline jurisdiction;
 - b. Removal of native or non-native trees that overhang the stream, river or lake shoreline water body;
 - c. Removal of native or non-native vegetation on slopes if that vegetation supports maintenance of slope stability and prevents surface erosion; or
 - d. Removal of vegetation followed by supplemental grading and alteration of existing drainage patterns.
 - 2. For example, the following vegetation alteration actions would not be considered an adverse impact when they occur outside of a shoreline buffer as established in in this Section below:
 - a. Removal of existing lawn, landscaping or other non-native vegetation associated with existing uses, provided any impervious surfaces that

- replace removed vegetation are infiltrated, treated, and/or detained as necessary to control potential adverse impacts to water quality or quantity;
- b. Removal of vegetation, which doesn't provide an identified function in SMP Section 4.5.1.A, on lots upland of an improved road, railroad or other development, provided any new impervious surfaces that replace removed vegetation are infiltrated, treated, and/or detained as necessary to control potential adverse impacts to water quality or quantity; or
- c. Removal of invasive or noxious plant species.
- C. Tree Pruning, Retention, and Removal. To maintain the ecological functions that trees provide to the shoreline environment, the applicant should be encouraged to retain all viable trees within shoreline jurisdiction.
 - 1. Selective pruning of trees for safety is allowed if consistent with the provisions of Section 4.2, Ecological Protection and Critical Areas.
 - 2. Noxious and invasive trees are encouraged to be removed from shoreline jurisdiction and the removal area planted with shoreline appropriate trees and/or other vegetation.
 - 3. Within any shoreline buffer, significant trees shall be retained to the maximum extent possible, except where the tree is dead, diseased, dying or where a healthy tree creates a hazard situation.
 - a. Where trees pose a significant safety hazard as indicated in a written report by a certified arborist or other qualified professional, they may be removed if the hazard cannot be mitigated by topping or other techniques that maintain some habitat function. Stumps should be retained in the ground to provide soil stabilization unless another soil stabilization technique is utilized immediately after stump removal.
 - 4. For removal of a non-hazard significant tree in the shoreline buffer, an approved mitigation and management plan, public access, or view corridor is required.
 - 5. Within shoreline jurisdiction, unauthorized tree activities, including, but not limited to:
 - a. Significant trees shall not be removed or topped for the purpose of creating views; or
 - b. Clearing, damaging or poisoning resulting in an unhealthy or dead tree; or
 - c. Removal of at least half of the live crown; or
 - d. Damage to roots or trunk that is likely to destroy the tree's structural integrity.
 - 6. Tree removal in shoreline jurisdiction, proposed as part of an approved use or development, shall be minimized through site design and mitigated if the tree removal has an adverse impact as outlined in SMP Section 4.5.2.B. When required and provided that no invasive or noxious trees are allowed, tree replacement shall occur as follows:
 - a. Native trees with a similar native tree.
 - b. Non-native trees with a native tree or another non-native tree.
 - c. Noxious and invasive trees with a native or non-native tree.
 - 7. When tree replacement is required, the following replacement standards are applicable:
 - a. A planting plan showing the location, size, and species of the new trees.

- b. The required minimum size of the replacement tree(s) shall be five (5) feet tall for a conifer and 1 ¾ inch caliper for a deciduous or broad-leaf evergreen tree.
- c. All replacement trees in the shoreline buffer must be appropriate to that shoreline area and approved by the shoreline administrator.
- d. Replacement ratios are as follows:

TABLE 4 TREE REPLACEMENT RATIOS

Tree Type removed	Replacement Ratio Required
Invasive, noxious, dead, diseased, dying or	one-for-one replacement
hazardous tree	
Non-Hazard significant Tree	two-for-one replacement
All other tree removal	one-for-one replacement

- D. Non-native vegetation. With the exception of hand removal or spot-spraying of invasive or noxious weeds, the determination of whether non-native vegetation removal may be allowed in a shoreline buffer or critical area buffer must be evaluated in conformance with Section 4.2, Ecological Protection and Critical Areas. Non-native vegetation removal outside of shoreline buffers or critical area buffers does not require mitigation, except as noted under Subsections C and F, but must incorporate necessary erosion control measures.
- E. Unauthorized vegetation removal. Vegetation removal within shoreline jurisdiction that is not allowed under this Section and is conducted without the appropriate review and approvals is subject to enforcement provisions in Section 7.13 and requires the submittal and approval of a restoration plan prepared by a qualified professional, and shall be consistent with the provisions of Section 4.2, Ecological Protection and Critical Areas and appropriate requirements of Appendix B, Critical Areas Regulations. The restoration plan shall utilize only native vegetation, and shall be designed to compensate for temporal loss of function and address the specific functions adversely impacted by the unauthorized vegetation removal.
- F. Private View Corridors. The development or maintenance of view corridors can provide opportunities for visual access to waterbodies associated with privately owned waterfront lots. One view corridor, limited to 25 percent of the width of the lot frontage, or 25 feet, whichever distance is less, may be permitted per privately owned lot, when consistent with the provisions of Section 4.2, Ecological Protection and Critical Areas; Appendix B, Critical Areas Regulations; and this Section. A mitigation and management plan, as required by section 4.2 Ecological Protection and Critical Areas, must be submitted for review and approval.
 - 1. In addition to the submittal of a complete mitigation and management plan, an applicant must submit the following materials:
 - a. A graphic and/or site photos for the entire shoreline frontage which demonstrates that the existing or proposed development does not or will not have a view corridor of the waterbody, taking into account site topography and the location of existing shoreline vegetation on the parcel.
 - b. Demonstration that the view corridor will include the existing shoreline physical access corridor to minimize alteration of the shoreline buffer.
 - 2. Corridors must also be consistent with the following standards:

- a. Native vegetation removal shall be prohibited, unless the entire shoreline buffer between the primary structure or use and the shoreline waterbody consists of native vegetation and only when local topography prevents pruning or topping from providing the use or development with a view. Under those circumstances, native vegetation removal may be allowed only as needed to create or maintain the view corridor and provided that the view corridor is located to minimize removal of native trees and shrubs, in that order.
- b. Pruning of native trees shall be conducted by or under the supervision of a qualified professional such that the tree's long-term health shall not be compromised. Native shrubs shall not be pruned to a height less than four (4) feet. Tree topping is discouraged. Pruning of vegetation waterward of the OHWM is prohibited.
- c. Non-native vegetation within a view corridor may be removed when the mitigation and management plan can demonstrate a net gain in site ecological functions, and where any impacts are mitigated.
- d. Whenever possible, view corridors shall be located in areas dominated with non-native vegetation and invasive species.
- e. A view corridor may be issued once for a property. No additional vegetation pruning for the view corridor is authorized except as may be permitted to maintain the approved view corridor from regrowth. Limitations and guidelines for this maintenance shall be established in the mitigation and management plan.
- G. Conflicts with flood hazard reduction measures. The applicant shall submit documentation of conflicting provisions with any shoreline permit applications, and shall comply with all other provisions of this SMP that are not strictly prohibited by certifying or licensing agencies.
- H. Establishment of Buffers. The Table below establishes buffers to be measured landward in a horizontal and perpendicular direction to the OHWM of the shoreline waterbody. The following shoreline buffers shall apply to all new development on previously undeveloped sites, changes in use, and modifications of existing development. When environment designations are parallel, the buffer of the waterward environment extends only to the upland edge of that environment. The buffer for the landward environment would apply to uses and modifications in that upland environment. All buffer measurements for all environment designations are measured from the OHWM.

TABLE 5 SHORELINE BUFFERS BY ENVIRONMENT DESIGNATION FOR THE CITY OF WENATCHEE.

Environment Designation	Shoreline Buffer
Urban Conservancy	100'
Shoreline Residential	100'
Waterfront Park	Not applicable on public property – see section 1 below. This buffer applies to development on private property: 60'
High Intensity	60'

¹See J below for criteria guiding buffer reductions.

I. Waterfront Park Design and Maintenance Standards.

1. In recognition of the existing condition of current shoreline parks and recreation facilities located along Wenatchee's shoreline, the following standards shall guide new development and redevelopment of public properties within the Waterfront Park Environment Designation. The City shall review and condition the project to fully implement the standards below.

TABLE 6 WATERFRONT DESIGN AND MAINTENANCE STANDARDS

Design Element	Design and Management Standards
a. Category of Use Preference	 The following use preferences apply in priority order: Water-dependent uses located immediately upland of the OHWM Water-related and/or water-enjoyment uses located upland of water-dependent uses. Water-related and water-enjoyment uses shall not displace existing or planned water-dependent uses. If water-dependent uses are not feasible, then water-related or water-enjoyment uses are allowed immediately upland of the OHWM. Nonwater-oriented recreation uses located upland of water-oriented recreation uses Accessory, nonwater-oriented uses located upland of water-oriented uses. However, parking for those with disabilities, when no other location is feasible, may be located per "d" below.
b. Use Allowances	 Only water-oriented uses shall be located immediately upland of the OHWM. Water-oriented uses may be expanded. Accessory and primary nonwater-oriented uses shall be located upland of a water-oriented use except that parking for those with disabilities when no other location is feasible may be located per "d" below. [The City may establish a setback for the nonwater-oriented use based on unique conditions] Existing primary nonwater-oriented uses may only expand if they are located upland of water-oriented uses and if the expansion does not displace water-oriented uses. Existing water-enjoyment uses may be expanded. Existing water-oriented uses may not be converted to a nonwater-oriented use.
c. Impervious Surface and Stormwater Management	 New and expanded pollution-generating impervious surfaces (e.g., surfaces used predominantly by vehicles, such as parking areas, roads) must provide water quality treatment before discharging stormwater through use of oilwater separators, bio-swales, or other approved technique. This provision does not apply to boat launches. Runoff from pollution-generating and non-pollution-generating impervious surfaces shall be infiltrated or otherwise treated and discharged in accordance with water quality standards of the City of Wenatchee, unless infeasibility is demonstrated. New or expanded pollution-generating impervious surfaces within 30 feet of the OHWM shall be limited to those necessary to provide public access to boat launches, to improve existing informal parking areas, to expand existing parking, or to provide ADA parking.

Design Element	Design and Management Standards
	• Existing trail systems may only be expanded in response to increased demand, and shall be expanded in the following order of preference, with number 1 being the most preferred: 1) upland, 2) landward of existing trail, 3) laterally, and 4) waterward.
d. Parking	 New parking accessory to shoreline parks shall be at least 45 feet upland of the OHWM, except where a minimum number of parking spaces are provided closer than 45 feet to accommodate those with disabilities or where parking is provided within already disturbed areas. Existing parking closer than 45 feet upland of the OHWM may only be expanded in response to increased demand. Expanded parking shall be expanded in the following order of preference, with 1) being the most preferred: 1) upland, 2) landward of existing parking and 3) laterally of the existing parking.
e. Vegetation Management	 New and expanded uses in shoreline jurisdiction shall be located to avoid and minimize intrusion into riparian areas, as well as avoid tree and shrub removal. Tree removal shall follow the standards in Section C above. Shrubs removed in the shoreline buffer shall be replaced at a 2:1 ratio. Landscape designs for new, expanded, or modified recreation facilities shall incorporate the following. i. Select species that are suitable to the local climate, having minimal demands for water, minimal vulnerability to pests, and minimal demands for fertilizers. Native species shall comprise 50 percent of the landscaped area, not counting lawn area. If lawn areas are not currently established, the existing riparian vegetation shall be maintained, unless a mitigation and management plan demonstrates improved ecological function. ii. Preserve existing soil and vegetation (especially trees) where possible. Amend disturbed soils with compost. Mulch existing and proposed landscapes regularly with wood chips, coarse bark, leaves or compost. iii. Group plants by water need, use more efficient irrigation methods like drip and soakers under mulch, and design and maintain irrigation systems to reduce waste. iv. Place vegetation to maximize the following benefits: a. development or supplementation of a native vegetated wildlife corridor, b. development or supplementation of riparian vegetation adjacent to the water's edge, c. screening parking areas from views from the water or the park, and/or d. discouragement of wildlife that may directly or indirectly
f. Chemical Applications for Lawn and	 interfere with park use or human health (e.g., geese), A lawn and landscape management strategy for any allowed uses in the shoreline buffer shall be developed that incorporates the following: A site-specific plan for use of integrated pest management technique, if applicable.

Design Element	Design and Management Standards
Landscaping	ii. A detailed plan identifying anticipated use of fertilizers, herbicides and pesticides, to include method of application that ensures these materials will not enter the water. Phosphorus-containing fertilizer treatments shall not be applied to turf or landscaping within 30 feet of the OHWM. Natural applications such as bio-control methods, and hand removal are preferred over synthetic applications.
g. Pools	 Pools and other upland recreational uses that utilize chemically treated water must either be connected to a sewer system or must collect the water for later discharge into a sewer system. Pools and other upland recreational uses that utilize chemically treated water shall be located a minimum of 75 feet upland of the OHWM.
h. Lighting	 Outdoor lighting fixtures and accent lighting must be shielded and aimed downward, and shall be installed at the minimum height necessary. The shield must mask the direct horizontal surface of the light source. The light must be aimed to ensure that the illumination is only pointing downward onto the ground surface, with no escaping direct light permitted to contribute to light pollution by shining upward into the sky; except for: Temporary seasonal lighting or special event lighting that is removed within a 60-day period does not have to, but is encouraged to be shielded or aimed downward. Flag pole lighting must be limited to the minimum lighting necessary for illumination of the flag. Outdoor lighting fixtures and accent lighting shall not directly illuminate the stream or river, unless it is a navigational light subject to state or federal regulations.

- 2. Application requirements. Applicants shall submit a management plan that addresses compliance with each of the above standards and the following:
 - a. Drawings of existing facilities, including a narrative that identifies area (sq. feet or sq. meters) and description of uses, structures, trails, parking, riparian vegetation, campsites, recreational facilities (ball parks, picnic table, grilling areas), upland vegetation and lawn areas.
 - b. Drawings of proposed facilities, including a narrative that identifies area (sq. feet or sq. meters) and description of uses, structures, trails, parking, riparian vegetation, campsites, recreational facilities (ball parks, picnic table, grilling areas), upland vegetation and lawn areas.
 - c. Any increases in impervious surfaces (trail size, parking facilities, recreational facilities, etc.) shall be accompanied by a needs analysis that addressed the requirement for increased public facilities, what size facilities are needed by existing and projected users, and the nearest locations of similar facilities.
 - d. Expansion of public access/facilities shall be accompanied by a mitigation plan that addresses the design elements and the design and management standards above, addresses critical area impacts, and addresses the incorporation of applicable SMP restoration goals that have been

accomplished by the development, and demonstrates a net improvement in ecological shoreline functions. (For the purposed of this section, expansion means the outward enlargement or increase in size of the existing public access/facility outside of the existing defined area; e.g. the park boundaries are expanded from existing, or the enlargement of a facility goes beyond existing park boundaries, or conversely, facilities enlarged within existing park boundaries are not considered expansion.)

- J. Shoreline Buffer Reduction. Shoreline buffers may be administratively modified as outlined below:
 - 1. Roads(right-or-way), Railways (right-of-way), or an intervening legal lot of record under separate ownership. Where a legally established road, railway, or legal lot of record crosses a shoreline or critical area buffer and is wider than 20 feet measured perpendicularly from the OHWM of the shoreline, the Shoreline Administrator may approve a modification of the minimum required buffer width to the waterward edge of the improved road, railway, or legal lot of record. Approval of this modification by the Administrator may only occur if the part of the buffer on the upland side of the road, railway, or intervening legal lot of record sought to be reduced:
 - a. Does not provide additional protection of the shoreline water body or stream; and
 - b. Provides insignificant biological, geological or hydrological buffer functions relating to the waterward portion of the buffer adjacent to the shoreline water body or stream; and
 - c. Separates the subject upland property from the water body due to their width or depth; and
 - d. The intervening right-of-way or legal lot of record is developed.

e.

- 2. Administrative Shoreline Buffer Reduction. Reductions of up to twenty-five (25) percent of the shoreline buffer may be approved if the applicant demonstrates to the satisfaction of the Shoreline Administrator that:
 - a. A mitigation and management plan pursuant to Section 4.2.2 indicates that enhancing the buffer (by removing invasive plants or impervious surfaces, planting native vegetation, installing habitat features such as downed logs or snags, or other means) will result in a reduced buffer that functions at a higher level than the existing shoreline buffer. A mitigation and management plan is not necessary when the applicant or qualified professional submits a report describing:
 - b. How the proposed development does not result in a net loss of ecological functions compared to the existing condition;
 - c. A site plan illustrating the elements of the existing and proposed condition that support b.; and
 - d. How the project will prevent potential short-term construction-related impacts. This should include a description of how the proposal incorporates mitigation sequencing and how the design considers mitigation sequencing outlined in Section 4.2.2.
- 3. Common line shoreline buffer: A common line shoreline buffer may be utilized for the construction of a residential dwelling unit(s) on an undeveloped lot to

accommodate shoreline views that are similar, yet not necessarily equal, to those from adjoining properties. Common line shoreline buffers may be allowed on lots that are adjacent to lots that have residential dwelling unit(s) on one or both adjoining shoreline lots. The required setback is measured from the residences foundation corners closes to the ordinary high water mark; not from decks, patios, porches, or other residential appurtenances.

- e. The common line buffer/setback shall be determined by:
 - i. Existing residential dwelling units on both sides: Where there are existing residential dwelling units on both sides of the proposed residential dwelling unit(s), the setback shall be calculated the average of adjacent residential dwelling units' existing buffer/setback from the OHWM.
 - ii. Existing residential dwelling unit(s) on one side: Where there is an existing residential dwelling unit(s) within 150 feet of one side of the proposed residential dwelling unit(s), the setback shall be determined as a common line calculated by the adjacent residential dwelling unit's buffer/setback, as measured landward from the OHWM and the default buffer for the adjacent vacant lot.
- b. A mitigation and management plan prepared by a qualified professional shall be submitted and approved which demonstrates no net loss of ecological functions for the site in conformance with Section 4.2 Ecological Protection and Critical Areas.
- K. Developments or Uses Allowed in Buffers. The following developments or uses are allowed within the shoreline buffer without having to comply with the requirements of section J above.
 - 1. Those portions of public access development that require improvements or uses adjacent to the water's edge, such as fuel stations for retail establishments providing boat gas sales, haul-out areas for retail establishments providing boat and motor repair and service, boat launch ramps for boat launch facilities, swimming beaches or other similar activities. Any adverse ecological impacts must be mitigated. Vegetation mitigation may only be required when the alteration removes significant trees or other native vegetation.
 - 2. Native landscaping may be installed in the shoreline buffer, provided existing native vegetation is not removed. Non-native landscaping may only be authorized when specifically permitted under other provisions of the SMP. Use of noxious or invasive species is strictly prohibited. Chemical treatment of landscaping in shoreline buffers is discouraged, and any application of chemicals must be in strict conformance to the manufacturer's instructions.
 - 3. Shoreline residential access. A private access pathway constructed of pervious materials may be installed, a maximum of four (4) feet wide or some other standard consistent with Americans with Disabilities Act (ADA), through the shoreline buffer to the OHWM. Impervious materials may be used only as needed to construct a safe, tiered pathway down a slope using standards that are consistent with ADA. 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. Water-dependent or water related uses. Consistent with the use allowances for each environment designation, water-dependent and water related uses and activities may be located at the water's edge. Uses, developments and activities accessory to water-dependent and water related uses should be located outside any applicable standard or reduced shoreline buffer unless at least one of the following is met:
 - a. A location in the shoreline buffer is necessary for operation of the water-dependent or water related use or activity (e.g., a road to a boat launch facility);
 - b. In parks or on other public lands that are already legally established and whose use is primarily related to access to, enjoyment and use of the water, and they do not conflict with or limit opportunities for other water-oriented uses; or
 - c. The applicant's lot/site has topographical constraints where no other location of the development is feasible (e.g., the water-dependent use or activity is located on a parcel entirely or substantially encumbered by the required buffer).

In these circumstances above, uses and modifications accessory to water-dependent or water related uses must be designed and located to minimize intrusion into the shoreline buffer.

- d. 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 SMP. Applicants are encouraged to consider the buffer reduction options and implement mitigation sequencing prior to applying for a Shoreline Variance.
- 5. Public facilities and other water-oriented uses. As allowed by the use chart in this SMP, other essential public facilities as defined by RCW 36.70A.200, public access and recreation facilities, and their accessory uses and developments may be located in the shoreline buffer. This allowance is contingent on a demonstration that the use or activity cannot be reasonably accommodated or accomplished outside of the standard or reduced shoreline buffer and that alternative sites are not available. These uses and modifications must be designed and located to minimize intrusion into the buffer and must be consistent with this SMP.
- 6. Passive allowed activities. Education, scientific research, and passive recreational activities, including, but not limited to: fishing, bird watching, hiking, boating, horseback riding, snowshoe or cross-country skiing, swimming, canoeing, and bicycling, are allowed within shoreline buffers without a shoreline permit. This allowance is contingent upon the activity not including elements that meet the definition of "development." For example, hiking along a shoreline is allowed outright and does not require a permit; however, new trail construction on which to hike would constitute a development that requires permitting subject to the provisions of this SMP.
- 7. Site investigation allowed. Site investigative work necessary for land use application submittals such as surveys, soil logs, drainage tests and other related activities, may occur within shoreline buffers established by this SMP. In every

- case, buffer impacts should be avoided and/or minimized and disturbed areas shall be immediately restored.
- 8. Trails. Trails and associated facilities may be permitted in shoreline buffers, but should conform to design guidelines found in Public Access section of this SMP.
- 9. Siting of roads. Road crossings, where necessary, shall cross shoreline and critical area buffers as near perpendicular as possible, unless an alternate path would minimize disturbance of native vegetation or result in avoidance of other critical areas such as wetlands or geologically hazardous areas
- 10. Utilities. Where no other practical alternative exists to the excavation for and placement of wells, tunnels, utilities, or on-site septic systems in a shoreline buffer, these uses may be permitted if also allowed under Section 5.19

L. Existing Developments and Uses.

- 1. Existing uses may continue. Vegetation conservation standards shall not apply retroactively to existing, legally established uses and developments. Existing developments and uses, including residential appurtenances, may be maintained, repaired, and operated within shoreline jurisdiction and within shoreline buffers established in this SMP. In the absence of a development proposal, existing, lawfully established landscaping and gardens may be maintained in their existing condition including but not limited to, mowing lawns, weeding, harvesting and replanting of garden crops, pruning and replacement planting of ornamental vegetation or indigenous native species.
- 2. Landward of Shoreline Buffer. Existing developments and uses located landward of the shoreline buffer may redevelop or expand to the edge of the shoreline buffer consistent with the following:
 - a. Where such redevelopment results in removal of native vegetation, removal of native vegetation must be compensated at a 1:1 ratio with supplemental native shrub and groundcover plantings in the buffer waterward of the removal area.
 - b. Where such redevelopment results in removal of significant trees, compensation shall be provided as outlined in Subsection C above.
 - c. If compensation is inside the buffer and the buffer would not benefit from enhancement, compensatory plantings may be installed in a corridor perpendicular to the OHWM and extending upland of the buffer outside of the development footprint.
- 3. Waterward of the Shoreline Buffer. Existing developments and uses located waterward of the shoreline buffer may expand vertically or landward of the development.
 - a. Expansions waterward are prohibited unless the applicant obtains an administrative reduction under J above or a Shoreline Variance.
 - b. Expansions within the shoreline buffer laterally toward the side lot lines may be allowed, provided that there is no increase in runoff and water quality treatment is provided using the NPDES stormwater permit and the Eastern Washington Stormwater Management Manual, as amended, and that the administrative reduction provisions under J above are approved.

M. New Structures and Development.

1. New structures or developments prohibited. New structures or developments, including, but not limited to, pools, decks, patios, additions, sheds, fences, or other

- appurtenances, are not permitted in shoreline buffers except as specifically allowed in this section and the non-conforming chapter (Chapter 6).
- 2. New structures and developments located landward of shoreline buffers are allowed in shoreline jurisdiction on undeveloped sites and shall be sited to minimize removal of existing significant trees and native vegetation.
 - a. Removal of significant trees shall be compensated as outlined in Subsection C above.
 - b. Removal of other native vegetation must be compensated at a 1:1 ratio with supplemental native shrub and groundcover plantings waterward of the removal area.
 - c. If compensation is inside the buffer and the buffer would not benefit from enhancement, compensatory plantings may be installed in a corridor perpendicular to the OHWM and extending upland of the buffer outside of the development footprint.
- N. Water-oriented uses and developments in public park areas, recreational improvement projects shall place an emphasis on shoreline restoration/enhancement. This emphasis shall not require the removal of existing lawn areas, but should place an emphasis on incorporation of riparian plantings if the public access area is underutilized or public access would not be impaired by the plantings.
- O. Filling, clearing and grading. Filling, clearing and grading in shoreline jurisdiction shall be limited to the minimum necessary to accommodate approved shoreline development and shall also be in conformance with the provisions of Section 5.9. All earth-altering activities shall utilize best management practices to minimize and control erosion.

4.6 Water Quality, Stormwater and Nonpoint Pollution

4.6.1 Policies

- A. Do not degrade waters. The location, construction, operation, and maintenance of all shoreline uses and developments should maintain or enhance the quantity and quality of surface and groundwater over the long term.
- B. Assess and mitigate stormwater impacts. New developments or expansions or retrofits of existing developments should assess the effects of additional stormwater runoff volumes and velocities, and mitigate potential adverse effects on shorelines through design and implementation of appropriate stormwater management measures.
- C. Low impact development. Use of low impact development (LID) techniques for minimization of impervious surfaces and management of stormwater runoff is encouraged.
- D. Minimize need for synthetic chemical applications. Shoreline use and development, including invasive or noxious weed control, should minimize the need for synthetic chemical fertilizers, pesticides or other similar synthetic chemical treatments to prevent contamination of surface and ground water and/or soils and adverse effects on shoreline ecological functions and values. Use of natural and non-synthetic applications is encouraged when treatment is necessary.
- E. Provide and maintain buffers. As established in Chapter 4.5.2, buffers along all wetlands, streams, and lakes should be maintained for new development in a manner that implements best management practices and avoids the need for chemical treatment for vegetation management.

F. Existing development. For existing development, implementation of management plans that minimize or avoid the need for chemical treatments of vegetation in shoreline buffers is encouraged. When lands owned by the City of Wenatchee or other local government are leased to private parties, a vegetation management plan should be negotiated during lease renewal.

4.6.2 Regulations

- A. Do not degrade waters. Shoreline use and development shall incorporate measures to protect and maintain surface and groundwater quantity and quality in accordance with all applicable laws.
- B. New development and redevelopment. New development and redevelopment shall manage stormwater to avoid and minimize potential adverse effects on shoreline ecological functions, such as water quality and water quantity, through compliance with the Stormwater Management Manual for Eastern Washington in effect at the time without using any exceptions or applicability provisions. Deviations from the manual may be approved where it can be demonstrated that proposed deviations would provide equivalent or better treatment, retention, and/or detention. New development is encouraged to implement low impact development (LID) techniques.
- C. Maintain storm drainage facilities. Maintaining stormwater facilities is important to protecting shoreline areas. The following measures are to ensure maintenance and improve protections when feasible:
 - 1. The maintenance of storm drainage facilities is the responsibility of the property owner(s) or approved entity.
 - 2. The responsibility and the provision for maintenance shall be clearly stated on any recorded subdivision, short plat, or binding site plan map, building permit, property conveyance documents, maintenance agreements and/or improvement plans.
 - 3. Existing stormwater management systems and facilities shall be retrofitted and improved to incorporate LID techniques whenever feasible.
- D. Use BMPs. Best management practices (BMPs) for control of erosion and sedimentation shall be implemented for all development in shoreline jurisdiction through an approved temporary erosion and sediment control (TESC) plan, identified in the Stormwater Management Manual for Eastern Washington, as amended or the most recent adopted stormwater manual, or administrative conditions, in accordance with the current federal, state, and/or local stormwater management standards in effect at the time.
- E. Use LIDs. Low Impact Development (LID) techniques shall be considered and implemented to the greatest extent practicable throughout the various stages of all development including site assessment, planning and design, vegetation conservation, site preparation, retrofitting and built-out management techniques.
- F. Sewage management. All development within shoreline jurisdiction shall connect to the City of Wenatchee sewer system if not currently connected.
- G. Materials requirements. All materials that may come in contact with water shall be constructed of materials, such as untreated or approved treated wood, concrete, approved plastic composites or steel, that will not adversely affect water quality or aquatic plants or animals. Materials used for decking or other structural components shall be approved by applicable state or federal agencies for contact with water to avoid

5 SHORELINE MODIFICATIONS AND USES

Chapter 5 presents specific policies and regulations that apply to particular developments, uses, or activities within the shoreline jurisdiction.

Each section includes policies and regulations. Policies are statements of principles that guide and determine present and future decisions. Regulations are rules that govern developments, uses, or activities.

Shoreline application requirements are found in Section 7.4 of this SMP. Chapter 5 may contain specific submittal requirements for a particular use or modification beyond those stated in Section 7.4. Chapter 5 also contains performance standards for shoreline modifications and uses.

5.1 General Upland Shoreline Modification and Use Regulations

This section provides policies and standards addressing preferred layouts of shoreline development and appropriate signage serving the intended use and recognizing shoreline locations.

5.1.1 Policies

- A. Shoreline modifications should be allowed only where they are demonstrated to be necessary to support or protect an allowed primary use or structure, or a legally existing shoreline use or structure.
- B. Shoreline modifications should be designed to avoid sensitive areas.
- C. Location of Nonwater-Oriented Accessory Uses. Nonwater-oriented accessory development or use that does not require a shoreline location should be located landward of shoreline jurisdiction unless such development is required to serve approved water-oriented uses and/or unless the site is physically separated from the shoreline by another property or public ROW.
- D. Minimize Impacts on Shoreline and Upland Uses. Development should be located, designed, and managed to minimize impacts on shoreline or upland uses through bulk and scale restrictions, setbacks, buffers, light shielding, noise attenuation, limited signage, and other measures.
- E. Vistas and Viewpoints. Vistas and viewpoints from public properties and rights of way should not be degraded or impaired.

5.1.2 Regulations

- A. Design features for compatibility. Shoreline use and development activities shall be designed to complement the character and setting of the property, minimize noise and glare, and avoid impacts to view corridors. Development and uses shall be designed in a manner that directs land alteration to the least sensitive portions of the site to maximize vegetation conservation, both upland and aquatic; minimize impervious surfaces and runoff; protect riparian, nearshore, aquatic and wetland habitats; protect wildlife and habitats; protect archaeological, historic and cultural resources; and preserve aesthetic values. Shoreline applicants shall demonstrate efforts to minimize potential impacts to the extent feasible, including:
 - 1. Building mechanical equipment shall be incorporated into building architectural features to the maximum extent possible. Where mechanical equipment cannot be incorporated into architectural features, a visual screen shall be provided

- consistent with building exterior materials that obstructs views of such equipment.
- 2. Outdoor storage shall be screened from public view through techniques such as landscaping, berming, fencing and/or other equivalent visual screening measures.
- 3. Property screening in the form of fences or berms shall be subject to Section 5.1.2.E below.
- B. Preference for water-oriented facility location. Shoreline developments shall locate the water-oriented portions of their developments along the shoreline and place all other facilities landward or outside shoreline jurisdiction, unless the site is physically separated from the shoreline by another property or public ROW. Uses and/or developments such as parking, service buildings or areas, access roads, utilities, signs, and materials storage shall be located landward of shoreline, riparian and/or wetland buffers and landward of water-oriented developments and/or other approved uses, unless the site is physically separated from the shoreline by another property or public ROW
- C. Minimize changes to topography. To the extent feasible, developmental design shall conform to natural contours and minimize disturbance to soils and native vegetation and natural features.
- D. Soil disturbance. All disturbed areas shall be restored and protected from erosion using vegetation and other means.
- E. Height Analysis.
 - 1. Heights greater than 35 feet may be allowed within the Height Analysis area (see Inventory and Assessment for Height Analysis) provided applicants proposing building or structure heights above 35 feet accomplish the following:
 - a. The height proposal must be consistent with the underlying zoning height requirements.
 - b. Apply for a Substantial Development Permit.
 - c. Demonstrate that the development will not cause a view obstruction from public properties or substantial number of residences for an area greater than 1,000 feet from the development boundaries.
 - d. If an impact to a substantial number of residences or a view obstruction from public properties or a large number of residences is found, a view analysis shall be required (see 2. b below).
 - 2. Heights greater than 35 Feet outside the Height Analysis area (See Inventory and Assessment for Height Analysis): Per WAC 173-27-180, applicants for structures exceeding 35 feet in height shall provide a view analysis:
 - a. In the case of building heights above 35 feet, but inconsistent with this SMP and the underlying zoning, a Shoreline Conditional Use Permit authorization and a view analysis shall be required.
 - b. View Analysis: The applicant shall prepare a view analysis as follows:
 - A cumulative view obstruction analysis within a 1,000-foot radius of the proposed development combined with those of other developments that exceed 35-feet in height in the same radius shall be accomplished.
 - ii. The cumulative impact analysis shall address overall views that are lost, compromised, and/or retained; available view corridors; and surface water views lost, compromised, and/or retained

- iii. The applicant shall demonstrate through photographs, videos, photo-based simulations, and/or computer-generated simulations that the proposed development will obstruct less than 30% of the view of the shoreline enjoyed by a substantial number of residences on areas adjoining such shorelines
- iv. For phased developments, the view analysis shall be prepared in the first phase and include all proposed buildings.
- F. Lighting. Interior and exterior lighting shall be designed and operated to avoid illuminating nearby properties or public areas; prevent glare on adjacent properties, public areas, or roadways; avoid infringing on the use and enjoyment of such areas; to prevent hazards; and prevent illumination of the Wenatchee or Columbia Rivers. Methods of controlling spillover light include, but are not limited to, limits on height of structure, limits on light levels of fixtures, light shields, setbacks, buffer areas and screening. Lighting shall be directed away from shoreline areas.
- G. Sign regulations.
 - 1. Views: Signs shall not significantly obstruct visual access to the water or scenic vistas nor impair driver vision.
 - 2. Natural Features: Signs shall not be posted or painted on natural features such as trees, rocks, and hillsides, etc. within shoreline jurisdiction.
 - 3. Pennants, banners and other devices of seasonal, holiday, or special event character may be utilized on a temporary basis based on the City's zoning code and sign standards.
 - 4. Moved Signs: Signs that are moved, replaced, or substantially altered shall conform to SMP requirements and City regulations. For the purposes of this section, "substantial alterations" includes modifying structural elements of the sign.
 - 5. Signs required by law shall not be subject to limitations with respect to the number, location, and/or size, provided that they are the minimum necessary to achieve the intended purpose. Signs required by law include, but are not limited to, official or legal notices issued and posted by any public agency or court, or traffic directional or warning signs.
 - 6. Readerboards/electronic message center signs shall not be visible from or project light onto the aquatic environment.
 - 7. Reader board/electronic message centers, projecting signs, wall signs, freestanding and off-site signs, monument signs, and on-site portable signs are prohibited in the Urban Conservancy Environment Designation.

Illuminated signs and signs with effects shall not project light onto or be visible from the aquatic environment. A sign with "effects" is considered to have design components or features which move mechanically, electrically, or by any other means to easily rotate, alternate, or move messages, images, graphics, lighting or any portion of a sign or sign feature.

5.2 General Aquatic Shoreline Modification and Use Regulations

These policies and regulations apply to all modifications and uses taking place waterward of the OHWM, whether or not a shoreline permit or written statement of exemption is required.

5.2.1 Policies

- A. Protect beneficial uses, including ecological functions and water-dependent uses. Shoreline modifications and uses should be designed, located and operated in a manner that supports long-term beneficial use of the shoreline and protects and maintains shoreline ecological functions and processes. Modifications should not be permitted where they would result in a net loss of shoreline ecological functions, adversely affect the quality or extent of habitat for native species, adversely impact other habitat conservation areas, or interfere with navigation or other water-dependent uses.
- B. Minimize and mitigate unavoidable impacts. All significant adverse impacts to the shoreline should be avoided or, if that is not possible, minimized to the extent feasible and then mitigate in accordance with Chapter 4.2 Ecological Protection.
- C. Protect water quality and hydrology. Shoreline modifications and uses should be designed and managed to prevent degradation of water quality and alteration of natural hydrological conditions.

5.2.2 Regulations

The following regulations shall apply to in-water work, including, but not limited to, installation of new structures, repair or maintenance of existing structures, replacement projects, restoration projects, and aquatic vegetation removal:

- A. Siting and design requirements. In-water structures and activities shall be sited and designed to avoid the need for future shoreline stabilization activities and dredging, giving due consideration to watershed functions and processes, with special emphasis on protecting and restoring priority habitat and species. Modifications and uses located in the Aquatic environment shall be the minimum size necessary.
- B. Required permits. Projects involving in-water work must obtain all applicable state and federal permits or approvals, including, but not limited to, those from the U.S. Army Corps of Engineers, Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources, and/or Chelan County Public Utility District.
- C. Timing restrictions. Projects involving in-water work shall comply with timing restrictions as set forth by state and federal project approvals.
- D. Structure removal. Removal of existing structures shall be accomplished so the structure and associated material does not re-enter the waterbody.
- E. Disposal of waste material. Waste material, such as construction debris, silt, excess dirt or overburden resulting from in-water structure installation, shall be deposited outside of shoreline jurisdiction in an approved upland disposal site. Proposals to temporarily store waste material or re-use waste materials within shoreline jurisdiction may be approved provided that use of best management practices is adequate to prevent erosion or water quality degradation and that an on-site location outside of shoreline jurisdiction is not available.
- F. Hazardous materials. Extreme care shall be taken to ensure that no petroleum products, hydraulic fluid, fresh cement, sediments, sediment-laden water, chemicals, or any other toxic or deleterious materials are allowed to enter or leach into the waterbody during in-water activities. Necessary refueling of motorized equipment, other than watercraft, shall be conducted outside of shoreline buffers and a minimum of 50 feet from the OHWM if feasible. Appropriate spill clean-up materials must be on-site at all times, and any spills must be contained and cleaned immediately after discovery.

- G. Prevent siltation of adjacent areas. In-water work shall be conducted in a manner that causes little or no siltation to adjacent areas. A sediment control curtain shall be deployed in those instances where siltation is expected. The curtain shall be maintained in a functional manner that contains suspended sediments during project installation.
- H. Below-OHWM excavations. Any trenches, depressions, or holes created below the OHWM shall be backfilled prior to inundation by high water or wave action.
- I. Concrete management. Fresh concrete or concrete by-products shall not be allowed to enter the waterbody at any time during in-water installation. All forms used for concrete shall be completely sealed to prevent the possibility of fresh concrete from entering the waterbody.
- J. Protection of bank and vegetation. Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to perform the in-water work. All disturbed areas shall be restored and protected from erosion using vegetation or other means.
- K. Trash and unauthorized fill removal required. All trash and unauthorized fill, including concrete blocks or pieces, bricks, asphalt, metal, treated wood, glass, and paper, found below the OHWM at the time of project implementation shall be removed within the scope of the project. Where the trash or fill is providing some habitat or ecological function, consultation with Washington Department of Ecology, Washington Department of Fish and Wildlife and/or the U.S. Army Corps of Engineers should occur to determine if removal should be performed. Disposal should occur in an approved upland disposal location, outside of shoreline jurisdiction if feasible, but at a minimum landward of the OHWM and the channel migration zone.
- L. Notification of water quality problems or when fish harmed. If at any time as a result of project work, water quality problems develop or fish are observed to be in distress or killed, immediate notification shall be made to appropriate local, state, and federal agency(ies), including the Washington Department of Fish and Wildlife, Washington State Department of Ecology, National Marine Fisheries Service and/or U.S. Fish and Wildlife Service.
- M. Retain natural features. Natural in-water features such as snags, uprooted trees, or stumps should be left in place unless it can be demonstrated that they are actually causing bank erosion, higher flood stages, or a hazard to navigation or human safety.
- N. Floatation materials. Floatation material (floats, buoys) are currently prohibited in this SMP. Any use for emergency situations, as defined in Chapter 8, must be encapsulated within a commercially manufactured shell, typically polyethylene or another material specifically approved for use in aquatic environments, which prevents breakup or loss of the floatation material into the water, and is not readily subject to damage by ultraviolet radiation or abrasion. During maintenance, existing un-encapsulated floatation material must be replaced.
- O. Tire use. Tires shall not be allowed as part of above- or below-water structures or modified for use as floatation devices or where tires could potentially come in contact with the water (e.g., floatation, fenders). Existing tires used for floatation should be replaced with inert or encapsulated materials such as plastic or encased foam during maintenance or repair of the structure.
- P. Anchors. Floats, rafts, and mooring buoys are not allowed in this SMP. Any use for emergency situations (see definition in Chapter 8)must use helical screw anchors or

other embedded anchors and midline floats or other technologies to prevent anchors or lines from dragging or scouring.

5.3 Agriculture

5.3.1 Policies

- A. Maintain Agriculturally Productive Lands. Lands well suited for agriculture may be maintained in agricultural production.
- B. Encourage Vegetative Buffer. The maintenance of a buffer of permanent vegetation along the shoreline in agricultural areas should be encouraged in order to retard surface runoff, reduce siltation, and provide sanctuary for fish and other wildlife.
- C. Avoid Water Pollution. Agricultural activities should be conducted and buildings designed to avoid surface or groundwater pollution.
- D. Avoid Structures in Floodplains. Agricultural structures should be located outside of the floodway. Agricultural structures should be discouraged in the 100-year floodplain unless no other suitable location is available and adequate protective measures are implemented.
- E. Manage Water Resources. Water resources should be managed in accordance with federal and state laws and adopted County watershed plans.

5.3.2 Regulations

- A. Existing Agriculture. The provisions of this SMP do not limit or require modification of agricultural activities on agricultural lands as of the date of adoption of the SMP.
- B. Applicability. SMP provisions shall apply in the following cases:
 - 1. New agricultural activities on land not meeting the definition of agricultural land;
 - 2. Expansion of agricultural activities on non-agricultural lands or conversion of non-agricultural lands to agricultural activities;
 - 3. Conversion of agricultural lands to other uses;
 - 4. Other development on agricultural land that does not meet the definition of agricultural activities; and
 - 5. Agricultural development and uses not specifically exempted by the Act.
- C. Development Standards.
 - 1. A Substantial Development Permit shall be required for activities in Section B above and for all agricultural development not specifically exempt by the provisions of Section 7.5.3, Exemptions.
 - 2. Agricultural-Commercial Uses. Agricultural-commercial uses are allowed where specified in environment designations indicated in the use chart and when consistent with Commercial use standards in Section 5.7.

5.4 Aquaculture

5.4.1 Policies

A. Water-dependent and preferred use. Aquaculture is a water-dependent use and, when consistent with control of pollution, avoidance of adverse impacts to the environment and preservation of habitat for resident or anadromous native species, is a preferred use of the shoreline.

- B. Recognize limited availability of suitable locations. Potential locations for aquaculture activities should be recognized as relatively restricted because of specific requirements related to water quality, temperature, oxygen content, currents, adjacent land use, wind protection and navigation.
- C. Recognize and facilitate non-commercial aquaculture. Non-commercial aquaculture should be recognized and facilitated. The goals and objectives of non-commercial aquaculture include, but are not limited to, supplementation, conservation, restoration, mitigation, recreation, education, reintroduction, research, and harvest. Permitting should be streamlined for facilities that support propagation and acclimation of desirable salmonid species, particularly those covered by the Upper Columbia Salmon Recovery Plan.
- D. Preference for lower-impact methods. Preference should be given to those forms of aquaculture that involve lesser environmental and visual impacts, and lesser impacts to native plant and animal species. In general, preference should be given as follows:
 - 1. Projects that require either no structures or submerged structures are preferred over those that involve substantial floating structures.
 - 2. Projects that involve little or no substrate modification are preferred over those that involve substantial modification.
 - 3. Projects that involve little or no supplemental food sources, pesticides, herbicides or antibiotic application are preferred over those that involve such practices.
- E. Protect functions and Prevent adverse effects. Aquaculture activities should be designed, located and operated in a manner that supports long-term beneficial use of the shoreline and protects and maintains shoreline ecological functions and processes. Aquaculture activities should prevent cumulative adverse effects.
- F. Consult with stakeholders. Substantive comment on any shoreline permit application for aquaculture should be sought from all appropriate Federal, State, Tribal and local agencies, surrounding property owners/residents, and the general public regarding potential adverse impacts.
- G. Coordinate with Tribes. The rights of treaty tribes to aquatic resources within their usual and accustomed areas should be addressed through the permit review process. Direct coordination between the applicant and the tribe should be encouraged.
- H. Consider beneficial and adverse impacts. Consideration should be given to both the potential beneficial impacts and potential adverse impacts that aquaculture development might have on the physical environment; on other existing and approved land and water uses, including navigation; and on the aesthetic qualities of a project area.
- I. Restrictions on experimental aquaculture. Some latitude should be given when implementing the regulations of this section in the development of experimental aquaculture use. Experimental aquaculture projects in water bodies should be limited in scale and should be approved for a limited period of time; regulatory agencies should be consulted on appropriate time periods.

5.4.2 Regulations

A. Location.

1. Water-dependent portions of commercial and non-commercial aquaculture facilities and their necessary accessories may be located waterward of the OHWM or in the shoreline buffer. Water intakes and discharge structures, water and

- power conveyances, and fish collection and discharge structures are all considered water-dependent or accessory to water-dependent.
- 2. All other elements of commercial and non-commercial facilities shall be located outside the shoreline buffer, unless proximity to the water-dependent project elements is critical to the successful implementation of the facility's purpose.
- 3. Sites shall be selected to avoid and minimize the need for and degree of floodplain or floodway alteration, channel migration zone alteration, shoreline stabilization, native vegetation removal, and/or wetland alteration. Non-commercial aquaculture operations may be required to submit a site alternatives analysis. Recognizing the limited number of sites that are suitable for non-commercial aquaculture, applicants for non-commercial aquaculture operations shall only be required to demonstrate that the location of the proposed facilities on the available site avoids and minimizes impacts to any on-site critical areas and habitats to the maximum extent feasible.
- B. Substrate modification. Aquaculture that involves substantial aquatic substrate modification or sedimentation through dredging, trenching, digging, or other similar mechanisms, shall not be permitted in areas where the proposal would have long-term adverse impacts on important fish or wildlife habitats. If substrate modification will not have long-term adverse impacts or the adverse impacts will be short-term, the applicant shall further demonstrate that the degree of proposed substrate modification is the minimum necessary for feasible aquaculture operations at the site.
- C. Mitigation. Aquaculture practices shall be designed to minimize use of artificial substances and shall use chemical compounds that are least persistent and have the least impact on plants, animals and water quality. In addition, new aquaculture proposals shall comply with mitigation requirements outlined in Section 4.2.
- D. Agency review. All aquaculture projects shall be reviewed by local, State and Federal agencies, and FERC-licensed hydro-projects.
- E. U.S. Coast Guard requirements. All floating and submerged aquaculture structures and facilities in navigable waters shall be marked in accordance with U.S. Coast Guard requirements.
- F. Coordination with Tribes. The rights of treaty tribes to aquatic resources within their usual and accustomed areas shall be addressed through direct coordination between the applicant and the affected tribe(s) during the permit review process.
- G. New aquatic species. New aquatic species that were not previously found or cultivated in Chelan County shall not be introduced into fresh waters without prior written approval of the Director of the Washington Department of Fish and Wildlife and the Director of the Washington Department of Health.
- H. Fish kill. In the event of a fish kill at the site of a net pen facility, the aquaculture operator shall immediately report to the Chelan-Douglas Health District and Washington Department of Fish and Wildlife stating the cause of death and shall detail remedial action(s) to be implemented to prevent reoccurrence.
- I. Submerged and floating structures. The installation of submerged structures and floating structures shall be allowed only when the applicant demonstrates that no alternative method of operation is feasible.
- J. Potential impacts. If uncertainty exists regarding potential impacts of a proposed aquaculture activity, and for all experimental aquaculture activities, baseline and periodic operational monitoring by a qualified professional may be required, at the

- applicant's expense, and shall continue until adequate information is available to determine the success of the project and/or the magnitude of any probable significant adverse environmental impacts. Aquaculture operators may submit monitoring reports prepared by qualified professional as part of monitoring required by other state or federal agencies. Permits for such activities shall include specific performance measures and provisions for adjustment or termination of the project at any time if monitoring indicates significant, adverse environmental impacts that cannot be adequately mitigated.
- K. Over-water structures. For aquaculture projects using over-water structures, storage of necessary tools and apparatus waterward of the OHWM shall be limited to containers of not more than 3 feet in height, as measured from the surface of the raft or dock; provided that, in locations where the visual impact of the proposed aquaculture structures will be minimal, the City may authorize storage containers of greater height. In such cases, the burden of proof shall be on the applicant. Materials that are not necessary for the immediate and regular operation of the facility shall be stored outside of the shoreline buffer if feasible.
- L. Permanent instream facilities. Permanent instream facilities must be properly anchored or keyed to prevent the channel from migrating around it and causing erosion or creating a safety hazard, and must evaluate and mitigate any potential adverse effects on adjacent properties upstream and downstream.
- M. Product processing. No processing of any aquaculture product, except for the sorting or culling of the cultured organism and the washing or removal of surface materials or organisms after harvest, shall occur in or over the water unless specifically approved by permit. All other processing and processing facilities shall be located on land and shall be subject to this SMP when located within shoreline jurisdiction.
- N. Waste disposal. Aquaculture wastes shall be disposed of in a manner that will ensure strict compliance with all applicable governmental waste disposal standards, including, but not limited to, the Federal Clean Water Act, Section 401, and the Washington State Water Pollution Control Act (RCW 90.48).
- O. Construction, maintenance and bonding. Aquaculture structures and equipment shall be of sound construction and shall be so maintained. Abandoned or unsafe structures and/or equipment shall be removed or repaired promptly by the owner. Where any structure might constitute a potential hazard to the public in the future, the City may require the posting of a bond commensurate with the cost of removal or repair. The City may abate an abandoned or unsafe structure, following notice to the owner, if the owner fails to respond in thirty (30) days and may impose a lien on the related shoreline property or other assets in an amount equal to the cost of the abatement. Bonding requirements shall not duplicate requirements of other agencies.

5.5 Boating Facilities

Public, community or boating facilities, including marinas, community docks, public docks, fishing docks, and boat launch facilities, shall be subject to the policies and regulations of this Section. Buoys associated with these facilities used for protection of the facilities, navigation, and not for moorage are also subject to these policies and regulations.

All boating facilities that extend onto State-owned aquatic lands must also comply with Washington Department of Natural Resources standards and regulations.

5.5.1 Policies

- A. Recognize that boating facilities are water-dependent uses. Boating facilities, including marinas and public boat launch facilities, are water-dependent uses. These uses should be given priority for shoreline location when facilitating public access or providing an opportunity for substantial numbers of people to enjoy the shoreline. Shorelines particularly suitable for marinas and public boat launch facilities are limited and should be identified and reserved to prevent irreversible commitment for other uses having less stringent site requirements.
- B. Plan and coordinate marinas regionally. Regional needs for marina and boat launch facilities should be carefully considered in reviewing new proposals as well as in allocating shorelines for such development. Such facilities should be coordinated with park and recreation plans and, where feasible, collocated with other compatible water-dependent uses. Review of such facilities should be coordinated with recreation providers, local governments, and State agencies to efficiently provide recreational resources, avoid unnecessary duplication, and minimize adverse impacts to shoreline ecological functions and processes.
- C. Minimize modifications. Boating facilities that minimize the amount of shoreline modification, in-water structure, and overwater cover are preferred.
- D. Balance public access and ecological functions. New marinas should provide physical and/or visual public shoreline access, particularly where water-enjoyment uses are associated with the marina,
- E. Limitations on accessory uses. Accessory uses at boating facilities should be limited to water-oriented uses. Nonwater-dependent accessory uses should be located outside of shoreline jurisdiction or outside of the shoreline buffer whenever possible.
- F. Protect other water-dependent uses. Boating facilities should be located, designed, constructed and operated so that other appropriate water-dependent uses are not adversely affected; and adverse impacts such as noise, light and glare, aesthetic impacts to adjacent land uses, and impacts to public visual access to the shoreline are avoided.
- G. Site facilities appropriately. New boating facilities should be located only at sites where suitable environmental conditions, shoreline configuration, access, and compatible or similar uses are present.
- H. Consider navigation and other recreation opportunities. Boating facilities should not unduly obstruct navigable waters and should consider adverse effects to recreational opportunities such as fishing, pleasure boating, swimming, beach walking, picnicking and shoreline viewing.

5.5.2 Regulations

A. Location Standards.

- 1. Boating facilities shall not be permitted within the below listed shoreline habitats because of their scarcity, biological productivity and sensitivity. However, a boating facility may be permitted provided: no alternative location is feasible; the project results in a net enhancement of shoreline ecological functions; the project is otherwise consistent with this SMP; and the project receives a Shoreline Conditional Use Permit.
 - a. Native aquatic vegetation or wetlands with emergent vegetation (marsh type areas), or

- b. Spawning and holding areas for priority anadromous or priority resident fish.
- 2. New boating facilities shall not be permitted in channel migration zones, or areas where dredging will be required to create or maintain the new facility, where a flood hazard will be created, or where impacts to shoreline ecological functions and processes cannot be mitigated. To the extent feasible, expansions of existing boating facilities shall be designed to minimize the need for new or maintenance dredging.
- 3. New or expanded boating facilities shall be designed such that any moored boats will be located in water depths which prevent prop scour, unless the applicant can demonstrate that prop scour will not adversely impact aquatic vegetation or increase suspended sediment loads.
- 4. Boating facilities shall be located and designed in a manner that eliminates the need for shoreline stabilization. When the need for stabilization is unavoidable, as indicated by a study prepared consistent with SMP Section 5.10, only the minimum necessary shoreline stabilization to adequately protect facilities, users, and watercraft from floods or destructive storms shall be permitted.
- 5. Boating facilities shall not be located within 200 feet of beaches commonly used for public swimming, valuable public fishing areas, aquaculture facilities, or commercial navigation areas unless no alternative location exists and appropriate measures are installed or best management practices are implemented to minimize impacts to such areas and protect the public health, safety and welfare. For example, clearly delineating swimming, fishing or boating areas through upland signage, wake limit buoys, and/or floating swim area marker ropes.
- 6. Launch ramps shall be located where:
 - a. There is adequate water mixing and flushing;
 - b. They will not adversely affect flood channel capacity or otherwise create a flood hazard;
 - c. Water depths are adequate to eliminate or minimize the need for dredging or filling; and
 - d. Critical areas, active channel migration areas, and salmonid spawning habitat are not present.
- 7. Boating facilities shall be located only where adequate utility services that are necessary to meet applicable health, safety and welfare requirements, such as water, power and/or wastewater collection and treatment, are available or where they can be provided concurrent with the development.
- 8. Long-term boat storage located landward of the OHWM is regulated as a nonwater-oriented commercial use under Section 5.7, unless it is equipped with a boat launch facility (launch ramp, crane, hoist or similar device). If the storage use is equipped with a boat launch facility, it is regulated as a water-related commercial use. The dry boat storage portion shall be located landward of the shoreline buffer, unless there are site constraints that prevent the boats from being moved inland. In all cases, boat storage shall comply with applicable height restrictions.
- B. Facility Design.
 - 1. All boating facilities shall be no larger than the minimum size necessary to accommodate the anticipated demand. Specifically, the amount of overwater

coverage, the size and number of in-water structures, the waterward length of the facility, and the extent of any necessary associated shoreline stabilization or modification shall be minimized. Specific sizing of all private and public boating facility components shall be based on the results of the analyses conducted under Subsection F, Submittal Requirements, below, with the following limitations for specific boating facilities:

- a. Marinas and docks shall be no longer than 250 feet.
- b. New boating facilities with overwater structures (marinas or docks) on the Columbia River shall include grating materials that have been recognized and approved by state and federal resource agencies as the best currently available, unless the applicant can demonstrate that the height, orientation and width of the overwater structure results in illumination of the area below the overwater structure.
- 2. Launch ramps shall be designed and constructed using methods/technology that have been recognized and approved by state and federal resource agencies as the best currently available, with consideration for site-specific conditions and the particular needs of that use outlined in the submittal requirements in F below. At a minimum, they shall minimize the obstruction of currents, alteration of sediment transport, and the accumulation of drift logs and debris.
- 3. New over-water residences, including floating homes, shall be prohibited.
- 4. Replacement of Existing Boating Facilities. Proposals involving replacement of the entire existing over-water facility or 75 percent or more of dock support piles, when applicable, or 75 percent or more of an existing boat launch are considered a new boating facility and must be designed consistent with any dimensional, materials and mitigation standards for new boating facilities, except the Shoreline Administrator may approve an alternative design without a Shoreline Variance if it meets all of the following criteria:
 - a. All appropriate Federal agencies have approved the proposal; and
 - b. The total square footage of the replacement facility is no larger than the existing facility.
- 5. Additions to Boating Facilities. Proposals involving the modification and/or enlargement of existing boating facilities must comply with the following measures:
 - a. The applicant must demonstrate to the satisfaction of the Shoreline Administrator that there is a need for the enlargement of an existing boating facility. Proposals that demonstrate an enlargement is necessary due to increased or changed use or demand, safety concerns, or inadequate depth of water will be considered.
 - b. Enlarged portions of boating facilities must comply with applicable dimensional, design, materials and mitigation standards for new boating facilities.
- 6. Repair of Existing Boating Facility.
 - a. Repair proposals which replace 75 percent or greater of the existing docksupport piles or boat launch area are considered replacements and must comply with requirements for replacement facilities.
 - b. Other repairs to existing legally established boating facilities are permitted consistent with all other applicable codes and regulations.

- C. Site Design and Operation.
 - 1. Boating facilities shall be designed so that lawfully existing or planned public shoreline access is not blocked, obstructed nor made dangerous.
 - 2. New marinas shall provide physical and/or visual public access for as many water-oriented recreational uses as possible, commensurate with the scale of the proposal and compatible with shoreline ecological functions and processes and adjacent shoreline use. Features for access could include, but are not limited to, walk-on access, fishing platforms, and underwater diving and viewing platforms.
 - 3. Covered moorage, including watercraft lift canopies, is prohibited.
 - 4. Accessory uses at boating facilities shall be limited to water-oriented uses or uses that support physical or visual shoreline public access. Accessory development may include, but is not limited to, parking, non-hazardous waste storage and treatment, stormwater management facilities, and utilities where necessary to support the water-oriented use.
- D. Parking and Vehicle Access. Public boat launch facilities shall include parking facilities commensurate with projected demand to include spaces for boat trailers.
- E. Waste Disposal.
 - 1. Discharge of solid waste or sewage into a waterbody is prohibited. Garbage or litter receptacles shall be provided and maintained by the operator at several locations convenient to users. Marinas shall provide adequate restroom and sewage disposal facilities (pump out, holding, and/or treatment facilities) in compliance with applicable health regulations.
 - 2. Disposal or discarding of fish-cleaning wastes, scrap fish, viscera, or unused bait into water or in non-designated garbage receptacles is prohibited.
 - 3. Marina operators shall post all regulations pertaining to handling, disposal and reporting of waste, sewage, fuel, oil or toxic materials where all users may easily read them.
 - 4. Fail-safe facilities and procedures for receiving, storing, dispensing, and disposing of oil or hazardous products, as well as a spill response plan for oil and other products, shall be required of new marinas and expansion or reconfiguration of existing marinas. Compliance with Federal or State law may fulfill this requirement. Handling of fuels, chemicals or other toxic materials must be in compliance with all applicable Federal and State water quality laws as well as health, safety and engineering requirements. Rules for spill prevention and response, including reporting requirements, shall be posted on site.
- F. Submittal Requirements.
 - 1. In addition to other requirements of this SMP, applicants shall provide an assessment of demand for new or expanded boating facilities, including, but not limited to, the following:
 - a. The total amount of moorage proposed (except for boat launch facility proposals):
 - b. For new or expanded facilities proposing permanent or temporary moorage, the existing supply of temporary or permanent moorage spaces within the service range of the proposed facility, including vacancies or waiting lists at existing facilities. The service range is a site-specific determination made by the applicant considering the proposed facility location and proximity to other locations within either boating or driving distance;

- c. For new or expanded boat launch ramps, identification of the nearest existing boat launch facility, the expected or current level of use of the new or expanded boat launch ramp, and any other relevant factors related to the need for safe or efficient access to public waters, if that information supports justification for specific design elements;
- d. The expected service population and boat ownership characteristics of the population, if that information supports justification for specific design elements related to facility length or necessary water depth; and/or
- e. Existing approved facilities, or pending applications, within the service range of the proposed new facility.
- 2. Applicants for new or expanded boating facilities shall provide a mitigation and management plan as required by Section 4.2. In addition to Section 4.2, the mitigation plan shall discuss how the proposed project avoids and minimizes impacts consistent with the facility's sizing needs, which are to be based on the results of any critical area study and the demand analysis prepared. A slope bathymetry (under water topography) map may be required when deemed beneficial by the Shoreline Administrator for the review of the project proposal.
- 3. Applicants for new or expanded boating facilities shall provide an assessment of existing water-dependent uses in the vicinity, including, but not limited to, navigation, fishing, hunting, pleasure boating, swimming, beach walking, picnicking and shoreline viewing, and document potential impacts and mitigating measures. Specific conditions to avoid or minimize impacts to the identified uses shall be imposed.
- 4. New boat launch facilities shall be approved only if they provide public access to public waters that are not adequately served by existing access facilities, or if use of existing facilities is documented to exceed the designed capacity. Prior to providing boat launch facilities at a new location, documentation shall be provided demonstrating that expansion of existing launch facilities would not be adequate to meet demand.

5.6 Breakwaters, Jetties, Groins, Weirs, Barbs and other in-water structures.

- A. In-water structures (such as breakwaters, jetties, weirs, and barbs) include those placed by humans within streams, rivers and lakes for hydroelectric generation, irrigation, water supply, flood control, transportation, utilities, fish habitat enhancement, recreation, or other purpose.
- B. Breakwaters, jetties, groins, weirs and barbs are generally intended to protect harbors, moorages, navigation activity, or stream banks or bed from wave and wind action or stream flow by creating slow or stillwater areas along shore. A secondary purpose is to protect shorelines from wave or flow caused erosion.
- C. In-water structures have the potential to cause water impoundment or the diversion, obstruction, or modification of water, and are therefore regulated by this section.

5.6.1 Policies

A. In-water structures should be planned to be compatible with appropriate multiple uses of resources over the long-term, especially in Shorelines of Statewide Significance.

- Appropriate multiple uses include, but are not limited to, public access, recreation, and fish migration.
- B. Siting and design. In-water structures should be sited and designed consistent with appropriate engineering principles, including, but not limited to, guidelines of the Washington Department of Fish and Wildlife, Natural Resources Conservation Service, and the U.S. Army Corps of Engineers. Planning and design of in-water structures should be consistent with and incorporate elements from applicable watershed management and restoration plans and/or surface water management plans.
- C. Allowed Circumstances. The location, design, construction and maintenance of in-water structures should be allowed only where it is necessary to support water-dependent uses, protect watershed processes, provide public access, and prevent damage to other properties and other shoreline resources from alterations to geologic and hydrologic processes, and ecological functions, with special emphasis on protecting and restoring priority habitats and species.
- D. Regional benefit and no net loss of ecological functions. Breakwaters, jetties, groins weirs and barbs should be permitted only for water-dependent uses when the benefits to the region outweigh short-term resource losses from such works, and only where mitigated to provide no net loss of shoreline ecological functions and processes.
- E. Use less-impacting alternatives. Non-structural and non-regulatory methods to protect, enhance, and restore shoreline ecological functions and processes and other shoreline resources should be encouraged as an alternative to in-water structures. Alternative structures, including floating, portable or submerged breakwater structures, or several smaller discontinuous structures, should be considered where physical conditions make such alternatives with less impact feasible. Non-regulatory and non-structural methods may include public facility and resource planning, land or easement acquisition, education, voluntary protection and enhancement projects, or incentive programs.
- F. Enhance ecological function. In-water structure proposals should incorporate native vegetation to enhance ecological functions, create a more natural appearance, improve ecological processes, and provide more flexibility for long-term shoreline management. Such features include vegetated berms; vegetative stabilization including brush matting and buffer strips; and retention of existing trees, shrubs and grasses on stream banks, if possible.
- G. Soil stabilization. Upland cut-and-fill slopes and back-filled areas resulting from installation of in-water structures shall be stabilized with bioengineering approaches.
- H. Water quality. In-water structures shall be constructed and maintained in a manner that does not degrade the quality of affected waters. The City shall require reasonable conditions to achieve this objective.

5.6.2 Regulations

- A. Prohibited projects and structures. Channelization projects that damage fish and wildlife resources; degrade recreation and aesthetic resources; result in a net loss of ecological functions; or result in high flood stages and velocities are prohibited. No motor vehicles, appliances, other similar structures or parts thereof; nor structure demolition debris; nor any other solid waste shall be used as in-water structures
- B. Limitations on groins. Groins are prohibited except as a component of a professionally designed community or public beach management program that encompasses an entire

- reach for which alternatives are infeasible, or where installed to protect or restore shoreline ecological functions or processes.
- C. Limit size of structures. The size of breakwaters, jetties, groins weirs, barbs, and other in-water structures shall be limited to the minimum necessary, as determined by a qualified professional, to provide protection for the structure or use it is intended to protect.
- D. Use less-impacting alternatives. Jetties and breakwaters are prohibited except as an integral component of a professionally designed marina. Where permitted, floating, portable or submerged breakwater structures, or smaller discontinuous structures, are preferred where physical conditions make such alternatives with less impact feasible.
- E. Conditional Use Permit required. All new in-water structures shall require a Conditional Use Permit, except for those structures installed to protect or restore ecological functions, such as woody debris installed in streams, engineered log jams, or habitat-forming rock weirs installed in streams.
- F. Professional design. All in-water structures shall be designed and certified by a qualified professional including an engineer, hydrologist, or geomorphologist. In-water structures shall allow for natural groundwater movement and surface runoff, and shall preserve valuable recreation resources and aesthetic values such as point and channel bars, islands, and braided channels. In-water structures shall not be a safety hazard or obstruct water navigation as determined by the Shoreline Administrator
- G. State-owned aquatic lands. Proposals for breakwaters shall be consistent with the Washington Department of Natural Resources Aquatic Land Management standards.
- H. Public access. Design of in-water structures by public entities, including local governments, state agencies, and public utility districts, shall include access to public shorelines whenever possible, unless it is demonstrated that public access would cause unavoidable public health and safety hazards, security problems, or ecological impacts that cannot be mitigated, unavoidable conflicts with proposed uses. At a minimum, inwater structures should not decrease public access or use potential of shorelines.
- I. Natural features. Natural in water features such as snags, uprooted trees, or stumps shall be left in place unless it can be demonstrated that they are actually causing bank erosion or higher flood stages or pose a hazard to navigation or human safety.

5.7 Commercial Development

5.7.1 Policies

- A. Encourage water-oriented uses. Water-oriented commercial developments should be encouraged to locate near the water. Nonwater-oriented commercial development should be encouraged to locate landward or outside shoreline jurisdiction. Commercial uses should be located in the following preferred order:
 - 1. Water Dependent
 - 2. Water-Related
 - 3. Water-Enjoyment
 - 4. Nonwater-Oriented
- B. Design. New commercial development should be designed to provide economic activity meeting the needs of residents, businesses, and tourists, protect the public's health, safety, and welfare, protect shoreline ecological functions, and provide public access where feasible and consistent with constitutional limits.

C. The City should continue to implement the Wenatchee Waterfront Subarea Plan. Specifically, encourage mixed use development on the waterfront.

5.7.2 Regulations

- A. Water-oriented uses allowed. Water-dependent, water-related, and water-enjoyment uses are permitted where allowed by zoning and this SMP. Water-dependent commercial uses shall be given preference over water-related and water-enjoyment uses. The applicant shall demonstrate to the satisfaction of the City that proposed uses meet the definitions of water-dependent, water-related or water-enjoyment (water-oriented use).
- B. Nonwater-oriented commercial uses limited. In areas designated for commercial use, nonwater-oriented commercial uses are allowed if the site is physically separated from the shoreline by another property or public right of way. On properties fronting the shoreline, new nonwater-oriented commercial development is prohibited in shoreline jurisdiction, except where such use provides a significant public benefit with respect to the Act's objectives, such as providing public access and ecological restoration and meets one of the following conditions:
 - 1. The use is part of a mixed-use project that includes water-dependent uses; or
 - 2. Navigability is severely limited at the proposed site, such as not available for commercial navigation.
- C. Overwater uses. Nonwater-dependent commercial uses shall not be located over water except in existing structures or in the limited instances where they are auxiliary to and necessary in support of water-dependent uses.
- D. Accessory uses to water-oriented commercial activities. Accessory commercial development that does not require a shoreline location shall be located landward of the water-oriented portions of the development and comply with shoreline buffers for nonwater-oriented uses. Accessory uses may be allowed in existing structures or where necessary in support of water-oriented uses. Accessory development includes, but is not limited to, parking, storage and service areas, and circulation.

5.8 Dredging and Dredge Material Disposal

This section is not intended to cover other excavations waterward of the ordinary high water mark (OHWM) that are incidental to construction of an otherwise authorized use or modification (e.g., bulkhead replacements, large woody debris installations, boat launch ramp installation, pile placement).

All dredging and dredge material disposal on state-owned aquatic lands must also comply with Washington Department of Natural Resources standards and regulations.

5.8.1 Policies

A. Except as provided in this section, in the City of Wenatchee and its UGA, all dredging should be prohibited except as necessary to conduct environmental cleanup. Under those circumstances where the cleanup results in water depth conditions that are favorable to a marina or other over-water development allowed by this Master Program, such use may be allowed to locate over the dredged area. Dredging as part of flood hazard abatement, ecological restoration or enhancement, beach nourishment, public access or public recreation should be permitted if consistent with this SMP.

- B. Disposal. Spoil disposal on land outside of shoreline jurisdiction is generally preferred over open water disposal. Disposal of dredged material on shorelands or wetlands within a river's channel migration zone should be discouraged.
- C. Cooperative management programs. Long-term cooperative management programs that rely primarily on natural processes, and involve land owners and applicable local, State and Federal agencies and tribes, should be pursued to prevent or minimize conditions which make dredging necessary.
- D. Ecological impacts. Dredging and dredge material disposal should avoid or minimize adverse ecological impacts. Impacts that cannot be avoided should be mitigated in a manner that assures no net loss of shoreline ecological functions.
- E. Navigation channels and basins. Dredging for the purpose of establishing, expanding, relocating or reconfiguring navigation channels and basins should be allowed where necessary for assuring safe and efficient accommodation of existing navigational uses and then only when significant ecological impacts are minimized and when mitigation is provided. Maintenance dredging of established navigation channels and basins should be restricted to maintaining previously dredged and/or existing authorized locations, depths and widths.
- F. New development should be sited and designed to avoid or where avoidance is not possible to minimize the need for new and/or maintenance dredging.
- G. Dredging should be permitted for water-dependant uses of economic importance to the region and/or essential public facilities only when necessary and when alternatives are infeasible or less consistent with the SMP.

5.8.2 Regulations

- A. Allowed dredging activities. Dredging shall only be permitted through a Conditional Use Permit for the following activities:
 - 1. Dredging identified as a necessary component for environmental cleanup of a property. Cleanup that results in water depth conditions favorable to a marina or other over-water development allowed by this SMP, such use may be allowed to locate over the dredged area.
 - 2. Development of essential public facilities when there are no feasible alternatives.
 - 3. Maintenance of irrigation reservoirs, drains, canals, or ditches for agricultural purposes. The City may approve five-year management plans addressing maintenance dredging, use of best management practices, and other measures to assure no-net-loss of shoreline ecological functions.
 - 4. Restoration or enhancement of shoreline ecological functions and processes benefiting water quality, water quantity such as flood storage, and/or fish and wildlife habitat.
 - 5. Trenching to allow the installation of underground utilities (excluding "accessory utilities" associated with a primary use) if no practicable alternative exists, and:
 - a. Impacts to fish and wildlife habitat are minimized to the maximum extent possible.
 - b. The utility installation shall not increase or decrease the natural rate, extent, or opportunity of channel migration.
 - c. Appropriate best management practices are employed to prevent water quality impacts or other environmental degradation.

- 6. Development of new or expanded wet moorages where there is no feasible alternatives or other alternatives may have greater ecological impact.
- 7. Maintenance dredging for the purposes of restoring lawfully established development.
- B. Disposal of dredge material within channel migration zone discouraged. Disposal of dredge material on shorelands or wetlands within a river's channel migration zone is discouraged. In the limited instances where it is allowed, such disposal requires a Shoreline Conditional Use Permit. This provision is not intended to address discharge of dredge material into the flowing current of the river or in deep water within the channel where it does not substantially affect the geohydrologic character of the channel migration zone.
- C. Circumstances when open water dredge disposal is allowed. Dredge material disposal in open waters may be approved only when authorized by applicable agencies, which may include the U.S. Army Corps of Engineers pursuant to Section 10 (Rivers and Harbors Act) and Section 404 (Clean Water Act) permits, and Washington State Department of Fish and Wildlife Hydraulic Project Approval (HPA); and when one of the following conditions apply:
 - 1. Land disposal is infeasible, less consistent with this SMP, or prohibited by law; or
 - 2. Nearshore disposal as part of a program to restore or enhance shoreline ecological functions and processes is not feasible.
- D. Submittal requirements. In addition to other provisions of this SMP, the following information shall be required for all dredging applications:
 - 1. A description of the purpose of the proposed dredging and an analysis of compliance with the policies and regulations of this SMP.
 - 2. An analysis of the existing shoreline including the following:
 - a. A site plan map outlining the perimeter of the proposed dredge area. The map must include the existing bathymetry and have data points at a minimum of 2-foot depth increments.
 - b. A detailed description of the existing physical character, shoreline geomorphology, and biological resources provided by the area proposed to be dredged. This description should include information on the stability of bedlands adjacent to proposed dredging and spoils disposal areas.
 - c. Compliance with Section 4.2
 - 3. A detailed description of the physical, chemical and biological characteristics of the dredge materials to be removed, including:
 - a. Physical analysis of material to be dredged (material composition and amount, grain size, organic materials present, source of material, etc.).
 - b. Chemical analysis of material to be dredged (volatile solids, chemical oxygen demand (COD), grease and oil content, mercury, lead and zinc content, etc.).
 - c. Biological analysis of material to be dredged.
 - 4. A description of the method of materials removal, including facilities for settlement and movement.
 - 5. Dredging procedure, including the estimated length of time it will take to complete dredging, method of dredging, and amount of materials removed.
 - 6. Frequency and quantity of project maintenance dredging.
 - 7. Detailed plans for dredge spoil disposal, including specific land disposal sites and relevant information on the disposal site, including, but not limited to:

- a. Dredge material disposal area;
- b. Physical characteristics including location, topography, existing drainage patterns, surface and ground water;
- c. Size and capacity of disposal site;
- d. Means of transportation to the disposal site;
- e. Proposed dewatering and stabilization of dredged material;
- f. Methods of controlling erosion and sedimentation; and
- g. Future use of the site and conformance with land use policies and regulations.
- 8. Plan for disposal of maintenance spoils for at least a 50-year period, if applicable.
- 9. Hydraulic modeling studies sufficient to identify existing geo-hydraulic patterns and probable effects of dredging.

5.9 Fill and Excavation

Fill regulations in this section apply to fills anywhere in shoreline jurisdiction, in both aquatic and upland environments. "Fill" is the addition of soil, sand, rock, gravel, sediment, earth retaining structure, or other material to an area waterward of the OHWM, in wetlands, or on shorelands in a manner that raises the elevation or creates dry land.

Excavation regulations in this section apply to excavation anywhere in shoreline jurisdiction above the OHWM. All fill and excavation on state-owned aquatic lands must also comply with Washington Department of Natural Resources standards and regulations.

5.9.1 Policies

- A. Minimize fill and excavation. Fill and excavation should only be permitted to the minimum extent necessary to accommodate an approved shoreline use or development and with assurance of no net loss of shoreline ecological functions and processes.
- B. Location. Fills and excavation should be located and developed so that water quality, hydrologic and runoff patterns are not altered.
- C. Shoreline stabilization. Fill should not be allowed where shoreline stabilization would be required to maintain the materials placed.
- D. Restoration. Excavation and grading landward of the OHWM of a waterbody for projects with the primary purpose of restoring ecological functions and natural character should be permitted outright.
- E. Creation of uplands. Fill in waterbodies, floodways, channel migration zones, and/or wetlands should not be permitted for creation of new uplands, unless it is part of an approved ecological restoration activity or provides some other public benefit.
- F. Benefits and impacts. The predicted economic benefits of fills and excavation should be weighed against long-term cumulative impacts on ecological processes and functions.

5.9.2 Regulations

A. Fill and excavation shall be minimized to the maximum extent practicable and necessary to accommodate an approved shoreline use or development. Enhancement and voluntary restoration of landforms and habitat are encouraged. Fills necessary to protect historic or cultural resources may be permitted when consistent with Section 4.1 Archaeological and Historic Resources and all applicable provisions of the SMP. Fill

shall be permitted in limited instances to restore uplands where recent erosion has rapidly reduced upland area, to build protective berms and nourish beaches for shore stabilization or recreation, to restore or enhance degraded shoreline ecological functions and processes, or to facilitate upland development otherwise allowed by and consistent with this SMP.

- B. Permissible fill and excavation.
 - 1. Fill and excavation within wetlands, floodways, channel migration zones, or waterward of the OHWM shall only be permitted when state or federal permits have been obtained and in limited instances for the following purposes:
 - Water-dependent uses, public access, and cleanup and disposal of contaminated sediments as part of an interagency environmental clean-up plan;
 - Disposal of dredged material considered suitable under, and conducted in accordance with, the Dredged Material Management Program of the Department of Natural Resources and/or the Dredged Material Management Office of the U.S. Army Corps of Engineers;
 - c. Expansion or alteration of transportation facilities of statewide significance currently located on the shoreline where alternatives to fill are infeasible;
 - d. Ecological restoration or enhancement, including, but not limited to, beach nourishment, habitat creation, culvert upgrades to improve fish and flow passage, or bank restoration when consistent with an approved restoration plan; or
 - e. Protection of cultural or historic resources when fill is the most feasible method to avoid continued degradation, disturbance or erosion of a site. Such fills must be coordinated with any affected Indian tribes.
- C. Shoreline stabilization. Fills or excavation shall not be located where shoreline stabilization will be necessary to protect materials placed or removed, except when part of an approved plan for protection of cultural resources.
- D. Physical and visual consistency. Fills, beach nourishment and excavation shall be designed to blend physically and visually with existing topography whenever possible, so as not to interfere with long term appropriate use including lawful access and enjoyment of scenery.
- E. Maximum slopes. Cut and fill slopes shall generally be sloped no steeper than one foot vertical for every two feet horizontal (1:2) unless a specific engineering analysis has been provided.
- F. Erosion control. A temporary erosion and sediment control (TESC) plan, including BMPs, consistent with the Stormwater Management Manual for Eastern Washington, or the most recent adopted stormwater manual, shall be provided for all proposed fill and excavation activities, and approved by the Shoreline Administrator prior to commencement of activity. Disturbed areas shall be immediately protected from erosion using weed-free straw, mulches, or similar methods and revegetated, as applicable.
- G. Fills waterward of the ordinary high water mark for any use except ecological restoration shall require a shoreline conditional use permit.

5.10 Forest Practices

There are no Forested areas within the City of Wenatchee or the City of Wenatchee Urban Growth Area inside shoreline jurisdiction. This SMP addresses tree removal, replacement, and pruning regulations in Section 4.5.

5.11 Industry

5.11.1 Policies

- A. Industrial use preference. Industries are an appropriate land use along shorelines where compatible with existing land use plans and zoning. However, first priority should be given to water-dependent industries over nonwater-dependent uses, and second priority, to water-related industries over nonwater-oriented uses.
- B. Environmental limitations. Lands designated for industrial development should not include shoreline areas with severe environmental limitations, such as critical areas.
- C. Water and wastewater facilities. Sewage treatment and potable water facilities should be located with consideration for economic operation and compatibility with surrounding uses, designed to assure no net loss of ecological functions, and designed not to have significant adverse impacts to other shoreline resources and values.
- D. Cleanup and restoration. Industrial development and redevelopment should be encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated.
- E. Maintain and protect the viability of Wenatchee's limited industrial areas by restricting incompatible development adjacent to these uses.

5.11.2 Regulations

- A. Water-dependent or water-related uses allowed. Industrial facilities and structures that are water-dependent or water-related are permitted where allowed by zoning and this SMP. The applicant shall demonstrate to the satisfaction of the City that proposed uses are water-dependent and/or water-related.
- B. Nonwater-oriented industrial uses limited. In areas designated for industrial use, nonwater-oriented industrial uses are allowed only if the site is physically separated from the shoreline by another property or public right-of-way or railroad prior to the effective date of this SMP.. On properties fronting the shoreline, new nonwater-oriented industrial development is prohibited in shoreline jurisdiction, except where such use provides a significant public benefit with respect to the Act's objectives, such as providing public access and/or ecological restoration, and meets one of the following conditions:
 - 1. The use is part of a mixed-use project that includes water-dependent uses; or
 - 2. Navigability is severely limited at the proposed site such as not available for commercial navigation.
- C. Accessory uses to water-dependent or water-related industrial activities. Accessory industrial development that does not require a shoreline location shall be located upland of the water-dependent or water-related portions of the development. Accessory development includes, but is not limited to, parking, warehousing, open-air storage, waste storage and treatment, and transportation corridors.
- D. Clean up and Restoration. Industrial development and redevelopment are encouraged to locate where environmental cleanup and restoration of the shoreline area can be

incorporated. Federal and state requirements for hazardous materials clean up or management shall be addressed.

5.12 Mining

Mining is prohibited by this SMP.

5.13 Recreational Development

5.13.1 Policies

- A. Promote recreation and public access. Developments and uses should be designed and operated to provide the public with recreational areas, facilities, and access to the shorelines. Waterfront parks should be developed and used for activities and interests specifically related to the shoreline environment.
- B. Implement adopted Waterfront Sub Area Plan including recognition of the Wenatchee waterfront as a unique regional recreational resource.
- C. Support facilities and access. Recreational areas should be supported by multi-use trails and parking to prevent undue concentration and pressure on fragile natural areas. Parking is not a preferred shoreline use, and should be located only as necessary to support an authorized use, minimizing environmental and visual impacts. Waterfront trails, waterfront access and water related activities should be expanded when feasible.
- D. Pedestrian-oriented. Opportunities for pedestrian access should be provided where terrain and shore conditions permit. Direct access to the water should be via paths, walkways, or other pedestrian-oriented features. Vehicular traffic on beaches and fragile shorelines should be prohibited.
- E. Public acquisition. To reduce overcrowding of current facilities, avoid adverse impacts on adjacent properties, and meet the current and future needs for public recreation access, the increased public acquisition and dedication of land for shoreline parks and recreation areas is encouraged. As an economical alternative to new acquisition by the City, the use of State and Federal lands for recreational facilities should be considered.
- F. Grounds management. The use of fertilizers, herbicides, and pesticides to maintain recreational facilities such as golf courses and playfields should be closely monitored to prevent contamination of waterbodies by runoff. Management that utilizes organic treatments, integrated pest management, or non-synthetic chemicals is preferred where feasible and practical over management that utilizes synthetic chemicals.
- G. Prevent impact to private property. The location, design, construction and operation of recreational facilities should prevent undue adverse impacts on adjacent or nearby private properties.
- H. Protect the environmental integrity of the waterfront trail and park. Specifically:
 - 1. Minimize the loss of open space and landscaped areas within the park.
 - 2. Expand and improve the waterfront trail, where necessary, to support usage and minimize conflicts between different types of users.
 - 3. Design park improvements to complement and enhance surrounding park features.

5.13.2 Regulations

A. Design. Recreational uses and facilities shall be designed to be primarily related to access, enjoyment and use of the water and shorelines of the state.

- B. Use consistency. Proposed recreation uses shall be designed, located and operated consistent with the purpose and intensity of the shoreline environment designation and environmental conditions.
- C. Accessory uses. Accessory uses and support facilities such as maintenance facilities and parking lots shall be consolidated and located in upland areas outside shoreline, wetland and shoreline buffers to the extent feasible, except for access to water-dependent facilities such as boat launches.
- D. Public access. See SMP Section 4.4. Provide visual access to the water whenever possible. Develop viewpoints where the topography prevents direct access. Where recreation facilities for public access include overwater structures, such as public view or fishing platforms, those overwater structures should comply with relevant requirements of this SMP.
- E. Fertilizer and chemical management. For recreation developments such as golf courses and playfields that use fertilizers, pesticides, or other chemicals, the applicant shall submit plans demonstrating the best management practices and methods to be used to prevent these chemical applications and resultant leachate from entering adjacent waterbodies. Management that utilizes organic treatments, integrated pest management, or non-synthetic chemicals are preferred over management that utilizes synthetic chemicals where feasible and practical.
- F. Adequate utilities and services. Proposals for recreational development shall include adequate facilities for water supply, wastewater, and garbage disposal in conformance with City of Wenatchee standards.
- G. Management Plans. In order to simplify the review of exempt and non-exempt activities that are ongoing, a 5-year recreation management plan addressing public recreation facility operations and maintenance, use of best management practices, and other measures to assure no net loss of shoreline ecological function may be used.
 - 1. The plan shall minimally contain the following categories when applicable:
 - a. Description of in-stream or in-lake habitat protection measures, and commitment to implement mitigation for any new or expanded development that has adverse impacts;
 - b. Description of riparian and wetland protection measures, and commitment to implement mitigation for any new or expanded development that has adverse impacts;
 - c. Description of site-appropriate water use management activities, including use of less water-dependent landscaping, maximizing the efficiency of the application system, and reducing the area irrigated;
 - d. Description of stormwater management practices to treat stormwater runoff to reduce both water quantity and water quality impacts, including maximizing use of infiltration, bio-filtration, and detention;
 - e. Description of erosion and sediment control practices that prevent off-site movement of sediment for new construction, stored soils, and potential surface erosion areas: and
 - f. Description of chemical and nutrient use and containment practices that demonstrate minimization of overall inputs of these contaminants, restrict the type of inputs, and develop an acceptable method of application through a comprehensive management program, such as Integrated Pest Management (IPM).

2. Each category specified in 1 above shall be comprised of one to several standards. Each standard should describe the management objective or desired outcome for habitat conditions, specific performance requirements for each standard, and corrective actions that would be implemented if the performance requirement(s) is not met.

5.14 Residential Development

5.14.1 Policies

- A. Compatibility with shoreline. All subdivisions and residential development, where allowed, should be designed at a level of site coverage and density compatible with the physical capabilities of the shoreline and water in order to minimize probabilities of damage to life, property and the environment.
- B. A variety of housing types along the waterfront should be provided to increase pedestrian activity and vitality, increase the market for area businesses, and accommodate a significant share of the city's projected population growth.
- C. Encourage restoration and environmental design. Ecological restoration and measures to minimize environmental impacts, such as low impact development and vegetation conservation and enhancement, should be encouraged.,,
- D. Overwater residential development. New over-water residential development should be prohibited.
- E. Floating homes. New floating homes shall be prohibited.
- F. Provide public access. Residential developments should be encouraged to provide public access to shorelines within the development and to minimize impacts of vehicular use and parking upon shoreline aesthetics.
- G. Mixed Use: Residential development should be encouraged to be included in a mixed use development.

5.14.2 Regulations

- A. Residential uses shall be allowed in conformance with City zoning requirements and the provisions of this SMP.
- B. Subdivisions and plats. Where allowed by the City's Zoning Code, residential subdivisions and plats shall:
 - 1. Comply with all applicable subdivision, critical area, and zoning regulations.
 - 2. Be designed to prevent the need for new hard or soft shoreline stabilization or flood hazard reduction measures per Section 4.3. A note limiting shoreline stabilization shall be placed on the face of the plat at the time of subdivision.
 - 3. Be required to cluster residential units and structures where necessary and when allowed by the City to avoid critical areas and to preserve natural features and minimize physical impacts.
 - 4. If public or community access is provided, then it shall be clearly identified and otherwise be consistent with Section 4.4.
 - 5. Lots shall be configured in a way so as not to require a Shoreline Variance in the future for residential development. Lot configurations shall plan for building sites behind the required shoreline buffer. Shoreline buffer reductions shall be determined at the time of residential development; not at the time of subdivision.

- C. Environmental protection. Residential development including accessory uses and appurtenant structures shall:
 - 1. Be sufficiently set back from steep slopes and shorelines vulnerable to erosion so that structural improvements, including bluff walls and other stabilization structures, are not required to protect such structures and uses.
- D. Over-water residences, liveaboards, and floating homes. Over-water residences, liveaboards, and floating homes shall be prohibited.
- E. Accessory uses. Residential accessory uses or appurtenances shall not be located in required shoreline buffers unless specifically authorized in Vegetation Conservation standards. Residential accessory uses shall be prohibited over the water unless clearly water-dependent for recreational or personal use.
- F. Underground Utilities. All utilities shall be placed underground; See Section 5.18.

5.15 Shoreline Habitat and Natural Systems Enhancement Projects

Shoreline habitat and natural systems enhancement and restoration projects include those activities proposed and conducted specifically for the purpose of establishing, restoring, or enhancing habitat for priority species in shorelines. Examples of shoreline habitat and natural systems enhancement projects include floodplain restoration projects, fish passage barrier removal or improvement, and projects to increase shoreline habitat complexity, among others. Stabilization of eroding banks may be considered under this section provided that the purpose of the project is clearly restoration of the natural character and ecological functions of the shoreline, and the project uses bioengineering approaches, including limited use of rock as a stabilization only at the toe of the bank as necessary, and with primary emphasis on using native vegetation to control erosive forces. Projects that qualify as streamlined fish enhancement projects per RCW 77.55.181 will be considered under this section.

5.15.1 Policies

- A. Design. Restoration and enhancement of shorelines should be designed using principles of landscape and conservation ecology and should restore or enhance chemical, physical, and biological watershed processes that create and sustain shoreline habitat structures and functions.
- B. Improve shoreline ecological functions. Restoration and enhancement actions should improve shoreline ecological functions and processes and should target meeting the needs of sensitive plant, fish and wildlife species as identified by Washington Department of Fish and Wildlife, Washington Department of Natural Resources, National Marine Fisheries Service and/or U.S. Fish and Wildlife Service.
- C. Pursue funding. The City and private entities are encouraged to seek funding from State, Federal, private and other sources to implement restoration, enhancement, and acquisition projects, particularly those that are identified in the Restoration Plan of this SMP or the local watershed plans.
- D. Streamline review. The City should develop processing guidelines that will streamline the review of restoration-only projects. RCW 77.55.181
- E. Coordination. Restoration and enhancement projects should be coordinated with local public utility and conservation districts.
- F. Alternative mechanisms. Allow for the use of tax incentive programs, mitigation banking, grants, land swaps, or other programs, as they are developed, to encourage

restoration and enhancement of shoreline ecological functions and to protect habitat for fish, wildlife and plants.

5.15.2 Regulations

- A. Permitted. Shoreline restoration and ecological enhancement projects may be permitted in all shoreline environments; provided the project's purpose is the restoration of the natural character and/or ecological functions of the shoreline.
- B. Approved plan. Restoration and enhancement shall be carried out in accordance with an approved shoreline restoration plan or where opportunities arise for improving shoreline ecological functions.
- C. Protect adjacent resources. All shoreline restoration and enhancement projects shall protect the integrity of adjacent natural resources, including aquatic habitats and water quality.
- D. Maintenance and monitoring. Long-term maintenance and monitoring (minimum of three years, but preferably longer) shall be arranged by the project applicant and included in restoration or enhancement proposals.
- E. Use of best information and BMPs. Shoreline restoration and enhancement projects shall be designed using the best available scientific and technical information, and implemented using best management practices.
- F. Public use of waters. Shoreline restoration and enhancement shall not significantly interfere with the normal public use of the navigable waters of the state, as determined by the Shoreline Administrator, without appropriate mitigation. For projects on state-owned aquatic lands, prior to the solicitation of permits from regulatory agencies, project proponents must coordinate with the Washington Department of Natural Resources to ensure the project will be appropriately located.

5.16 Shoreline Stabilization

Shoreline stabilization includes actions taken to address erosion impacts to property and dwellings, businesses, or structures caused by natural processes, such as current, flood, tides, wind, or wave action. These actions include structural and nonstructural methods. Nonstructural methods include shoreline buffers or setbacks, relocation of the structure to be protected, groundwater management, planning and regulatory measures to avoid the need for structural stabilization.

Shorelines are by nature unstable, although in varying degrees. Erosion and accretion are natural processes that provide ecological functions and thereby contribute to sustaining the natural resource and ecology of the shoreline. Human use of the shoreline has typically led to hardening of the shoreline for various reasons including reduction of erosion or providing useful space at the shore or providing access to docks. The impacts of hardening any one property may be minimal, but cumulatively the impact of this shoreline modification is significant.

Shoreline hardening typically results in adverse impacts to shoreline ecological functions such as:

- (1) Beach starvation. Sediment supply to nearby beaches is cut off, leading to "starvation" of the beaches for the gravel, sand, and other fine-grained materials that typically constitute a beach.
- (2) Habitat degradation. Vegetation that shades the upper beach or bank is eliminated, thus degrading the value of the shoreline for many ecological functions, including spawning habitat for salmonids and forage fish.

- (3) Sediment impoundment. As a result of shoreline hardening, the sources of sediment on beaches (eroding "feeder" bluffs) are progressively lost and longshore transport is diminished. This leads to lowering of down-drift beaches, the narrowing of the high tide beach, and the coarsening of beach sediment. As beaches become coarser, less prey for juvenile fish is produced. Sediment starvation may lead to accelerated erosion in down-drift areas.
- (4) Exacerbation of erosion. The hard face of shoreline armoring, particularly concrete bulkheads, reflects wave energy back onto the beach, exacerbating erosion.
- (5) Groundwater impacts. Erosion control structures often raise the water table on the landward side, which leads to higher pore pressures in the beach itself. In some cases, this may lead to accelerated erosion of sand-sized material from the beach.
- (6) Hydraulic impacts. Shoreline armoring generally increases the reflectivity of the shoreline and redirects wave energy back onto the beach. This leads to scouring and lowering of the beach, to coarsening of the beach, and to ultimate failure of the structure.
- (7) Loss of shoreline vegetation. Vegetation provides important "softer" erosion control functions. Vegetation is also critical in maintaining ecological functions.
- (8) Loss of large woody debris. Changed hydraulic regimes and the loss of the upper beach, along with the prevention of natural erosion of vegetated shorelines, lead to the loss of beached organic material. This material can increase biological diversity, can serve as a stabilizing influence on natural shorelines, and is habitat for many aquatic-based organisms, which are, in turn, important prey for larger organisms.
- (9) Restriction of channel movement and creation of side channels. Hardened shorelines along rivers slow the movement of channels, which, in turn, prevents the input of larger woody debris, gravels for spawning, and the creation of side channels important for juvenile salmon rearing, and can result in increased floods and scour.

Additionally, hard structures, especially vertical walls, often create conditions that lead to failure of the structure. In time, the substrate of the beach coarsens and scours down to bedrock or hard clay. The footings of bulkheads are exposed, leading to undermining and failure. This process is exacerbated when the original cause of the erosion and "need" for the bulkhead was from upland water drainage problems. Failed bulkheads and walls adversely impact beach aesthetics, may be a safety or navigational hazard, and may adversely impact shoreline ecological functions.

"Hard" structural stabilization measures refer to those with solid, hard surfaces, such as concrete bulkheads, while "soft" structural measures rely on less rigid materials, such as biotechnical vegetation measures or beach enhancement. There is a range of measures varying from soft to hard that include: vegetation enhancement, upland drainage control, biotechnical measures, beach enhancement, anchor trees, gravel placement, rock revetments, gabions, concrete groins, retaining walls, bluff walls, and bulkheads.

Generally, the harder the construction measure, the greater the impact on shoreline processes, including sediment transport, geomorphology, and biological functions.

Structural shoreline stabilization often results in vegetation removal and damage to near-shore habitat and shoreline corridors. Therefore, master program shoreline stabilization provisions shall also be consistent with SMP Section 4.5, Vegetation Conservation and Shoreline Buffers, and where applicable, the City of Wenatchee's critical areas regulations found in Appendix B.

In order to avoid or mitigate adverse impacts to shoreline ecological functions where shoreline alterations are necessary to protect single-family residences and primary appurtenant structures in

danger from active shoreline erosion, the SMP includes standards setting forth the circumstances under which alteration of the shoreline is permitted, and for the design and type of protective measures and devices.

5.16.1 Policies

- A. Ecological functions and processes. Shoreline stabilization should be located, designed, and maintained to protect and maintain shoreline ecological functions, ongoing shoreline processes, and the integrity of shoreline features. Ongoing stream or lake processes and the probable effects of proposed shoreline stabilization on other properties and shoreline features should be considered. Shoreline stabilization should not be developed for the purpose of filling shorelines or creating additional property.
- B. Alternatives. Structural shoreline stabilization measures should only be used when more natural, flexible, non-structural methods such as placing the development farther from the OHWM, planting vegetation, or installing on-site drainage improvements, beach nourishment and bioengineering have been determined infeasible. Alternatives for shoreline stabilization should be based on the following hierarchy of preference:
 - 1. No action. Allow the shoreline to retreat naturally, increase buffers, and relocate structures.
 - 2. Flexible defense works constructed of natural materials including soft shore protection, bioengineering, including beach nourishment, protective berms, large woody debris, or vegetative stabilization.
 - 3. Rigid works constructed of artificial materials such as riprap or concrete.
- C. Future stabilization. Structures should be located and designed to avoid the need for future shoreline stabilization where feasible. Land subdivisions should be designed to assure that future development of the created lots will not require shoreline stabilization for reasonable development to occur.
- D. Protect existing structures. New or expanded structural shoreline stabilization should only be permitted where demonstrated to be necessary to protect an existing primary structure, including residences, that is in danger of loss or substantial damage, and where mitigation of impacts would not cause a net loss of shoreline ecological functions and processes.
- E. Enhancement, restoration and remediation. New or expanded structural shoreline stabilization for enhancement, restoration, or hazardous substance remediation projects should only be allowed when non-structural measures, native vegetation planting, or on-site drainage improvements would be insufficient to achieve enhancement, restoration or remediation objectives.
- F. Site-specific design. Shoreline stabilization on streams should be located and designed to fit the physical character and hydraulic energy potential of a specific shoreline reach, which may differ substantially from adjacent reaches.
- G. Public access and other uses. Shoreline stabilization should not be permitted when it interferes with public access to shorelines of the state, nor with other appropriate shoreline uses including, but not limited to, navigation or private recreation.
- H. Non-regulatory methods. In addition to conformance with the regulations in this section, non-regulatory methods to protect, enhance, and restore shoreline ecological functions and other shoreline resources should be encouraged for shore stabilization. Non-regulatory methods may include public facility and resource planning, technical

- assistance, education, voluntary enhancement and restoration projects, or other incentive programs.
- I. Coordination. Shoreline stabilization should be developed in a coordinated manner among affected property owners and public agencies, particularly those that cross boundaries between local governments or other entities with authority over specific land or water areas, to address ecological and geo-hydraulic processes, sediment conveyance, and beach management issues. Where beach erosion threatens existing development, a comprehensive program for shoreline management should be established by the multiple affected property owners.
- J. Public or quasi-public developments. Provisions for multiple use, restoration, and/or public shoreline access should be incorporated into the location, design and maintenance of shoreline stabilization for public or quasi-public developments whenever safely compatible with the primary purpose. Shoreline stabilization on publicly owned shorelines should not be allowed to decrease long-term public use of the shoreline. For the purposes of this section, a 'quasi-public development' shall mean a privately-owned development with a public mandate and/or public funding.
- K. Materials. Materials used for construction of shoreline stabilization should be selected for long-term durability, ease of maintenance, compatibility with local shoreline features including aesthetic values, and flexibility for future uses.
- L. Adjacent properties. New development that would require shoreline stabilization which causes adverse impacts to adjacent or down-current properties and shoreline areas should not be allowed.

5.16.2 Regulations

- A. General. The purpose of this section is to provide standards for the location and design of hard structural and soft structural shoreline stabilization measures that have the potential to adversely impact the shoreline natural environment. New development, however, shall be located and designed to avoid the need for future shoreline stabilization to the extent feasible. Land subdivisions shall be designed to assure that future development of the created lots will not require shoreline stabilization for reasonable development to occur. New development on steep slopes or bluffs shall be set back sufficiently to ensure that shoreline stabilization is unlikely to be necessary during the life of the structure, as demonstrated by a geotechnical analysis. New development that would require shoreline stabilization which causes significant impacts to adjacent or down-current properties and shoreline areas should not be allowed. In all cases, soft structural shoreline stabilization is preferred to hard structural stabilization. Shoreline stabilization shall be designed so that net loss of ecological functions does not occur.
- B. Nonconforming shoreline stabilization. Nonconforming shoreline stabilization measures are not governed by nonconforming structure provisions in Chapter 6; instead, they are governed by this section.
- C. New or enlarged structural shoreline stabilization. New structural shoreline stabilization measures, including both hard and soft structural shoreline stabilization measures, shall include measures installed to address erosion impacts. Enlargement of an existing structural shoreline stabilization shall include additions to or increases in size (such as height, width, length, or depth) to existing shoreline stabilization measures

and these enlargements shall be considered new structures. New or enlarged structural stabilization measures shall not be allowed, except as follows:

- 1. To protect an existing primary structure, including residences, when conclusive evidence, documented by a geotechnical analysis, is provided that the structure is in danger from shoreline erosion caused by currents or waves. Normal sloughing, erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis, is not demonstration of need. The geotechnical analysis should evaluate on-site drainage issues and address drainage problems away from the shoreline edge before considering hard or soft structural shoreline stabilization.
- 2. In support of new nonwater-dependent development, including single-family residences, when all of the conditions below apply:
 - a. The erosion is not being caused by upland conditions, such as drainage and the loss of vegetation.
 - b. Nonstructural measures, such as placing the proposed development farther from the shoreline, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient to adequately address erosion impacts.
 - c. The need to protect primary structures from damage due to erosion is demonstrated through a geotechnical analysis. The damage must be caused by natural processes, such as currents or waves.
- 3. In support of water-dependent development when all of the conditions below apply:
 - a. The erosion is not being caused by upland conditions, such as drainage and the loss of vegetation.
 - b. Nonstructural measures, such as planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient to adequately address erosion causes or impacts.
 - c. The need to protect primary structures, including residences, from damage due to erosion is demonstrated through a geotechnical analysis.
- 4. To protect projects for the restoration of ecological functions or for hazardous substance remediation projects pursuant to RCW Chapter 70.105D when nonstructural measures, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient to adequately address erosion causes or impacts.
- 5. To protect cultural or historic resources when nonstructural measures, planting vegetation, or installing on-site drainage improvements are not feasible or not sufficient to avoid continued degradation, disturbance or erosion of a site. Cultural resource protection projects shall be coordinated with any affected Indian tribes and comply with applicable provisions of Section 4.1 of this SMP.
- D. Repair of existing shoreline stabilization measures. This section allows repair and maintenance of existing shoreline stabilization measures, subject to all of the following standards. [Note: repair of shoreline stabilization structures may meet the criteria for exemption from a Shoreline Substantial Development Permit, but they are not exempt from the policies and regulations of this Section or the SMP.]
 - 1. Maintenance and repair shall include modifications or improvements to an existing shoreline stabilization measure that are designed to ensure the continued

- function of the stabilization measure by preventing failure of any part of the stabilization measure.
- 2. Modifications or improvements that include additions to or increase in size of existing shoreline stabilization measures shall be considered new structures, and are not maintenance and/or repair.
- 3. Replacement of greater than 50 percent or 35 feet, whichever is smaller, of linear length of existing shoreline stabilization on a waterfront parcel is not considered a repair or maintenance for purposes of these regulations, and must be designed and reviewed as a replacement subject to the provisions contained in E below. For shoreline stabilization projects, "replacement" occurs when the existing structure, including its footing or bottom course of rock, is removed prior to placement of new shoreline stabilization materials. Repairs and maintenance that involve only removal of material above the footing or bottom course of rock are not considered replacements. Replacement of existing shoreline stabilization may still qualify for an exemption from a Shoreline Substantial Development Permit as listed in Section 7.5.3 of this SMP.
- 4. Areas of temporary disturbance within the shoreline buffer shall be expeditiously restored to their pre-project condition or better.
- 5. The placement of a new shoreline stabilization structure landward of a failing shoreline stabilization structure shall be considered a new structure, and is not maintenance or repair.
- E. Replacement. The following standards apply to replacement of existing hard and soft structural shoreline stabilization measures [Note: repair of shoreline stabilization structures may meet the criteria for exemption from a Shoreline Substantial Development Permit, but they are not exempt from the policies and regulations of this Section or the SMP]:
 - 1. For purposes of this section, "replacement" means the construction of a new structure to perform a shoreline stabilization function of an existing structure that can no longer adequately serve its purpose. Additions to or increases in size of existing shoreline stabilization measures shall also be considered new structures.
 - 2. Replacement shall be treated as a new shoreline stabilization measure subject to the restrictions of C above, as well as the submittal requirements of H below, except for the requirement to prepare a geotechnical analysis. A geotechnical analysis is not required for replacements of existing hard or soft structural shoreline stabilization with a similar or softer measure if the applicant demonstrates need to protect principal uses or structures from erosion caused by waves or other natural processes operating at or waterward of the OHWM.
 - 3. Replacement hard structural shoreline stabilization measures shall not encroach waterward of the OHWM or waterward of the existing shoreline stabilization measure unless the primary residence was constructed prior to January 1, 1992, and there is overriding safety or environmental concerns. In such cases, the replacement structure shall abut (attached to and waterward of) the existing shoreline stabilization structure. All other replacement hard structural shoreline stabilization measures shall be located at or landward of the existing shoreline stabilization structure.

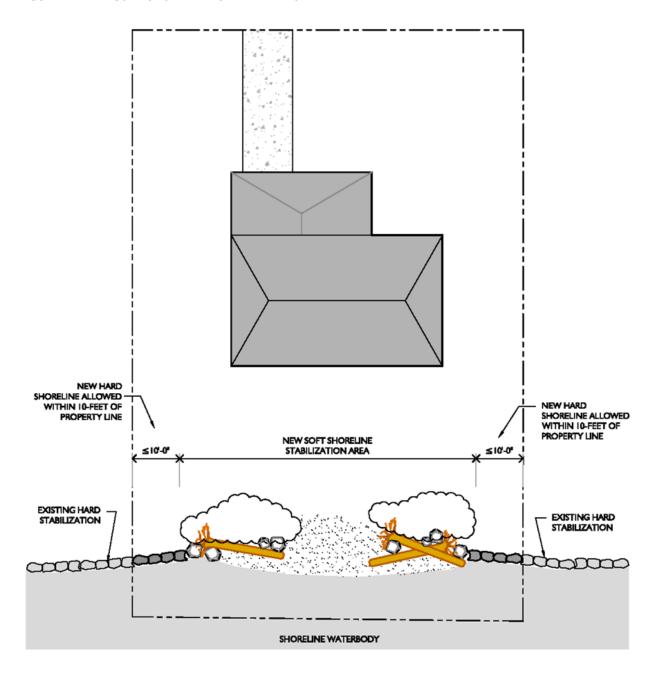
- 4. Fill associated with hard and soft shoreline stabilization measures may be allowed waterward of the OHWM to provide enhancement of shoreline ecological functions through creation of nearshore shallow-water habitat.
- F. General design standards. When a hard or soft structural shoreline stabilization measure is demonstrated to be necessary, the following design standards shall be incorporated into the stabilization design:
 - 1. Soft structural shoreline stabilization measures shall be used to the maximum extent practicable for new, enlarged, or replacement shoreline stabilization measures, limiting hard structural shoreline stabilization measures to the portion or portions of the site where necessary to protect or support existing shoreline structures or trees, or where necessary to connect to existing shoreline stabilization measures on adjacent properties. Hard structural shoreline stabilization transition areas between the applicant's otherwise soft shoreline measure and the adjacent hardened shoreline, when needed on the subject property to prevent destabilization of adjacent hardened shorelines, should be minimized and extend into the subject property from the property line no more than 10 feet.
 - 2. For enlarged or replacement soft and hard structural shoreline stabilization measures, the following location and design standards are preferred in descending order:
 - a. Conduct excavation and fill activities associated with the soft or hard structural shoreline stabilization landward of the existing OHWM to the maximum extent practicable.
 - b. Where a, above, is not practicable because of overriding safety or environmental concerns, conduct necessary excavation and fill activities waterward of the existing OHWM as needed to implement a soft structural shoreline stabilization technique or to mitigate the impacts of hard structural shoreline stabilization. Fill material waterward of the OHWM may be sand, gravel, cobble or boulders provided the placement of boulders does not effectively present a continuous wall or face to oncoming waves (also known as rip rap).
 - 3. All approved new, enlarged, repair, or replacement shoreline stabilization measures must minimize and mitigate any adverse impacts to ecological functions resulting from short-term construction activities, consistent with Section 4.2, Ecological Protection and Critical Areas and Appendix B, Critical Areas Regulations. Impact minimization techniques may include compliance with appropriate timing restrictions, use of best management practices to prevent water quality impacts related to upland or in-water work, and stabilization of exposed soils following construction.
 - 4. All new, enlarged, or replacement hard structural shoreline stabilization measures shall minimize any long-term adverse impacts to ecological functions by incorporating the following measures into the design:
 - a. Limiting the size of hard structural shoreline stabilization measures to the minimum necessary, including height, depth, and mass.
 - b. Shifting the hard structural shoreline stabilization landward and/or sloping the hard structural shoreline stabilization landward to provide some

- dissipation of wave energy and increase the quality or quantity of near shore shallow-water habitat.
- 5. Approved new and enlarged shoreline stabilization measures shall mitigate any adverse impacts to ecological functions by incorporating the following measures at a minimum into the design if appropriate for local conditions:
 - a. Restoration of appropriate substrate conditions waterward of the OHWM, to include substrate composition and gradient. The material should be sized and placed to remain stable during a two-year flood event on rivers and under typical boat- and wind-driven wave conditions on lakes, including storm events.
 - b. Plant native riparian vegetation, as necessary, along at least 75 percent of the shoreline linear frontage affected by the new or enlarged stabilization, located along the water's edge. The vegetated portion of the shoreline buffer shall average 10 feet in depth from the OHWM, but may be a minimum of 5 feet wide to allow for variation in landscape bed shape and plant placement. Restoration of native vegetation shall consist of a mixture of trees, shrubs and groundcover and be designed to improve habitat functions. At least 3 trees per 100 linear feet of shoreline must be included in the plan. Plant materials must be native to the ecosystem of the project area. An alternative planting plan or mitigation measure in lieu of meeting these requirements may be allowed if approved by other State and Federal agencies.
 - c. Additional mitigation measures may be required by the City, or State or Federal agencies, depending on the level of impact.
- 6. The shoreline stabilization measure shall be designed to not significantly interfere with normal surface and/or subsurface drainage into the adjacent waterbody.
- 7. The shoreline stabilization measure shall be designed so as not to constitute a hazard to navigation.
- 8. Stairs or other water access measures may be incorporated into the shoreline stabilization (e.g., steps integrated into the bulkhead, coved area with shallow entry), but shall not extend waterward of the shoreline stabilization measure and the OHWM.
- 9. The shoreline stabilization measure shall be designed to ensure that it does not restrict appropriate public access to the shoreline. When a structural shoreline stabilization measure is required at a public access site, provisions for safe access to the water shall be incorporated into the shoreline stabilization structure design (e.g., steps integrated into the bulkhead, coved area with shallow entry). Access measures should not extend farther waterward than the face of the shoreline stabilization measure and the OHWM.
- 10. Shoreline stabilization measures shall not extend waterward more than the minimum amount necessary to achieve effective stabilization, except for those elements that enhance shoreline ecological functions and minimize impacts.
- 11. When repair or replacement shoreline stabilization measures intended to improve ecological functions shift the OHWM landward of the pre-modification location, any buffers from the OHWM or lot area for the purposes of calculating lot coverage shall be measured from the pre-modification location. The pre-modification OHWM shall be recorded in a form approved by the City and recorded at the Chelan County Auditor's Office.

- 12. If repair or replacement shoreline stabilization measures intended to improve ecological functions shift the OHWM landward of the pre-modification location and result in expansion of the shoreline jurisdiction on any property other than the subject property, the plan shall not be approved until the applicant submits a copy of a statement signed by the property owners of all affected properties, in a form approved by the City and recorded at the Chelan County Auditor's Office, consenting to the shoreline jurisdiction creation and/or increase on such property.
- G. Specific hard structural shoreline stabilization design standards. In those limited instances when hard structural shoreline stabilization measures, such as bulkheads, are demonstrated to be necessary as outlined in I below, the following standards shall be incorporated into the design:
 - 1. In those limited cases when hard structural shoreline stabilization is proposed on a site where hard structural shoreline stabilization is not located on adjacent properties, the construction of hard structural shoreline stabilization shall tie in with the existing contours of the adjoining properties, as feasible, such that the proposed stabilization would not cause erosion of the adjoining properties.
 - 2. When hard structural shoreline stabilization is proposed on a site where hard structural shoreline stabilization is located on adjacent properties, the proposed stabilization may tie in flush with existing stabilization measures on adjoining properties, provided that the new stabilization does not extend waterward of the OHWM, except as necessary to make the connection to the adjoining stabilization, and does not extend onto the adjacent property. In such circumstances, the remaining portion of the stabilization shall be placed landward of the existing OHWM such that no net intrusion into the waterbody occurs nor does net creation of uplands occur. The length of hard structural shoreline stabilization transition area to adjacent properties should be minimized to the maximum extent practicable, and extend into the subject property from adjacent properties no more than 10 feet.
 - 3. Fill behind hard structural shoreline stabilization shall be limited to 1 cubic yard per running foot of stabilization. Any filling in excess of this amount shall be considered a regulated activity subject to the regulations in this Chapter pertaining to fill activities and the requirement for obtaining a Shoreline Substantial Development Permit or Shoreline Conditional Use Permit.
- H. Specific soft structural shoreline stabilization design standards. In addition to applicable general design standards and hard structural shoreline stabilization standards above, the following standards shall be incorporated into the design:
 - 1. The soft shoreline stabilization design shall provide sufficient protection of adjacent properties by tying in with the existing contours of the adjoining properties to prevent erosion at the property line, provided the stabilization measure does not extend onto the adjacent property. Soft shoreline stabilization projects that include necessary use of hard structural shoreline stabilization measures, as indicated by the appropriate study prepared per I below, only near the property lines to tie in with adjacent properties shall be permitted as soft shoreline stabilization measures. The length of hard structural shoreline stabilization transition area to adjacent properties shall be minimized to the maximum extent practicable, and extend into the subject property from adjacent

- properties no more than 10 feet (see Figure 1 below). The hard structural shoreline stabilization transition area shall not extend waterward of the OHWM, except as necessary to make the connection to the adjoining stabilization, and shall not extend onto the adjacent property.
- 2. The soft shoreline stabilization design shall size and arrange any gravels, cobbles, logs, and boulders so that the project remains stable during a two-year flood event on rivers and under typical boat- and wind-driven wave conditions on lakes, including storm events, and dissipates wave and current energy, without presenting extended linear faces to oncoming waves or currents.

FIGURE 1 SOFT SHORELINE STABILIZATION EXAMPLE



- I. Submittal requirements. In addition to submitting an application for the appropriate shoreline permit, the applicant shall submit the following as part of a request to construct a new, enlarged, or replacement shoreline stabilization measure:
 - 1. For a new or enlarged hard or soft structural shoreline stabilization measure, a geotechnical analysis prepared by a qualified professional with an engineering license. The analysis shall include the following:
 - a. An assessment of the necessity for structural shoreline stabilization by estimating time frames and rates of erosion and reporting on the urgency associated with the specific situation. New hard structural shoreline stabilization measures shall not be authorized, except when an analysis confirms that that there is a significant possibility that an existing structure will be damaged within three years as a result of shoreline erosion in the absence of such hard structural shoreline stabilization measures, or where waiting until the need is immediate results in the loss of opportunity to use measures that would avoid impacts on ecological functions. Where the geotechnical analysis confirms a need to prevent potential damage to a primary structure, but the need is not as immediate as three years that analysis may still be used to justify more immediate authorization to protect against erosion using soft measures.
 - b. An assessment of the cause of erosion, looking at processes occurring both waterward and landward of the OHWM.
 - c. An assessment of alternative measures to shoreline stabilization, including:
 - i. Placing the structure farther from the OHWM.
 - ii. Correcting any on-site groundwater or drainage issues that may be causing shoreline erosion.
 - d. Where structural shoreline stabilization is determined to be necessary, the assessment must evaluate the feasibility of using soft shoreline stabilization measures in lieu of hard structural shoreline stabilization measures. Soft shoreline stabilization may include the use of gravels, cobbles, boulders, and logs, as well as vegetation.
 - e. Design recommendations for minimum sizing of hard structural or soft structural shoreline stabilization materials, including gravel and cobble beach substrates necessary to dissipate wave energy, eliminate scour, and provide long-term shoreline stability.
 - 2. For replacements of existing hard structural shoreline stabilization measures with a similar measure, the applicant shall submit a written narrative providing a demonstration of need. The narrative must be prepared by a qualified professional. The demonstration of need shall consist of the following:
 - a. An assessment of the necessity for continued structural shoreline stabilization, considering site-specific conditions such as water depth, orientation of the shoreline, wave fetch or flow velocities, and location of the nearest primary structure.
 - b. An assessment of erosion potential resulting from the action of waves or other natural processes operating at or waterward of the OHWM in the absence of the hard structural shoreline stabilization.
 - c. An assessment of alternative measures to shoreline stabilization, including:
 - i. Relocating the development farther from the OHWM.

- ii. Correcting any on-site groundwater or drainage issues that may be causing shoreline erosion.
- d. An assessment of the feasibility of using soft shoreline stabilization measures in lieu of hard structural shoreline stabilization measures. Soft structural shoreline stabilization may include the use of gravels, cobbles, boulders, and logs, as well as vegetation.
- e. Design recommendations for minimizing impacts of any necessary hard structural shoreline stabilization.
- 3. A demonstration of need may be waived when an existing hard structural shoreline stabilization measure is proposed to be repaired or replaced using soft structural shoreline stabilization measures, resulting in significant restoration of shoreline ecological functions or processes.
- 4. For all structural shoreline stabilization measures, including soft structural shoreline stabilization, detailed construction plans, including, but not limited to, the following:
 - a. Plan and cross-section views of the existing and proposed shoreline configuration, showing accurate existing and proposed topography and OHWMs
 - b. Detailed construction sequence and specifications for all materials, including gravels, cobbles, boulders, logs, and vegetation. The sizing and placement of all materials shall be selected to accomplish the following objectives:
 - Protect the primary structures from erosion and other damage over the long term, and accommodate the normal amount of alteration from currents and wind- or boat-driven waves;
 - ii. Allow safe passage and migration of fish and wildlife; and
 - iii. Minimize or eliminate juvenile salmon predator habitat.
 - c. For projects that include vegetation, a detailed five-year vegetation maintenance and monitoring program to include the following:
 - i. Goals and objectives of the shoreline stabilization plan;
 - ii. Success criteria by which the implemented plan will be assessed;
 - iii. A five-year maintenance and monitoring plan, consisting of at least one site visit per year by a qualified professional, with annual progress reports submitted to the Shoreline Administrator and all other agencies with authority;
 - iv. A performance standard of 100 percent survival for the first year of growth post installation, with no less than 80 percent survival at the end of the third year; and
 - v. A contingency plan and a bond in an amount and form acceptable to the City in case of failure.

5.17 Transportation and Parking

5.17.1 Policies

A. Circulation. Public agencies and developments should provide circulation facilities including roads, streets, alleys, pedestrian, bicycle, and public transportation facilities, consistent with federal, state, or local standards and sufficient to meet adopted levels of service.

- 1. Minimize traffic impacts of trains on the waterfront access.
- B. Essential public facilities. Comprehensive Plans, which include Shoreline Master Programs, may not preclude the siting of essential public facilities, which include state or regional transportation facilities as defined in RCW 47.06.140.
- C. Minimize land consumption. When transportation facilities must be located along shorelines, efforts should be made to minimize the amount of land consumed. Where feasible, such transportation facilities should be sufficiently set back so that a usable shoreline area remains.
- D. Erosion and groundwater. Roads in shoreline areas should be designed and maintained to prevent erosion and to permit a natural movement of groundwater.
- E. Protect shorelands. Transportation facilities and parking facilities should be planned, located, and designed where routes will have the least possible adverse effect on unique or fragile shoreline features, will not result in a net loss of shoreline ecological functions or adversely impact existing or planned water-dependent uses.
- F. Fit topography. Road locations should be planned to fit the topography so that minimum alterations of natural conditions will be necessary.
- G. Scenic highways and bridges. Scenic highways and major bridge crossings should have provisions for safe pedestrian and other non-motorized travel. Also, provision should be made for sufficient viewpoints, rest areas and picnic areas along shorelines of the state, if feasible.
- H. General maintenance and reconstruction. Road maintenance and reconstruction should be allowed in accordance with best management practices adopted by the City and the State of Washington Department of Transportation.
- I. Trails. Multi-purpose trails should be encouraged in shoreline jurisdiction consistent with public access policies and regulations in Section 4.4.
- J. Coordinate land use and transportation. Since land use and transportation facilities are so highly interrelated, the plans for each should be closely coordinated and consider shoreline goals, objectives, policies, and standards.
 - 1. Encourage the development of new roadways, where necessary, to facilitate desired development and enhance waterfront access.
 - 2. Link and integrate the waterfront's development nodes.
 - 3. Create visible and attractive gateways that promote the waterfront and create a sense of identity.
- K. Parking. Parking facilities in shorelines are not a preferred use and should be allowed only as necessary to support an authorized use. Parking facilities should be located as far inland as possible from the OHWM.
 - 1. Provide on-street parking opportunities, where possible, on existing and new streets to support waterfront land uses and calm traffic.

5.17.2 Regulations

- A. Roads and railroads limited in shoreline jurisdiction. Where other options are available and feasible, new roads, road expansions or railroads shall not be built within shoreline jurisdiction. If subdivisions are being proposed, new road placement shall be evaluated at the time of the plat application, or site development planning.
- B. Criteria if roads or railroads are unavoidable. When railroads, roads or road expansions are unavoidable in the shoreline jurisdiction, proposed transportation facilities shall be planned, located, and designed to achieve the following:

- 1. Minimize possible adverse effects on unique or fragile shoreline features;
- 2. Implement Section 4.2 and Section 4.5;
- 3. Set back from the OHWM to the maximum extent feasible to allow for a usable shoreline area for vegetation conservation and planned shoreline uses.
- C. Visual access. Public roads, within shoreline jurisdiction, shall, where possible, provide and maintain visual access to scenic vistas. Visual access may include, but is not limited to, turn-outs, rest areas, and picnic areas.
- D. Construction standards. Construction standards of the appropriate governmental agency, together with SMP standards, shall be included as conditions for granting shoreline permits. Seasonal work windows may be required based on federal or state requirements, or if the proposal involves crossing shorelines or altering the waterbody.
- E. Trails. See public access standards in Section 4.4.
- F. Parking facilities. Parking facilities in shorelines are not a preferred use and shall be allowed only as necessary to support an authorized use and when minimizing environmental and visual impacts. For the purposes of this section, authorized means a use or activity included in the use matrix and associated definitions in Chapter 8. New or expanded parking areas shall:
 - 1. Be sited outside of shoreline jurisdiction unless no feasible alternative location exists; for example where a property does not extend outside jurisdiction;
 - 2. Be landscaped to provide a visual and noise buffer for adjoining dissimilar uses or scenic areas. The Shoreline Administrator may condition proposals to incorporate the following performance standards:
 - Select species that are suitable to the local climate, having minimal demands for water, minimal vulnerability to pests, and minimal demands for fertilizers; and
 - b. Incorporate native species.
 - 3. Observe shoreline buffers. Parking shall be located outside shoreline buffers unless one of the following is met:
 - a. ADA parking requirements are not met and placing the limited number of needed ADA parking spaces within the shoreline buffer facilitates better and safer public access to the shoreline.
 - b. Parking is located on a parcel landward of allowed uses and the applicant's lot/site has topographical constraints where no other location outside the buffer yet within the proposed development is feasible (e.g., the use or activity is located on a parcel entirely or substantially encumbered by the required buffer)

In the above cases, parking shall be located as far upland from the OHWM as feasible and parking allowed in a buffer shall follow mitigation sequencing pursuant to Section 4.2; and

- 4. Be designed to incorporate low-impact development practices, such as pervious surfaces and bioswales, to the extent feasible.
- G. Modifications of Existing Roads and Parking Areas: Existing roads and parking areas that are of a non-paved surface (e.g. gravel) may be paved provided such facilities comply with all applicable requirements of this SMP. Roadways or paved parking areas shall be designed to incorporate low-impact development practices, such as pervious surfaces and bioswales, to the extent feasible.

- H. Private Driveways: A driveway for an individual single family home is considered a residential appurtenance and is considered part of the primary use, and subject to Residential standards of this SMP. Private driveways or private roads serving more than one home are subject to the standards of this section.
- I. Maintenance Standards for New or Expanded Road or Parking Facility: When a new or expanded roadway or new or expanded parking facility is proposed, the City may condition the proposal to provide a maintenance plan that promotes best management practices to achieve no-net-loss of shoreline ecological function. For example, maintenance standards may include restrictions on the use of herbicides, hazardous substances, sealants or other liquid oily substances, or de-icing practices adjacent to shoreline buffers or critical areas and their buffers.

5.18 Utilities

Utilities provisions apply to services and facilities that produce, convey, store, or process power, gas, sewage, stormwater, communications, oil, waste, and the like. On-site utility features serving a primary use, such as water, sewer or gas lines to a residence, are "accessory utilities" and shall be considered a part of the primary use. Consult standards of the primary use of the property, e.g. Residential, Commercial, Industrial, or Recreational, for any additional standards relevant to the placement of accessory activities such as utilities. Water intake and water and/or fish conveyances between a waterbody and an aquaculture facility are not considered a "utility" under this section of the SMP; consult standards for Aquaculture.

5.18.1 Policies

- A. Meet demand for utilities. Utilities should be located to meet the needs of current underserved areas or future growth.
- B. Use existing corridors. Intensified use of existing utility corridors should be encouraged, as opposed to the addition of new corridors.
- C. Minimize visual impact. Whenever utilities must be placed in a shoreline area, the location should be chosen so as to minimize their visual impact. Whenever feasible, utilities should be placed underground or designed to do minimal damage to aesthetic qualities of the shoreline area.
- D. Upland and underwater utilities. Upland locations are recommended for utility pipelines and cables. If an underwater location becomes necessary, easements for the utility should include proper provisions to insure against substantial or irrevocable damage to the waterway or the resident aquatic ecosystems.
- E. Restoration of disturbed areas. Upon completion of installation or maintenance projects on shorelines, all disturbed areas within shoreline jurisdiction should be restored to pre-project configuration where feasible, replanted with suitable plant species, and maintained until the newly planted vegetation is established consistent with Vegetation Conservation policies and standards in Section 4.5.
- F. Outfalls. Site outfalls to avoid impacts to critical areas. Design outfalls to reduce impacts to aquatic vegetation and water quality.

5.18.2 Regulations

A. Design considerations. Utility systems are permitted provided such systems:

- 1. Are designed and constructed to meet all applicable engineering standards of the City of Wenatchee;
- 2. Avoid paralleling the shoreline or following a down-valley course near the channel, except where located in an existing road or easement footprint;
- 3. Do not alter processes affecting the rate of channel migration or shoreline erosion; the Shoreline Administrator may require a monitoring plan and adaptive management measures prepared by a qualified professional as appropriate; and
- 4. Joint use of utility corridors is recommended consistent with prudent utility practice.
- B. Preference existing footprints. Preference shall be given to utility systems contained within the footprint of an existing right-of-way or utility easement over new locations for utility systems.
- C. Undergrounding. All new permanent utility systems shall be underground except where environmental or geological conditions makes undergrounding prohibitive; provided that facilities which are temporary or infeasible to underground are exempt from undergrounding, including but not limited to electric transmission lines in excess of 15kV, utilities attached to undersides of bridges, and public stormwater facilities, outfalls, and associated structures.
- D. Reasonable screening and/or architecturally compatible integration of all new above-ground utility facilities, such as a substation, shall be required.
- E. Minimum clearing. Where utility systems must be located in shoreline jurisdiction areas, clearing necessary for installation or maintenance shall be kept to the minimum width necessary to prevent interference by trees and other vegetation with proposed transmission facilities. Impacts associated with removal of vegetation or clearing shall be mitigated on the property.
- F. Restoration of disturbed areas. Upon completion of utility system installation, or any maintenance project, the disturbed area shall be graded to compatibility with the natural terrain and replanted to prevent erosion.
- G. Underwater utilities. If an underwater location is necessary, the following performance standards apply:
 - 1. The design, installation and operation shall minimize impacts to the waterway or the resident aquatic ecosystems.
 - 2. Seasonal work windows may be made a condition of approval.
 - 3. All federal or state permits must be obtained.
 - 4. A maintenance schedule and emergency repair protocol shall be prepared and recorded.
- H. New Nonwater-oriented processing and production facilities. New nonwater-oriented utility production and processing facilities, such as power plants and sewage treatment plants, or parts of those facilities that are nonwater-oriented, shall not be allowed in shoreline jurisdiction unless it can be demonstrated that no other feasible option is available.
- I. Outfall design principles. New and reconfigured outfalls shall be located to avoid impacts to existing native aquatic vegetation attached to or rooted in substrate. The diffuser or discharge point(s) for new or expanded outfalls must be located offshore and at a buffer distance beyond the near shore/littoral area, to avoid impacts to those areas. The Shoreline Administrator may require a mixing zone analysis for the outfall from a

qualified professional to determine the diffuser or discharge point. The outfall pipe shall be subsurface within the near shore.

5.19 Redevelopment, Repair, and Maintenance

5.19.1 Policies

- A. The SMP should recognize existing uses and developments in the shoreline and allow them to continue consistent with their lawfully established condition.
- B. The City should apply relevant SMP provisions in proportion to the shoreline use or development proposed.

5.19.2 Regulations

- A. SMP provisions shall not apply retroactively to existing lawfully established uses and developments.
- B. Existing legally established uses and developments may be maintained, repaired, and operated within shoreline jurisdiction and within shoreline buffers established in this SMP. Normal maintenance and repair, as specified in Section 7.5.3, Exemptions, do not require shoreline permits.
- C. Consistent with provisions of Section 1.3, SMP standards shall apply to expansions or alterations of uses or developments and to new development or redevelopment of a property as follows:
 - 1. The Shoreline Administrator shall determine the extent of compliance with SMP provisions.
 - 2. The required provisions shall be related to and in proportion to the proposal. For example, if an upper story is added to a structure, requirements related to building heights and views may apply. If vegetation is removed beyond normal maintenance pursuant to 7.5.3.B, vegetation conservation and shoreline buffer standards may apply.
- D. Maintenance or repair activities which exceed the specifications of Section 7.5.3.B in Exemptions or which are required for new development or re-development may be authorized through the establishment of multi-year maintenance or repair plans, as follows:
 - 1. Five-year management plans consistent with Section 5.15.
 - 2. Multi-year plan(s) for other maintenance or repair activities that are used to establish best management practices or protocols to ensure no-net-loss of shoreline ecological function such as for roadways, utilities, or other facilities shall address the following:
 - a. Description of proposed maintenance activities and best management practices;
 - b. Type, methods, and frequency of maintenance or repair activities;
 - c. Description of in-stream or in-lake habitat protection measures;
 - d. Description of riparian and wetland protection measures;
 - e. Description of stormwater management practices to reduce both water quantity and water quality impacts;
 - f. Description of erosion and sediment control practices that prevent off-site movement;

- g. Description of re-vegetation or restoration activities following maintenance or repair; and
- h. Description of chemical and nutrient use and containment practices such as Integrated Pest Management (IPM).

6 NONCONFORMING STRUCTURES AND USES

6.1 Nonconforming Uses, Structures, and Lots

6.1.1 Policies

The following policies on nonconforming structures, uses, and lots are intended to guide the application of the City's nonconforming standards:

- A. Continuation of nonconforming uses and structures. Nonconforming existing legal uses and structures may continue according to City of Wenatchee standards.
- B. Transition to conforming uses. Transitions from nonconforming uses to conforming uses should be encouraged.
- C. Expansion of nonconforming structures. Owners of nonconforming structures that wish to expand the structure should not increase the nonconformity according to the City's standards.
- D. No-net-loss of ecological function. The SMP no-net-loss of ecological function objective should guide review of proposed expansions or other changes to nonconforming uses and new development on nonconforming vacant lots. This objective may be addressed in an area-wide manner consistent with the SMP cumulative impacts analysis.
- E. Balance historic character. The City of Wenatchee should consider balancing historic character of the community with conformity to SMP rules when considering changes to nonconforming uses, structures, and lots.

6.1.2 Regulations

The following nonconforming standards shall apply to nonconforming uses and structures, with the exception of Boating Facilities (Section 5.5) and shoreline stabilization structures (Section 5.16).

A. Nonconforming uses

- 1. A legal nonconforming use in existence as of the effective date of this SMP may be continued but shall not be enlarged upon, expanded, increased in intensity or be extended; provided, however, the extension of the nonconforming use of a structure that was originally arranged or designed for such nonconforming use, on or before the effective date of this SMP, shall not be deemed the extension of a nonconforming use.
- 2. A nonconforming use, if changed to a conforming use, may not thereafter be changed to a nonconforming use.
- 3. No nonconforming use shall be enlarged, increased or extended to occupy a greater gross floor area or land coverage than was occupied on the effective date of this SMP.
- 4. A structure which is being or has been used for a nonconforming use may be used for a different nonconforming use only upon the approval of a conditional use permit. A conditional use permit may be approved only upon a finding that:
 - a. No reasonable alternative conforming use is practical; and
 - b. The proposed use will be at least as consistent with the policies and provisions of the act and the master program and as compatible with the uses in the area as the preexisting use.

- In addition such conditions may be attached to the permit as are deemed necessary to assure compliance with the above findings, the requirements of the master program and the Shoreline Management Act and to assure that the use will not become a nuisance or hazard.
- 5. Uses and developments that were legally established and are nonconforming with regard to the use regulations of this SMP may continue as legal nonconforming uses. Such uses shall not be enlarged or expanded, except that nonconforming single-family residences that are located landward of the ordinary high water mark may be enlarged or expanded in conformance with applicable bulk and dimensional standards by the addition of space to the main structure or by the addition of normal appurtenances, as defined in Chapter 8 of this SMP, upon approval of a conditional use permit.
- 6. If a nonconforming use is discontinued for twelve consecutive months or for twelve months during any two-year period, the nonconforming rights shall expire and any subsequent use shall be conforming.
- B. Nonconforming structures: For the purposes of this section, signs shall be considered as structures.
 - 1. A structure which is legally nonconforming as of the effective date of the SMP by reason of restrictions on area, lot coverage, height, required setbacks or other requirements concerning structures may be continued so long as it remains otherwise lawful.
 - 2. A structure with one or more nonconforming setbacks (not to be confused with buffers) may be extended when said addition or extension would be no less conforming as to setback distance than the existing structure; and provided, that the addition shall be no longer in linear feet along the nonconforming setback than 50 percent of the length of the existing nonconformity.
 - 3. A nonconforming structure shall not be altered, extended, enlarged, or otherwise physically changed in any manner that would have the effect of increasing its amount or degree of nonconformity.
 - 4. A nonconforming structure destroyed by any cause to an extent exceeding 50 percent of its cost of replacement using new materials shall only be replaced with a structure conforming to the provisions of this SMP.
 - 5. Nothing in this SMP shall be deemed to prevent the normal maintenance and repair of a nonconforming structure or its restoration to a safe condition when declared to be unsafe by any official charged with protecting the public safety.
 - C. Nonconforming lots
 - An undeveloped lot, tract, parcel, or division of land located landward of the
 ordinary high water mark and was of record on the effective date of this SMP, or
 amendment thereto, which contain less than the required width, depth, or area as
 required by this SMP, shall be considered buildable in all respects. However, this
 is contingent upon any proposed structures and uses to be developed must be
 permitted under City regulations and conform to all other requirements of this
 SMP.

7 SHORELINE PERMITS, PROCEDURES AND ADMINISTRATION

Sections:

- 7.1 Roles and Responsibilities
- 7.2 Interpretation
- 7.3 Application Requirements
- 7.4 Shoreline Substantial Development Permits
- 7.5 Exemptions from Shoreline Substantial Development Permits
- 7.6 Shoreline Conditional Use Permits
- 7.7 Shoreline Variances
- 7.8 Permit Conditions
- 7.9 Duration of Permits
- 7.10 Initiation of Development
- 7.11 Appeals
- 7.12 Amendments to Permits
- 7.13 Enforcement
- 7.14 Rescission and Modifications
- 7.15 Amendments to Shoreline Master Program
- 7.16 Purpose, Applicability and Definitions
- 7.17 Application Process
- 7.18 Application Review
- 7.19 Performance Assurance and Guarantee

7.1 Roles and Responsibilities

The City shall administer this Shoreline Master Program according to the following roles and responsibilities.

7.1.1 Shoreline Administrator

The Shoreline Administrator in the City of Wenatchee is the Community and Economic Development Director or assigned designee and shall have overall administrative responsibility of the SMP. The Shoreline Administrator or his/her designee is hereby vested with the authority to:

- A. Administrate this SMP.
- B. Grant or deny exemptions from Shoreline Substantial Development Permit requirements of this SMP per Section 7.5.3.
- C. Authorize, approve or deny, or revise Shoreline Substantial Development Permits, except those that the Administrator designates the Hearing Examiner as the decision maker. The Hearing Examiner shall review any shoreline substantial development permit associated with a shoreline conditional use permit or shoreline variance.
- D. Make field inspections as needed, and prepare or require reports on shoreline permit applications.
- E. Make written recommendations to the Hearing Examiner, Planning Commission, or City Council as appropriate.

- F. Provide interested persons and prospective applicants guidance as to the administrative procedures and related components of this SMP.
- G. Authorize, approve or deny revisions to shoreline conditional use permits, or shoreline variances, except those that the Administrator designates the Hearing Examiner as the decision maker.
- H. Collect fees for all necessary permits as provided in City of Wenatchee ordinances or resolutions. The determination of which fees are required shall be made by the City.
- I. Make administrative decisions and interpretations of the policies and regulations of this SMP and the Act.

7.1.2 SEPA Official

The responsible SEPA official or his/her designee is authorized to conduct environmental review of all use and development activities subject to this SMP, pursuant to WAC 197-11 and RCW 43.21C. The responsible SEPA official is designated in accordance with the City's SEPA implementation ordinance.

7.1.3 Hearing Examiner

In the City of Wenatchee, the Hearing Examiner shall have the authority to:

- A. Decide on Shoreline Substantial Development Permits that the Hearing Examiner is the designated decision maker by the Administrator, or that are associated with a shoreline conditional use permit or shoreline variance.
- B. Appeals from administrative decisions issued by the Administrator of this SMP.
- C. Grant or deny shoreline conditional uses under this SMP.
- D. Grant or deny shoreline variances from this SMP.
- E. Grant or deny revisions to shoreline conditional uses or shoreline variances that the Hearing Examiner is the designated decision maker by the Administrator.

7.1.4 Planning Commission

The Planning Commission is vested with the responsibility to review the Shoreline Master Program as part of regular SMP updates required by RCW 90.58.080 as a major element of the City's planning and regulatory program, and make recommendations for amendments thereof to the City Council.

7.1.5 City Council

The Wenatchee City Council shall maintain a policy role and is vested with authority to:

- A. Initiate an amendment to this SMP according to the procedures prescribed in WAC 173-26-100.
- B. Adopt all amendments to this SMP, after consideration of the recommendation of the planning commission. Amendments shall become effective 14 days from the date of issuance of Ecology's final action letter by Ecology.

7.2 Interpretation

Upon request or as determined necessary the Administrator shall interpret the meaning or application of the provisions of the SMP and issue a written interpretation. Interpretation

requests shall be processed in the same manner as a letter of exemption under sections 7.5.4-5 under the processing and review standards of sections 7.16-7.18 of this Chapter. The Administrator shall consult with Ecology to ensure that any formal written interpretations are consistent with the purpose and intent of chapter 90.58 RCW and 173-26 WAC.

7.3 Application Requirements

The Joint Aquatic Resource Permit Application (JARPA) in its current iteration shall be the application form used for permit submittals.

7.3.1 Requirements

- A. A complete JARPA for an Exemption, Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance shall provide, at a minimum, the following:
 - 1. The name, address and phone number of the applicant. The applicant should be the owner of the property or the primary proponent of the project and not the representative of the owner or primary proponent.
 - 2. The name, address and phone number of the applicant's representative if other than the applicant.
 - 3. The name, address and phone number of the property owner, if other than the applicant.
 - 4. Location of the property. This shall, at a minimum, include the property address and identification of the section, township and range to the nearest quarter, quarter section or latitude and longitude to the nearest minute. All applications for projects located in open water areas away from land shall provide a longitude and latitude location.
 - 5. Identification of the name of the shoreline (water body) that the site of the proposal is associated with. This should be the water body from which jurisdiction of the act over the project is derived.
 - 6. A thorough description of the proposed project that includes the proposed use or uses and the activities necessary to accomplish the project.
 - 7. A thorough description of the property as it now exists including its physical characteristics and improvements and structures.
 - 8. A thorough description of the vicinity of the proposed project including identification of the adjacent uses, structures and improvements, intensity of development and physical characteristics.
 - 9. A site development plan consisting of maps and elevation drawings, photographs, and text which shall include:
 - a. The site plan drawn to an appropriate scale to clearly depict all required information. The scale must be at minimum 1 to 100.
 - b. The boundary of the parcel(s) of land upon which the development is proposed.
 - c. The ordinary high water mark of all water bodies located adjacent to or within the boundary of the project. This may be an approximate location provided, that for any development where a determination of consistency with the applicable regulations requires a precise location of the ordinary high water mark the mark shall be located precisely and the biological and hydrological basis for the location as indicated on the plans shall be included

- in the development plan. Where the ordinary high water mark is neither adjacent to or within the boundary of the project, the plan shall indicate the distance and direction to the nearest ordinary high water mark of a shoreline.
- d. Existing and proposed land contours. The contours shall be at intervals sufficient to accurately determine the existing character of the property and the extent of proposed change to the land that is necessary for the development. Areas within the boundary that will not be altered by the development may be indicated as such and contours approximated for that area
- e. A delineation of all wetland areas that will be altered or used as a part of the development.
- f. A thorough indication of the character of vegetation found on the site.
- g. The dimensions and locations of all existing and proposed structures and improvements including but not limited to:
 - i. Impervious surfaces; buildings, paved or graveled areas, roads;
 - ii. Utilities, septic tanks and drainfields (if applicable), and stormwater management facilities;
 - iii. Location of material stockpiles or surcharge, storage areas, and staging areas;
 - iv. Existing and/or proposed view corridors;
 - v. Wildfire defensible space;
 - vi. Existing and/or proposed water access trail(s)/routes; and
 - vii. Show area calculations for each of the above.
- h. Where applicable, the project landscaping plans.
- Where applicable, plans for development of areas on or off the site as mitigation for impacts associated with the proposed project shall be included and contain information consistent with the requirements of this section.
- j. Quantity, source and composition of any fill material that is placed on the site whether temporary or permanent.
- k. Quantity, composition and destination of any excavated or dredged material.
- l. A vicinity map showing the relationship of the property and proposed development or use to roads, utilities, existing developments and uses on adjacent properties.
- m. Where applicable, a depiction of the impacts to views from existing residential uses and public areas consistent with this SMP.
- 10. On all variance applications the plans shall clearly indicate the following:
 - a. Where development could occur without approval of a variance;
 - b. The physical features and circumstances on the property that provide a basis for the request;
 - c. The location of adjacent structures and uses;
 - d. An assessment of the existing ecological functions and/or processes provided by topographic, physical and vegetation characteristics of the site, any impacts to those functions and/or processes; and
 - e. When the project results in adverse impacts to ecological function and/or processes, a mitigation and management plan in conformance with Section

- 4.2.2 must be provided that describes how proposed mitigation compensates for the lost functions or process.
- 11. The location of any mapped channel migration zone, floodplain, and/or floodway boundary and critical areas, if known, and respective setback/buffer areas on and within 200 ft. of the vicinity of the project site and all applicable buffers.
- B. The Shoreline Administrator may vary or waive these application requirements according to administrative application requirements on a case by case basis. The Shoreline Administrator may require additional specific information depending on the nature of the proposal and the presence of sensitive ecological features or issues related to compliance with other city requirements, and the provisions of this SMP.

7.4 Shoreline Substantial Development Permits

7.4.1 Permit Required

A Shoreline Substantial Development Permit shall be required for all development of shorelines, unless the proposal is specifically exempt per Section 7.5.

7.4.2 Permit Review Criteria

In order for the permit to be approved, the decision maker must find that the proposal is affirmatively consistent with the following criteria:

- A. How is the proposal consistent with the policies and procedures of the Shoreline Management Act?
- B. How is the proposal consistent with the provisions of WAC 173-27-140, "Review criteria for all development", and WAC 173-27-150, "Review criteria for substantial developments". ?
- C. How is the proposal consistent with this SMP?

7.5 Exemptions from Shoreline Substantial Development Permits

7.5.1 Compliance with Applicable Regulations Required

An exemption from the Shoreline Substantial Development Permit process is not an exemption from compliance with the Act or this SMP, or from any other regulatory requirements. To be authorized, all uses and development must be consistent with the policies, requirements and procedures of this SMP and the Act.

7.5.2 Interpretation of Exemptions

- A. Exemptions shall be construed narrowly. Only those developments that meet the precise terms of one or more of the listed exemptions may be granted exemption from the Shoreline Substantial Development Permit process.
- B. A development or use that is listed as a conditional use pursuant to this SMP or is an unlisted use, must obtain a Shoreline Conditional Use Permit even though the development or use does not require a Shoreline Substantial Development Permit. When a development or use is proposed that does not comply with the bulk, dimensional and performance standards of this SMP, such development or use can only be authorized by approval of a Shoreline Variance.

- C. The burden of proof that a development or use is exempt from the permit process is on the applicant. The City may require the applicant to provide additional documentation to support their exemption request.
- D. If any part of a proposed development is not eligible for exemption, then a Shoreline Substantial Development Permit is required for the entire proposed development project.
- E. The City may attach conditions to the approval of exempted developments and/or uses as necessary to assure consistency of the project with the Act and this SMP. Additionally, nothing shall interfere with the City's ability to require compliance with all other applicable laws and plans.
- F. Except for the exemption based on fair market value in 7.5.3.A, activities consistent with the exemptions listed in 7.5.3 are exempt regardless of the value of the project.

7.5.3 Exemptions

The City shall exempt from the Shoreline Substantial Development Permit requirement the shoreline developments listed below. Written Letters of Exemption or other written documentation may be required for exempt activities and can be issued consistent with Section 7.5.4.

- A. Any development of which the total cost or fair market value, whichever is higher, does not exceed six thousand four hundred sixteen dollars (\$6,416.00) or dollar value as amended by the State of Washington Office of Financial Management provided such development does not materially interfere with the normal public use of the water or shorelines of the state.
- 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 OHWM 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 OHWM 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 OHWM. 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, WAC 173-27-040, or this Shoreline Master Program, obtained. All emergency construction shall be consistent with the policies of chapter 90.58 RCW and this Shoreline 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 buovs:
- 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 authority thereof, other than requirements imposed pursuant to chapter 90.58 RCW. See Chapter 8 for definitions of single-family residence and residential appurtenances. Construction authorized under this exemption shall be located landward of the OHWM;
- 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 in fresh waters the fair market value of the dock does not exceed ten thousand dollars (\$10,000), but if subsequent construction having a fair market value exceeding two thousand five hundred dollars (\$2,500) occurs within five years of completion of the prior construction, the subsequent construction

- shall be considered a substantial development for the purpose of this Shoreline Master Program.
- 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 ground water 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, Energy Facilities -Site Locations;
- M. Site exploration and investigation activities that are prerequisite to preparation of an application for development authorization under this chapter, if:
 - 1. The activity does not interfere with the normal public use of the surface waters;
 - 2. 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:
 - 3. 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;
 - 4. A private entity seeking development authorization under this section first posts a performance bond or provides other evidence of financial responsibility to the City to ensure that the site is restored to preexisting conditions; and
 - 5. The activity is not subject to the permit requirements of RCW 90.58.550, Oil or natural gas exploration in marine waters;
- 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 below. The City 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.
 - 1. "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 (10) miles of stream reach, in which less than twenty-five (25) 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; or
 - 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 in stream habitat enhancement structure associated with the project, is less than two hundred square feet in floor area and is located above the OHWM of the stream.
- 2. "Watershed restoration plan" means a plan developed or sponsored by the Washington Departments of Fish and Wildlife, Ecology, or 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:
 - 1. The project has been approved in writing by the State of Washington department of Fish and wildlife;
 - 2. The project has received hydraulic project approval by the State of Washington Department of Fish and Wildlife pursuant to chapter 77.55 RCW; and
 - 3. The City has determined that the project is substantially consistent with the local shoreline master program. The City 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.3.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:
 - (a) Elimination of human-made fish passage barriers, including culvert repair and replacement; or
 - (b) 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
 - (c) 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:
 - (a) By the department of fish and wildlife pursuant to chapter 77.95 or 77.100 RCW; or
 - (b) By the sponsor of a watershed restoration plan as provided in chapter 89.08 RCW; or
 - (c) By the department as a department of fish and wildlifesponsored fish habitat enhancement or restoration project; or
 - (d) Through the review and approval process for the jobs for the environment program; or
 - (e) 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: or
 - (f) Through a formal grant program established by the legislature or the department of fish and wildlife for fish habitat enhancement or restoration; and
 - (g) Through other formal review and approval processes established by the legislature.
- b. Fish habitat enhancement projects meeting the criteria of P.3.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.3.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. A hydraulic project approval permit is required for projects that meet the criteria of P.3.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 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.
- d. 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.
- e. No local government may require permits or charge fees for fish habitat enhancement projects that meet the criteria of P.3.a of this subsection and that are reviewed and approved according to the provisions of this section.

7.5.4 Letters of Exemption

Letters of exemption shall be issued by the City when required by the provisions of WAC 173-27-050.

No statement of exemption shall be required for other uses or developments exempt pursuant to WAC 173-27-050 unless the Administrator has cause to believe a substantial question exists as to qualifications of the specific use or development for the exemption, the Administrator determines there is a likelihood of adverse impacts to shoreline ecological functions or values; or a review process is required by the SMP requiring approval by the Administrator that is not associated with a shoreline substantial development permit, shoreline conditional use permit or shoreline variance.

7.5.5 Letters of Exemption – Application

Applications for proposals that meet shoreline exemptions shall contain, at a minimum, the information listed in Section 7.3.1 above, unless waived by the Shoreline Administrator as unnecessary to determine applicability of SMP provisions.

7.6 Shoreline Conditional Use Permits

7.6.1 Purpose

This section provides procedures and criteria guiding the review of shoreline conditional use permits, which require careful review to ensure the use can be properly installed and operated in a manner that meets the goals of the Act and this SMP in accordance with any needed performance standards.

7.6.2 Determinations of Conditional Use Permits

- A. Uses specifically classified or set forth in this Shoreline Master Program as conditional uses shall be subject to review and condition by the Hearing Examiner of the City of Wenatchee and by the Department of Ecology in accordance with WAC 173-27-200.
- B. Other uses which are not classified or listed or set forth in this SMP may be authorized as conditional uses provided the applicant can demonstrate consistency with the requirements of this Section and the requirements for conditional uses contained in this SMP.
- C. Uses which are specifically prohibited by this SMP may not be authorized as a conditional use.

7.6.3 Review Criteria

- A. Conditional use criteria. An applicant proposing a conditional use shall affirmatively demonstrate compliance with review criteria below or as thereafter amended in WAC 173-27-160.
 - 1. How is the proposed use consistent with the policies of RCW 90.58.020 and this SMP?
 - 2. How will the proposed use avoid interference with the normal public use of public shorelines?
 - 3. How will the proposed use of the site and design of the project be compatible with other authorized uses within the area and with uses planned for the area under the comprehensive plan and this SMP?
 - 4. How will the proposed use cause no significant adverse effects to the shoreline environment in which it is to be located?
 - 5. How will the public interest suffer no substantial detrimental effect?
- B. Criteria for exceeding maximum height. Applicants proposing to exceed maximum height limits and that are required to receive a Conditional Use Permit pursuant to Section 5.1.2, shall affirmatively comply with the following criteria:
 - 1. Does the application thoroughly provide and demonstrate all of the requirements identified in Section 5.1.2.(E)(2).
 - 2. Has the applicant located and oriented structures on the subject property in a manner that diminishes the potential view impact? For example, side yard setbacks may need to be increased. No side yard setbacks shall be reduced to accommodate the proposed structure.
 - 3. Has the applicant demonstrated extraordinary circumstances?
 - 4. To address "overriding considerations of the public", has the applicant prepared a cumulative impacts analysis that documents the public benefits served by issuance of a Conditional Use Permit?
- C. Consideration of cumulative impact. In the granting of all Conditional Use Permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if Conditional Use Permits were granted for other developments in the area where similar circumstances exist, the total of the conditional uses shall also remain consistent with the policies of RCW 90.58.020 and shall not produce substantial adverse effects to the shoreline environment.
 - 1. The applicant shall prepare a cumulative impact analysis by a qualified professional for the type of application proposed that:
 - a. Documents other properties or uses on the same waterbody that are similarly situated and could request a similar conditional use permit;
 - b. Demonstrates consistency with the policies of RCW 90.58.020 (Legislative findings); and
 - c. Demonstrates no substantial adverse effects to the shoreline environment and achievement of no-net-loss of ecological function.

The City shall determine whether the additional potential for conditional use permits will produce substantial adverse effects to the shoreline environment considering the characteristics of the proposed use, the ability to achieve no-net-loss of ecological function principles, and capability of accommodating preferred

shoreline uses in the future if the conditional use and cumulative potential requests occur.

2. For requests to exceed maximum height requirements Section 5.1.2 shall be followed.

7.7 Shoreline Variances

7.7.1 Purpose and Review Process

The purpose of a variance is to grant relief to specific bulk or dimensional requirements set forth in this Shoreline Master Program where there are extraordinary or unique circumstances relating to the property such that the strict implementation of this Shoreline Master Program would impose unnecessary hardships on the applicant or thwart the policies set forth in RCW 90.58.020. Variances from the use regulations of the SMP are prohibited.

After a Shoreline Variance application has been approved by the City, Ecology shall review the permit and make its final decision, in accordance with WAC 173-27-200.

7.7.2 Review Criteria

Shoreline Variances may be authorized provided the applicant can demonstrate compliance with the following criteria or as thereafter amended in WAC 173-27-170.

- A. General provisions. Shoreline Variances should be granted in circumstances where denial of the variance would result in a thwarting of the policy enumerated in RCW 90.58.020. In all instances the applicant must demonstrate that extraordinary circumstances exist and the public interest shall suffer no substantial detrimental effect.
- B. Shoreline variances landward of the OHWM. Shoreline Variances for development and/or uses that will be located landward of the OHWM and/or landward of any wetland as defined in Chapter 8, may be authorized provided the applicant demonstrates affirmatively all of the following:
 - 1. How would the strict application of the bulk, dimensional or performance standards set forth in this SMP preclude or significantly interfere with reasonable use of the property?
 - 2. How the hardship is described in B.1 above specifically related to the property, and is the hardship the result of unique conditions such as irregular lot shape, size, or natural features and the application of this SMP, and not, for example, from deed restrictions or the applicant's own actions?
 - 3. How is the design of the project compatible with other authorized uses within the area and with uses planned for the area under the comprehensive plan and shoreline master program and will the project design not cause adverse impacts to the shoreline environment?
 - 4. How will the variance not constitute a grant of special privilege not enjoyed by the other properties in the area?
 - 5. How the requested variance is the minimum necessary to afford relief?
 - 6. How will the public interest suffer no substantial detrimental effect?
- C. Shoreline variances waterward of OHWM. Shoreline Variances for development and/or uses that will be located waterward of the OHWM, may be authorized provided the applicant demonstrates affirmatively all of the following:

- 1. How would the strict application of the bulk, dimensional or performance standards set forth in this SMP preclude all reasonable use of the property?
- 2. How is the proposal consistent with the criteria established under subsection 7.7.2.B.2 through B.6 of this section?
- 3. How will the public rights of navigation and use of the shorelines not be adversely affected?
- D. Cumulative impacts. In the granting of all Shoreline Variances, consideration shall be given to the cumulative impact of additional requests for like actions in the area. The applicant shall submit a cumulative impact analysis prepared by a qualified professional for the subject of the variance:
 - 1. Documenting other properties or uses on the same waterbody that are similarly situated and could request a similar variance;
 - 2. Demonstrating consistency with the policies of RCW 90.58.020; and
 - 3. Demonstrating no substantial adverse effects to the shoreline environment and achievement of no-net-loss of shoreline ecological function.

For example if variances were granted to other developments and/or uses in the area where similar circumstances exist, the total of the variances shall also remain consistent with the policies of the Act and shall not cause substantial adverse effects to the shoreline environment.

The City shall determine whether the additional potential for variances will produce substantial adverse effects to the shoreline environment considering the characteristics of the proposed variance request, the ability to achieve no-net-loss of ecological function principles, and capability of accommodating preferred shoreline uses in the future if the variance and cumulative potential requests occur.

7.8 Permit Conditions

In granting, revising, or extending a shoreline permit, the City and/or DOE may attach such conditions, modifications, or restrictions thereto regarding the location, character, and other elements of the proposed development or activity deemed necessary to prevent undesirable effects of the proposed development or activity and to assure that the development or activity will be consistent with the policy and provisions of the Act and this SMP, as well as the supplemental authority provided in RCW 43.21C, as applicable. In cases involving unusual circumstances or uncertain effects, a condition may be imposed to require monitoring with future review or reevaluation to assure conformance with the Act and this SMP. If the monitoring plan is not implemented, the permittee may be found to be noncompliant and the permit may be rescinded.

7.9 Duration of Permits

7.9.1 Requirements

Time duration requirements for Shoreline Substantial Development, Shoreline Variance, and Shoreline Conditional Use Permits shall be consistent with the following provisions.

A. General provisions. The time requirements of this section shall apply to all Shoreline Substantial Development Permits and to any development authorized pursuant to a Shoreline Conditional Use Permit or Shoreline Variance authorized by this Chapter. Upon a finding of good cause, based on the requirements and circumstances of the project proposed and consistent with the policy and provisions of this SMP and this

- chapter, the City may adopt different time limits from those set forth in Subsections 7.9.1.B and C of this section as a part of an action on a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance.
- B. Commencement. Construction activities shall be commenced or, where no construction activities are involved, the use or activity shall be commenced within two years of the effective date of a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance. Commencement means taking the action on the shoreline project for which the permit was granted shall begin. For example, beginning actual construction or entering into binding agreements or contractual obligations to undertake a program of actual construction. However, the City may authorize a single extension for a period not to exceed one year based on reasonable factors, if a request for extension has been filed with a complete extension application submittal before the expiration date and notice of the proposed extension is given to parties of record on the Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance and to Ecology.
- C. Termination. Authorization to conduct development activities shall terminate five years after the effective date of a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance. However, the City may authorize a single extension for a period not to exceed one year based on reasonable factors, if a request for extension has been filed before the expiration date and notice of the proposed extension is given to parties of record on the Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance, and to Ecology.
- D. Effective date. The effective date of a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance shall be the date of receipt as provided in RCW 90.58.140(6). The permit time periods in subsections B and C of this section do not include the time during which a use or activity was not actually pursued due to pending administrative appeals or legal actions or due to the need to obtain any other government permits and approvals for the development that authorize the development to proceed, including all reasonably related administrative or legal actions on any such permits or approvals. The applicant shall be responsible for informing the City of the pendency of other permit applications filed with agencies other than the City of Wenatchee and of any related administrative and legal actions on any permit or approval. If no notice of the pendency of other permits or approvals is given by the applicant to the City prior to the date of the last action by the City to grant permits and approvals necessary to authorize the development to proceed, including administrative and legal actions of the City of Wenatchee, and actions under other City development regulations, the date of the last action by the City shall be the effective date.
- E. Revisions. Revisions to permits under Section 7.12 may be authorized after original permit authorization has expired, provided that this procedure shall not be used to extend the original permit time requirements or to authorize substantial development after the time limits of the original permit.
- F. Notification to Ecology. The City shall notify Ecology in writing of any change to the effective date of a permit, as authorized by this section, with an explanation of the basis for approval of the change. Any change to the time limits of a permit other than those authorized by RCW 90.58.143as amended shall require a new permit application.

7.10 Initiation of Development

7.10.1 Timing

- A. Authorization to begin construction. Each permit for a Substantial Development, Shoreline Conditional Use or Shoreline Variance, issued by the City shall contain a provision that construction pursuant to the permit shall not begin and is not authorized until twenty-one (21) days from the date of receipt with Ecology as defined in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within twenty-one (21) days from the date of receipt of the decision, except as provided in RCW 90.58.140 (5)(a) and (b). The date of receipt for a Substantial Development Permit means that date the applicant receives written notice from Ecology that it has received the decision. With regard to a permit for a Shoreline Variance or a Shoreline Conditional Use, the date of receipt means the date the City of Wenatchee or the applicant receives the written decision of Ecology.
- B. Forms. Permits for Substantial Development, Shoreline Conditional use, or Shoreline Variance may be in any form prescribed and used by the City including a combined permit application form. Such forms will be supplied by the City.
- C. Data sheet. A permit data sheet shall be submitted to Ecology with each shoreline permit. The permit data sheet form shall be consistent with WAC 173-27-990.
- D. Construction Prior to Expiration of Appeal Deadline. Construction undertaken pursuant to a permit is at the applicant's own risk until the expiration of the appeals deadline.

7.11 Appeals

7.11.1 Appeals of Shoreline Administrator Determinations and Decisions

- A. Administrative review decisions by the Administrator that are not a Substantial Development Permit decision (See Section 7.11.2), but are based on provisions of this SMP, may be the subject of an appeal to the Hearing Examiner by any aggrieved person. Such appeals shall be an open record hearing before the Hearing Examiner.
- B. Appeals of exemptions are allowed only for exemptions where a letter is required pursuant to Section 7.5.4, Letters of Exemption, of this SMP or is requested by the applicant.
- C. Appeals must be submitted within fourteen (14) calendar days after the date of decision or written interpretation together with the applicable appeal fee. Appeals submitted by the applicant or aggrieved person shall contain:
 - 1. The decision or interpretation being appealed, including the file number reference and the specific objections in the decision document;
 - 2. The name and address of the appellant and his/her interest(s) in the application or proposed development;
 - 3. The specific reasons why the appellant believes the decision or interpretation to be erroneous, including identification of each finding of fact, each conclusion, and each condition or action ordered which the appellant alleges is erroneous. The appellant shall have the burden of proving the decision or interpretation is erroneous;
 - 4. The specific relief sought by the appellant; and
 - 5. The appeal fee established by the City.
- D. Per WAC 173-27-120, the City shall comply with the special procedures for limited utility extensions and bulkheads. If there is an appeal of the decision to grant or deny

the permit to the local government legislative authority, the appeal shall be finally determined by the legislative authority within thirty days.

7.11.2 Appeals to Shorelines Hearings Board

Appeals to the Shoreline Hearings Board of a final decision on a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, Shoreline Variance, or a decision on an appeal of an administrative action, may be filed by the applicant or any aggrieved party pursuant to RCW 90.58.180 within twenty-one (21) days of receipt of the final decision by the City or by Ecology.

7.12 Amendments to Permits

7.12.1 Revision – When Required

A permit revision is required whenever the applicant proposes substantive changes to the design, terms or conditions of a project from that which is approved in the permit. Changes are substantive if they materially alter the project in a manner that relates to its conformance to the terms and conditions of the permit, this SMP, and/or the policies and provisions of chapter 90.58 RCW. Changes which are not substantive in effect do not require approval of a revision.

When an applicant seeks to revise a permit, the City shall request from the applicant detailed plans and text describing the proposed changes. Proposed changes must be within the scope and intent of the original permit, otherwise a new permit may be required, pursuant to Section 7.12.2.

7.12.2 Determination of Scope and Intent

If the City determines that the proposed changes are within the scope and intent of the original permit, and are consistent with this SMP and the Act, the City of Wenatchee may approve a revision.

"Within the scope and intent of the original permit" means all of the following:

- A. No additional over water construction is involved except that pier, dock, or float construction may be increased by five hundred (500) square feet or ten percent (10%) from the provisions of the original permit, whichever is less;
- B. Ground area coverage and height may be increased a maximum of ten percent (10%) from the provisions of the original permit;
- C. The revised permit does not authorize development to exceed height, lot coverage, setback, or any other requirements of this SMP except as authorized under a Shoreline Variance granted as the original permit or a part thereof;
- D. Additional or revised landscaping is consistent with any conditions attached to the original permit and with this SMP;
- E. The use authorized pursuant to the original permit is not changed; and
- F. No adverse environmental impact will be caused by the project revision.

7.12.3 Filing of Revision

A. The revision approval, including the revised site plans and text consistent with the provisions of Section 7.3 and 7.12 as necessary to clearly indicate the authorized

- changes, and the final ruling on consistency with this section shall be filed with Ecology. In addition, the City shall notify parties of record of their action.
- B. If the revision to the original permit involves a Shoreline Conditional Use Permit or Shoreline Variance, the City of Wenatchee shall submit the revision to Ecology for approval, approval with conditions, or denial, and shall indicate that the revision is being submitted under the requirements of this subsection. Ecology shall render and transmit to the City and the applicant its final decision within fifteen (15) days of the date of Ecology's receipt of the submittal from the City of Wenatchee. The City of Wenatchee shall notify parties of record of Ecology's final decision.

7.12.4 Effective Date of Revised Permit

The revised permit is effective immediately upon final decision by the City of Wenatchee or, when appropriate under Subsection 7.12.3, upon final action by Ecology. Construction undertaken pursuant to a permit is at the applicant's own risk until the expiration of the appeals deadline.

7.12.5Appeal of Revised Permit

- A. Filing. Appeals of a revised permit shall be in accordance with RCW 90.58.180 and shall be filed within twenty-one (21) days from the date of receipt of the City's action by Ecology or, when appropriate under Subsections 7.6 and 7.7, the date Ecology's final decision is transmitted to the City and the applicant.
- B. Basis of appeals. Appeals shall be based only upon contentions of noncompliance with the provisions of Subsection 7.12.1. Appeals shall be based on the revised portion of the permit.
- C. Risk. Construction undertaken pursuant to that portion of a revised permit not authorized under the original permit is at the applicant's own risk until the expiration of the appeals deadline.
- D. Scope of decision. If an appeal is successful in proving that a revision is not within the scope and intent of the original permit, the decision shall have no bearing on the original permit.

7.13 Enforcement

7.13.1 Provisions

- A. The City shall apply 173-27 WAC Part II, Shoreline Management Act Enforcement, to enforce the provisions of this SMP.
- B. SMP violations include, but are not limited to, development activities that violate:
 - 1. Any provision of the act or other regulation promulgated under the act; or
 - 2. Any provision of this master program.

7.14 Rescission and modification

A. Any shoreline permit granted pursuant to this SMP may be rescinded or modified upon a finding by the Hearing Examiner that the permittee or his/her successors in interest have not complied with conditions attached thereto. The results of a monitoring plan

- may show a development to be out of compliance with specific performance standards, which may be the basis for findings of non-compliance.
- B. The Administrator shall initiate rescission or modification proceedings by serving written notice of non-compliance to the permittee or his/her successors and notifying parties of record at the original address provided in application review files. Service of the written notice shall be by both regular first class mail and certified mail, return receipt requested.
- C. The Hearing Examiner shall hold a public hearing no sooner than fifteen (15) days following such service of notice, unless the applicant/proponent files notice of intent to comply and the Administrator grants a specific schedule for compliance. If compliance is not achieved, the Administrator shall schedule a public hearing before the Hearing Examiner. Upon considering written and oral testimony taken at the hearing, the Hearing Examiner shall make a decision in accordance with the above procedure for shoreline permits.
- D. These provisions do not limit the Administrator, the City of Wenatchee Prosecuting Attorney, the Department of Ecology or the Attorney General from administrative, civil, injunctive, declaratory or other remedies provided by law, or from abatement or other remedies.

7.15 Amendments to Shoreline Master Program

7.15.1 General

- A. This Shoreline Master Program carries out the policies of the Shoreline Management Act for the City of Wenatchee. It shall be reviewed and amended as appropriate in accordance with the review periods required in the Act and in order to:
 - 1. To assure that the master program complies with applicable law and guidelines in effect at the time of the review; and
 - 2. To assure consistency of the master program with the local government's comprehensive plan and development regulations adopted under chapter 36.70A RCW, if applicable, and other local requirements.
- B. This SMP and all amendments thereto shall become effective 14 days from the date of issuance of the final action letter from Ecology
- C. The SMP may be amended annually or more frequently as needed pursuant to the Growth Management Act. **Note:** Department of Ecology approval timeline will impact the frequency of amendments.

7.15.2 Amendment Process and Criteria

- A. Initiation. Future amendments to this Shoreline Master Program may be initiated by the City Council by its own authority, or upon recommendation of the Shoreline Administrator or Planning Commission, as appropriate.
- B. Petition. Petitions for shoreline master program amendments may be submitted to the City Council. Petitions shall specify the changes requested and any and all reasons therefore. Petitions shall be made on forms specified by the City. Such petitions shall contain information specified in the City's procedures for Comprehensive Plan and development regulation amendments pursuant to RCW 36.70A, the Growth Management Act, and information necessary to meet minimum public review procedures in Subsection C.

- C. Public Review Process Minimum Requirements. The City of Wenatchee shall accomplish the amendments in accordance with the procedures of the Shoreline Management Act, Growth Management Act, and implementing rules including, but not limited to, RCW 90.58.080, WAC 173-26-100, RCW 36.70A.106 and 130, and Part Six, Chapter 365-196 WAC.
- D. Roles and Responsibilities. Proposals for amendment of the Shoreline Master Program shall be heard by the Planning Commission, per the provisions of Section 7.1.4. After conducting a hearing and evaluating testimony regarding the application, including a recommendation from the Shoreline Administrator per Section 7.1.1, the Planning Commission shall submit its recommendation to the City Council, who shall approve or deny the proposed amendment consistent with Section 7.1.5.
- E. Finding. Prior to approval, the City shall make a finding that the amendment would accomplish #1 or #2, and must accomplish #3:
 - 1. The proposed amendment would make this SMP more consistent with the Act and/or any applicable Department of Ecology Guidelines;
 - 2. The proposed amendment would make this SMP more equitable in its application to persons or property due to changed conditions in an area;
 - 3. This SMP and any future amendment hereto shall ensure no net loss of shoreline ecological functions and processes on a programmatic basis in accordance with the baseline functions present as of the effective date of this SMP
- F. After approval or disapproval of a Shoreline Master Program amendment by the Department of Ecology as provided in RCW 90.58.090, the City shall publish a notice that the Shoreline Master Program amendment has been approved or disapproved by Ecology pursuant to the notice publication requirements of RCW 36.70A.290.

7.16 Permit, applicability, and definitions

7.16.1 Purpose and applicability

- 1. The purpose of sections 7.16-7.18 of this Chapter are to enact the processes and timelines for shoreline development permitting in concert with the requirements of this Chapter and the SMP. The objectives of this chapter are to encourage the preparation of appropriate information early in the permitting process, to process permit applications in a timely manner, to provide the general public with an adequate opportunity for review and comment, and to provide the development community with a standardized process and predictability.
- 2. Sections 7.16-7.18 of this Chapter shall apply to permit applications for shoreline development regulated by the City of Wenatchee Shoreline Master Program.

7.16.2 Definitions

Unless the context clearly requires otherwise, the definitions in this sub-section apply within sections 7.16-7.18 of this Chapter:

- 1. "Application" means a request for a shoreline permit required from the local jurisdiction for proposed development or action, including, without limitation, building permits, shoreline exemptions, shoreline substantial development permits, shoreline conditional use permits, and shoreline variances.
- 2. "Closed record appeal" means an appeal on the record with no new evidence or information allowed to be submitted and only appeal argument allowed.

- 3. "Department" means the City of Wenatchee Community and Economic Development Department.
- 4. "Open record hearing" means a hearing that creates the record through testimony and submission of evidence and information. An open record hearing may be held on an appeal if no open record hearing has previously been held on the application.
- 5. "Public meeting" means an informal meeting, hearing, workshop, or other public gathering to obtain comments from the public or other agencies on an application. A public meeting does not constitute an open record hearing.

7.17 Application process

The application process shall consist of the following components:

- 1. Plan review:
- 2. Determination of completeness;
- 3. Notice of application;
- 4. Application review;
- 5. Notice of final decision.

7.17.1 Consolidated application process

- 1. When more than one application for a proposed development is required, the applicant may elect to have all applications submitted for review at one time.
- 2. Applications for proposed development and planned actions subject to the provisions of the State Environmental Policy Act (SEPA) shall be reviewed concurrently and in accordance with the state and local laws, regulations and ordinances.
- 3. When more than one application is submitted under a consolidated review and the applications are subject to different types of review procedure, all of the applications for the proposed development shall be subject to the highest level of review procedure which applies to any of the applications.
- 4. If an applicant elects a consolidated application process, the determination of completeness, the notice of application, and the notice of final decision must include all applications being reviewed.

7.17.2 Plan review

- 1. A plan review shall be conducted to determine if the application is complete. Plan review shall determine if adequate information is provided in or with the application in order to begin processing the application and that all required information and materials have been supplied in sufficient detail to begin the application review process. All information and materials required by the application form must be submitted. All studies supporting the application or addressing projected impacts of the proposed development must be submitted.
- 2. The purpose of the plan review is to ensure adequate information is contained in the application materials to demonstrate consistency with this SMP, applicable comprehensive plans, development regulations and other applicable regulations. Department staff will coordinate the involvement of agencies responsible for the review of the proposed development.

7.17.3 Determination of completeness

- 1. Within twenty-eight days after receiving an application, the department shall complete the plan review of the application and provide the applicant a written determination that the application is complete or incomplete.
- 2. An application shall be determined complete only when it contains all of the following information and materials:
 - a. A fully completed and signed application;
 - b. Applicable review fees;
 - c. All information and materials required by the application form and the provisions of this SMP;
 - d. A fully completed and signed environmental checklist for projects subject to review under the State Environmental Policy Act;
 - e. A plot plan disclosing all existing and proposed structures and features applicable to the desired development; for example, parking, landscaping, preliminary drainage plans with supporting calculations, signage, setbacks, etc.;
 - f. Any additional information and materials identified at the pre-application meeting or required by applicable development standards, plans, policies or any other federal, state or local laws; and
 - g. Any supplemental information or special studies identified by the department.
- 3. For applications determined to be incomplete, the department shall identify, in writing, the specific requirements, information or materials necessary to constitute a complete application. Within fourteen days after its receipt of the additional requirements, information or materials, the department shall issue a determination of completeness or identify the additional requirements, information or materials still necessary for completeness.
- 4. A determination of completeness shall identify, to the extent known, other local, state or federal agencies that may have jurisdiction over some aspect of the application.
- 5. A determination of completeness shall not preclude the department from requesting additional information or studies if new information is required or a change in the proposed development occurs.

7.17.4 Application vesting

An application shall become vested on the date a determination of completeness is made. Thereafter the application shall be reviewed under the codes, regulations and other laws in effect on the date of vesting; provided, in the event an applicant substantially changes his/her proposed development after a determination of completeness, as determined by the department, the application shall not be considered vested until a new determination of completeness on the changes is made.

7.17.5 Notice of application

- 1. Within fourteen days after issuing a determination of completeness, the department shall issue a notice of application. The notice shall include, but not be limited to the following:
 - a. The date of application, the date of the determination of completeness, and the date of the notice of application;
 - b. A description of the proposed project action, a list of permits required for the application, and if applicable, a list of any studies requested;
 - c. The identification of other required permits not included in the application, to the extent known by the department;

- d. The identification of existing environmental documents which evaluate the proposed development and the location where the application and any studies can be reviewed;
- e. A statement of the public comment period, which shall be thirty days following the date of the notice of application, and a statement of the right of any person to comment on the application, receive notice of and participate in any hearings, and request a copy of the decision once made, and a statement of any appeal rights;
- f. The date, time, location and type of hearing, if applicable and scheduled at the date of the notice of application;
- g. A statement of the preliminary determination, if one has been made at the time of notice of application, of those development regulations that will be used for project mitigation and of consistency with the type of land use of the proposed site, the density and intensity of proposed development, infrastructure necessary to serve the development, and the character of the development; and
- h. Any other information determined by the department to be appropriate.

2. Informing the public.

- a. The notice of application shall be mailed to the latest recorded real property owners as shown by the records of the county assessor within at least three hundred and fifty feet of the boundary of the property upon which the development is proposed; and
- b. The notice of application shall be posted on the subject property by the city for the duration of the public comment period. The location and manner of posting shall be determined by the city. The city will post the notice of application upon payment of all applicable fees. It shall be the responsibility of the applicant to maintain the posting at the location and in good condition throughout the entire public comment period. After the public comment period, the city staff person responsible for posting the notice of application shall remove the posting and sign an affidavit of posting before a notary public, using the form adopted by the city, and the affidavit of posting shall be placed in the application file; and
- (c) It shall be posted on the city's official website; and
- (d) A referral shall be sent to all other agencies with jurisdiction
- 3. The notice of application is not a substitute for any required notice of a public hearing. It may serve as the notice of public hearing, provided it contains all of the information required for a public hearing notice and complies with all other public notice requirements for the type of action being sought.
- 4. A notice of application is not required for the following actions, when they are categorically exempt from SEPA or environmental review has been completed:
 - a. Application for a commercial, multi-family, industrial and/or office building permit, single-family residence, accessory uses or other minor construction building permits;
 - b. Application for a lot line adjustment;
 - c. Any application for which a Type 1 limited administrative review is determined applicable;

All shoreline substantial development and shoreline conditional use permits shall require a notice of application, regardless of Sub-section 7.17.5(4)(a-c).

5. A State Environmental Policy Act (SEPA) threshold determination may be issued for a proposal concurrent with the notice of application.

7.18 Application review

7.18.1 Application review criteria

Review of an application and proposed development shall be governed by and be consistent with the fundamental policies and choices which have been made in the adopted SMP, the comprehensive plans and development regulations. The review process shall consider the type of use permitted at the proposed site, the density and intensity of the proposed development, the infrastructure available and needed to serve the development, the character of the development and its consistency with adopted plans and regulations. In the absence of applicable development regulations or policies in this Master Program, the applicable requirements of the Act, RCW 90.58, and WAC 173-26 &27 shall be determinative.

7.18.2 Application review classification

- 1. Following the issuance of a determination of completeness and a notice of application, an application shall be reviewed at one of four levels: Type 1 limited administrative review, Type 2 full administrative review, quasi-judicial review and legislative review.
- 2. If this SMP provides that a proposed development is subject to a specific type of review, or a different review procedure is required by law, then the application for such development shall be processed and reviewed accordingly. If this chapter does not provide for a specific type of review or if a different review procedure is not required by law, then the department shall determine the type of review to be used for the type and intensity of the proposed development.
- 3. Any public meeting or required open hearing may be combined by the Department with any public meeting or open record hearing that may be held on the proposed development by another local, state, federal or other agency. Hearings shall be combined if requested by the applicant. However, joint hearings must be held within the jurisdiction and within the time limits of this Chapter and RCW 36.70B.

7.18.3 Type 1 limited administrative review of applications

Limited administrative review shall be used when the proposed development is subject to clear, objective and nondiscretionary standards that require the exercise of professional judgment about technical issues and the proposed development is exempt from the State Environmental Policy Act (SEPA). Included within this type of review are single-family building permits, commercial, multifamily, industrial and/or office building permits which are exempt from SEPA review, accessory dwelling units, and shoreline exemptions which do not require a letter of exemption. The department may approve, approve with conditions, or deny the application after the date the application is accepted as complete, without public notice. The decision of the department is final. There is no administrative appeal of a limited administrative review decision.

7.18.4 Type 2 Full administrative review of applications

1. Full administrative review shall be used when the proposed development is subject to objective and subjective standards that require the exercise of limited discretion about non-technical issues and about which there may be limited public interest. The proposed development may or may not be subject to SEPA review. Included within this type of review are applications for administrative interpretations, shoreline exemptions which require a letter of exemption, administrative shoreline substantial development permits, administrative shoreline conditional

use permits, short subdivisions, multifamily, commercial, and industrial and/or office building permits.

- 2. This review procedure under full administrative review shall be as follows:
 - a. If the proposed development is subject to the State Environmental Policy Act (SEPA), the threshold determination shall be made after the closing of the public comment period required in the notice of application.
 - b. Upon the completion of the public comment period and the comment period required by SEPA, if applicable, the department may approve, approve with conditions, or deny the application. The department shall mail the notice of decision to the applicant and all parties of record. The decision shall include:
 - (1) A statement of the applicable criteria and standards in the development codes and other applicable law;
 - (2) A statement of the findings of the review authority, stating the application's compliance or noncompliance with each applicable criterion, and assurance of compliance with applicable standards;
 - (3) The decision to approve or deny the application and, if approved, conditions of approval necessary to ensure the proposed development will comply with all applicable laws;
 - (4) A statement that the decision is final unless appealed as provided in Chapter 7 of this Master Program. The appeal closing date shall be listed. The statement shall describe how a party may appeal the decision, including applicable fees and the elements of a notice of appeal;
 - (5) A statement that the complete case file, including findings, conclusions and conditions of approval, if any, is available for inspection. The notice shall list the place, days and times when the case file is available for inspection and the name and telephone number of the department's representative to contact to arrange inspection.
 - c. The decision may be appealed to the hearing examiner or city council pursuant to the process established in Chapter 7 of this Master Program.

7.18.5 Quasi-judicial review of applications

- 1. Quasi-judicial review shall be used when the development or use proposed under the application requires a public hearing before a hearing body. This type of review shall be used for shoreline conditional use permits, and shoreline variances and other similar applications. Shoreline substantial development permits associated with a conditional use permit or variance, or that are assigned by the Administrator to the Hearing Examiner shall also be subject to quasi-judicial review.
- 2. The review procedure under quasi-judicial review shall be as follows:
 - a. A quasi-judicial review process requires an open record public hearing before the appropriate hearing body.
 - b. The public hearing shall be held after the completion of the public comment period and the comment period required by SEPA, if applicable.
 - c. At least ten days before the date of a public hearing the department shall issue public notice of the date, time, location and purpose of the hearing.
 - d. At least seven days before the date of the public hearing, the department shall issue a written staff report, integrating the SEPA review and threshold determination and recommendation regarding the application(s), shall make available to the public a copy of the staff report for review and inspection, and shall mail a copy of the staff report and recommendation to the applicant or the applicant's designated representative. The

- department shall make available a copy of the staff report, subject to payment of a reasonable charge, to other parties who request it.
- e. Public hearings shall be conducted in accordance with the rules of procedure adopted by the hearing body. A public hearing shall be recorded. If for any reason, the hearing cannot be completed on the date set in the public notice, it may be continued during the public hearing to a specified date, time and location, without further public notice required.
- f. Within ten working days after the date the public record closes, the hearing body shall issue a written decision regarding the application(s).
- g. The hearing body may approve, approve with conditions or deny the application and shall mail the notice of its decision to the department, applicant, the applicant's designated representative, the property owner(s), and any other parties of record. The decision shall include:
 - (1) A statement of the applicable criteria, standards and law;
 - (2) A statement of the findings the hearing body made showing the proposal does or does not comply with each applicable approval criterion and assurance of compliance with applicable standards;
 - (3) A statement that the decision is final unless appealed pursuant to Chapter 7 of this Master Program. The appeal closing date shall be listed;
 - (4) A statement that the complete case file, including findings, conclusions and conditions of approval, if any, is available for inspection. The notice shall list the place, days and times when the case file is available for inspection and the name and telephone number of the Department representative to contact to arrange inspection.

7.18.6 Legislative review of applications

- 1. Legislative review shall be used to review and amend this master program.
- 2. Legislative review shall be conducted as follows:
 - a. Legislative review requires at least one public hearing before the planning commission and one public meeting before the Legislative authority of the jurisdiction.
 - b. The application shall contain all information and material requirements required by the appropriate application form.
 - c. At least ten days before the date of the first planning commission hearing the department shall issue public notice of the date, time, location and purpose of the hearing. The notice shall include notice of the SEPA threshold determination issued by the department.
 - d. At least seven days prior to the hearing the department shall issue a written staff report, integrating the SEPA review and threshold determination and recommendation regarding the application(s), shall make available to the public a copy of the staff report for review and inspection, and shall mail a copy of the staff report and recommendation to the applicant or the applicant's designated representative, and planning commission members. The department shall make available a copy of the staff report, subject to a reasonable charge, to other persons who request it.
 - e. Following the public hearing and in accordance with RCW 36.70.630, the recommendation of the planning commission shall be forwarded to the legislative authority of the jurisdiction. Upon receiving the recommendation from the planning commission, the legislative authority shall set a public meeting to consider the proposal, at which the board may either accept or reject the recommendation.
 - f. The legislative authority must hold a public hearing to consider any changes to the recommendation of the planning commission. The legislative authority may approve,

- approve with conditions, deny or remand the proposal back to the planning commission for further review after such public hearing. The final decision of the legislative authority shall be adopted by resolution.
- g. The final decision of the legislative authority shall be in writing and include:
 - (1) A statement of the applicable criteria and law;
 - (2) A statement of the findings indicating the application's or proposed development's compliance or noncompliance with each applicable approval criterion;
 - (3) The decision to approve, condition or reject the planning commission recommendation or remand for further review;
 - (4) A statement that the decision is final unless appealed pursuant to the process in Chapter 7 of this Master Program. The appeal closing date shall be listed.
 - (5) A statement that the complete case file, including findings, conclusions and conditions of approval, if any, is available for inspection. The notice shall state the place, days and times when the case file is available for inspection and the name and telephone number of the department representative to contact to arrange inspection.

7.18.7 Notice of final decision

- 1. A notice of final decision on an application shall be issued within one hundred twenty days after the date of the declaration of completeness. In determining the number of days that have elapsed, the following periods shall be excluded:
 - a. Any period during which the applicant has been requested by the department to correct plans, perform required studies, or provide additional information or materials. The period shall be calculated from the date the department issues the request to the applicant to, the earlier of, the date the department determines whether the additional information satisfies its request or fourteen days after the date the information has been received by the department;
 - b. If the department determines the information submitted by the applicant under 7.18.7.1 of this section is insufficient, it shall again notify the applicant of deficiencies, and the procedures of this section shall apply to the request for information;
 - c. Any period during which an environmental impact statement (EIS) is being prepared following a determination of significance pursuant to RCW 43.21C;
 - d. Any period for administrative appeals, which shall not exceed ninety days for open record appeals and sixty days for closed record appeals;
 - e. Any extension of time mutually agreed upon by the applicant and the department.
- 2. The time limit by which the jurisdiction must issue a notice of final decision does not apply if an application:
 - a. Requires an amendment to a comprehensive plan or development regulation;
 - b. Requires approval of an essential public facility as provided in RCW Chapter 36.70A;
 - c. Is substantially revised by the applicant after a determination of completeness has been issued, in which case the time period shall start from the date on which the revised project application is determined to be complete.
- 3. If the department is unable to issue its final decision within the time limits provided for in this chapter, it shall provide written notice of this fact to the applicant. The notice shall include a statement of reasons why the time limits have not been met and an estimated date for issuance of the notice of final decision.
- 4. In accordance with state law, the local jurisdiction is not liable for damages which may result from the failure to issue a timely notice of final decision.

5. The City shall file the final decision with the Department of Ecology in accordance with WAC 173-27-130, as amended.

7.19 Performance assurance and guarantee

7.19.1 Purpose

The purpose of this sub-section is to allow individuals developing property to post a performance assurance device in a sufficient amount to guarantee and warranty the construction of required improvements, and protect public property.

7.19.2 Performance assurance

Except where specified by this SMP, all improvements shall be fully completed prior to the final approval of a development permit, land divisions, issuance of a certificate of occupancy or actual occupancy, as directed by applicable codes or regulations, unless an alternative performance assurance device, a contractual agreement, an agreement and partial funding for a local improvement district (LID), or bond between the developer and the city has been executed and approved in accordance with this section.

7.19.3 Criteria

- A. The performance assurance device shall be approved by the department as appropriate and shall be in a form acceptable to the City of Wenatchee Attorney.
- B. Except where specified by this SMP, the performance assurance device shall be for a period of not more than one year for each phase of the development, unless a time schedule for the performance assurance device is approved by the review authority. The time period may be extended depending on the type of project and phasing schedule.
- C. If a performance assurance device or evidence of a similar device is required under 7.19.3 A or B of this section, the review authority shall determine the specific type of assurance device required in order to insure completion of the required conditions of approval. The value of the device shall equal at least one hundred twenty-five percent of the estimated cost of the required improvements and shall be utilized by the city to perform any necessary work, to reimburse the city for performing any necessary work, and to reimburse the city for documented administrative costs associated with action on the device. If costs incurred by the city exceed the amount provided by the assurance device, the property owner shall reimburse the city in full, or the city may file a lien against the subject property for the amount of any deficit.
- D. If the performance device or evidence of a similar device is required the property owner shall provide the city with an irrevocable notarized agreement granting the city and its agents the right to enter the property and perform any required work remaining uncompleted at the expiration of the completion date(s) identified in the assurance device.
- E. Upon completion of the required work by the property owner and approval by the city, at or prior to expiration of the completion date(s) identified in the assurance device, the city shall promptly release the device or evidence thereof.
- F. If bonds or securities are to be used, the review authority shall determine the specific type of assurance device required. The value of this device shall equal at least one hundred twenty-five percent of the estimated cost of the improvement to be performed. If costs incurred by the city exceed the amount provided by the assurance device, the property owner shall reimburse the city in full, or the city may file a lien against the property for the excess amount.

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The terms used throughout this Shoreline Master Program shall be defined and interpreted as indicated below. When consistent with the context, words used in the present tense shall include the future; the singular shall include the plural, and the plural the singular. Definitions established by WAC 173 have been incorporated herein and should these definitions in the WAC be amended, the most current WAC definition shall apply. Except where specifically defined in this chapter, the RCW or the WAC, all words used in this Shoreline Master Program shall carry their customary meanings.

Α

ACCESSORY. Any use or development incidental to and subordinate to a primary use of a shoreline use or development. See also APPURTENANCE, RESIDENTIAL.

ACT. The Washington State Shoreline Management Act, chapter 90.58 RCW.

ADEQUATE. Sufficient to satisfy an adopted requirement. If the City does not have an adopted requirement, adequate means to meet a need or demand generated by the proposed shoreline development or use as determined by the authority responsible to determine compliance with the Shoreline Master Program per Chapter 7.

ADJACENT. Means, for the purpose of critical areas, within 200 feet of a critical area.

ADMINISTRATOR OR SHORELINE ADMINISTRATOR. Administrator or Shoreline Administrator means the director of the City of Wenatchee's Community and Economic Development Department or his/her designated representative, who is vested with the duty of administering Shoreline Master Program regulations within the City's area of authority.

ADVERSE IMPACT. An impact that can be measured or is tangible and has a reasonable likelihood of causing moderate or greater harm to ecological functions or processes or other elements of the shoreline environment. See also SIGNIFICANT ECOLOGICAL IMPACT

AGRICULTURAL ACTIVITIES. Agricultural uses and practices including, but not limited to: producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded; allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities; and maintaining agricultural lands under production or cultivation. See also EXISTING AND ONGOING AGRICULTURAL ACTIVITIES.

AGRICULTURAL-COMMERCIAL. The following activities are considered agricultural-commercial activities:

- A. "Agricultural tourism" refers to the act of visiting a working farm or any agricultural, horticultural or agribusiness operation for the purpose of enjoyment, education or active involvement in the activities of the farm or operation.
- B. "Nursery" means land or structures, such as greenhouses, used to raise plants, flowers and shrubs for sale.
- C. "Roadside stand" means a temporary use which is primarily engaged in the sale of fresh agricultural products, locally grown on- or off-site, but may include, incidental to fresh produce sale, the sale of limited prepackaged food products and non-food items. This use is to be seasonal in duration, open for the duration of the harvest season. For existing roadside stands see AGRICULTURAL ACTIVITIES and AGRICULTURAL EQUIPMENT and AGRICULTURAL FACILITIES.
- D. "Value added operation" means any activity or process that allows farmers to retain ownership and that alters the original agricultural product or commodity for the purpose of gaining a marketing advantage. Value added operations may include bagging, packaging, bundling, pre-cutting, food and beverage service, etc.
- E. "Winery" means a facility where fruit or other products are processed (i.e., crushed, blended, aged, and/or bottled) and may include as incidental and/or accessory to the principal use a tasting room, food and beverage service, places of public/private assembly, and/or retail sales area.

AGRICULTURAL EQUIPMENT AND AGRICULTURAL FACILITIES. Include, but are not limited to:

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

AGRICULTURAL LAND. Areas on which agricultural activities are conducted as of the date of adoption of this SMP pursuant to the State Shoreline Guidelines as evidenced by aerial photography or other documentation. After the effective date of this SMP, land converted to agricultural use is subject to compliance with the requirements herein.

AGRICULTURAL PRODUCTS. Includes, but is not limited to, horticultural, viticultural, floricultural, vegetable, fruit, berry, grain, hops, hay, straw, turf, sod, seed, and apiary products; feed or forage for livestock; Christmas trees; hybrid cottonwood and similar hardwood trees grown as crops and harvested within twenty (20) years of planting; and livestock including both the animals themselves and animal products including, but not limited to, meat, poultry and poultry products, and dairy products.

ALTERATION. Any human induced change in an existing condition of a shoreline, critical area and/or its buffer. Alterations include, but are not limited to grading, filling, channelizing, dredging, clearing (vegetation), draining, construction, compaction, excavation, or any other activity that changes the character of the area.

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AMENDMENT. A revision, update, addition, deletion, and/or reenactment to an existing shoreline master program or to a permit as appropriate.

ANADROMOUS FISH. Fish species that spend most of their lifecycle in saltwater, but return to freshwater to reproduce.

APPLICABLE. The shoreline goal, objective, policy, or standard is relevant or appropriate, or the shoreline development meets the threshold upon which a requirement is based as determined by the authority responsible to determine compliance with the Shoreline Master Program per Chapter 7.

APPROVAL, SHORELINE MASTER PROGRAM. An official action by a local government legislative body agreeing to submit a proposed shoreline master program or amendments to the department for review and official action pursuant to this chapter; or an official action by the department to make a local government shoreline master program effective, thereby incorporating the approved shoreline master program or amendment into the state master program.

APPROVAL, PERMIT. Approval of a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, revision, or Shoreline Variance Permit or any combination thereof.

APPURTENANCE, RESIDENTIAL. An improvement necessarily connected to the use and enjoyment of a single-family residence when located landward of the OHWM or, the perimeter of a wetland and outside their corresponding required buffers. Appurtenances may include, but are not limited to, a garage and/or shop; driveway; utilities; water craft storage (upland); swimming pools; hot tubs; sport courts; shoreline stabilization; retaining walls when necessary to protect the residence and associated structures from erosion; fences; yards; saunas; cabanas; antennas; decks; walkways; and 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 OHWM. ²

AQUATIC. Pertaining to those areas waterward of the OHWM.

AQUACULTURE. Aquaculture is defined as the propagation and rearing of aquatic organisms in controlled or selected aquatic environments for any commercial, recreational, or public purpose. The broad term "aquaculture" refers to the breeding, rearing, and harvesting of plants and animals in all types of water environments, including ponds, rivers, and lakes. Aquaculture can take place in the natural environment or in a manmade environment. Using aquacultural techniques and technologies, researchers and the aquaculture industry are "growing," "producing," "culturing," "ranching", and "farming" all types of freshwater species. Aquaculture can be classified as either commercial aquaculture or non-commercial aquaculture.

- A. Commercial Aquaculture: Commercial aquaculture is defined as the rearing of aquatic organisms, including the incidental preparation of these products for human use, with the goal of maximizing profit.
- B. Non-Commercial Aquaculture: Non-commercial aquaculture is location dependent because of the requirement for natal waters. Non-commercial aquaculture is defined as fish and

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wildlife activities that are not primarily for profit and are supported by a recognized federal, tribal, or state resource manager.

- 1. Low Intensity Non-Commercial Aquaculture: Activities which support non-commercial aquaculture, including well and water supply development, surveys, ground disturbance of less than 10 cubic yards, no permanent structures, and minimal land clearing.
- 2. Medium Intensity Non-Commercial Aquaculture: Activities which support non-commercial aquaculture, including well and water supply development, surveys, development of acclimation ponds or other acclimation vessels, and removable/portable structures.
- 3. High Intensity Non-Commercial Aquaculture: Activities which support non-commercial aquaculture including well and water supply development, surveys, development of acclimation ponds, and permanent structures.

In addition to commercial and non-commercial aquaculture, experimental aquaculture means an aquaculture activity that uses methods or technologies that are unprecedented or unproven in the State of Washington. The technology associated with some forms of aquaculture is still experimental and in formative stages.

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

AQUIFER SUSCEPTIBILITY. The ease with which contaminants can move from the land surface to the aquifer based solely on the types of surface and subsurface materials in the

ARCHAEOLOGICAL OBJECT. An object that comprises the physical evidence of an indigenous and subsequent culture including material remains of past human life including monuments, symbols, tools, facilities, graves, skeletal remains and technological by-products.

ARCHAEOLOGICAL RESOURCES/SITE. A geographic locality in Washington, including, but not limited to, submerged and submersible lands and the bed of the sea within the state's authority, that contains archaeological objects.

ARCHAEOLOGICAL. Having to do with the scientific study of material remains of past human life and activities.

ARCHAEOLOGIST, PROFESSIONAL. A person who meets qualification standards promulgated by DAHP and the National Park Service and published in 36 CFR Part 61 and which define minimum education and experience required to perform identification, evaluation, registration and treatment activities for archaeological sites. In some cases, additional areas or levels of expertise may be needed, depending on the complexity of the task and the nature of the properties involved.

ASSOCIATED WETLANDS. Wetlands that are in proximity to tidal waters, lakes, rivers or streams that are subject to the Act and either influence or are influenced by such waters. Factors used to determine proximity and influence include, but are not limited to: location contiguous to a shoreline waterbody, formation by tidally influenced geo-hydraulic processes, presence of a surface connection including through a culvert or tide gate, location in part or whole within the floodplain of a shoreline, periodic inundation, and/or hydraulic continuity.

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AUTHORIZED USE. Any use allowed in shoreline jurisdiction either by appropriate shoreline permit or exemption.

AVERAGE GRADE LEVEL. The average of the natural or existing topography of the portion of the lot, parcel, or tract of real property which will be directly under the proposed building or structure. In the case of structures to be built over water, average grade level shall be the elevation of the ordinary high water mark. Calculation of the average grade level shall be made by averaging the ground elevations at the midpoint of all exterior walls of the proposed building or structure."

B

BARB. Used primarily in streams, barbs are low relief projections from a bank, angled upstream, to redirect flow away from the bank towards the center of the channel. As opposed to groins or jetties, barbs are not barrier types of structures; they function by re-directing flows that pass over the top of the structure.

BEACH. The zone of unconsolidated material that is moved by waves and wind currents, including areas both above and below the OHWM.

BEACH ENHANCEMENT/RESTORATION. Process of restoring a beach to a state more closely resembling a natural beach, using beach feeding, vegetation, drift sills and other nonintrusive means as applicable. See also ENHANCEMENT.

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

BEST AVAILABLE SCIENCE.

- A. Critical area site analysis, reports and decisions to alter critical areas shall rely on the best available science to protect the functions and values of critical areas and must give special consideration to conservation and protection measures necessary to preserve or enhance their functions and values.
- B. The best available science is that scientific information applicable to the critical area. These data must be prepared by local, state, or federal natural resource agencies, a qualified scientific professional or team of qualified scientific professionals that is consistent with criteria established in WAC 365-195-900 through WAC 365-195-925.
- C. In the context of critical area protection, a valid scientific process is one that produces reliable information useful in understanding the consequences of a local government's regulatory decisions, and in developing critical area policies and development regulations that will be effective in protecting the functions and values of critical areas. To determine whether information received during the permit review process is reliable scientific information, the administrator or his designee shall determine whether the source of the information displays the characteristics of a valid scientific process. Such characteristics are as follows:
 - 1. Peer Review. The information has been critically reviewed by other persons who are qualified scientific experts in that scientific discipline. The proponents of the information

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- have addressed the criticism of the peer reviewers. Publication in a referred scientific journal usually indicates that the information has been appropriately peer reviewed.
- 2. Methods. The methods used to obtain the information are clearly stated and reproducible. The methods are standardized in the pertinent scientific discipline or, if not, the methods have been appropriately peer reviewed to assure their reliability and validity.
- 3. Logical Conclusions and Reasonable Inferences. The conclusions presented are based on reasonable assumptions supported by other studies and consistent with the general theory underlying the assumptions. The conclusions are logically and reasonably derived from the assumptions and supported by the data presented. Any gaps in information and inconsistencies with other pertinent scientific information are adequately explained.
- 4. Quantitative Analysis. The data has been analyzed using appropriate statistical or quantitative methods.
- 5. Context. The information is placed in proper context. The assumptions, analytical techniques, data, and conclusions are appropriately framed with respect to the prevailing body of pertinent existing information.
- 6. References. The assumptions, analytical techniques, and conclusions are well referenced with citations to relevant, credible literature and other pertinent existing information.

BEST MANAGEMENT PRACTICES. Conservation practices or systems of practices and management measures, often promulgated by state and federal agencies or the City, that:

- A. Control soil loss and reduce water quality degradation caused by nutrients, animal waste, toxins, and sediment;
- B. Minimize adverse impacts to surface water and ground water flow, circulation patterns, and to the chemical, physical, and biological characteristics of waters, wetlands, and other fish and wildlife habitats:
- C. Control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material.

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

BIOFILTRATION SYSTEM. A stormwater or other drainage treatment system that utilizes as a primary feature the ability of plant life to screen out and metabolize sediment and pollutants. Typically, biofiltration systems are designed to include grassy swales, retention ponds and other vegetative features.

BOAT CLUB means a private or public membership facility designed for boating activities, such as kayak storage and docks usages for similar purposes.

BOATHOUSE. Any roofed and enclosed structure built over water for storage of watercraft or float planes. See also COVERED MOORAGE.

BOATING FACILITIES. Developments and uses that support access to shoreline waters for purposes of boating, including marinas, community docks serving more than four single-family residences or multi-family units, public piers, and community or public boat launch facilities.

BOAT LAUNCH FACILITY. Any structure or apparatus used for transferring watercraft between uplands and the water. Boat launches are typically launch ramps, but may also include other mechanisms such as a hoist or crane often used at dry storage locations. See also LAUNCH RAMP.

BOG. A wet, spongy, poorly drained area which is usually rich in very specialized plants, contains a high percentage of organic remnants and residues, and frequently is associated with a spring, seepage area, or other subsurface water source. A bog sometimes represents the final stage of the natural process of eutrophication by which lakes and other bodies of water are very slowly transformed into land areas.

BREAKWATER. An aquatic structure that is generally built parallel to shore, but may be built perpendicular to the shoreline, that may or may not be connected to land, and may be floating or stationary. The primary purpose is to protect harbors, moorages and navigation activity from wave and wind action by creating stillwater areas along shore. A secondary purpose is to protect shorelines from wave caused erosion. See also JETTIES.

BUFFER OR SHORELINE BUFFER. The area adjacent to a shoreline that separates and protects the waterbody from adverse impacts associated with adjacent land uses. It is designed and designated to remain vegetated in an undisturbed and natural condition to protect an adjacent aquatic or wetland site from upland impacts, to provide habitat for wildlife, to afford limited public or private access, and to accommodate certain other specified uses that benefit from a shoreline location. Buffers are distinct from setbacks. The dimensions of the shoreline buffer are established in the Vegetation Conservation and Shoreline Buffers sections of this SMP.

BUILDING. Any combination of materials constructed, placed or erected permanently on the ground or attached to something having a permanent location on the ground, for the purpose of shelter, support or enclosure of persons, animals or property, or when supporting any use, occupancy or function. Excluded from this definition are structures waterward of the OHWM, all forms of vehicles even though immobilized, residential fences, retaining walls less than three feet in height, rockeries and similar improvements of a minor nature. Docks and bulkheads are not buildings under this definition. For structures waterward of the OHWM, see OVER-WATER STRUCTURES.

BULKHEAD. A solid wall erected generally parallel to and at or near the OHWM for the purpose of protecting adjacent uplands from waves or current action. A bulkhead is an example of hard structural shoreline stabilization.

BUOY, MOORING. An anchored float for the purpose of mooring vessels.

BUOY, NAVIGATION. An anchored float for the purpose of identifying navigational hazards or directing watercraft traffic.

C

CHANNEL MIGRATION ZONE (CMZ). The area along a river or stream within which the channel(s) can reasonably be expected to migrate over time as a result of natural and normally

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occurring hydrological and related processes when considered with the characteristics of the river or stream and its surroundings. It encompasses that area of current and historic lateral stream channel movement that is subject to erosion, bank destabilization, rapid stream incision, and/or channel shifting, as well as adjacent areas that are susceptible to channel erosion.

CHANNELIZATION. The straightening, relocation, deepening or lining of stream channels, including construction of continuous revetments or levees for the purpose of preventing gradual, natural meander progression.

CITY. The City of Wenatchee.

CLEARING. The destruction or removal of vegetation ground cover, shrubs and trees including, but not limited to, root material removal and/or topsoil removal.

COMMERCIAL DEVELOPMENT. Those developments whose primary use is for retail, service or other commercial business activities. Included in this definition are developments including but not limited to hotels, motels, bed and breakfast establishments, or other commercial accommodations, shops, restaurants, banks, professional offices, grocery stores, laundromats, recreational vehicle parks, and indoor or outdoor commercial recreation facilities.

COMMERCIAL USES. Commercial uses are those activities engaged in commerce and trade and involving the exchange of money, including but not limited to, retail, services, wholesale, or business trade activities. Examples include, but are not limited to, hotels, motels, or other commercial accommodations, grocery stores, restaurants, shops, commercial recreation facilities, and offices.

COMMUNITY ACCESS. The ability of all property owners or members of a residential development to reach and use the waters of the State, the water/land interface, and associated shoreline area. It includes physical access that is either lateral (areas paralleling the shore) or perpendicular (an easement or community corridor to the shore), and/or visual access facilitated by scenic roads and overlooks, viewing platforms, and other community sites or facilities. Community access is not intended for the general public.

COMMUNITY DOCK. A private water-dependent facility designed for moorage of pleasure craft as its primary use that serves a specified residential development of more than four single-family residences or multi-family units. Other water-enjoyment uses, such as fishing or viewing, may occur on community docks. Community docks are different from marinas.

COMPENSATORY MITIGATION. Means a mitigation project for the purpose of replacing, at an equivalent or greater level, unavoidable impacts that remain after all appropriate and practicable avoidance and minimization measures have been implemented. Compensatory mitigation includes, but is not limited to, wetland creation, restoration, enhancement, and preservation; stream restoration and relocation, rehabilitation; and buffer enhancement.

CONDITIONAL USE, SHORELINE. A use, development, or substantial development which is classified as a Conditional Use or is not classified within this SMP. Those activities identified as conditional uses or not classified in this SMP must be treated according to the review criteria established in WAC 173-27-160.

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CONSERVATION. The prudent management of rivers, streams, wetlands, wildlife and other environmental resources in order to preserve and protect them. This includes the careful use of natural resources to prevent depletion or harm to the environment.

CONSERVATION EASEMENT. A legal agreement that the property owner enters into to restrict uses of the land for purposes of natural resources conservation. The easement is recorded on a property deed, runs with the land, and is legally binding on all present and future owners of the property.

CONTAMINANT. Any chemical, physical, biological, or radiological substance that does not occur naturally in ground water, air, or soil or that occurs at concentrations greater than those in the natural levels.

COUNTY. Chelan County, Washington.

COVERED MOORAGE. Boat moorage, with or without walls, that has a roof to protect the vessel. See also BOATHOUSE.

CRITICAL AQUIFER RECHARGE AREA. Areas that are determined to have a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduce recharge.

CRITICAL AREAS. The following areas as designated in critical area standards as established in Appendix B:

- A. Critical aquifer recharge areas
- B. Wetlands
- C. Geologically hazardous areas
- D. Frequently flooded areas
- E. Fish and wildlife habitat conservation areas.

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

D

DAHP. The State of Washington Department of Archaeology and Historic Preservation.

DATA MAPS. Means that series of maps maintained by the Wenatchee Department of Community and Economic Development for the purpose of graphically depicting the boundaries of critical areas.

DEPARTMENT OF ECOLOGY or ECOLOGY. The Washington State Department of Ecology.

DEVELOPMENT. A use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel, minerals or vegetation; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters of the state subject to Chapter 90.58 RCW at any stage of water level. Development does not include the following activities:

- A. Interior building improvements that do not change the use or occupancy;
- B. Exterior structure maintenance activities, including painting and roofing as long as it does not expand the existing footprint of the structure;
- C. Routine landscape maintenance of established, ornamental landscaping, such as lawn mowing, pruning and weeding; and
- D. Maintenance of the following existing facilities that does not expand the affected area: septic tanks (routine cleaning); wells; and individual utility service connections.

DEVELOPMENT REGULATIONS. The controls placed on development or land uses by the City of Wenatchee, including, but not limited to, zoning ordinances, critical areas ordinances, all portions of a shoreline master program other than goals and policies approved or adopted under Chapter 90.58 RCW, planned unit development ordinances, subdivision ordinances, and binding site plan ordinances together with any amendments thereto.

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

DOCK. All platform structures or anchored devices in, suspended over, or floating on waterbodies to provide moorage for pleasure craft (including watercraft and float planes) or landing for water-dependent recreation including, but not limited to, piers, floats, swim floats, float plane moorages, and water ski jumps. Excluded are launch ramps. Docks often consist of a nearshore pier with a ramp to an offshore float. See also PIER.

DOCUMENT OF RECORD. The most current shoreline master program officially approved or adopted by rule by the Department of Ecology for a given local government, including any changes resulting from appeals filed pursuant to RCW 90.58.190.

DREDGING. Excavation or displacement of the bottom or shoreline of a waterbody (waterward of the OHWM) for purposes of flood control, navigation, utility installation (excluding on-site utility features serving a primary use, which are "accessory utilities" and shall be considered a part of the primary use), the construction or modification of essential public facilities and regional transportation facilities, and/or restoration (of which the primary restoration element is sediment/soil removal rather than being incidental to the primary restoration purpose). Dredging, as regulated in this SMP under Section 5.8, is not intended to cover other excavations waterward of the ordinary high water mark that are incidental to construction of an otherwise authorized use or modification (e.g., , bulkhead replacements, large woody debris installations, boat launch ramp installation, pile placement).

DWELLING UNIT. Means a building or portion thereof designed exclusively for residential purposes on a permanent basis; to be used, rented, leased, or hired out to be occupied for living

purposes having independent living facilities, including permanent provisions for living, sleeping, eating, cooking, and sanitation. No motor home, travel trailer, tent trailer or other recreational vehicle shall be considered a dwelling unit.

DWELLING-SINGLE FAMILY. Means a building containing one dwelling unit on one lot, other than an accessory dwelling, and those structures and developments within a contiguous ownership which are a normal appurtenance. A single-family dwelling unit can be either attached or a detached unit, provided each unit is located on a separate lot. Multiple cottage housing units built on one lot are each considered a single family dwelling unit.

DWELLING-TWO FAMILY (Duplex). Means a building containing two attached dwelling units on one lot, other than an accessory dwelling.

DWELLING-MULTI-FAMILY. Means a building containing three or more dwelling units.

E

ECOLOGICAL FUNCTIONS (OR SHORELINE FUNCTIONS). The work performed or role played by the physical, chemical, and biological processes that contribute to the maintenance of the aquatic and terrestrial environments that constitute the shoreline's natural ecosystem.

ECOLOGY. See DEPARTMENT OF ECOLOGY.

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

EMBANKMENT. A wall or bank of earth or stone built to prevent a river flooding an area.

EMERGENCY/EMERGENCY CONSTRUCTION. 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 the master program. Emergency construction is construed narrowly as that which is necessary to protect property and facilities from the elements. 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 this SMP, shall be obtained. All emergency construction shall be consistent with the policies of Chapter 90.58 RCW and this SMP. As a general matter, flooding or seasonal events that can be anticipated and may occur but that are not imminent are not an emergency.

ENHANCEMENT. Alteration of an existing resource to improve or increase its characteristics, functions, or processes without degrading other existing ecological functions. Enhancements are to be distinguished from resource creation or restoration projects. See also BEACH ENHANCEMENT/RESTORATION.

ENVIRONMENTAL IMPACT STATEMENT (EIS). An environmental impact statement is a document that must be prepared in accordance with the State Environmental Policy Act or National

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Environmental Policy Act when the lead agency determines a proposal is likely to have significant adverse environmental impacts. The EIS provides an impartial discussion of significant environmental impacts, reasonable alternatives, and mitigation measures that would avoid or minimize adverse impacts. A draft EIS is issued with a comment period to allow other agencies, tribes, and the public to comment on the environmental analysis and conclusions. The lead agency uses these comments to finalize the environmental analysis and issue a final EIS.

EROSION. The wearing away of land by the action of natural forces.

ESSENTIAL PUBLIC FACILITIES: Essential public facilities include those facilities that are typically difficult to site, such as airports, state education facilities, and state or regional transportation facilities as defined in RCW 47.06.140, regional transit authority facilities, as defined in RCW 81.112.020, state and local correctional facilities, solid waste handling facilities, and inpatient facilities including substance abuse facilities, mental health facilities, group homes, and secure community transition facilities as defined in RCW 30 71.09.020.

EXCAVATION. The disturbance or displacement of unconsolidated earth material such as silt, sand, gravel, soil, rock or other material. In addition to upland excavation, this definition covers excavations waterward of the ordinary high water mark that are incidental to construction of an otherwise authorized use or modification (e.g., bulkhead replacements, large woody debris installations, boat launch ramp installation, pile placement). See also DREDGING.

EXEMPTION. Certain specific developments as listed in WAC 173-27-040 are exempt from the definition of substantial developments are therefore exempt from the Shoreline Substantial Development Permit process of the SMA. An activity that is exempt from the substantial development provisions of the SMA must still be carried out in compliance with policies and standards of the Act and this SMP. Conditional use and/or variance permits may also still be required even though the activity does not need a Shoreline Substantial Development Permit.

EXISTING AND ONGOING AGRICULTURAL ACTIVITIES. Those activities conducted on lands defined in RCW 36.70A.030 and those activities involved in the production of crops and livestock, including, but not limited to, operation and maintenance of existing farm and stock ponds or drainage ditches, irrigation systems, changes between agricultural activities, and maintenance or repair of existing serviceable structures and facilities. Activities that result in the filling of an area or bring an area into agricultural use are not part of an ongoing activity. An operation ceases to be ongoing when the area on which it was conducted has been converted to a non-agricultural use, or has lain idle for more than five (5) years unless that idle land is registered in a federal or state soils conservation program. Forest practices are not included in this definition. See also AGRICULTURAL ACTIVITIES.

F

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

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FEASIBLE. For the purpose of this master program, that an action, such as a development project, mitigation, or preservation requirement, meets all of the following conditions:

- A. The action can be accomplished with technologies and methods that have been used in the past, or studies or tests have demonstrated that such approaches are currently available and likely to achieve the intended results.
- B. The action provides a reasonable likelihood of achieving its intended purpose. Reasonable means acceptable and according to common sense or normal practice.
- C. The action does not physically preclude achieving the project's primary intended use.)

In cases where these guidelines require certain actions unless they are infeasible, the burden of proving infeasibility is on the applicant.

In determining an action's infeasibility, the City may weigh the action's relative public costs and public benefits, considered in the short- and long-term time frames. See INFEASIBLE

FEED LOT. A confined area or structure for feeding, breeding or holding livestock for eventual sale or slaughter and in which animal waste accumulates faster than it can naturally dissipate without creating a potential for a health hazard, particularly with regard to surface and groundwater; but not including barns, pens or other structures used in a dairy operation or structures on farms holding livestock primarily during winter periods.

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

FINGERS OR DOCK FINGERS. Narrow extensions of piers perpendicular to the pier or float that provide additional watercraft moorage.

FISH AND WILDLIFE HABITAT CONSERVATION AREAS. Areas necessary for maintaining species in suitable habitats within their natural geographic distribution so that isolated subpopulations are not created. These areas include:

- A. Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association;
- B. Habitats of local importance, including, but not limited to, areas designated as priority habitat by the State Department of Fish and Wildlife;
- C. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish and wildlife habitat;
- D. Waters of the state, including lakes, rivers, ponds, streams, inland waters, underground waters, and all other surface water and watercourses within the authority of the state of Washington; and
- E. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; state natural area preserves and natural resources conservation areas.
- F. State natural area preserves, natural resource conservation areas, and state wildlife areas.

FLOATING HOMES. Any floating structure that is designed, or has been substantially and structurally remodeled or redesigned, to serve primarily as a residence. "Floating homes" include house boats, house barges, or any floating structures that serve primarily as a residence and do not qualify as a vessel. A floating structure that is used as a residence and is capable of navigation, but is

not designed primarily for navigation, nor normally is capable of self propulsion and use as a means of transportation is a floating home, not a vessel.

FLOATS. A detached, anchored platform that is free to rise and fall with water levels, used for boat mooring, swimming (including a SWIM FLOAT) or similar recreational activities that is not anchored to the shoreline or accessed directly from the shoreline.

FLOAT, SWIM. A floating platform designed and intended expressly for facilitating safe swimming. Swim floats are anchored in deeper waters, are not connected to uplands, and are not motorized. Water ski/wake board jumps are also considered swim floats.

FLOOD CONTROL WORKS. Methods or facilities designed to reduce flooding of adjacent lands, to control or divert stream flow, to retard bank erosion, or to create a reservoir.

- A. Nonstructural measures include, but are not limited to, shoreline buffers, land use controls, wetland restoration, dike removal, use relocation, biotechnical measures, storm water management programs, land or easement acquisition, voluntary protection and enhancement projects, or incentive programs.
- B. Structural measures include, but are not limited to, dikes, levees, revetments, floodwalls, channel realignment, or embankments.

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

FLOODWAY. The area, as identified in a master program, that either: (i) Has been established in federal emergency management agency flood insurance rate maps or floodway maps; or (ii) consists of those portions of a river valley lying streamward from the outer limits of a watercourse upon which flood waters are carried during periods of flooding that occur with reasonable regularity, although not necessarily annually, said floodway being identified, under normal condition, by changes in surface soil conditions or changes in types or quality of vegetative groundcover condition. Regardless of the method used to identify the floodway, the floodway shall not include those lands that can reasonably be expected to be protected from flood waters by flood control devices maintained by or maintained under license from the federal government, the state, or a political subdivision of the state.

FOREST PRACTICES. Any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber, including but not limited to: road and trail construction; harvesting, final and intermediate; pre-commercial thinning and fire protection; reforestation; fertilization; prevention and suppression of diseases and insects; salvage of trees; and brush control. Forest practices do not include preparatory work such as tree marking, surveying and road flagging, and removal or harvesting of incidental vegetation from forest lands such as berries, ferns, greenery, mistletoe, herbs, mushrooms, and other products which cannot normally be expected to result in damage to forest soils, timber, or public resources.

FREQUENTLY FLOODED AREA. Means an area subject to flooding, as defined by the Flood Insurance Rate Maps (FIRM), once every one hundred years, also known as the floodplain.

GEOLOGICALLY HAZARDOUS AREA. Areas that may not be suited to development consistent with public health, safety or environmental standards, because of their susceptibility to erosion, sliding, earthquake, or other geological events. Types of geologically hazardous areas include erosion, landslide, seismic, volcanic hazards, and mine.

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

GEOTECHNICAL REPORT. See GEOTECHNICAL ANALYSIS.

GRADE. See AVERAGE GRADE LEVEL.

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

GRASSY SWALE. A vegetated drainage channel that is designed to remove various pollutants from storm water runoff through biofiltration.

GRAY WATER. Sewage from bathtubs, showers, bathroom sinks, washing machines, dishwashers, and kitchen sinks. It includes sewage from any source in a residence or structure that has not come into contact with toilet wastes.

GROINS. A barrier type of structure extending from the backshore or stream bank into a waterbody for the purpose of the protection of a shoreline and adjacent uplands by influencing the movement of water or deposition of materials. In lake environments, groins are typically used to trap sediment for the purpose of preserving a depositional feature, such as a beach. In a stream environment, groins may serve a variety of functions, including bank protection, pool formation, and increased roughness, and may include rock structures, debris jams, or pilings that collect wood debris. See also BARB and WEIR.

GROUNDWATER. All water that exists beneath the land surface or beneath the bed of any stream, lake or reservoir, or other body of surface water within the boundaries of the state, whatever may be the geological formation or structure in which such water stands or flows, percolates or otherwise moves .

GROWTH MANAGEMENT ACT. RCW 36.70A and 36.70B, as amended.

GUIDELINES. Those standards adopted by the Department of Ecology into the Washington Administrative Code (WAC) to implement the policy of Chapter 90.58 RCW for regulation of use of the shorelines of the state prior to adoption of master programs. Such standards also provide

criteria for local governments and the Department of Ecology in developing and amending master programs.

H

HABITAT. The place, including physical and biotic conditions, where a plant or animal usually occurs or could occur and is fundamentally linked to the actual or potential distribution and abundance of species. A species may use a habitat or a structural component of the habitat for all or part of its lifecycle, and may adapt to use various habitats. Habitat is scale-dependent and refers to a large geographic area, a species' home range, a local setting, or a site-specific feature. Habitat may perform a specific function for a species or multiple species, and may include those elements necessary for one or more species to feed, migrate, breed, or travel.

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

HEIGHT. The vertical dimension measured from average grade to the highest point of a structure; provided that, antennas, chimneys, and similar appurtenances shall not be used in calculating height, unless such appurtenance obstructs the view of a substantial number of adjacent residences. Temporary construction equipment is excluded in this calculation. Average grade shall be defined consistent with the definition of average grade level, and shall be the grade existing as of effective date of this SMP or pursuant to any legal alterations consistent with the SMP and applicable federal, state, or local laws. ³

HISTORIC PRESERVATION PROFESSIONAL. Individuals who meet standards promulgated by the DAHP as well as the National Park Service and published in 36 CFR Part 61. These standards address minimum education and experience required to perform identification, evaluation, registration and treatment activities for historic properties. In some cases, additional areas or levels of expertise may be needed, depending on the complexity of the task and the nature of the properties involved.

HISTORIC SITE. Sites that are eligible or listed on the Washington Heritage Register, National Register of Historic Places or any locally developed historic registry formally adopted by the City of Wenatchee.

HYDROLOGICAL. Referring to the science related to the waters of the earth including surface and ground water movement, evaporation and precipitation. Hydrological functions in shoreline include, water movement, storage, flow variability, channel movement and reconfiguration, recruitment and transport of sediment and large wood, and nutrient and pollutant transport, removal and deposition.

I	
IMPACT.	See SIGNIFICANT ECOLOGICAL IMPACT.
3	

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IMPERVIOUS SURFACE. A hard surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. For purposes of determining whether thresholds for application of core elements are exceeded, open, uncovered retention or detention facilities shall not be considered as impervious surfaces. Open, uncovered retention or detention facilities shall be considered impervious surfaces for purposes of runoff modeling.

INDUSTRIAL DEVELOPMENT. Facilities for processing, manufacturing, and storage of finished or semi-finished goods, including but not limited to oil, metal or mineral product refining, power generating facilities, including hydropower, ship building and major repair, storage and repair of large trucks and other large vehicles or heavy equipment, related storage of fuels, commercial storage and repair of fishing gear, warehousing construction contractors' offices and material/equipment storage yards, wholesale trade or storage, and log storage on land or water, together with necessary accessory uses such as parking, loading, and waste storage and treatment. Excluded from this definition are mining including onsite processing of raw materials, and off site utility, solid waste, road or railway development, and methane digesters that are accessory to an agricultural use.

INDUSTRIAL PARK. A tract of land that has been planned, developed and operated as an integrated facility for a number of individual industrial uses with special attention to circulation, parking, utility needs and compatibility.

INDUSTRIAL USES. The production, processing, manufacturing, or fabrication of goods or materials, including warehousing and storage of materials or production.

INFEASIBLE. To determine that an action, such as a development project, mitigation, or preservation requirement, is infeasible, the following conditions are found:

- A. The action cannot be accomplished with technologies and methods that have been used in the past, or studies or tests have demonstrated that such approaches are currently not available or unlikely to achieve the intended results.
- B. The action does not have a reasonable likelihood of achieving its intended purpose. Reasonable means acceptable and according to common sense or normal practice.
- C. The action precludes achieving the project's primary intended use.
- D. The action's relative public costs and public benefits, considered in the short- and long-term time frames, show the costs far outweigh the benefits.

In cases where these guidelines require certain actions unless they are infeasible, the burden of proving infeasibility is on the applicant. In determining an action's infeasibility, the City may weigh the action's relative public costs and public benefits, considered in the short- and long-term time frames. See FEASIBLE.

INFILTRATION. The passage or movement of water into the soil surface.

INSTITUTIONAL. Those public and/or private facilities including, but not limited to, police and fire stations, libraries, activity centers, schools, educational centers, museums, water-oriented research facilities, and similar uses. These may also be called public facilities.

IN-WATER STRUCTURE. Structure placed by humans within a stream, river or lake waterward of the OHWM that either causes or has the potential to cause water impoundment or the diversion, obstruction, or modification of water flow. In-water structures may include those for hydroelectric generation, irrigation, water supply, flood control, transportation, utility service transmission, fish habitat enhancement, recreation (e.g., docks, boatlifts), or other purpose. Note that the listed recreation-related in-water structures have a very limited capacity to affect water flows and are exclusively regulated under SMP Section 5.5 (Boating Facilities).

INVASIVE SPECIES. A species that is 1) non-native (or alien) to Chelan County and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species can be plants, animals, and other organisms (e.g., microbes).

I

JETTIES. A barrier type of structure generally built singly or in pairs perpendicular to the shoreline at harbor entrances or river mouths to prevent sediment from depositing in the harbor or channel. They also protect channels and inlets from crosscurrents and storm waves. See also BREAKWATERS.

JOINT-USE DOCKS. Those constructed and utilized by two, three or four property owners, whether on adjacent lots as single-family residences or as multi-family units, or by a homeowner's association. Marinas, public docks and community docks that serve more than four single-family residences or multi-family units are regulated as Boating Facilities under Section 5.5 of this SMP. New residential joint-use docks are prohibited under this SMP.

L

LAKE. A body of standing water in a depression of land or expanded part of a river, including reservoirs, of twenty acres or greater in total area. A lake is bounded by the OHWM or, where a stream enters a lake, the extension of the elevation of the lake's OHWM within the stream. Where the OHWM cannot be found, it shall be the line of mean high water.

LANDSLIDE. A general term covering a wide variety of mass movement landforms and processes involving the down slope transport, under gravitational influence of soil and rock material en masse; included are debris flows, debris avalanches, earthflows, mudflows, slumps, mudslides, rock slides, and rock falls.

LARGE WOODY DEBRIS. Logs, limbs, or root wads 4 inches or larger in diameter, delivered to waterbodies from adjacent riparian or upslope areas or from upstream areas. Large woody debris also includes logs, limbs, or root wads 4 inches or larger that are placed in a waterbody for the purpose of providing habitat and/or mitigation.

LAUNCH RAMP. An inclined slab, set of pads, rails, planks, or graded slope which extends waterward of the OHWM, and is used for transferring watercraft between uplands and the water with trailers or occasionally by hand. See also BOAT LAUNCH FACILITY.

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LEGALLY ESTABLISHED. A use or structure in compliance with the laws and rules in effect at the time of creation of the use or structure.

LETTERS OF EXEMPTION. A letter prepared by the City of Wenatchee addressed to the applicant, where required by WAC 173-27-050. A written statement of exemption may be required in accordance with Section 7.6.4. Letters of exemption for development determined by the City to be exempt from the substantial development permit process according to the exemption provisions of this Shoreline Master Program. Also see EXEMPTION.

LEVEE. A natural or artificial embankment on the bank of a stream or river for the purpose of keeping floodwaters from inundating adjacent land. Some levees have revetments on their sides.

LIMITED UTILITY EXTENSION. For the purposes of Section 7.11.1.D, the extension of a utility service that:

- A. Is categorically exempt under chapter 43.21C RCW for one or more of the following: Natural gas, electricity, telephone, water, or sewer;
- B. Will serve an existing use in compliance with WAC 173-27; and
- C. Will not extend more than two thousand five hundred linear feet within the shorelines of the state.

LIVEABOARD. A floating vessel that serves as a residence, and is self-powered by sail or motor.

LOCAL GOVERNMENT. Any county, incorporated city or town which contains within its boundaries shorelines of the state subject to chapter 90.58 RCW. For the purposes of this SMP, this means the City of Wenatchee.

LOW IMPACT DEVELOPMENT, (LID). LID is an evolving approach to land development and stormwater management using the natural features of a site and specifically designed best management practices to manage stormwater. LID involves assessing and understanding the site, protecting native vegetation and soils, and minimizing and managing stormwater at the source. LID practices are appropriate for a variety of development types.

M

MAINTENANCE, NORMAL. Those usual acts to prevent a decline, lapse, or cessation from a legally established condition. See REPAIR, NORMAL.

MANAGED OPEN SPACE means a landscaped area maintained in a manner for the purpose of human activity and not of a commercial or retail nature, including, but not limited to, parks, bridle paths, playfields, arboretums, botanical gardens, equestrian facilities, and other similar uses, including accessory uses such as parking and restroom facilities. Managed open space does not include nurseries, commercial agriculture, pastures and similar activities.

MARINA. A public or private water-dependent wet moorage facility for pleasure craft and/or commercial craft where goods, moorage or services related to boating may be sold commercially or provided for a fee, e.g. yacht club, etc. Dry storage and launching facilities, either launch ramp, crane or hoist, may also be provided. Marinas may be open to the general public or restricted on the basis of property ownership or membership. Community docks that do not provide nonwater-oriented

uses or water-oriented commercial services, other than to the specific residential community served by the community dock, are not considered marinas.

MARSH. A low flat wetland area on which the vegetation consists mainly of herbaceous plants such as cattails, bulrushes, tules, sedges, skunk cabbage or other hydrophytic plants. Shallow water usually stands on a marsh at least during part of the year.

MAY. Refers to actions that are acceptable, provided they conform to the provisions of this master program and the Act.

MINERAL EXTRACTION. The removal of topsoil, gravel, rock, minerals, clay, sand or other earth materials, including accessory activities such as washing, sorting, screening, crushing and stockpiling for commercial and other uses. Not included is the leveling, grading, filling, or removal of materials during the course of normal site preparation for an approved use (e.g., residential subdivision, commercial development, etc.) subject to the provisions of this SMP.

MITIGATION (OR MITIGATION SEQUENCING). The process of avoiding, reducing, or compensating for the environmental impact(s) of a proposal. The following sequence of steps is listed in prioritized order:

- A. Avoiding the impact altogether by not taking a certain action or parts of an action;
- B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;
- C. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of the initiation of the project;
- D. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;
- E. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and
- F. Monitoring the impact and the compensation projects and taking appropriate corrective measures.

Lower priority measures shall be applied only where higher priority measures are determined to be infeasible or inapplicable.

MIXED USE. A combination of uses within the same building or site as a part of an integrated development project with functional interrelationships and coherent physical design.

MIXED USE COMMERCIAL. Developments that include water-dependent commercial uses combined with water-related, water-enjoyment uses and/or nonwater-oriented commercial uses. Mixed-use developments can be a tool for water-dependent activities, civic revitalization, and public access to the shoreline.

MIXED USE RESIDENTIAL. Developments that include water-dependent uses combined with water-related, water-enjoyment uses and/or nonwater-oriented uses together with single-family or multi-family uses while promoting public access for significant numbers of the public and/or providing an ecological restoration resulting in a public benefit. This mix of uses is intended to reduce transportation trips, use land efficiently, and provide for waterfront commerce and housing options.

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MODIFICATION. A change or alteration in existing materials, including structures, plans and uses.

MODIFICATION, SHORELINE. Those actions that modify the physical configuration or qualities of the shoreline area, usually through the construction of a physical element such as a dike, breakwater, dock, weir, dredged basin, fill, bulkhead, or other shoreline structures. They can include other actions, such as clearing, grading, or application of chemicals.

MONITORING. Evaluating the impacts of development proposals on the biological, hydrologic and geologic elements of such systems and assessing the performance of required mitigation measures. This may be done through the collection and analysis of data by various methods for the purposes of understanding and documenting changes in natural ecosystems and features, including gathering baseline data.

MOORAGE FACILITY. Any device or structure used to secure a boat or a vessel, including docks, piers, floats, piles, watercraft lifts or buoys.

MOORAGE PILE. A permanent vertical column generally located in open waters, often in close proximity to a dock or pier, to which the vessel is tied to prevent it from excessive movement generated by wind, or wind- or boat-driven waves.

MULTI-FAMILY DWELLING (OR RESIDENCE). See DWELLING MULTI-FAMILY.

MUST. A mandate; the action is required. See SHALL.

N

NATURAL OPEN SPACE means an unimproved and undeveloped area naturally vegetated and not artificially landscaped or maintained for human activity. Natural Open Space includes but is not limited to riparian vegetation area or areas that are left for ecological functions to take place.

NAVIGABLE WATERS. Navigable waters of the United States are those waters that are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.

NECESSARY. A word describing an element that is essential, indispensable or needed to achieve a certain result or effect.

NO NET LOSS. A public policy goal and requirement to maintain the aggregate total of the County's shoreline ecological functions at its current level of environmental resource productivity. For purposes of reviewing and approving this SMP, "current" is equivalent to the date of the Final Shoreline Inventory and Analysis Report . As a development and/or mitigation standard, no net loss requires that the impacts of a particular shoreline development and/or use, whether permitted or exempt, be identified and prevented or mitigated, such that it has no resulting adverse impacts on shoreline ecological functions or processes relative to the legal condition just prior to the proposed development and/or use.

NONCONFORMING USE OR DEVELOPMENT. A shoreline use or development which was lawfully constructed or established prior to the effective date of the Act (June 1, 1971; RCW 90.58.920) or the effective date of this SMP, or amendments thereto, but which does not conform to present regulations or standards of the SMP.

NONPOINT POLLUTION. Pollution that enters any waters of the state from any dispersed land-based or water-based activities, including, but not limited to, atmospheric deposition, surface water runoff from agricultural lands, urban areas, or forest lands, subsurface or underground sources, or discharges from boats or marine vessels not otherwise regulated under the National Pollutant Discharge Elimination System program.

NONWATER-ORIENTED USES. Those uses that are not water-dependent, water-related, or water-enjoyment.

NORMAL MAINTENANCE. See MAINTENANCE, NORMAL and REPAIR, NORMAL"

NORMAL PROTECTIVE BULKHEAD. Those structural and nonstructural developments installed at or near, and parallel to, the OHWM for the sole purpose of protecting an existing single-family residence and appurtenant structures from loss or damage by erosion.

NORMAL REPAIR. See REPAIR, NORMAL and MAINTENANCE, NORMAL

NOXIOUS WEEDS. A special sub-class of invasive plant species listed as Class A or B by the Chelan County Noxious Weed Control Board.

0

OFF-SITE REPLACEMENT/MITIGATION. To replace wetlands or other shoreline environmental resources away from the site on which a resource has been impacted by a regulated activity.

ORDINARY HIGH WATER MARK (OHWM). That mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the Department of Ecology: provided, that in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining fresh water shall be the line of mean high water.

OVERWATER STRUCTURES. Any structure located above the water surface waterward of the OHWM. Common examples include, but are not limited to, residential docks, marinas, and pedestrian or vehicular bridges over waterways.

P

PARKING. A place where vehicles are temporarily stored while an activity is being conducted. Local parking is located onsite as accessory use or offsite as a primary use. Regional parking is a parking area intended to support a district with multiple uses.

PARTY OF RECORD. All persons, agencies, or organizations who have submitted written or verbal comments in response to a notice of application, made oral comments in a formal public hearing conducted on the application, or notified local government of their desire to receive a copy of the final decision on a permit and who have provided an address for delivery of such notice by mail or email.

PERIODIC. Occurring at regular intervals.

PERSON. An individual, partnership, corporation, association, organization, cooperative, public or municipal corporation, or agency of the state or local governmental unit however designated.

PIER. Fixed platform above the water and supported by piles, usually perpendicular to the shoreline. See also DOCK.

PRIMARY USE. Uses or activities on a shoreline site that is identified as serving the main purpose of the site in terms of its land occupancy or use intensity, and any other uses within the site are supportive or accessory to it.

PRIORITY HABITAT. A habitat type with unique or significant value to one or more species. An area classified and mapped as priority habitat must have one or more of the following attributes: Comparatively high fish or wildlife density; comparatively high fish or wildlife species diversity; fish spawning habitat; important wildlife habitat; important fish or wildlife seasonal range; important fish or wildlife movement corridor; rearing and foraging habitat; refuge; limited availability; high vulnerability to habitat alteration; unique or dependent species; or shellfish bed. A priority habitat may be described by a unique vegetation type or by a dominant plant species that is of primary importance to fish and wildlife. A priority habitat may also be described by a successional stage. Alternatively, a priority habitat may consist of a specific habitat element (such as talus slopes, caves, snags) of key value to fish and wildlife. A priority habitat may contain priority and/or non-priority fish and wildlife

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

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

PROVISIONS. Policies, regulations, standards, guideline criteria or designations.

PUBLIC ACCESS. The public's ability to reach and use the State's public waters, the water/land interface, and associated shoreline area. It includes physical access that is either lateral (areas paralleling the shore) or perpendicular (an easement or public corridor to the shore), and visual access facilitated by means such as scenic roads and overlooks, viewing platform, and other public sites or facilities. See also COMMUNITY ACCESS.

PUBLIC FACILITIES. Facilities that include streets, roads, highways, sidewalks, street and road lighting systems, traffic signals, domestic water systems, storm and sanitary sewer systems, parks and recreational facilities, and schools .

PUBLIC INTEREST. The interest shared by the citizens of the state or community at large in the affairs of government, or some interest by which their rights or liabilities are affected such as an effect on public property or on health, safety, or general welfare resulting from a use or development.

Q

QUALIFIED PROFESSIONAL. A person with expertise and training appropriate for the relevant subject. A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, soil science, engineering, environmental studies, fisheries, geology, hydrology, geomorphology or related field, and at least five years of related work experience. Specific qualified professionals must also meet the following criteria, or any other criteria included in Appendix B, Critical Areas Regulations:

- A. A qualified professional providing a geotechnical analysis as required under Section 5.16 of this Master Program must be a licensed engineer in the State of Washington, with specific training in geology, hydrology and/or geomorphology.
- B. A qualified professional providing a demonstration of need as required under Section 5.16 of this Master Program must have a M.S. or equivalent degree in geology, hydrology, or geomorphology.
- C. A qualified professional for wetlands means a biologist who has a degree in biology, ecology, botany, or a closely related field, or has been certified as a Professional Wetland Scientist, and a minimum of five (5) years of professional experience in wetland identification and assessment in Eastern Washington.
- D. A qualified professional for habitat conservation areas means a biologist who has a degree in wildlife biology, ecology, fisheries, or closely related field and a minimum of five (5) years professional experience related to the subject species/habitat type.
- E. A qualified professional for geologically hazardous areas must be an engineer or engineering geologist licensed in the state of Washington. An engineer must be licensed as a civil engineer pursuant to Chapter 18.43 RCW, to qualify. An engineering geologist must be a practicing geologist licensed as a professional geologist pursuant to Chapter 18.22, RCW.
- F. A qualified professional for critical aquifer recharge areas means a Washington State licensed hydro-geologist, geologist, or engineer.
- G. A qualified professional for vegetation management must be a registered landscape architect, certified arborist, biologist, or professional forester with a corresponding degree or certification.

R

RAMP. Walkway that connects a pier or land to a float, often used in areas where water levels change due to seasonal variations. LAUNCH RAMP is defined above.

RCW. Revised Code of Washington.

REASONABLE. Reasonable means acceptable and according to common sense or normal practice.

RECREATION. An experience or activity in which an individual engages for personal enjoyment and satisfaction. Most shore-based outdoor recreation such as: fishing, hunting, beach combing, and rock climbing; various forms of boating, swimming, hiking, bicycling, horseback riding, camping, picnicking, watching or recording activities such as photography, painting, bird watching or viewing of water or shorelines, nature study and related activities.

RECREATIONAL USES. Uses which offer activities, pastimes, and experiences that allow for the refreshment of mind and body. Examples include, but are not limited to, parks, camps, camping clubs, launch ramps, golf courses, viewpoints, viewpoint platforms, trails, public access facilities, public parks and athletic fields (e.g. ballfields), hunting blinds, and other low-intensity use outdoor recreation areas. Recreational Uses that do not require a shoreline location, nor are related to the water, nor provide significant public access, are considered nonwater-oriented. For example, a recreation use solely offering indoor activities would be considered nonwater-oriented. Common accessory uses are those uses and amenities that support recreational water-enjoyment uses, including, but not limited to: restrooms, picnic shelters, access roads, grilling facilities or barbecue pits, and grassy and riparian open areas.

RECREATIONAL, VEHICLE PARK means any lot or parcel of land upon which two or more recreational vehicles sites are located, established, or maintained as temporary living quarters for recreation or vacation purposes. Such facilities may include sites for camping.

REPAIR, NORMAL. To restore a development or structure to a state comparable to its original, legally established 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. See also MAINTENANCE, NORMAL.

RESIDENTIAL USES. Buildings, structures or portions thereof that are designed and used as a place for human habitation. Included are single, duplex or multi-family dwellings, apartment/condominium buildings, manufactured homes, modular homes, and other structures that serve to house people. This definition includes accessory uses common to normal residential use, including but not limited to, residential appurtenances, accessory dwelling units, home occupations, family day care homes, and adult care homes.

RESTORE (RESTORATION OR ECOLOGICAL RESTORATION). Reestablishment or upgrading of impaired ecological shoreline processes or functions. This may be accomplished through measures including but not limited to re-vegetation, removal of intrusive shoreline structures, and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions.

REVETMENT. Facing of rock, concrete, etc., built to protect a steep slope, cliff, embankment, or shore structure against erosion by waves or currents.

RIPARIAN VEGETATION. Vegetation that tolerates and/or requires moist conditions and periodic free flowing water thus creating a transitional zone between aquatic and terrestrial habitats which provides cover, shade and food sources for aquatic and terrestrial insects for fish species. Riparian vegetation and their root systems stabilizes stream banks, attenuates high water flows, provides wildlife habitat and travel corridors, and provides a source of limbs and other woody debris to terrestrial and aquatic ecosystems, which, in turn, stabilize stream beds.

RIPRAP. A layer, facing, or protective mound of dense, hard, angular rock used to prevent erosion, scour, or sloughing of a structure or embankment for revetments, armoring or hardening of shorelines, or other flood/erosion control works.

ROAD. Road shall mean and include contiguous streets, alleys, sidewalks, curbs and gutters, planting strips, roads, highways, thoroughfares, parkways, bridges, viaducts, public grounds and public improvements within the city limits. Lands for public right of ways are reserved for use and maintenance of the road system. Bridges are roads which cross over water. Sidewalks or paths independent of the rest of typical roadway cross-sections shall be considered trails.

RUNOFF. Water that is not absorbed into the soil but rather flows along the ground surface following the topography.

S

SANITARY SEWER. A system designed to accept sewage to be deposited into and carried off by a system of lateral sewers, drains, and pipes to a common point, or points, for transfer to treatment or disposal.

SEDIMENT. The fine grained material deposited by water or wind.

SEPA (STATE ENVIRONMENTAL POLICY ACT). SEPA requires state agencies, local governments and other lead agencies to consider environmental factors when making most types of permit decisions, especially for development proposals of a significant scale. As part of the SEPA process, environmental impact statements (EISs) may be required to be prepared and public comments solicited.

SETBACK. The distance between property line and the foundation wall or load-bearing member of the primary structure. Meaning is distinct from BUFFER.

SETBACK, SIDE. The distance between side lot line and the foundation wall of the primary structure.

SEWAGE. Any urine, feces, and the water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments or other places.

SHALL. A mandate; the action must be done. See also MUST.

SHORELANDS OR SHORELAND AREAS. Those lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter; the same to be designated as to location by the Department of Ecology.

SHORELINE AREAS. All "shorelines of the state" and "shorelands" as defined in RCW 90.58.030.

SHORELINE BUFFER. SEE BUFFER OR SHORELINE BUFFER.

SHORELINE ENVIRONMENT DESIGNATIONS. The classifications of shorelines established by local shoreline master programs in order to provide a uniform basis for applying policies and use regulations within distinctively different shoreline areas.

SHORELINE FUNCTIONS. See ecological functions.

SHORELINE JURISDICTION. The term describing all of the geographic areas covered by the SMA, related rules and this SMP. Also, such areas within a specified local government's authority under the SMA. See SHORELINES, SHORELINES OF THE STATE, SHORELINES OF STATE-WIDE SIGNIFICANCE and WETLANDS. See also Section 3.1 of this SMP.

SHORELINE MANAGEMENT ACT. Washington's Shoreline Management Act was passed by the State Legislature in 1971 and adopted by voters in 1972. The overarching goal of the Act is "to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines." There are three basic policy areas to the Act: shoreline use, environmental protection and public access. The Act emphasizes accommodation of appropriate uses that require a shoreline location, protection of shoreline environmental resources and protection of the public's right to access and use the shorelines (RCW 90.58.020). Under the Shoreline Management Act (SMA), each city and county with "shorelines of the state" must prepare and adopt a Shoreline Master Program (SMP) that is based on state laws and rules but is tailored to the specific geographic, economic and environmental needs of the community.

SHORELINE MASTER PROGRAM, MASTER PROGRAM, OR SMP. A comprehensive use plan for a described area, and the use regulations together with maps, diagrams, charts, or other descriptive material and text, a statement of desired goals, and standards developed in accordance with the policies articulated in RCW 90.58.020. As provided in RCW 36.70A.480, the goals and policies of a shoreline master program for a county or city approved under chapter 90.58 RCW shall be considered an element of the county or city's comprehensive plan. All other portions of the shoreline master program for a county or city adopted under chapter 90.58 RCW, including use regulations, shall be considered a part of the county or city's development regulations.

SHORELINE PERMIT. A Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, revision, or Shoreline Variance or any combination thereof.

SHORELINE PROPERTY. An individual property wholly or partially within shoreline jurisdiction.

SHORELINE STABILIZATION. Structural or non-structural modifications to the existing shoreline intended to reduce or prevent erosion of uplands or beaches. They are generally located parallel to the shoreline at or near the OHWM.

SHORELINES HEARINGS BOARD (SHB). A six member quasi-judicial body, created by the SMA, which hears appeals by any aggrieved party on the issuance of a shoreline permit, enforcement penalty and appeals by local government on Department of Ecology approval of master programs, rules, regulations, guidelines or designations under the SMA.

SHORELINES OF STATEWIDE SIGNIFICANCE. A select category of shorelines of the state, defined in Chapter 1where special policies apply. This includes lakes over 1,000 acres in area and all associated shorelands and rivers that have either a mean annual flow of 200 cubic feet per second or more, or; the portion downstream from the first 300 square miles of drainage areas.

SHORELINES OF THE STATE. The total of all "shorelines" and "shorelines of state-wide significance" within the state.

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

SHOULD. The particular action is required unless there is a demonstrated, compelling reason, based on policy of the Act and this SMP, against taking the action.

SIGN. A board or other display containing words and/or symbols used to identify or advertise a place of business or to convey information. Excluded from this definition are signs required by law and the flags of national and state governments.

SIGNIFICANT ECOLOGICAL IMPACT. An effect or consequence of an action if any of the following apply:

- A. The action measurably or noticeably reduces or harms an ecological function or ecosystem-wide process.
- B. Scientific evidence or objective analysis indicates the action could cause reduction or harm to those ecological functions or ecosystem-wide processes under foreseeable conditions.
- C. Scientific evidence indicates the action could contribute to a measurable or noticeable reduction or harm to ecological functions or ecosystem-wide processes as part of cumulative impacts, due to similar actions that are occurring or are likely to occur.

SIGNIFICANT TREE. A significant tree means a living and/or dead standing tree greater than 10 inches in diameter at 4.5 feet above the ground. Invasive or noxious tree species are not to be considered a significant tree.

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

SINGLE-FAMILY RESIDENCE (SFR). See "Dwelling-single family".

SITE ANALYSIS/REPORT. For the purposes of critical areas review under Appendix B, a review by a qualified professional of the applicable critical area and the impacts from the proposed development using best available science to determine necessary measures to avoid, reduce, and/or mitigate critical area impacts. The site analysis shall include at minimum:

- A. A site plan depicting the boundaries of the critical area and associated property(s) to a discernable scale
- B. A detailed description of the critical area.
- C. For areas off site of the project site, estimate conditions within 200 feet of the project boundaries using the best available information
- D. Required studies, information and materials identified within Appendix B.
- E. Analysis of any likely impacts to the critical area, and any potential impacts to the development or surrounding existing development associated with the critical area.
- F. Available measures to avoid, reduce, and/or mitigate impacts
- G. Recommendations

SMA. The Shoreline Management Act of 1971, Chapter 90.58 RCW, as amended.

SMP. See SHORELINE MASTER PROGRAM.

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

SPECIES OF LOCAL IMPORTANCE. Those species that are of local concern due to their population status or their sensitivity to habitat manipulation or that are game species.

STATE MASTER PROGRAM. The cumulative total of all shoreline master programs and amendments thereto approved or adopted by rule by Ecology.

STORM WATER. That portion of precipitation that does not normally percolate into the ground or evaporate but flows via overland flow, interflow, channels, or pipes into a defined surface water channel or constructed infiltration facility.

STORMWATER FACILITY. A constructed component of a stormwater drainage system designed or constructed to perform a particular function or multiple functions. Stormwater facilities include, but are not limited to: pipes, swales, ditches, culverts, street gutters, detention ponds, retention

ponds, constructed wetlands, infiltration devices, catch basins, oil/water separators, and biofiltration swales.

STREAM. Any portion of a channel, bed, bank, or bottom waterward of the ordinary high water mark of waters of the state, including areas in which fish may spawn, reside, or pass, and tributary waters with defined bed or banks, which influence the quality of fish habitat downstream. This includes watercourses which flow on an intermittent basis or which fluctuate in level during the year and applies to the entire bed of such watercourse whether or not the water is at peak level. This definition does not include irrigation ditches, canals, storm water run-off devices, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans. A shoreline stream is a naturally occurring body of periodic or continuously flowing water where: a) the mean annual flow is greater than twenty cubic feet per second and b) the water is contained within a channel. A channel is an open conduit either naturally or artificially created. This definition does not include artificially created irrigation, return flow, or stockwatering channels

STRUCTURE. A permanent or temporary edifice or building, or any piece of work artificially built or composed of parts joined together in some definite manner, whether installed on, above or below the surface of the ground or water, except for vessels.

SUBDIVISION. The division or redivision of land, including short subdivision, for the purpose of sale, lease or conveyance.

SUBSTANTIAL DEVELOPMENT, SHORELINE. Any development which meets the criteria of RCW 90.58.030(3)(e). See also DEVELOPMENT and EXEMPTION.

SUBSTANTIALLY DEGRADE. See SIGNIFICANT ECOLOGICAL IMPACT

SURFACE WATER. All water that exists on the land surface, including streams, lakes or reservoirs, or other bodies of water within the boundaries of the state.

SWAMP. A depressed area flooded most of the year to a depth greater than that of a marsh and characterized by areas of open water amid soft, wetland masses vegetated with trees and shrubs. Extensive grass vegetation is not characteristic.

T

TERRESTRIAL. Of or relating to land as distinct from air or water.

TRAIL. Trails are clearly identified paved, semi-paved or unpaved but defined (e.g. gravel) pathways for pedestrians in a natural or urban setting used for recreational or circulation purposes. A trail by itself is not considered a road.

TRANSPORTATION FACILITIES. Roads and railways, including their related bridges and culverts, transportation structures, public transit and bus facilities, pedestrian transportation including foot bridges over rivers/streams and trails, fills, embankments, causeways, truck terminals and rail switchyards, sidings, spurs, air fields and other associated minor facilities. Not included are, highway rest areas, ship terminals, nor logging roads. Local transportation refers to facilities provide direct access to abutting land and to higher order roads. Regional transportation refers to facilities serving more than one city or community or major destinations.

UNAVOIDABLE. Adverse impacts that remain after all appropriate mitigation sequencing measures have been implemented.

UPLAND. Generally described as the dry land area above and landward of the OHWM.UTILITIES. Lines and facilities related to the provision, distribution, collection, transmission or disposal of water, stormwater, sanitary sewage, oil, gas, power, wireless communication facilities and telephone cable, and includes facilities for the generation of electricity.

- A. "Large facilities" serve more than one community (e.g. more than one neighborhood, town, city or other defined place) or major attractions. Examples include, but are not limited to, 230 kv power transmission lines, natural gas transmission lines, and regional water storage tanks and reservoirs, regional water transmission lines or regional sewer collectors and interceptors. Large facilities may also include facilities serving an entire community, such as subregional switching stations (one hundred fifteen (115) kv and smaller), and municipal sewer, water, and storm water facilities.
- B. "Small facilities" serve adjacent properties and include, but are not limited to, power lines not specified under "large facilities," water, sanitary sewer, and storm water facilities, fiber optic cable, wireless communication facilities, pump stations and hydrants, switching boxes, and other structures normally found in a street right-of-way. On-site utility features serving primary use such as a water, sewer, or gas line to a residence are accessory utilities and shall be considered part of the primary use.

V

VARIANCE, SHORELINE. A means to grant relief from the specific bulk, dimensional, or performance standards set forth in this master program where there are extraordinary circumstances relating to the physical character or configuration of property such that the strict implementation of the master program will impose unnecessary hardships on the applicant or thwart the policies set forth in this SMP and RCW 90.58.020; variance is not a means to vary a use of a shoreline. Variance permits must be specifically approved, approved with conditions, or denied by the Administrator and the Department of Ecology.

VESSEL. A floating structure that is designed primarily for navigation, is normally capable of self-propulsion and use as a means of transportation, and meets all applicable laws and regulations pertaining to navigation and safety equipment on vessels, including, but not limited to, registration as a vessel by an appropriate government agency.

VIEW ANALYSIS. An analysis to evaluate the ability of the general public to view the water and the shoreline from adjacent locations such as public places or from substantial numbers of residences.

VISUAL ACCESS. The ability of the general public to view the water and the shoreline from adjacent locations.

VIEW CORRIDOR. The line of sight (identified as to height, width, and distance) of an observer looking toward shoreline from upland locations, public spaces, such as parks, trails, or streets that have particular significance in preserving the unique character of the shoreline.

W

WAC. Washington Administrative Code.

WASTE STORAGE AND TREATMENT. Facilities for collecting and treating, as an accessory use only, garbage, solid waste or sewage generated by the development and its users. This definition does not include municipal sewage treatment facilities.

WATERBODY. A body of still or flowing water, fresh or marine, bounded by the OHWM.

WATERCRAFT LIFT. An in-water structure used for the dry berthing of vessels above the water level and lowering of vessels into the water. A watercraft lift is generally a manufactured unit without a canopy cover and may be placed in the water adjacent to a pier or float, and may be floating or ground-based. Watercraft lifts include, but are not limited to, lifts for motorized boats, kayaks, canoes, jet skis, and float planes. A watercraft lift is different from a hoist or crane used for the launching of vessels.

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

WATER-ENJOYMENT USE. A recreational use or other use that facilitates public access to the shoreline as a primary characteristic of the use; or a use that provides for recreational use or aesthetic enjoyment of the shoreline for a substantial number of people as a general characteristic of the use and which through location, design, and operation ensures the public's ability to enjoy the physical and aesthetic qualities of the shoreline. In order to qualify as a water-enjoyment use, the use must be open to the general public and the shoreline-oriented space within the project must be devoted to the specific aspects of the use that fosters shoreline enjoyment. Primary water-enjoyment uses may include, but are not limited to, parks, viewing and walking piers and other improvements facilitating public access to the shorelines of the State, including public view or fishing platforms; and general water-enjoyment uses may include, but are not limited to restaurants, museums, aquariums, scientific/ecological reserves, resorts/hotels (as part of mixed use development or with significant public access or restoration components), and mixed-use commercial/office. (examples based on Shoreline Inventory and Analysis Report)

WATERFRONT. A parcel of property with upland characteristics which includes within its boundary a physical interface with the existing shoreline of a body of water.

WATER-ORIENTED USE. A use that is water-dependent, water-related, or water-enjoyment, or a combination of such uses.

WATER QUALITY. The physical characteristics of water within shoreline jurisdiction, including water quantity, hydrological, physical, chemical, aesthetic, recreation-related, and biological characteristics. Where used in this SMP, the term "water quantity" refers only to development and uses regulated under this chapter and affecting water quantity, such as impervious surfaces and storm water handling practices. Water quantity, for purposes of this master program, does not

mean the withdrawal of ground water or diversion of surface water pursuant to RCW 90.03.250 through 90.03.340.

WATER-RELATED USE. A use or portion of a use which is not intrinsically dependent on a waterfront location but whose economic viability is dependent upon a waterfront location because:

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

Examples of water-related uses may include warehousing of goods transported by water, seafood processing plants, , gravel storage when transported by barge, oil refineries where transport is by tanker, log storage, and agriculturally related water transportation systems. (examples based on Shoreline Inventory and Analysis Report)

WATERSHED. A geographic region within which water drains into a particular river, stream or body of water.

WATERSHED RESTORATION PLAN. 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.

WATERSHED RESTORATION PROJECT. 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 10 miles of stream or lake reach, in which less than 25 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; or
- B. A project for the restoration of an eroded or unstable stream bank or lake shore 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 wave energy; 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 (e.g., project equipment shed), other than a bridge or culvert or in-water habitat enhancement structure associated with the project, is less than 200 square feet in floor area and is located above the ordinary high water mark of the stream or lake.

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WEIR. A structure generally built across a stream channel for the purpose of diverting water or trapping sediment or other moving objects transported by water.

WETLAND OR WETLANDS. Areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support—and that under normal circumstances do support—a prevalence of vegetation typically adapted for life in marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands.

7.

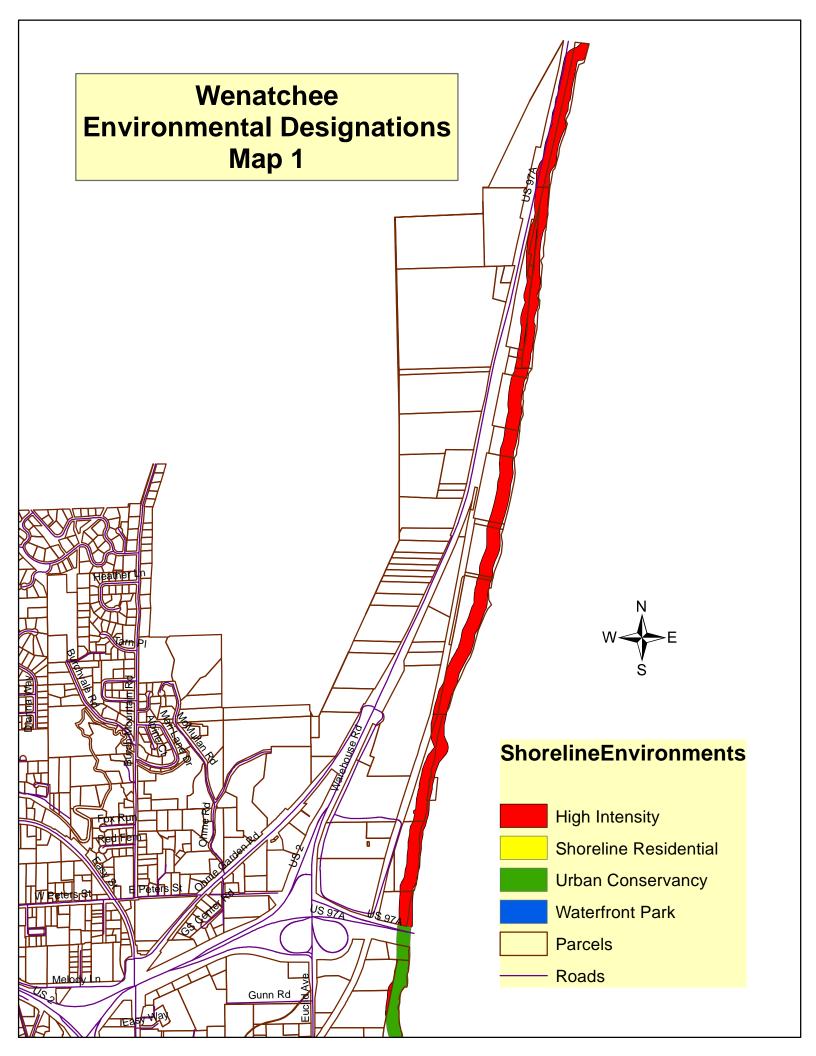
ZONING. The system of land use and development regulations and related provisions of the City of Wenatchee.

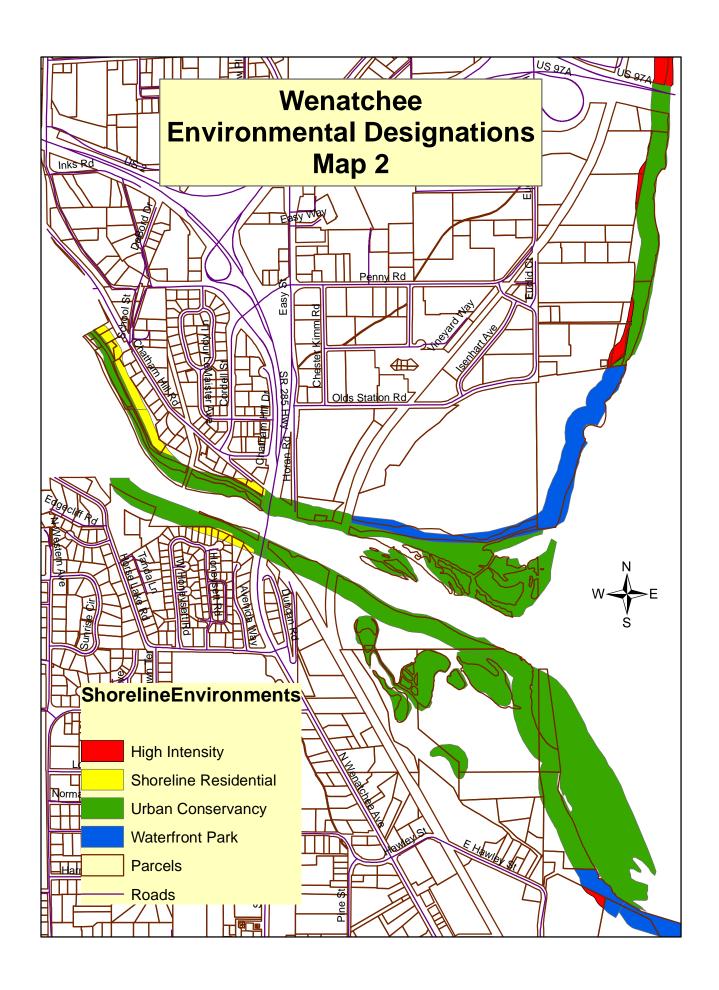
UNIVERSAL NOTE. In addition, the definitions and concepts set forth in RCW 90.58.030, as amended, and implementing rules shall also apply as used herein.

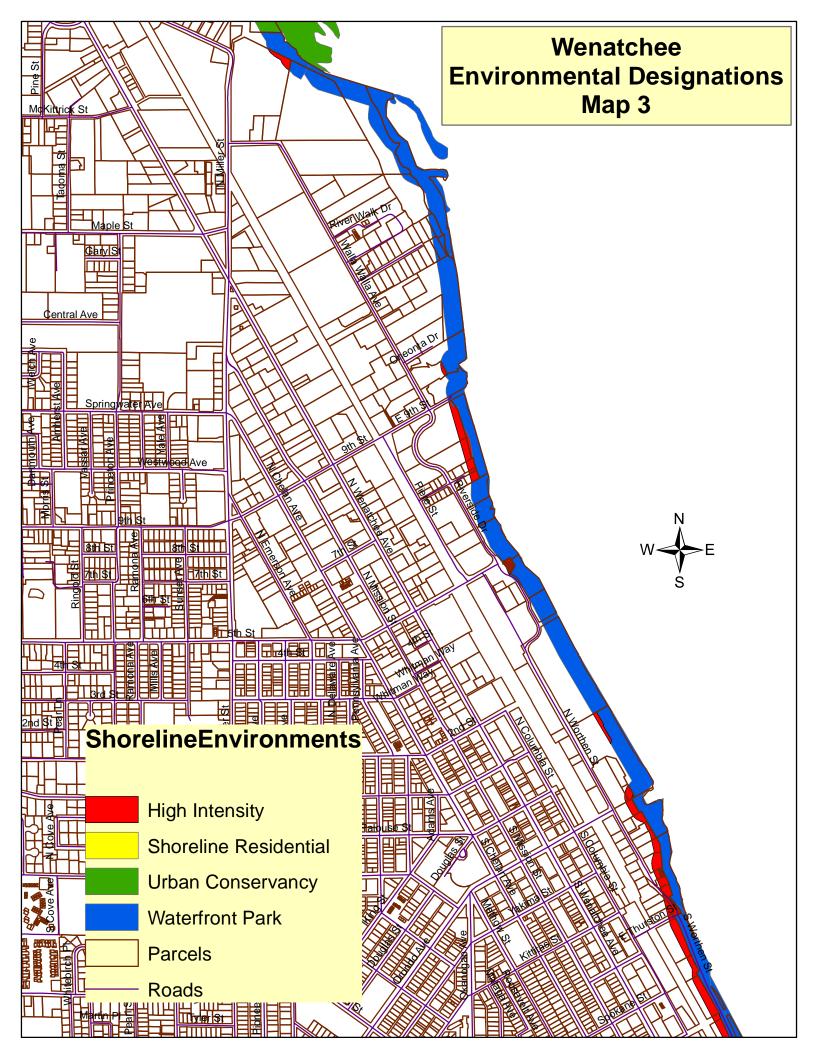
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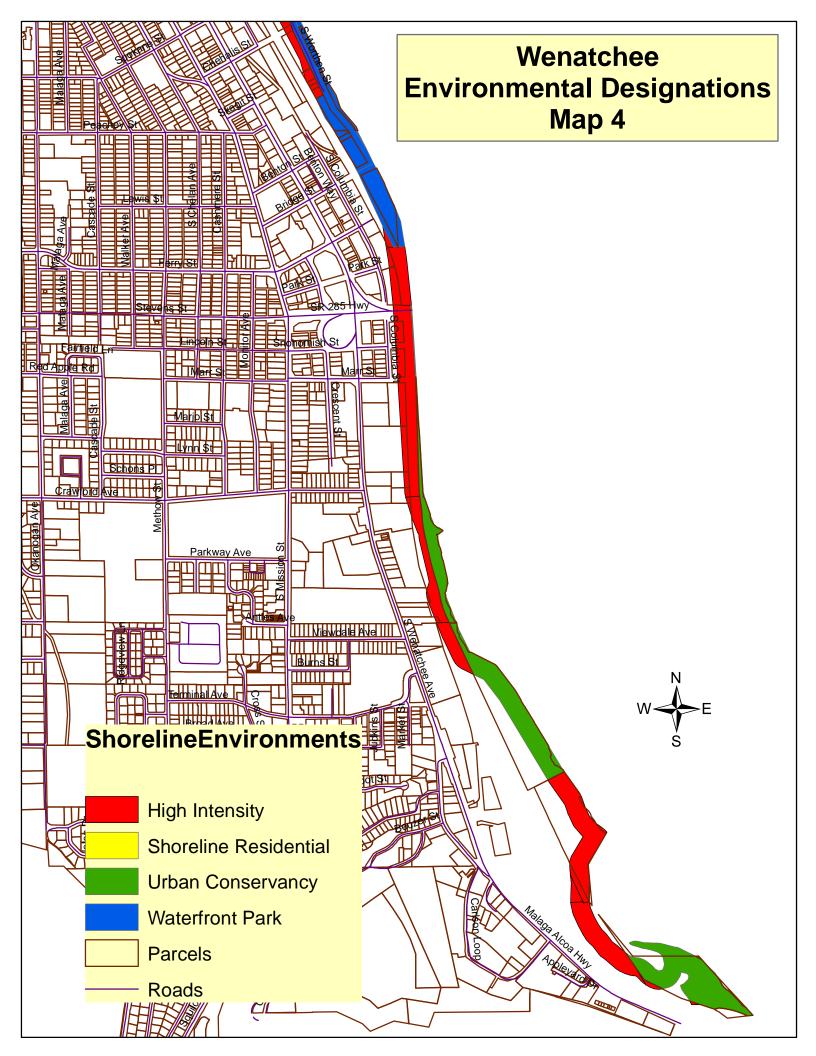
Appendix A

Shoreline
Environmental
Designation
Maps









APPENDIX B: CRITICAL AREAS REGULATIONS

CRITICAL AREAS CHAPTER

SECTION 1.0	Purpose and objectives
SECTION 2.0	Establishment of critical areas: Provision for data maps
SECTION 3.0	Interpretation of data maps
SECTION 4.0	Effect of data maps: Applicability
SECTION 5.0	General provisions
SECTION 6.0	Critical areas; standards for site-specific analysis; development
	standards
SECTION 7.0	Warning and disclaimer of liability

SECTION 1.0 PURPOSE AND OBJECTIVES

The regulations of this chapter are intended to protect critical areas, and satisfy the requirements of the Shoreline Management Act for critical areas protection as provided in WAC 173-26-221, in accordance with the Growth Management Act and through the application of the best available science, as determined according to WAC 365-195-900 through 365-195-925, and in consultation with state and federal agencies and other qualified professionals.

This chapter is to be administered with flexibility and attention to site-specific characteristics. It is not the intent of this chapter to make a parcel of property unusable by denying its owner reasonable economic use of the property or to prevent the provision of public facilities and services necessary to support existing development and planned for by the community without decreasing current service levels below minimum standards.¹

The City's enactment or enforcement of this chapter shall not be construed for the benefit of any individual person or group of persons other than the general public.

SECTION 2.0 ESTABLISHMENT OF CRITICAL AREAS: PROVISION FOR DATA MAPS

2.1 List of Critical Areas

The incorporated area of the City of Wenatchee is hereby divided into the following critical areas, where appropriate, consistent with the best available science and the provisions herein:

¹ See RCW 36.70A.020(12).

City of Wenatchee Critical Areas Regulations

- A. Wetlands
- B. Critical aquifer recharge areas
- C. Fish and wildlife conservation areas
- D. Frequently flooded areas
- E. Geologically hazardous areas

All areas within the City of Wenatchee's shoreline jurisdiction meeting the definition of one or more critical areas, regardless of any formal identification, are hereby designated critical areas and are subject to the provisions of this chapter.

2.2 Data Maps

Critical areas are hereby designated on a series of data maps maintained at the business office of the Community and Economic Development Department. These maps contain the best available graphic depiction of critical areas and will be continuously updated as reliable data becomes available. These maps are for information and illustrative purposes only and are not regulatory in nature.

The critical areas data maps are intended to alert the development community, appraisers, and current or prospective property owners of a potential encounter with a use or development limiting factor based on the natural systems. The presence of a critical area designation on the data maps is sufficient foundation for the Administrator to order an analysis for the factor(s) identified prior to acceptance of a development application as being complete.

SECTION 3 INTERPRETATION OF DATA MAPS

3.1 Interpretation of Data Maps

The official charged with the administration of the Shoreline Master Program is hereby declared the Administrator of these regulations for the purpose of interpreting data maps. An affected property owner or other party with standing has a right to appeal the administrative determination to the Hearing Examiner using the procedure for appeals found in Chapter 7 of this Shoreline Master Program.

The data maps are to be used as a general guide to the location and extent of critical areas. Critical areas indicated on the data maps are presumed to exist in the locations shown and these critical areas and any associated buffers are protected under the provisions of this chapter and all other applicable provisions of the SMP. The exact location of critical areas shall be determined by the applicant as a result of field investigations performed by qualified professionals using the standards and definitions found in this SMP. All development applications are required to show the boundary(s) of all critical areas and any applicable buffers on a scaled drawing

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prior to the development application being considered "complete" for processing purposes.

SECTION 4 EFFECT OF DATA MAPS: APPLICABILITY

4.1 Effect of Data Maps

The conclusion by the Administrator that a parcel of land or a part of parcel of land that is the subject of a proposed development application is within the boundary(s) of one or more designated critical areas, as shown on the data maps, shall serve as cause for additional investigation and analysis to be conducted by the applicant. Development adjacent to an identified critical area will require additional investigation and analysis when the critical area is a fish and wildlife habitat conservation area or wetland and may require further review for other critical areas when there is sufficient information to determine a potential impact to or from the critical area for the development. The site specific analysis may be limited to those critical areas indicated on the data maps. In the event of multiple designations, each subject matter will be addressed independently and collectively for the purpose of determining development limitations and appropriate mitigating measures.

4.2 Applicability

- A. When a chapter reference is used, it shall be inclusive of all of Appendix B.
- B. This chapter classifies and designates critical areas in the city and establishes a process to apply appropriate protection measures for these critical areas in concert with all applicable provisions of the SMP. Any development authorized to alter the condition of any land, water or vegetation; or to alter or construct any building, structure or improvement shall be in compliance with the requirements of this chapter.
 - 1. This chapter applies to all real property, all land uses and development activity, and all structures and facilities within the corporate limits of the City of Wenatchee, Washington, as it is now configured or may, from time to time, be altered, whether or not a permit or authorization is required, and shall apply to every person, firm, partnership, corporation, group, governmental agency, or other entity that owns, leases, or administers land within the City of Wenatchee. No person, company, agency, or applicant shall alter a critical area or buffer except as consistent with the purposes and requirements of these regulations.
 - 2. Any individual critical area adjoined by another type of critical area within the shoreline jurisdiction shall apply the buffer standards and meet the requirements that provide the most protection of shoreline resources, when consistent with SMA policy.

SECTION 5 GENERAL PROVISIONS

- 5.2 5.1 The city shall not approve any permit or issue any authorization to alter the condition of any land, water or vegetation, or to construct or alter any structure or improvement in, over, or on a critical area or associated buffer, without first ensuring compliance with the requirements of this chapter. No site analysis/report required by Section 6 of this chapter will be considered complete without a detailed resume of the principal author(s) which disclose(s) their technical training and experience and demonstrate their stature as a qualified professional(s).
 - A. Critical area site analysis/reports and decisions to alter critical areas shall rely on the best available science to protect the functions and values of critical areas and must give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fish, such as salmon and bull trout, and their habitat.²
 - B. Any action taken pursuant to this chapter shall result in equivalent or greater functions and values of the critical areas associated with the proposed action, as determined by the best available science. Applicants must first demonstrate an inability to avoid or reduce impacts, before restoration and compensation of impacts will be allowed. No activity or use shall be allowed that results in a net loss of the ecological functions or values of critical areas, including lost time when the critical area does not perform impacted functions.
- 5.3 Surety. If a development proposal is subject to mitigation, maintenance or monitoring plans, an assurance device or surety may be required by the Administrator in accordance with Chapter 7 of the SMP.
- 5.4 The preparation of site analysis/reports or information and materials required by this Chapter are the responsibility of the applicant.
- 5.5Prior to accepting any application or issuing any authorization to alter the condition of any land, water or vegetation, or to construct or alter any structure or improvement, the data maps shall be consulted for the purposes of determining whether or not the property subject to the application is within any area shown as a critical area or associated buffer. The Administrator shall make available to applicants resources and information on the type(s) of critical areas and/or buffers that may be present. Information shall be provided to the applicant on the type of evaluation and site-specific analysis that will be required as a supplement to the application materials necessary to bring the application up to a standard that can be characterized as "complete" and eligible for processing.

If the subject property does not lie within or partly within the critical areas or associated buffers as depicted on the data maps, the application will be considered

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² See RCW 36.70A.172(1).

- complete, provided the application requirements of the Shoreline Master Program or other ordinances governing the process at issue are satisfied.
- 5.6 Fees. The City of Wenatchee shall establish fees for filing of a critical area review processing, and other services provided by the City of Wenatchee as required by this chapter. These fees shall be based on the anticipated sum of direct costs incurred by the city for any individual development or action and may be established as a sliding scale that will recover all of the costs including the enforcement of these code provisions. Basis for these fees shall include, but not be limited to, the cost of engineering and planning review time, cost of inspection time, costs for administration, and any other special costs attributable to the critical area review process.
- 5.7 Administrative Procedures. The administrative procedures followed during the critical area review process shall conform to the standards and requirements of the associated application type in the Shoreline Master Program as provided in Chapter 7 of the SMP. When no other application review process is required, final site analysis/reports or analysis and information required for development by this Chapter shall be reviewed and approved pursuant to the permitting process as provided for in sections 7.5.4-5 of Chapter 7 of the SMP.

SECTION 6 CRITICAL AREAS; STANDARDS FOR SITE-SPECIFIC ANALYSIS: DEVELOPMENT STANDARDS

- 6.1 Critical Areas. Critical areas identified pursuant to the provisions of this Chapter are subject to the following minimum requirements as categorized for each applicable critical area below.
 - 1. A. WetlandsWetlands, as defined within Chapter 8 of this SMP, shall be identified and delineated in the City of Wenatchee to reflect the relative function, value and uniqueness of the wetland using the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1987, as amended); and the US Army Corps of Engineers, (2006), and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. The City of Wenatchee may use the following information sources as guidance in identifying the presence of wetlands and the subsequent need for a wetland delineation study in addition to the provisions for data maps identified in sections 2-4 of this Chapter:
 - a. Hydric soils, soils with significant soil inclusions, and "wet spots" identified within the Chelan County soil survey;
 - b. National Wetlands Inventory;
 - c. Previous wetland rating evaluation; and,
 - d. On-site inspection.
 - 2. A Site analysis/Report required for the purpose of establishing an exact wetland boundary where development is associated with

City of Wenatchee Critical Areas Regulations

- wetlands or a wetland buffer identified by this Chapter. . Field delineation of the boundary is required and a scaled map must be produced. The *Washington State Wetland Rating System for Eastern Washington* (Ecology Publication #04-06-015, or as revised and approved by Ecology) must then be applied to the wetlands area to establish the category(s) of wetlands in evidence. The analysis required by this subsection shall be done by qualified professional or the Washington Department of Ecology.
- 3. A Wetland Analysis is required for wetlands identified by this Chapter, addressing the following minimum requirements:
 - a. Categorize the wetland/s per the 'Washington State Wetland Rating System for Eastern Washington', as amended.
 - b. Establish the wetland buffers based upon Department of Ecology's Wetland guidance in Alternative 3 in Wetlands in Washington State, Volume 2, as amended. More specifically found in Appendix 8-D 'Buffer Alternative 3' attached to this chapter as Exhibit "A" of this Appendix.
 - c. If impacts to the wetland or buffers are to occur, provide a mitigation plan identifying the impacts and associated mitigation consistent with Department of Ecology's guidance in 'Guidance on Wetland Mitigation in Washington State Part 2: Developing Mitigation Plans (Version 1)', Ecology Publication #06-06-011b, Olympia, WA, March 2006 or as revised.
 - d. Flexibility in mitigation is allowed provided that the mitigation is consistent with Department of Ecology's guidance in 'Wetlands in Washington State Volume 1: A Synthesis of the Science' (Washington State Department of Ecology Publication #05-06-006, Olympia, WA, March 2005); 'Wetlands in Washington State Volume 2: Guidance for Protecting and Managing Wetlands' (Washington State Department of Ecology Publication # 05-06-008, Olympia, WA, April 2005); 'Selecting Wetland Mitigation Sites Using a Watershed Approach' (Washington Department of Ecology Publication # 10-06-007, Olympia, WA, November 2010) or can be supported by Best Available Science.
 - e. Wetland analysis must ensure that "No net loss of wetland area and functions including lost time when wetland does not perform the function" is met .
 - f. Mitigation ratios are found in the following table (Table 8D-11 Mitigation ratios for projects in Eastern Washington, Wetlands in Washington State, Volume 2'):

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Category and Type of Wetland Impacts	Re-establishment or Creation	Rehabilitation Only ¹	Re-establishment or Creation (R/C) and Rehabilitation (RH) ¹	Re-establishment or Creation (R/C) and Enhancement (E) ¹	Enhancement Only ¹
All Category IV	1.5:1	3:1	1:1 R/C and 1:1 RH	1:1 R/C and 2:1 E	6:1
All Category	2:1	4:1	1:1 R/C and 2:1 RH	1:1 R/C and 4:1 E	8:1
Category II Forested	4:1	8:1	1:1 R/C and 4:1 RH	1:1 R/C and 6:1 E	16:1
Category II Vernal pool	2:1 Replacement has to be seasonally ponded wetland	4:1 Replacement has to be seasonally ponded wetland	1:1 R/C and 2:1 RH	Case-by-case	Case-by- case
All other Category II	3:1	6:1	1:1 R/C and 4:1 RH	1:1 R/C and 8:1 E	12:1
Category I Forested	6:1	12:1	1:1 R/C and 10:1 RH	1:1 R/C and 20:1 E	24:1
Category I based on score for functions	4:1	8:1	1:1 R/C and 6:1 RH	1:1 R/C and 12:1 E	16:1
Category I Natural Heritage site	Not considered possible ²	6:1 Rehabilitation of a Natural Heritage site	R/C Not considered possible ²	R/C Not considered possible ²	Case-by- case
Category I Alkali	Not considered possible ²	6:1 rehabilitation of an alkali wetland	R/C Not considered possible ²	R/C Not considered possible ²	Case-by- case
Category I Bog	Not considered possible ²	6:1 Rehabilitation of a bog	R/C Not considered possible ²	R/C Not considered possible ²	Case-by- case

¹ These ratios are based on the assumption that the rehabilitation or enhancement actions implemented represent the average degree of improvement possible for the site. Proposals to implement more effective rehabilitation or enhancement actions may result in a lower ratio, while less effective actions may result in a higher ratio. The distinction between rehabilitation and enhancement is not clear-cut. Instead, rehabilitation and enhancement actions span a continuum. Proposals that fall within the gray area between rehabilitation and enhancement will result in a ratio that lies between the ratios for rehabilitation and the ratios for enhancement.

² Natural Heritage sites, alkali wetland, and bogs are considered irreplaceable wetlands because they perform some special functions that cannot be replaced through compensatory mitigation. Impacts to such wetlands would therefore result in a net loss of some functions no matter what kind of compensation is proposed.

City of Wenatchee Critical Areas Regulations

- 4. Buffer Standards
 - a. Wetland buffer zones shall be retained in their natural condition. Where buffer disturbance is unavoidable during adjacent construction, re-vegetation will be required with native plant materials preferred.
 - b. A Buffer zone shall be required adjacent to, and outside of, all regulated wetlands, including any wetland restored, relocated, replaced or enhanced because of wetlands alterations.
 - c. All buffers shall be measured from the wetland edge as delineated in the field. The buffer zone depths may be reduced up to no more than 25% or averaged if a special site analysis/report demonstrates to the satisfaction of the Administrator, or if the Administrator otherwise determines, that the adjacent land is, and will remain, extensively vegetated, is topographically remote from the wetland, and that no direct or indirect adverse impacts on the regulated wetlands is reasonably likely as a result of the buffer reduction.
 - d. Buffer averaging may not be used in conjunction with any other buffer reduction methods.
 - e. Buffer averaging may be used under the following conditions:
 - i. Averaging to improve wetland protection may be permitted when all of the following conditions are met:
 - (a) The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component or a "dual-rated" wetland with a Category I area adjacent to a lower rated area.
 - (b) The buffer is increased adjacent to the higherfunctioning area of habitat or more sensitive portion of the wetland and decreased adjacent to the lower functioning or less sensitive portion.
 - (c) The total area of the buffer after averaging is equal to the area required without averaging.
 - (d) The buffer at its narrowest point is never less than 3/4 of the required width
 - ii. Averaging to accommodate otherwise allowed development of a parcel may be permitted when all of the following are met:
 - (a) There are no feasible alternatives to the site design that could be accomplished without buffer averaging.
 - (b) The averaged buffer will not result in degradation of the wetland's functions and values as demonstrated

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- by a report from a qualified wetland professional.
- (c) The total buffer area after averaging is equal to the area required without averaging.
- (d) The buffer at its narrowest point is never less than 3/4 of the required width.

5. Development

- a. The following activities are allowed to occur on wetlands and wetland buffer zones: passive outdoor recreational activities, existing and ongoing agricultural activities (provided no additional area is added beyond demonstrable historic levels), maintenance of existing facilities, structures, ditches, roads and utility systems.
- b. A legally established use or structure established prior to the effective date of this SMP which does not conform to standards set forth herein, is allowed to continue and be reasonably maintained provided that such activity or structure shall not be expanded or enlarged in any manner that increases the extent of its' nonconformity.

B. Critical Aquifer Recharge Areas

- 1.Site analysis/Report required for the purpose of delineating the recharge areas on a scaled development plan and provided detailed information on the following items:
 - a. hydro-geological susceptibility to contamination and contamination loading potential
 - b. depth to groundwater
 - c. hydraulic conductivity and gradient
 - d. soil permeability and contamination attenuation
 - e. a vadose zone analysis including permeability and attenuation properties
 - f. an analysis of the recharge area's toleration for impervious surfaces in terms of both aquifer recharge and the effect on water quality degradation
 - g. a summary of the proposed development's effect on the recharge area concentrating on items "d" and "f"
 - h. existing aquifer water quality analysis

2. Development Standards

- a. The site analysis will create a water quality baseline which will serve as a minimum standard that shall not be further degraded by proposed development.
- b. The creation of additional impervious surfaces shall be limited to that amount described in the site analysis that will ensure adequate aquifer recharge and water quality protection.
- c. Development approvals shall ensure that all best management

City of Wenatchee Critical Areas Regulations

practices are employed to avoid introducing pollutants into the aquifer. This includes the complete collection and disposal of storm water outside of the aquifer recharge area for all development impervious surfaces.

- C. Frequently Flooded Areas. The flood insurance rate maps (FIRM) and floodway maps along with the Flood Insurance Study prepared by the National Flood Insurance Program (NFIP) are adopted as the formal designation for frequently flooded areas, specifically FIRM Panel #5300200005C and FIRM Panel #5300150625D as maintained by NFIP. When base flood elevation data is not available from the above information to designate frequently flooded areas, the Administrator shall obtain, review and reasonably utilize any base flood elevation data and floodway data available from federal and state governmental agencies or other sources including but not limited to historical data, high water marks or photographs of past flooding to make the appropriate designations.
 - 1. Site analysis/Report required to identify the location of the development in proximity to the one hundred year floodplain, and floodways where applicable.
 - 2. Development Standards-The City of Wenatchee maintains flood hazard reduction standards administered under ordinances adopted under the building codes. The provisions of this Master Program provide additional standards for flood hazard that must be reviewed in concert with locally adopted building codes, and may be more restrictive or alter the design, location or nature of a development from the local standards. These policies and regulations are addressed specifically within Section 4.3 Flood Hazard Reduction of this SMP. Additional provisions within the SMP as a whole may also affect the design, location or nature of a development associated with frequently flooded areas, dependent upon the specific nature of the development.

D. Geologically Hazardous Areas

1. Erosion Hazard

a. Site analysis/Report – required to determine the exact location and circumstances that might be expected to precipitate a significant erosion event. The type and effectiveness of mitigating measures available to safeguard the public safety and welfare shall be addressed. The analysis shall also discuss the proposed development's influence on the erosion hazard and suggest appropriate design and development measures/standards that might be taken to minimize such hazards.

b. Development Standards

- i. Erosion hazard areas shall be avoided as locations for building construction, roads or utility systems where mitigation is not feasible.
- ii. Development activities or their support infrastructure shall

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- not be allowed that would directly or indirectly worsen the erosion hazard identified in the site analysis.
- iii. A minimum buffer shall be established at a horizontal distance from the top, toe, and along all sides of slopes shown to be high-risk or intermediate-risk slopes. Existing native vegetation within the buffer area shall be maintained and the buffer shall be extended beyond these limits as required to mitigate landslide and erosion hazards, or as otherwise necessary to protect public health, safety and welfare.
- iv. The buffer may be reduced when an applicant demonstrates, pursuant to a special site analysis/report using best available science, that the reduction will adequately protect the proposed development and the critical area.
- v. Building Setback Lines. A building setback line will be established at a minimum distance of fifteen (15) feet from the edge of the buffer.

2. Landslide Hazard

a. Site analysis/Report - required to identify and quantify geologic, topographic and hydrologic factors that might contribute to slope instability. The rate and extent of potential hazards to development activity must be assessed and mitigation measures, if any, evaluated. The proposed development must be analyzed in light of the hazards and effects represented by the landslide exposure on proposed private and public investments. Development operational factors should be included in the analysis to account for the effects of residential landscape irrigation, storm water generation from impervious surfaces and the influence of street conveyance on slope stability.

b. Development Standards

- i. Documented landslide hazard areas shall be avoided as locations for building construction, roads or utility systems where mitigation is not feasible.
- ii. If the degree of hazard warrants some development activity, post construction slope stabilization and appropriately upgraded road construction specifications shall be employed to eliminate as completely as practicable, any public or private exposure to landslide hazards or abnormal maintenance or repair costs.

E. Fish and Wildlife Habitat Conservation Areas

1. Site analysis/Report - required to identify endangered, threatened, sensitive species, species and habitats of local importance and the nature and extent of their primary association with the habitat conservation area.

City of Wenatchee Critical Areas Regulations

The investigation shall include relative density and species richness, breeding, habitat, seasonal range dynamics and movement corridors. The analysis shall address the relative tolerance by species of human activities. The development proposal shall be evaluated in terms of its influence on the above wildlife factors and recommend mitigation measures for any area that would potentially degrade base-line populations and reproduction rates over the long term.

2. Development Standards

- a. No development approval shall be granted unless mitigation of adverse effects can be provided that will ensure continuation of base-line populations for all endangered, threatened and sensitive species.
- b. Development may be allowed when only species and habitats of local importance will suffer population declines or interruption of migration routes provided that adequate regional populations are maintained.
- c. Development reviews shall include regional species occurrence and movements and will avoid creating isolated sub-populations where warranted.

SECTION 7 WARNING AND DISCLAIMER OF LIABILITY

8.1 Warning and Disclaimer of Liability

The degree of hazard protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Catastrophic natural disasters can, and will, occur on rare occasions. This chapter does not imply that land outside the critical areas or activities permitted within such areas will be free from exposure or damage. This chapter shall not create liability on the part of the City of Wenatchee, and officers or employees thereof, for any damages that result from reliance on this chapter or any administrative decision lawfully made hereunder.

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8D.2.3 Buffer Alternative 3: Width Based on Wetland Category, Intensity of Impacts, Wetland Functions, or Special Characteristics

The third alternative provides the most flexibility by basing the widths of buffers on three factors: the wetland category, the intensity of the impacts (as used in Alternative 2), and the functions or special characteristics of the wetland that need to be protected as determined through the rating system. The recommended widths for buffers are shown in Tables 8D-4 to 8D-7. Using this alternative, a wetland may fall into more than one category in the table. For example, a forested, riparian, wetland may be rated a Category II wetland because it is a riparian forest, but it may be rated a Category I wetland based on its score for functions.

If a wetland meets more than one of the characteristics listed in Tables 8D-4 to 8D-7, the buffer recommended to protect the wetland is the widest one. For example, if a Category I wetland (Table 8D-7) scores 32 points for habitat and 27 points for water quality functions, a 200-foot buffer is needed for land uses with high impacts because the widths needed to protect habitat are wider than those needed for the other functions.

Table 8D-4. Width of buffers needed to protect Category IV wetlands in eastern Washington (Buffer Alternative 3 for wetlands scoring less than 30 points for all functions).

Wetland Characteristics	[2000년, 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12 - 19 12	Other Measures Recommended for Protection
Score for all 3 basic functions	Low - 25 ft	No recommendations at this time ¹
is less than 30 points	Moderate – 40 ft	
	High – 50 ft	

Table 8D-5. Width of buffers needed to protect Category III wetlands in eastern Washington (Buffer Alternative 3 for wetlands scoring 30-50 points for all functions or isolated vernal pools).

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use	Other Measures Recommended for Protection
Moderate level of function for habitat (score for habitat 20 - 28 points)	Low - 75 ft Moderate – 110 ft High – 150 ft	No recommendations at this time ¹
Not meeting above characteristic	Low - 40 ft Moderate – 60 ft High – 80 ft	No recommendations at this time ¹

¹ No information on other measures for protection was available at the time this document was written. The Washington State Department of Ecology will continue to collect new information for future updates to this document.

Table 8D-6. Width of buffers needed to protect Category II wetlands in eastern Washington (Buffer Alternative 3 for wetlands scoring 51-69 points for all functions or having the "Special Characteristics" identified in the rating system).

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use (apply most protective if more than one criterion is met)	Other Measures Recommended for Protection
High level of function for habitat (score for habitat 29 - 36 points)	Low - 100 ft Moderate – 150 ft High – 200 ft	Maintain connections to other habitat areas
Moderate level of function for habitat (score for habitat 20 - 28 points)	Low - 75 ft Moderate – 110 ft High – 150 ft	No recommendations at this time ²
High level of function for water quality improvement and low for habitat (score for water quality 24 - 32 points; habitat less than 20 points)	Low - 50 ft Moderate – 75 ft High – 100 ft	No additional surface discharges of untreated runoff
Vernal pool	Low - 100 ft Moderate – 150 ft High – 200 ft OR Develop a regional plan to protect the most important vernal pool complexes – buffers of vernal pools outside protection zones can then be reduced to: Low - 40 ft Moderate – 60 ft High – 80 ft	No intensive grazing or tilling in the wetland
Riparian forest	Buffer width to be based on score for habitat functions or water quality functions	Riparian forest wetlands need to be protected at a watershed or sub-basin scale (protection of the water regime in the watershed) Other protection based on needs to protect habitat and/or water quality functions
Not meeting above characteristics	Low - 50 ft Moderate – 75 ft High – 100 ft	No recommendations at this time ²

² See footnote on the previous page.

Table 8D-7. Width of buffers needed to protect Category I wetlands in eastern Washington (Buffer Alternative 3 for wetlands scoring 70 points or more for all functions or having the "Special Characteristics" identified in the rating system).

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use (apply most protective if more than one criterion is met)	Other Measures Recommended for Protection
Natural Heritage Wetlands	Low - 125 ft Moderate – 190 ft High – 250 ft	No additional surface discharges to wetland or its tributaries No septic systems within 300 ft Restore degraded parts of buffer
Bogs	Low - 125 ft Moderate – 190 ft High – 250 ft	No additional surface discharges to wetland or its tributaries Restore degraded parts of buffer
Forested	Buffer size to be based on score for habitat functions or water quality functions	If forested wetland scores high for habitat, need to maintain connectivity to other natural areas Restore degraded parts of buffer
Alkali	Low – 100 ft Moderate – 150 ft High – 200 ft	No additional surface discharges to wetland or its tributaries Restore degraded parts of buffer
High level of function for habitat (score for habitat 29 - 36 points)	Low – 100 ft Moderate – 150 ft High – 200 ft	Maintain connections to other habitat areas Restore degraded parts of buffer
Moderate level of function for habitat (score for habitat 20 - 28 points)	Low – 75 ft Moderate – 110 ft High – 150 ft	No recommendations at this time ³
High level of function for water quality improvement (24 – 32 points) and low for habitat (less than 20 points)	Low – 50 ft Moderate – 75 ft High – 100 ft	No additional surface discharges of untreated runoff
Not meeting any of the above characteristics	Low – 50 ft Moderate – 75 ft High – 100 ft	No recommendations at this time ³

³ See footnote on page 6.



Chelan County Grant No. G0800231

FINAL

SHORELINE RESTORATION PLAN for Shorelines in Wenatchee



750 Sixth Street South Kirkland WA 98033



February 4, 2013



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CITY OF WENATCHEE SHORELINE RESTORATION PLAN

1. Introduction

A jurisdiction's Shoreline Master Program applies to activities in the jurisdiction's shoreline¹ area. Activities that have adverse effects on the ecological functions and values of the shoreline must provide mitigation for those impacts. By law, the proponent of that activity is not required to return the subject shoreline to a condition that is better than the baseline level at the time the activity takes place. How then can the shoreline be improved over time in areas where the baseline condition is severely, or even marginally, degraded?

Section 173-26-201(2) (f) WAC of the Shoreline Master Program Guidelines² says:

"master programs shall include goals and policies that provide for restoration of such impaired ecological functions. These master program provisions shall identify existing policies and programs that contribute to planned restoration goals and identify any additional policies and programs that local government will implement to achieve its goals. These master program elements regarding restoration should make real and meaningful use of established or funded nonregulatory policies and programs that contribute to restoration of ecological functions, and should appropriately consider the direct or indirect effects of other regulatory or nonregulatory programs under other local, state, and federal laws, as well as any restoration effects that may flow indirectly from shoreline development regulations and mitigation standards."

However, degraded shorelines are not just a result of pre-Shoreline Master Program activities, but also of unregulated activities and exempt development. The new Guidelines also require that "[1]ocal master programs shall include regulations ensuring that exempt development in the aggregate will not cause a net loss of ecological functions of the shoreline." While some actions within shoreline jurisdiction are exempt from a permit, the Shoreline Master Program should clearly state that those actions are not exempt from compliance with the Shoreline Management Act or the local Shoreline Master Program. Because the

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¹ "Shorelines" means all of the water areas of the state, including reservoirs, and their associated shorelands, together with the lands underlying them..." (RCW 90.58.030(2)(d))

² The Shoreline Master Program Guidelines were prepared by the Washington Department of Ecology and codified as WAC 173-26. The Guidelines translate the broad policies of the Shoreline Management Act (RCW 90.58.020) into standards for regulation of shoreline uses. See http://www.ecy.wa.gov/programs/sea/sma/guidelines/index.html for more background.

Final Chelan County Restoration Plan

shoreline environment is also affected by activities taking place outside of a specific local master program's jurisdiction (e.g., outside of city limits, outside of the shoreline area within the city), assembly of out-of-jurisdiction actions, programs and policies can be essential for understanding how the City fits into the larger watershed context. The latter is critical when establishing realistic goals and objectives for dynamic and highly inter-connected environments.

As directed by the Guidelines, the following discussions provide a summary of baseline shoreline conditions, list restoration goals and objectives, and discuss existing or potential programs and projects that positively impact the shoreline environment. Finally, anticipated scheduling, funding, and monitoring of these various comprehensive restoration elements are provided. In total, implementation of the Shoreline Master Program (with mitigation of project-related impacts) in combination with this Restoration Plan (for restoration of lost ecological functions) should result in a net improvement within the City of Wenatchee's shoreline environment in the long term.

In addition to meeting the requirements of the Guidelines, this Restoration Plan is also intended to support the City's' or other non-governmental organizations' applications for grant funding, and to provide the interested public with contact information for the various entities working within the City of Wenatchee to enhance the environment.

2. Shoreline Inventory Summary

2.1 Introduction

An inventory was conducted for all County and City shorelines as defined by the state's Shoreline Management Act (SMA) (RCW 90.58). The inventory was conducted according to direction provided in the Guidelines (WAC 173-26-201) and in the Grant Agreement promulgated by Ecology. It referenced "relevant and reasonably available" information (WAC 173-26-201(3)(c)) from County, City, State and Federal agencies; utilities; private non-governmental organizations; and Advisory Committee members, among others. The Shoreline Inventory and Analysis Report (Analysis Report) (The Watershed Company and ICF Jones & Stokes 2009 [TWC and J&S]) utilizes the existing watershed and subbasin plans to the maximum extent practicable given the Guidelines and the topical coverage of those management plans. Many parties were active participants to the Advisory Committee for the SMP Update; the remaining parties have been and will continue to be notified at key project stages and provided with opportunities to submit relevant information. Collected information was supplemented with other resources such as scientific literature, personal communications, aerial photographs, and internet documents.

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The *Analysis Report* (TWC and J&S 2009) will serve as the baseline from which the possible effects of potential development actions in the shoreline will be measured. Ideally, the SMP, in combination with other County, City and regional efforts, will ultimately produce a net improvement in shoreline ecological functions. The *Analysis Report* (TWC and J&S 2009) describes existing physical and biological conditions in the shoreline area within County and City limits, including recommendations for restoration of ecological functions where they are degraded. The full *Analysis Report* (TWC and J&S 2009) is summarized below.

The City of Wenatchee has reduced this Restoration Plan to only relevant portions for its SMP.

2.2 Shoreline Boundaries

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the state plus their associated "shorelands." At a minimum, the waterbodies designated as shorelines of the state are streams whose mean annual flow is 20 cubic feet per second (cfs) or greater or lakes whose area is greater than 20 acres. In addition, shorelines of statewide significance are those streams and rivers that meet one or more of the following criteria

- "i. that have either: a mean annual flow of 200 cubic feet per second or more, or;
- ii. the portion downstream from the first 300 square miles of drainage areas.

Shorelands are defined as:

"those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter...Any county or city may determine that portion of a one-hundred-year-floodplain to be included in its master program as long as such portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom... Any city or county may also include in its master program land necessary for buffers for critical areas... (RCW 90.58.030)"

The City shoreline boundaries have been updated (subject to Wenatchee City Council and Ecology's approval) concurrent with the *Analysis Report* (TWC and J&S 2009) through use of improved stream flow modeling by the United States Geological Survey and improved lake area mapping that resulted in increased accuracy of jurisdiction identification and mapping. Past mapping errors by

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USGS and Ecology have been corrected so that federal lands are no longer excluded from shoreline jurisdiction. Note: The City of Wenatchee does not have any federal lands within its shoreline jurisdiction.

2.2.1 Chelan County

Chelan County encompasses 2,294 square miles and is located in the north-central part of Washington. The county is bordered to the south by Kittitas County, to the southwest by King County, to the west by Snohomish County, to the northwest by Skagit County, to the northeast by Okanogan County, and to the east by Douglas County. Chelan County is predominantly rural in nature, with unincorporated areas making up most of the land area. Chelan County includes four Watershed Resource Inventory Areas (WRIAs) (WRIA 40a - Stemilt-Squilchuck and part of WRIA 40b located in Chelan County [Colockum Creek basin], WRIA 45 - Wenatchee, WRIA 46 - Entiat, and WRIA 47 - Chelan) and five incorporated cities (Cashmere, Chelan, Entiat, Leavenworth, and Wenatchee).

The *Analysis Report* (TWC and J&S 2009) provided detail about 80 streams/rivers and 53 lakes that may meet shoreline jurisdiction criteria. The total acreage of upland shorelands (excluding area of the shoreline waterbodies) is approximately 42,693.

Federal lands make up 68 percent of that acreage, or 29,211 acres total. Of the 133 total shoreline waterbodies, 94 are entirely on federal lands and another 17 have more than 50 percent of their shoreland areas on federal land. The three federal entities that own the majority of the federal land are the United States Forest Service (USFS), the National Park Service (NPS), and the United States Bureau of Land Management (BLM). Four USFS wilderness areas are found along Chelan County shorelines: Lake Chelan Sawtooth Wilderness, Glacier Peak Wilderness, Henry M. Jackson Wilderness, and Alpine Lakes Wilderness. These areas have the greatest level of protection and stringent prohibitions on alteration. A large area at the north end of Lake Chelan is also part of NPS's Lake Chelan National Recreation Area.

Tables 1 and 2 of the *Analysis Report* (TWC and J&S 2009) present the list of shoreline jurisdictional waterbodies, and some basic jurisdictional history. These tables have been included in this document as Tables 1 and 2 below.

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 Table 1.
 Shoreline Jurisdiction Streams and Rivers

River/Creek Name	Mapped as Shoreline Under Existing SMP	Total Length of Proposed Shoreline (ft)	River/Creek Name	Mapped as Shoreline Under Existing SMP	Total Length of Proposed Shoreline (ft)
Agnes Creek	No	29,474	Mill Creek	No	6,781
Basin Creek	No	1,770	Mission Creek	Yes	39,870
Big Meadow Creek	No	5,541	Mountaineer Creek	No	15,747
Boulder Creek 1	No	20,203	Napeequa River	Yes	88,773
Boulder Creek 2	No	4,702	Nason Creek*	Yes	122,246
Bridge Creek	No	62,307	North Fork Bridge Creek	No	33,667
Buck Creek	No	19,291	North Fork Entiat River	No	34,972
Cady Creek	No	15,527	North Fork Thirtyfive Mile Creek	No	3,104
Chelan River*	Yes	21,818	Panther Creek	No	22,409
Chikamin Creek	Yes	14,641	Park Creek	No	28,140
Chiwaukum Creek	No	41,892	Peshastin Creek	Yes	64,582
Chiwawa River*	Yes	200,777	Phelps Creek	Yes	31,266
Chumstick Creek	No	24,601	Pole Creek	No	249
Colockum Creek	No	19,380	Prince Creek	No	27,914
Columbia River*	Yes	395,252	Prospect Creek	No	7,479
Company Creek	No		Railroad Creek	Yes	78,823
Cottonwood Creek	No	2,617	Rainbow Creek	No	21,952
Cougar Creek	No		Rainy Creek	No	25,678
Doubtful Creek	No		Rimrock Creek	No	2,849
Eightmile Creek	Yes	21,678	Roaring Creek	No	75
Entiat River*	Yes		Rock Creek	No	29,154
Fish Creek	No		Snowall Creek	No	11,418
Fish Creek	No	17,825	South Fork Agnos	No	48,380
Flat Creek	No	41,871	South Fork Bridge Creek	No	12,953
French Creek	No	38,892	South Fork Chiwaukum Creek	Yes	16,709
Ibex Creek	No	3,443	South Fork Flat Creek	No	4,702
Ice Creek	No	6,088	Spruce Creek	No	16,427
Icicle Creek*	Yes	151,122	Stehekin River*	Yes	125,759
Indian Creek	No	35,568	Swamp Creek	No	5,190
Ingalls Creek	Yes	56,766	Thunder Creek	No	12,715
Jack Creek	No	45,045	Tommy Creek	No	7,255
Lake Creek	No		Trapper Creek	No	7,437
Lake Creek	No	21,104	Trout Creek	No	9,324
Leland Creek	No		Twentyfive Mile Creek	Yes	15,544
Lightning Creek	No		Wenatchee River*	Yes	278,629
Little Wenatchee River*	Yes	117,784	West Fork Agnes Creek	No	34,890

River/Creek Name	Mapped as Shoreline Under Existing SMP	Total Length of Proposed Shoreline (ft)	River/Creek Name	Mapped as Shoreline Under Existing SMP	Total Length of Proposed Shoreline (ft)
Mad River	Yes	104,360	West Fork Flat Creek	No	10,583
Maple Creek	No	10,153	White River*	Yes	153,763
McAlester Creek	No	12,397	Whitepine Creek	Yes	31,390
Meadow Creek	No	9,909	Wildhorse Creek	No	13,921

TOTAL: 3,452,102 ft (653.8 miles)

Table 2. Shoreline Jurisdiction Lakes

Lake Name	Mapped as Shoreline Under Existing SMP	Total Area of Proposed Shoreline Lake (acres)	Lake Name	Mapped as Shoreline Under Existing SMP	Total Area of Proposed Shoreline Lake (acres)
Antilon Lake	Yes	35	Lichtenwasser	No No	26
	103		Lake	140	20
Black Lake (aka Wheeler Hill or Spring Hill Reservoir)	Yes	33	Loch Eileen Lake	Yes	26
Chiwaukum Lake	Yes	70	Lost Lake	No	27
Colchuck Lake	Yes	88	Lyman Lake	No	74
Cortez Lake	Yes	34	Meadow Lake	Yes	36
Cub Lake	No	23	Mirror Lake	No	25
Domke Lake	No	273	Nada Lake	No	23
Doubtful Lake	No	30	Perfection Lake	No	21
Dry Lake	Yes	81	Rainy Lake	No	53
Eightmile Lake	Yes	65	Roses Lake	Yes	178
Fish Lake	Yes	503	Schaefer Lake	No	83
Glasses Lake	No	23	Shield Lake	No	39
Green View Lake	No	41	Snow Lake-Lower	Yes	65
Hart Lake	No	33	Snow Lake-Upper	Yes	126
Heather Lake	No	86	Square Lake	No	73
Ice Lakes (1)	No	44	Stemilt Project Reservoir	No	22
Ice Lakes (2)	No	20	Stuart Lake	No	41
Josephine Lake	No	24	Surprise Lake	No	40
Klonaqua Lakes (1) Lower	Yes	66	Theseus Lake	No	29
Klonaqua Lakes (2) Upper	Yes	65	Trapper Lake	No	148
Lake Augusta	No	24	Twin Lakes (1)	No	33

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^{*} Streams/rivers that are partial or complete Shorelines of Statewide Significance.

Lake Name	Mapped as Shoreline Under Existing SMP	Total Area of Proposed Shoreline Lake (acres)	Lake Name	Mapped as Shoreline Under Existing SMP	Total Area of Proposed Shoreline Lake (acres)
Lake Chelan*	Yes	32,623	Twin Lakes (2)	No	259
Lake Leland	No	36	Unnamed Lake 1	No	34
Lake Valhalla	No	25	Upper Wheeler Reservoir	Yes	34
Lake Victoria	Yes	26	Wapato Lake	Yes	195
Lake Wenatchee*	Yes	2,449	White Rock Lakes (1)	No	20
Larch Lake	No	30			

TOTAL: 38,577 acres

2.2.2 Stemilt/Squilchuck-Colockum (WRIA 40a/b)

The Stemilt/Squilchuck - Colockum watershed (WRIA 40a/b) is approximately 49,000 acres, and includes two shoreline streams/rivers and five lakes. The area of upland shoreline jurisdiction totals 739 acres along 137,001 linear feet (26 miles) of shoreline. Table 3 provides the name of each shoreline waterbody in WRIA 40a/b.

Table 3. Shoreline waterbodies in WRIA 40a/b, outside of cities and their urban growth areas.

Jurisdictional Streams/Lakes					
Colockum Creek	Black Lake	Meadow Lake	Upper Wheeler Reservoir		
Columbia River	Cortez Lake	Stemilt Project Reservoir			

2.2.3 Wenatchee (WRIA 45)

The Wenatchee watershed (WRIA 45) is approximately 1,370 square miles, and contains 45 shoreline streams/rivers and 29 shoreline lakes. The area of upland shoreline jurisdiction totals 24,652 acres along 2,159,741 linear feet (409 miles) of shoreline. The headwaters of WRIA 45 originate in the Cascade Mountain range as the Little Wenatchee and White Rivers. These rivers flow into Lake Wenatchee, the source of the Wenatchee River. Table 4 provides the name of each shoreline waterbody in WRIA 45.

^{*} Lakes that are partial or complete Shorelines of Statewide Significance.

Table 4. Shoreline waterbodies in WRIA 45, outside of cities and their urban growth areas.

_ Jurisdictional Streams/Lakes						
Big Meadow Creek	Icicle Creek	Peshastin Creek	Wildhorse Creek	Loch Eileen Lake		
Boulder Creek	Indian Creek	Phelps Creek	Chiwaukum Lake	Lost Lake		
Buck Creek	Ingalls Creek	Pole Creek	Colchuck Lake	Nada Lake		
Cady Creek	Jack Creek	Prospect Creek	Eightmile Lake	Perfection Lake		
Chikamin Creek	Lake Creek	Rainy Creek	Fish Lake	Schaefer Lake		
Chiwaukum Creek	Leland Creek	Roaring Creek	Glasses Lake	Shield Lake		
Chiwaukum Creek SF	Lightning Creek	Rock Creek	Heather Lake	Snow Lake Lower		
Chiwawa River	Little Wenatchee River	SF Chiwaukum Creek	Josephine Lake	Snow Lake Upper		
Chumstick Creek	Meadow Creek	Snowall Creek	Klonaqua Lakes Lower	Square Lake		
Columbia River	Mill Creek	Thunder Creek	Klonaqua Lakes Upper	Stuart Lake		
Cougar Creek	Mission Creek	Trapper Creek	Lake Augusta	Theseus Lake		
Eightmile Creek	Mountaineer Creek	Trout Creek	Lake Leland	Twin Lakes 1		
Fish Creek	Napeequa River	Wenatchee River	Lake Valhalla	Twin Lakes 2		
French Creek	Nason Creek	White River	Lake Victoria			
Ibex Creek	Panther Creek	Whitepine Creek	Lake Wenatchee			

2.2.4 City of Wenatchee

Shorelands in the City of Wenatchee include only areas within 200 feet of the ordinary high water mark, floodways, portions of their adjacent floodplains and any associated wetlands within those floodplains. Waters identified within jurisdiction include the Wenatchee and Columbia Rivers. In the City and its UGA, shoreline jurisdiction contains 282 acres and 51,484 linear feet.

2.3 Inventory and Analysis Summary

The Shoreline Inventory and Analysis Report (TWC and J&S 2009) is divided into seven main sections: Introduction, Current Regulatory Framework Summary, Elements of the Shoreline Inventory, Shoreline-Specific Conditions, Analysis of Ecological Functions and Ecosystem-wide Processes, Land Use Analysis, and Public Access Analysis. Most of these chapters were subdivided into sections for the County and watershed. Discussions were broken into the four WRIAs (WRIA 40a - Stemilt-Squilchuck and part of WRIA 40b located in Chelan County

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[Colockum Creek basin], and WRIA 45 - Wenatchee) and Wenatchee (as edited by the City of Wenatchee staff). The WRIA discussions do not include information for the incorporated City of Wenatchee and its UGA. The following inventory is summarized from detailed information presented in the *Analysis Report* (TWC and J&S 2009).

The City of Wenatchee reduced this Regional Restoration Plan completed by the Watershed Company and Chelan County. The reduction included the removal of some WIRAs, a portion of the other cities information with Chelan County (Cashmere, Chelan, Entiat, and Leavenworth), and a portion of the Chelan County information in an effort to keep only that information pertinent to the City of Wenatchee and its UGA.

The intent is to incorporate those portions of the Inventory and Analysis Plan that are directly relevant to the City of Wenatchee's shoreline jurisdiction as well as keep those areas analyzed and inventoried that are adjacent to and/or connected by WIRA to the City of Wenatchee's shoreline jurisdiction and UGA. The goal is to identify existing conditions and opportunities to accomplish offsite restoration within upstream shorelines of a project site and/or within hydrological connected WIRAs.

2.3.1 Chelan County

Land Use and Physical Conditions

Most human settlements (both pre-historic and historic) in Chelan County have developed along waterbodies. The communities that developed are likewise connected along waterbodies by transportation and utility corridors. Countywide water-oriented uses include: agriculture, fish hatcheries, certain hotels/motels, marine craft transportation, open space, parks, recreational activities, resorts and group camps, and retail trade-eating/drinking.

In the unincorporated WRIAs, the current land use patterns are predominantly rural residential, government/utility, and forestry and agriculture resource lands, with exceptions – such as small towns along rivers and streams, lake communities, and some focused areas of rural industrial and rural waterfront commercial. Relatively more urban and intensive development is found in the cities, particularly Chelan (commercial, tourist, recreation), Cashmere (mixed use), and Wenatchee (utility and industrial). Some cities have extensive open space along their shorelines, such as Entiat, Leavenworth and Wenatchee, due to municipal, Public Utility District (PUD), County, or state park lands.

Future land use designations tend to reinforce current land use patterns, but there are areas of the County that are identified for new or greater uses. Unincorporated shorelines that are in public ownership tend to be identified for

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resource uses, while those in private ownership tend to be planned for rural residential, rural commercial/waterfront, or rural industrial uses. City shorelines are planned for a wider variety of activities to support their role as centers of the local community. Many areas in the cities that are already developed are likely to see re-development. Entiat and Wenatchee have the most ambitious of these re-development/waterfront plans. All of the WRIAs are likely to see additional rural residential growth.

Biological Resources and Critical Areas

Numerous wetlands are associated with Chelan County shorelines, including emergent and palustrine wetlands. In Chelan County, emergent wetlands are most likely to be sedge meadows and montane meadows, and palustrine wetlands would be dominated by woody vegetation occurring along watercourses. Old-growth forest corridors are found throughout the county, having been mapped by the USFS as part of its *Northwest Forest Plan*.

Chelan County has many critical areas discussed in more detail in the sections below.

2.3.2 Stemilt/Squilchuck-Colockum (WRIA 40a/b)

Land Use and Physical Conditions

WRIA 40a/b is dominated by resource lands, including commercial agriculture and commercial forestry. Residential and industrial uses tend to congregate closer to the Columbia River and other waterbodies in the eastern portion of the WRIA (RH2 Engineering, Inc. 2007). Geologically hazardous areas are common, particularly around the three reservoirs (which are considered to have 100% geohazard coverage). Shorelands within WRIA 40a/b are currently used for: agriculture; cultural/recreation/assembly; forestry; government/utility; manufacturing/industry; natural resources; residential; and transportation.

Twenty-seven percent (27%) of the WRIA remains undeveloped, although plans for additional single-family rural residential dwellings (23% of the current land use, planned to increase to 65% of the shoreland area) would reduce the amount of undeveloped land in time. Likewise, increases in rural industrial shoreline use, accounting for 3% of the existing shoreline use, would increase to 22 percent. Current open space in shoreline jurisdiction totals about 166 acres, mostly along the Columbia River.

Biological Resources and Critical Areas

Shorelines contain a combined total of 569 acres of priority habitats and habitat features, including wetlands, riparian zones, cliffs/bluffs, elk and mule deer habitat, and wood duck breeding areas. WRIA 40a/b waters contain priority fish

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species as well. According to the National Wetlands Inventory (NWI) and hydric soils information, as much as 17% of the total shoreline area may be wetlands.

2.3.3 Wenatchee (WRIA 45)

Land Use and Physical Conditions

Government/utility uses and resource lands (forestry, agriculture, and other natural resources) dominate the majority of the 75 shorelines. Shorelands within WRIA 45 are currently used for: agriculture, commercial, cultural/recreation/assembly, forestry, government/utility, manufacturing/industry, natural resources, residential, transportation, and open space. WRIA 45 contains unincorporated and incorporated lands.

Water-oriented uses along shorelines in WRIA 45 include agriculture, parks/recreation/recreational activities, resorts and group camps, certain hotel/motels, eating and drinking places, and others. Much of the shorelines tend to be parcels without buildings, largely due to the commercial forest lands in the watershed. Most of the shoreline land is being used for government/utility is expected to remain, even where there are vacant parcels. With future development, the shorelines are likely to see added rural residential, which makes up 17 percent of the current land use, but is planned for over 24 percent of the shoreline lands.

Parks and open space are found along numerous shorelines in WRIA 45. Open space is estimated at approximately 24,699 acres, and park lands total about 17 acres (found along the Columbia and Wenatchee Rivers). Developed public access points include: trails, campgrounds, picnic areas, fishing easements, and boat launches. The trails are extensive, linking various waterbodies as well as running alongside waterbodies. Fishing easements and boat launches are located along the Wenatchee River.

Biological Resources and Critical Areas

Shorelines in WRIA 45 contain a combined total of 19,433 acres of priority habitats and habitat features. The most common habitats, in order of frequency of occurrence, are those for elk calving, migration, concentrations, or foraging and mountain goat breeding or concentrations. Twenty-seven separate osprey nest sites are mapped in shoreline jurisdiction, distributed on five waterbodies. Many of the rivers, streams and lakes also contain priority fish species. According to the NWI and hydric soils information, as much as 39 percent of the total shoreline area may be wetlands. Floodplains and a few geohazard areas are also documented in the WRIA.

2.3.4 City of Wenatchee

The City of Wenatchee and its UGA are located along the banks of the Columbia River at the confluence of the Wenatchee River. Wenatchee is the largest city in Chelan County and is the primary center for jobs.

Land Use and Physical Conditions

Along the two shorelines in the City of Wenatchee, current land uses are dominated by government/utility and open space, but also include: agriculture, commercial, manufacturing/industrial, residential, transportation, and undeveloped land. Water-oriented uses include parks/open space (approximately 80 acres) and agriculture (6 acres), with 50 combined acres on the Columbia River and 30 combined acres on the Wenatchee.

Planned development along the City's shorelines may include: industry, the north Wenatchee business district, residential high/moderate/single-family, and waterfront mixed use. These planned land uses along the Columbia River shoreline may include industrial, high density residential, and parks. Planned land uses along the Wenatchee River may include single-family residential, industrial, and parks.

The Columbia River waterfront is flanked by public properties such as PUD recreation facilities and the railroad. The Sunnyslope area along the Wenatchee and Columbia Rivers is generally developed with homes and industrial uses, and is unlikely to see a significant change in the land use pattern (B. Frampton, personal communication, April 2008). There are several public and private parcels with no structures on them. Future development could occur on vacant parcels and on parcels subject to the *Wenatchee Waterfront Sub-Area Plan* (2003) which promotes redevelopment. Seventy-seven of 125 parcels on the Columbia River do not have buildings (representing 66% of the shoreland), and 20 of the 31 parcels on the Wenatchee River (representing 94% of the shoreland) do not contain buildings.

Open space and park land within the City's shoreline jurisdiction (totaling ~120 acres), may offer water access via boat launches, piers, or trails at some locations. Four waterfront parks and trails are present in the City and UGA. Planned parks and recreation improvement in or near the shoreline include waterfront moorage and parking, waterfront trail upland access and boathouse, and open space acquisition in the City of Wenatchee and its UGA at +/- 200 acres (City of Wenatchee 2008).

Biological Resources and Critical Areas

Shorelines in the City of Wenatchee and its UGA contain 253 acres of priority habitats, consisting of bald eagle, bighorn sheep, mule deer, and priority riparian

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zones concentrations. All of the City's shorelines contain priority fish species. According to the NWI and hydric soils information, as much as 38 percent of the total shoreline area may be wetlands. However, this figure is high because of the inclusion of some of the mainstem Columbia River as wetland. No information was available regarding presence of geologically hazardous areas in the City of Wenatchee.

3. RESTORATION GOALS AND OBJECTIVES

3.1 Chelan County

The following subsections discuss restoration goals and objectives previously identified in local WRIA, City and County planning efforts. Discussions are broken into the four WRIAs and City of Wenatchee when applicable. The WRIA discussions do not include information for the incorporated Cities and their UGAs. The City discussions include each City's UGA.

The WIRA's included are connected in a hydrological manner to the City of Wenatchee's shorelines and UGA shorelines that are being pre-designated.

3.1.1 County-Wide

Many of the watershed planning and salmon recovery efforts are administered by the Chelan County Natural Resources Department (CCNRD). Current activities include Wenatchee River Watershed (WRIA 45) planning and implementation, Squilchuck/Stemilt Watershed (WRIA 40a) planning and implementation, a County-wide salmon recovery grant program through Washington Salmon Recovery Funding Board, and habitat conservation plan development under the Federal Endangered Species Act (Chelan County website). CCNRD is also a partner with the Cascadia Conservation District (CCD) (formerly the Chelan County Conservation District) in the planning and implementation of the Entiat (WRIA 46) watershed plan, and the early planning stages of the Lake Chelan (WRIA 47) watershed plan. The goals and objectives of the above plans will be discussed in the appropriate WRIA subsections below.

The CCNRD also supports a regional salmon recovery effort, the Upper Columbia Salmon Recovery Board (UCSRB), and staffs the Chelan County Water Conservancy Board (Chelan County website). The mission statement of the UCSRB, whose planning area includes all of Chelan County except for the Chelan watershed, is:

"To restore viable and sustainable populations of salmon, steelhead, and other at risk species through collaborative, economically sensitive efforts, combined resources, and wise resource management of the Upper Columbia region."

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Restoration efforts throughout the County could focus on addressing the 12 factors for decline that were identified in the *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan* (UCSRB 2007) for covered species. Areas for improvement may address the following factors:

- Social, Cultural, and Economic Factors
- Public Policy
- Management Actions
- Harvest
- Hatcheries
- Hydropower
- Habitat (includes alteration from land use practices, logging, mining, diversions, and other uses)
- Ecological Factors
- Factors Outside the ESU [Evolutionarily Significant Unit] and DPS [Distinct Population Segment]
- Interaction of Factors
- Current Threats
- Uncertainties

3.1.2 WRIA 40a/b

WRIA 40a Watershed Plan Restoration Objectives

The WRIA 40a Watershed Plan (RH2 Engineering, Inc. 2007) developed objectives for desired future conditions within the Squilchuck and Stemilt basins. Phase 1 (discussions) and Phase 2 (assessment work) of the Plan led to the development of three general principal recommendations, which are listed in the general order of the Planning Unit's priority:

- 1. Increase the availability of water, the reliability of the water supply, and/or increase water use efficiency.
- 2. Improve the management of water and related land resources in WRIA 40a.
- 3. Improve the understanding of the hydrology of WRIA 40a.

Objectives were organized by sub-basin, and ranked and revised based on the information obtained during the development of the *Water Quantity Assessment* (2007), the *Multi-Purpose Water Storage Assessment* (2007) and the preliminary draft of the Watershed Plan during WRIA 40a Planning Unit (Planning Unit) meetings (RH2 Engineering, Inc. 2007). Planning Unit objectives identified in the *WRIA 40a Watershed Plan* focus primarily water storage and address the three

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objectives listed in the plan and above. These are in the general order of ranking, as follows:

- 1. Perform emergency infrastructure repairs to ensure continued system operation.
- 2. Upgrade existing water reservoir storage and irrigation water distribution systems for water conservation and continued safety protection (fire suppression water). The availability of fire suppression water protects the watershed and natural resources within the WRIA. If this area were to experience a catastrophic wildfire, it would drastically impact the water balance in the area because of changes to runoff and evapotranspiration that would occur.
- 3. Implement cost-effective new water storage projects in both the Stemilt and Squilchuck Creek watersheds to sustain flow during the agricultural water use period and the fall low flow period.
- 4. Obtain needed data to enhance the water balance developed by RH2 as part of the watershed planning effort and consider the water balance in all decisions related to water supply in the WRIA 40a study area.
- 5. Evaluate artificial snow-making and reservoir construction at the Mission Ridge Winter Sports Area to determine opportunities for enhancing water delivery in terms of timing and flow in the Squilchuck Creek watershed.
- 6. Where feasible, transfer existing interruptible Columbia River water rights to non-interruptible sources. Coordinate with Ecology's Columbia River Water Management Program (CRWMP) to ensure this issue is adequately addressed in that effort.
- 7. Where feasible, provide domestic water from the regional water supply to support future residential and industrial development in WRIA 40a.

In addition to the objectives above, the WRIA 40a Watershed Plan (RH2 Engineering, Inc .2007) identifies the following goal toward implementing restoration:

8. Work with CCNRD and other State and local agencies to protect identified wetland, riparian and ground water recharge areas.

Planned and implemented restoration projects addressing goal number 8 are listed in Table 3-8 of the *Final WRIA 40a Detailed Implementation Plan* (WRIA 40a Planning Unit 2008). Habitat issues are addressed with projects that include

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channel connectivity, off-channel habitat, culvert removal and improvement, bank stabilization, and habitat enhancement.

WRIA 40a Watershed Plan Restoration Implementation Strategies, Benchmarks, and Funding

The Final WRIA 40a Detailed Implementation Plan (WRIA 40a Planning Unit 2008) calls for concurrent implementation of the three general principal recommendations and the eight objectives above. The Planning Unit applied the same prioritization process to each goal and objective. The Implementation Plan employs flexibility in its strategy so that variable water needs, available funds, and commitment to projects may be accommodated. The strategy calls for determining targets for instream flow and acceptable instream habitat loss by conducting studies on the Wenatchee River and tributaries. Periodic review is part of the strategy, as is the pursuit of funding through partnerships and innovative means. Implementation schedules depend on size and complexity of projects, funding, permitting, and the capacity of involved parties to complete projects. Near-term funded actions were scheduled for implementation in 2008 to 2011 at the time of Implementation Plan completion. Implementation of 50 percent of near-term unfunded actions (top-tier priority only) was scheduled for 2009 to 2013 implementation; the remaining 50 percent and 50 percent of secondtier projects are scheduled for 2014 to 2018. The remaining projects of second-tier priority are scheduled for implementation. All remaining second- and third-tier projects are to be implemented in 2019 to 2023. Evaluation of the status of water reservation is scheduled for every five years until 2025.

Three funding mechanisms are addressed in the Implementation Plan. Funds appropriated by the State legislature for watershed planning implementation will be used primarily for first- and second-tier projects and implementation of the WRIA 45 Watershed Management Plan. Secondly, implementing entities (Ecology, CCNRD, BOR, SRFB, and BPA, for example) have made unspecified finding commitments. Finally, grant funding will be coordinated with other processes, such as the Chelan County Lead Entity process and the CCD. Additional funds for projects not funded through these avenues may be sought from a variety of sources, included other State agency grants, other SRFB funding, BPA grants, and many private sources, which can be located through the Boise State University Finance Center website at http://efc.boisestate.edu/watershed/searchmenu.asp.

Washington Department of Fish and Wildlife Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek Objectives

The Washington Department of Fish and Wildlife (WDFW) completed a *Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek* in 2006. The goal of the inventory was to 1) assess unscreened or inadequately screened surface water diversions and 2) identify

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fish passage barriers and to assess the potential available habitat gain for each feature. Data obtained from the diversion screening and fish passage inventory and concurrent habitat survey will allow for prioritization for correction of noncompliant surface water diversions and fish passage barriers to ensure compliance with Washington State laws. The report identifies an additional goal toward shoreline restoration in WRIA 40a/b: In the area of Colockum Creek within the shoreline jurisdiction, at least five barriers to fish passage were identified. These are all recommended for removal or repair, as they block anadromous salmonids access to suitable habitat.

Washington Department of Fish and Wildlife Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek Implementation Strategies, Benchmarks, and Funding

The goals of the *Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek* (WDFW 2006) to assess surface water diversion and fish passage issues were largely completed during the inventory process. The results yielded the third goal in the preceding section, the removal and/or repair of fish passage barriers. The potential fish barrier projects were also ranked and prioritized as part of the inventory. No timeline or implementation strategy was included in the analyses. This, a recommended first step would be to completed a detailed implementation plan for fish passage barrier projects in the three creeks. Potential funding sources include many of those listed in the preceding paragraph.

3.1.3 WRIA 45

Planning Unit Objectives

The Wenatchee Watershed Planning Unit, which includes Chelan County and the Cities of Wenatchee, Cashmere and Leavenworth, has a defined mission "to collaboratively develop a management plan for sustaining and improving watershed and community health." To implement this plan, the WRIA 45 Planning Unit's goal is to: "protect water resources, habitat and water use in a way that balances the educational, economic and recreational values associated with a healthy community." The WRIA 45 Planning Unit will work to achieve this goal by meeting the following three objectives:

- 1. Assess water supply and use, and develop strategies for meeting current and future needs for both in-stream and out-of-stream use (Water Quantity and Instream Flow Subcommittee).
- 2. Protect and enhance habitat of threatened and endangered and culturally important species throughout the Wenatchee Watershed, improving overall habitat function and connectivity (Habitat Subcommittee).

Final Chelan County Restoration Plan

3. Address polluted water bodies that do not meet state and federal water quality standards (Water Quality Technical Subcommittee).

The WRIA 45 Planning Unit identified 25 opportunities for actions in the Wenatchee watershed, including six short-term actions and four hatchery-oriented actions. Details are covered in Volume 1 of the *Wenatchee Watershed Management Plan* (WWMP) (Wenatchee Watershed Planning Unit 2006). These recommended actions and planned implementation strategies meet the WRIA 45 Planning Unit's three objectives by identifying watershed-wide actions (pertaining to instream flow, quantity, growth and land use, quality, habitat, implementation, and outreach) and sub-watershed specific actions. Tables 2-1 through 2-16 of the WWMP (2006) present summaries of the recommended actions and the agency(s) or entity(s) responsible for implementation; Table 2-6 lists specific implementation actions.

Planning Unit Implementation Strategies, Benchmarks, and Funding

The WWMP suggests that voluntary, cooperative measures are preferable to regulatory enforcement approaches. Implementation actions in the WWMP may need additional assessment and planning before implementation can proceed and responsibilities can be assumed, and that funding considerations may limit the implementation process, although federal entities are expected to support the strategies in the plan within the limits of available financial resources.

Funding sources for recommended actions would be determined by the implementation entity. Examples of potential private and public funding sources include Aquatic Lands Enhancement Account (ALEA), Bonneville Environmental Foundation Watershed Program, The Bullitt Foundation, Coastal Protection Fund (CPF), The Compton Foundation Environmental Grants, Family Forest Fish Passage Program (WDNR), Fish America Foundation Conservation Grant, Riparian Habitat Protection in the Washington Wildlife and Recreation Program (WWRP), and the UCSRB.

The UCSRB *Draft Upper Columbia Spring Chinook Salmon, Steelhead, and Bull Trout Recovery Plan* (2005) calls for administrative reviews to assess project implementation success, as well and for monitoring of recovery actions for their effectiveness in fulfilling goals. The WWMP also recommends an adaptive management strategy for actions that may require further development, additional data collection, or subsequent modification.

The Wenatchee River Integrated Status and Effectiveness Monitoring Program (ISEMP) is also in place to evaluate and document the progress and success of habitat actions. The ISEMP is a collaborative effort funded through various federal, state and local efforts. It builds on existing monitoring programs and consists of pilot status and trend monitoring efforts for anadromous salmonids and their habitat,

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as well as effectiveness monitoring for suites of habitat restoration projects in the Wenatchee Watershed.

Wenatchee River Channel Migration Zone Study Objectives

CCNRD conducted a *Wenatchee River Channel Migration Zone Study-Phase I* in 2003. The purpose of the CMZ Study Phase I was to provide the technical foundation to allow the selection and prioritization of salmonid habitat restoration, enhancement, and preservation projects (Jones and Stokes Inc. 2004). The study objectives were to 1) evaluate historic changes in channel behavior and vegetation for the lower Wenatchee River (from Leavenworth to the mouth) and some of its tributaries (mouths of the Icicle, Peshastin and Mission Creeks, and the lower four miles of Nason Creek), 2) project areas where these rivers and streams may migrate or erode their banks in the future, and 3) identify potential restoration sites to improve salmon habitat (CCNRD website).

Phase II of the CMZ Study was subsequently completed to quantify physical and biological mechanisms linked to the salmonid habitat limiting factors, and prioritize potential habitat restoration, enhancement, and preservation actions. Twenty-four restoration sites were selected for preservation, enhancement, or restoration. The sites included areas that could be preserved because of their existing high-quality habitat adjacent to the Wenatchee River, and their need for additional off-channel habitat and riparian vegetation. The CCNRD has made it a goal to restore and protect these 24 sites.

Wenatchee River Channel Migration Zone Study Implementation Strategies, Benchmarks, and Funding

Potential restoration and protection opportunities are reviewed by CCNRD in an ongoing manner. No timetable or implementation strategy specific to the 24 sites listed in the CMZ study exists. Rather, the sites will be considered as viable options for restoration and preservation activities discussions. Funding for restoration and preservation projects may differ, as some public funds and private entities may be available solely for one of these project types. For example, one of the projects (identified as CMZ 2, and referenced in the WWMP) was initiated by a private property owner and then was finalized and will be constructed by the Yakama Nation using Bonneville Power Administration mitigation funds. The Boise State University Finance Center website (http://efc.boisestate.edu/watershed/searchmenu.asp) provides a potential listing of available grants and other funds for the projects and sites suggested in the CMZ study.

Upper Valley Plan Objectives

A Steering Committee and the Chelan County Public Utilities District (CCPUD) partnered to develop a vision plan with opportunities for the upper Wenatchee

River valley, including the communities of Leavenworth, Peshastin, Dryden, Cashmere, and Monitor. They identified goals, objectives and a list of potential river access sites and fisheries enhancement opportunities along the Wenatchee River.

A summary of the *Upper Valley Plan's* purpose was to: 1) identify interpretive sites, river access points, and fisheries and wildlife enhancement opportunities along the Wenatchee River corridor, that have the potential to increase the public's knowledge and understanding of CCPUD's salmon and wildlife habitat enhancement programs; and to 2) build on existing tourism by creating attractions, new tourism opportunities (with an emphasis on the environment, education, recreation, culture, and art), visibility of the valley's resources, leveraging efforts of other groups that share common goals, and protect and enhance natural habitats (J.T. Atkins & Company PC. 2003). The plan identifies opportunity sites in:

- 1. Leavenworth (at the Leavenworth National Fish Hatchery, Blackbird Island, Icicle Creek/Wenatchee River confluence, irrigation projects, Wenatchee River habitat work, Icicle Loop Trail, potential interpretive trail at an old railbed site east of Leavenworth, gateway for "back roads" scenic drive, and Trout Unlimited projects).
- 2. Peshastin (at an old mill site, mill intake station, old railroad corridor, Kiwanis Park, Main Street, a historic log structure, Peshastin Creek/Wenatchee River confluence, and at railroad bridge and sandy beach).
- 3. Dryden (at a beaver pond site, dam site, powerhouse site, old school site, downtown Dryden, old dump site and public access above railroad and between railroad and SR 2).
- 4. Cashmere (at the Chelan Co. museum, a fishing hole on the north shore of the Wenatchee R., Old Mill, Raft Park and PUD kiosk, a flood area below Bethlehem construction, Goodwin Bridge, and Devil's Gulch mountain bike area).
- 5. Monitor (at Sleepy Hollow viewpoint, Green Bridge, gateway for "back roads" scenic drive, irrigation site, Monitor Bridge, riparian area, Chelan Co. Park, Wenatchee Foothills trail).

Upper Valley Plan Implementation Strategies, Benchmarks, and Funding

Implementation plans for the Upper Valley Plan goals begin obtaining 501c3 for the Steering committee, hiring a project director, and acquiring office space and equipment. Community meetings and meetings with reviewing agencies to

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determine permitting requirements are the following step. The remainder of the plan is aimed at identifying and procuring funding. Potential funding sources are not specified but may include both acquiring project specific funds from private and public entities as well as teaming to complete projects with existing programs and groups such as the Chelan-Douglas Land Trust, Washington State Department of Transportation, The Audubon Society, and CCNRD.

Washington Department of Ecology Total Maximum Daily Load (TMDL) Objectives

The U.S. Environmental Protection Agency (EPA) has approved a TMDL (the Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Plan (TMDL) (Ecology 2009). The TMDL identified three water bodies in the project area exceeding dissolved oxygen standards and six exceeding pH standards. The overarching goal of the TMDL plan is to meet water quality standards; thus, the goal is to reduce total phosphorus from point and nonpoint sources to the Wenatchee River. The timeline for compliance with water quality standards is 10 years from TMDL approval, or 2019. Fifty specific activities and goals are identified in Table 5 of the TMDL. They include supporting and regional phosphorus reduction activities, point and nonpoint source activities, facility planning and design, monitoring activities, and habitat improvements.

Washington Department of Ecology Total Maximum Daily Load (TMDL) Implementation Strategies, Benchmarks, and Funding

Three phases and a number of targets are defined to track progress toward goals. Timelines are in Table 3 of the TMDL and summarized below:

Phase/Target	Definition	Timeline
Phase 1	Point and nonpoint source reductions, data collection and model calibration	2009-2013
Target 1	50% nonpoint source loading reduction	2014
Phase 2	Modification of load and wasteload allocations (if needed); identification of additional nonpoint source reductions	2014-2015
Phase 3	Additional load reductions implemented	2015-2019
Target 2a	NPDES compliance	2019
Target 2b	Reduction in remaining nonpoint source poading	2019
Final Target	Water quality standards achieved	2019

Dissolved oxygen and pH data will be collected every five years to monitor progress toward the goals. Adaptive management will be employed to ensure that goals are achieved. Compliance monitoring will continue after compliance with water quality standards is achieved.

A number of funding resources presently support the TMDL or will potentially provide technical assistance or monetary support as projects are implemented. These sources include the CCD, which is a current recipient of a Centennial Clean Water Fund grant for TMDL activities; CCNRD, which provides incentive payments for implementation of riparian restoration activities; NRCS, which provides technical assistance to farmers and ranchers and may also be a funding source; and a number of jurisdictions and entities, including Chelan County, the Chelan County PUD, and the Cities of Wenatchee, Leavenworth, and Cashmere, have all shown interest in investigating sources of nonpoint source phosphorus loading.

3.2 City of Wenatchee

The *Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan* (2008) states that "scenic resources and open space have become topics of community preservation and value. These natural resources are intrinsic to Wenatchee's identity and attraction and need to be protected." The Wenatchee vision statement identified by locals in 2002 reads, "the City will protect and enhance its natural setting and environmental quality, including the surrounding hillsides, shorelines, and scenic vistas."

The City of Wenatchee and the CCPUD developed a long range *Wenatchee Waterfront Sub-Area Plan* (2003). Plan goals and objectives look at the Waterfront as a whole and identified what needs to happen on a global perspective. Environment protection goals are as follows:

Parks, Recreation, and Shoreline Goal: Preserve and enhance Wenatchee's system of waterfront park and trails.

Shoreline and Environment Goal: Upgrade the environmental quality of the shoreline and larger waterfront area.

More information about this Sub-Area Plan is available online at the City's website: http://www.wenatcheewa.gov/Index.aspx?page=79.

The City of Wenatchee was an initiating government and is a member of the Wenatchee Watershed Planning Unit, and as such is committed to supporting the relevant objectives and actions of the *Wenatchee Watershed Management Plan*. The four habitat actions for the lower Wenatchee watershed previously mentioned

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for the City of Cashmere (identified in the *WWMP* 2006) are relevant to City of Wenatchee's Wenatchee River shoreline.

4. LIST OF EXISTING AND ONGOING PROGRAMS

4.1 WRIA 40a/b Watershed Plans

As reported in the *Shoreline Inventory and Analysis Report* (TWC and J&S 2009), the *WRIA 40a Watershed Plan* (RH2 Engineering, Inc. 2007) was the deliverable for Phase 3 of the watershed planning process. Phase 4, the implementation plan, is currently underway. Opportunities and strategies for carrying out each of the three principal recommendations presented in Section 3.1.2 above are presented in Table 3 of the *WRIA 40a Watershed Plan* and described in detail in the Plan's Section 3.3. These opportunities will be further evaluated in Phase 4 (implementation) and prioritized based on their feasibility to achieve the desired future conditions in WRIA 40a.

Implementation goals were identified in Appendix D (*Water Quantity Assessment*) and Appendix E (*Multi-Purpose Storage Assessment*) of the *WRIA 40a Watershed Plan* (RH2 Engineering, Inc. 2007). Goals were ranked according to their level of importance and will be implemented by the WRIA 40a Planning Unit as funds become available.

4.2 WRIA 45 Watershed Plans

The WRIA 45 Planning Unit explains in their *Phase IV – Detailed Implementation Plan* [(DIP) April 2008] that:

"The Wenatchee Watershed (WRIA 45) has been listed by the State Department of Ecology as one of the 16 basins in the state with critical and inadequate streamflows for fish."

The WRIA 45 Planning Unit therefore developed an approach and ranking strategy to prioritize actions for implementation of the *WWMP* (WWPU 2006). The DIP (WWPU 2008) provides priorities and a practical schedule for implementing actions previously identified in Volume 1 of the *WWMP* (WWPU 2006), along with additional salmon recovery and water quality related actions that have evolved since the DIP was adopted. This management tool targets the status and completion of existing and ongoing projects, and can be found in Table 3-2 of the WRIA 45 Planning Unit's *Phase IV – Detailed Implementation Plan* (WWPU 2008).

4.3 Chelan County Natural Resource Department Efforts

The Chelan County Natural Resource Department (CCNRD) administers watershed planning and salmon recovery efforts in Chelan County. Current activities include Wenatchee River Watershed (WRIA 45) planning and implementation, Squilchuck/Stemilt Watershed (WRIA 40a) planning and implementation, a countywide salmon recovery grant program through Washington Salmon Recovery Funding Board, and habitat conservation plan development under the Federal Endangered Species Act (Chelan County website). The CCNRD also supports the Upper Columbia Salmon Recovery Board (UCSRB) and staffs the Chelan County Water Conservancy Board. The CCNRD manages a variety of state, federal, and local project and planning grants that assist watershed planning and salmon recovery efforts in Chelan County. Details about CCNRD programs and funding can be found online at http://www.co.chelan.wa.us/nr/nr_main.htm.

The CCNRD's current restoration strategies and efforts primarily stem from those identified in: watershed plans and DIPs previously mentioned; the *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan*'s (2007) implementation schedule; and various studies, such as the Wenatchee River CMZ study. The CCNRD also implements "need-based" projects as they arise (E. Fonville, personal communication, March 9, 2009), which may consist of native riparian plantings and stream buffer restoration for private land owners in collaboration with the Chelan-Douglas Land Trust (CDLT).

UCSRB Implementation Schedule

The *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan* (UCSRB 2007) provides a regionally and federally accepted framework for implementing coordinated recovery actions, while providing a "roadmap" towards implementation of priority habitat actions. The UCSRB has successfully completed single-project-focused actions that 1) reopen tributary habitat, 2) preserve key habitat areas, and 3) protect countless fry and smolt from entrainment in irrigation diversions. One recent project success story, sponsored by the CCNRD, includes the Nason Creek Oxbow Reconnection project in the upper Wenatchee valley (located between mile post 0.83 and 1.33 on Hwy. 207). This project reconnected a half-mile-long oxbow (secondary channel) by installing two 12-foot-wide fish-friendly culverts. The reconnection restored access to 21.7 acres of off-channel refuge, rearing and over-wintering habitat for juvenile salmonids.

While these single-project-focused actions significantly contribute to recovery efforts, "there is a growing consensus among biologists, project managers and the entities providing salmon recovery funding, that the greatest current opportunities for habitat restoration projects that will yield the greatest biological

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benefits are found in the yet to be addressed large-scale, multi-years, multi-million dollar recovery activities" (UCSRB 2009). In a recent memo regarding funding and project coordination of salmon recovery projects in the Upper Columbia, UCSRB members state that "the priority of the UCSRB is to restore salmonid populations ... through the development of a mid-range implementation/3-year work plan and coordinated funding." The UCSRB is currently updating their comprehensive, coordinated and strategic approach to restoration to address the "large-scale, multi-year, multi-million dollar recovery activities." The implementation plan that the CCNRD works from can be found online at http://www.ucsrb.com/theplan.asp. Implementation actions pertain to: water quantity and quality, water temperature extremes, habitat diversity and quantity, obstructions, riparian/floodplain, sediment, diversions, species interactions, depleted nutrients, nutrient limitations, and ecosystem function.

Outreach and Education

The CCNRD sends out mailers (postcards) updating the community about educational workshops and workgroups, such as the Shoreline Master Program update meetings.

4.6 Comprehensive Plan Policies

At the beginning of the planning process, the County and the Cities of Cashmere, Chelan, Entiat, Leavenworth, and Wenatchee opted to divide the County into eight study areas and prepare a plan for each area. The County took the lead role, in coordination with the cities in the development of seven sub-area plans. The City of Wenatchee took the lead role in the development of a comprehensive plan for the Wenatchee Urban Area.

4.6.1 Chelan County

The Chelan County Comprehensive Plan (2005) was developed in accordance with Section 36.70A.070 of the Growth Management Act to address land uses. The Plan covers the unincorporated areas outside of the city urban growth areas. Seven study areas were indentified within the county-wide plan, encompassing the following study areas: Chelan-Manson, Entiat Valley, Malaga-Stemilt-Squilchuck, Lower Wenatchee River Valley, Upper Wenatchee River Valley, Plain-Lake Wenatchee, and Stehekin (Chelan County 2005). Unincorporated areas of the County within UGA boundaries are covered by the city comprehensive plans.

A Rural Coordinating Committee, made of 12 members appointed by the Board of Commissioners to coordinate the Rural Element of the Plan, together with the Planning Commission, went through a process where they identified goals and policies applicable to specific study areas, and goals and policies applicable

county-wide. The Comprehensive Plan represents the County's policy plan for growth to the year 2017 and can be found online: http://www.co.chelan.wa.us/bl/data/compplan.pdf. In particular, the Plan expresses a goal of identifying and protecting critical areas and mitigation adverse impacts that may result from reasonable use. Policies include encouraging the enhancement and restoration of fish and wildlife habitat. Projects pertaining to habitat are to be defined and implemented by landholders and other involved parties on a case-by-case basis.

4.6.2 City of Wenatchee

The City of Wenatchee developed their *Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan* (2007) with a vision based upon the views expressed by local residents. Three subjects were considered to be the most important determinants in Wenatchee's future: 1) economic development, 2) quality of life, 3) and learning and human services. Detailed policies can be found in the *Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan* (2007).

4.7 Critical Areas Regulations

The City of Wenatchee has its own set of critical area regulations that dictate protection of environmentally sensitive areas, including wetlands, streams (fish and wildlife habitat conservation areas), geologically hazardous areas, frequently flooded areas, and aquifer recharge areas. The regulations use a version of Ecology's Eastern Washington Wetland Rating System. For specific protection of critical areas in shoreline jurisdiction, the Shoreline Master Program contains the City's revised set of regulations that meets the Shoreline Management Act and Shoreline Master Program Guidelines' more specific requirements and standards.

4.7.1 City of Wenatchee

The City Wenatchee has adopted the Resource Lands and Critical Area Development Ordinance (City of Wenatchee 2009). The Ordinance does not designate agricultural lands of long-term commercial significance but assures the continued use of farm lands for agricultural purposes. The City of Wenatchee will "protect public safety and the ecological functions of critical areas by mitigating development depending on area characteristics" (City of Wenatchee 2007). The *Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan* (2007) lists regulatory policies as follows:

<u>Policy 1</u>: Ensure any development in critical areas adequately mitigates potential negative impacts associated with the specific conditions.

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<u>Policy 2</u>: Review and expand critical area designations and associated development regulations for accuracy, effectiveness, and utilization of best available science.

<u>Policy 3</u>: Designate fish and wildlife habitat corridors along the waterfront and in the foothills where appropriate.

<u>Policy 4</u>: Designate within the UGA, frequently-flooded areas in accordance with Federal Emergency Management Act (FEMA) criteria.

<u>Policy 5</u>: Encourage the use of clustered development and other innovative designs that aim to preserve the functions of critical areas and further public safety.

The City completed an update of its critical areas regulations in early 2009.

4.8 Stormwater Management and Planning

4.8.1 Chelan County

The storm drain system for Chelan County's roads consists primarily of roadside ditches and culvert pipes for drainage under roads and driveways. Stormwater is generally directed to roadside ditches that discharge directly into local waters. In more urbanized areas, a limited number of piped drain systems are in place. These areas include Olds Station, Sunnyslope, Peshastin, Leavenworth, and Manson. The piped systems are located where it was necessary to construct a roadway with curb, gutter and associated catch basins.

The Chelan County Public Works Department has developed a Stormwater Management Plan for the Olds Station area that is adopted by reference as part of the *Chelan County Comprehensive Plan* (2005). The Port of Chelan County is in the process of developing more storm systems in the Olds Station area. Within the County portions of the Entiat and Leavenworth UGA's, stormwater systems consist of a system of roadside drainage ditches (City of Entiat 2007 and City of Leavenworth 2001). The storm ditches within the Leavenworth UGA will need to be tight-lined into the City storm system when land is developed (City of Leavenworth 2001).

4.8.2 City of Wenatchee

The City of Wenatchee has developed many control measures required for stormwater management programs, since the federal National Pollutant Discharge Elimination System (NPDES) requirements went into effect in 2003. All development within the City is required to control stormwater such that it doesn't damage adjoining properties, route to City system if capacity is available, extend City infrastructure in accordance with the *Planning to Blossom* 2025

Wenatchee Urban Area Comprehensive Plan (2007), and will provide water quality treatment for all construction activities. All commercial development must address water quality on site and some must be capable of detaining stormwater in flood events. The City also routinely sweeps streets to help keep debris out of the storm drain system. Most of the City of Wenatchee is connected to the stormwater collection system that discharges directly into local waters. The City of Wenatchee presented a policy in the Comprehensive Plan to establish review requirements so that all development projects do not adversely impact the rate and amount of runoff into adjacent waters or lands.

The *Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan* (2007) provides options being considered for future City of Wenatchee stormwater:

- 1. Low Impact Development Explore the use of low impact development techniques in city streets, new and redevelopment so as to decrease the volume of stormwater entering the City system and surrounding waters.
- 2. Extend Stormwater Requirements Require all new development and appropriate redevelopment to infiltrate stormwater on site.
- 3. Education Continue efforts to inform the public about stormwater's effects on water quality, the way the City's stormwater system works, and how individual actions affect stormwater.

4.9 Public Environmental Education

4.9.1 Chelan County

The Chelan County Comprehensive Plan (2005) describes eight visions of the citizens of the Lower Wenatchee River Valley Study Area, including one that pertains to an "educational climate." As part of providing "an economic and educational climate that enables our citizens to find suitable employment within the valley," environmental education and respect for natural resources is highly evident throughout county and partner activities. County environmental education and stewardship is highly influenced and supported by the surrounding forest and park lands, vast natural resources and beauty, and associated managing and guiding agencies. Several of the agencies and community groups involved in local education have been described in the sections below.

The Board of County Commissioners approved an initial set of county-wide planning policies on May 26, 1992. One of the policies included pertains to public education and citizen participation (Chelan County 2005). Chelan County does provide public education and accepts citizen involvement pertaining to Comprehensive Plan information, rationale and goals, as well as changes that

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will take place in the County with the Plan's implementation (Chelan County 2005).

4.9.2 City of Wenatchee

The City of Wenatchee's Natural Environment element in the *Planning to Blossom* 2025 Wenatchee Urban Area Comprehensive Plan (2007) includes several policies and potential options for maximizing the implementation and effectiveness of public environmental education:

- 1. Encourage environmental education, learning opportunities and partnerships for shoreline and habitat opportunities
- 2. Continue efforts to inform the public about storm water's effects on water quality, the way the City's storm water system works, and how individual actions affect storm water.
- 3. Promote water conservation in buildings, appliances, landscaping, and daily life through public outreach and informational materials.
- 4. Work with Chelan County Noxious Weed Control Board to increase public awareness and promote volunteer clean-up action [of noxious weeds].
- 5. Be an active player in education and involvement programs that raise public awareness about environmental issues, advocate respect for the environment, and demonstrate how individual and cumulative actions directly affect our surroundings.
- 6. Work in cooperation with public agencies, local organizations, associations, departments, and groups in creating and carrying out environmentally related programs and outreach efforts.
- 7. Create informational documents with green building methods and local resources to aid new development in utilizing "green" techniques.

One of the goals established in the *Wenatchee Waterfront Sub-Area Plan* (2003) is to develop an environmental education center/urban agricultural center.

4.10 Additional City Efforts

The City of Wenatchee continues to accomplish the goals established in the *Wenatchee Waterfront Sub-Area Plan* (2003). Restoration-related elements of the park/open space/recreation implementation opportunities include: waterfront park and shoreline enhancement and the development of an environmental education center/urban agricultural center.

4.11 Audubon Society Efforts

The North Central Washington (NCW) chapter of the Audubon Society is dedicated to furthering the knowledge and conservation of the environment of North Central Washington, our Nation, and the World (NCW Audubon website). Chapter president, Mark Oswood, expresses the goals, hopes, aspirations, and plans of the NCW Audubon Society to: promote resource decisions based on the best available data; be honest brokers in environmental conflicts; believe that sustainable economies are the only road into the future; believe in citizen science and life-long learning; act as "outside consultants" – leading field trips, holding outdoor classes, and doing "dirt work"; and watch, count and protect birds, "one of the grandest expressions of life" (NCW Audubon website).

NCW Audubon is a frequent contributor and partner in several area events and programs that educate and foster stewardship within the community, including the annual *Leavenworth Spring Bird Fest* and the *Wenatchee River Salmon Festival*. Both of these are venues for a NCW Audubon Society birding simulation activity for kids and families, called "What's That Bird?" (M. Oswood, e-mail communication, March 7, 2009). NCW Audubon volunteers assist with outdoor education programs at these events and at events for local students, primarily held at the Barn Beach Reserve (in Leavenworth). The NCW chapter of the Audubon Society also participates in the Wenatchee River Watershed (WRIA 45) Planning effort and the Stemilt-Squilchuck Partnership. The *Wild Phlox*, a NCW Audubon Society newsletter (edited by Teri Pieper), reaches approximately 450 members across the four-county (Chelan, Douglas, Okanogan, Ferry) chapter territory, providing monthly environmental updates and opportunities for Audubon birders and environmental enthusiasts alike. More information about the NCW Audubon Society can be found online at http://www.ncwaudubon.org.

4.12 Cascadia Conservation District Efforts

Watershed Planning

The Cascadia Conservation District (CCD) (formerly the Chelan County Conservation District) is the lead entity for the Entiat (WRIA 46) watershed planning effort, and is also involved with the Wenatchee (WRIA 45) watershed planning effort, led by Chelan County. Since 1993, Entiat area landowners have been working with the CCD to develop local solutions to natural resource issues specific to the basin. The CCD coordinates quarterly Entiat Watershed Planning Unit meetings, monthly Entiat Habitat Sub-Committee meetings, and numerous water quality and quantity meetings. The CCD and its partners generate and update Entiat watershed reports, the Entiat Watershed Plan, and the Entiat Watershed Detailed Implementation Plan.

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Land Owner Assistance Program

Numerous projects occur each year, with recent projects along Chumstick Creek, Colockum Creek, Mission Creek, Stemilt Creek, Yaksum Creek, and the Entiat and Wenatchee Rivers (R. Malinowski, personal communication, February 17, 2009). The CCD has assisted in diverse ways by providing: side channel reconnection, off-channel juvenile salmonid rearing habitat, installation of LWD structures and boulder structures for instream habitat complexity, native riparian plantings to stabilize streambanks and provide canopy cover, installation of livestock fencing, elimination of fish entrainment in irrigation diversions through designing and updating new fish screens, and construction of groundwater wells to replace surface water diversions. Primarily the CCD works with private landowners to enhance riparian areas while providing fish-friendly conveyance to irrigation ditches, thereby reducing annual instream disturbance from diversion maintenance. By installing instream log cross vanes, LWD (with intact rootwads) and boulder clusters, irrigation pools are allowed to form (with fish screens), minimizing diversion impacts to fish and stream habitat. The CCD continues to assist local landowners and watersheds.

Water Metering

In an effort to encourage voluntary compliance with state metering requirements, the CCD has partnered with the Washington State Department of Ecology to provide cost-share funding to assist Chelan County diversion owners with the installation of adequate metering equipment.

Education and Outreach

Kids in the Creek

Cascadia Conservation District participates in the *Kids in the Creek* program that was developed by local volunteers. This program won First Place for 2006 Environmental Education Curriculum from the National Association of Interpretation Media. The objectives of the program show how streams and watersheds work. Students walk away with an understanding of how their actions can affect stream health, in both negative and positive ways. They learn about watersheds, stream habitat, water quality, riparian areas, and macroinvertebrates. More information about the *Kids in the Creek* program can be found online:

http://www.bpa.gov/corporate/KR/ed/kidsinthecreek/homepage.htm

Streamside Property Owner's Guide

The CCD developed the *Streamside Property Owner's Guide* for the Entiat Watershed to provide county residents with an understanding of the critical riparian habitat along the stream. The guide includes "7 Steps to Stewardship" - a list of contacts and sources of information to assist with

riparian planning and activities (R. Malinowski, personal communication, February 17, 2009).

Wenatchee River Salmon Festival

The CCD participates in the *Wenatchee River Salmon Festival*, hosted annually by the Leavenworth National Fish Hatchery and the Okanogan and Wenatchee National Forests. The festival's mission is to "provide high quality natural resource education, promote outdoor recreation, and share the cultural significance of salmon to the people of the Northwest." Information about the Wenatchee River Salmon Festival can be found online at http://www.salmonfest.org.

For more details, contact the Cascadia Conservation District by phone (509) 664-9370 or look them up on the internet at http://www.cascadiacd.org.

4.13 Chelan-Douglas Land Trust Efforts

Land Protection

The Chelan-Douglas Land Trust (Land Trust) protects lands throughout the County, either through conservation easements or acquisition (B. Bugert, e-mail correspondence, February 13, 2009). Land is eligible for Land Trust protection based on the following qualifying criteria:

- Is it habitat for endangered, threatened or rare species?
- Does it contain exemplary natural ecosystems such as old-growth forests or migratory waterfowl staging/wintering areas?
- Does it include shoreline and riparian areas?
- Does it include wetlands, floodplains, or other lands important for the protection of water quality?
- Is it undeveloped land in close proximity to urban development?
- Does it have important recreational opportunities?
- Does it include parcels that could be connected to greenbelt corridors between privately protected or publicly held properties?
- Does it include unique local scenic viewpoints or outstanding physiographic features that help define the character of our locale and enhance our community's sense of place?
- Is it valuable for timber or agricultural production?
- Is it a heritage site of historic and or prehistoric value?
- Does it include ecosystems of educational or scientific value?
- Is the landowner amenable to the conservation goals of the land trust?

Additional Land Trust protection efforts are described below:

Riparian Plantings

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The Land Trust has done work to revegetate riparian habitat along the Entiat River (WRIA 46) at their Cottonwood and Stormy Creek reserves (B. Bugert, e-mail correspondence, February 13, 2009). They are currently collaborating with Chelan County Natural Resources to do riparian plantings along Icicle Creek and potentially future projects throughout the County (B. Bugert, e-mail correspondence, February 13, 2009).

• Lake Wenatchee and White River

The Land Trust is working with private landowners, the U.S. Forest Service, the Washington Department of Fish and Wildlife (WDFW), and Chelan County to permanently protect the natural functions and scenic beauty of the White River watershed.

Entiat River Valley

The Land Trust is actively involved in efforts to protect fish habitat, wildlife habitat, and floodplain function along the "Stillwater" reach of the Entiat River. The Stillwater is a calm stretch of river that contains the majority of the Entiat's spawning and rearing habitat for endangered steelhead, endangered spring chinook salmon, threatened bull trout, and fall chinook salmon. At the urging of local residents, the Land Trust applied for and received a grant for \$1.4 million from the state Salmon Recovery Funding Board to purchase nearly 300 acres (including nearly three miles of riverfront) of prime fish and wildlife habitat along the Entiat. The Land Trust is working with Entiat Valley residents to develop management plans that will protect the conservation values of these properties in perpetuity (Chelan-Douglas Land Trust website).

Education and Outreach

• Chelan County Good Neighbor Handbook

To promote community stewardship, the Land Trust publishes the *Chelan County Good Neighbor Handbook* as a tool to ensure people do their part in keeping the County a special place to live. The handbook is available online at:

http://www.cdlandtrust.org/Good%20Neighbor%20HB%20for%20web.pdf

Workshops

The Land Trust is working to make the case that land conservation is a good investment for local communities. They believe that, "we do not need to choose between a healthy economy and healthy landscapes" (Chelan-Douglas Land Trust website). As part of this effort, the Land Trust partners with several local organizations to present workshops on various topics ranging from the economy to the environment. Recent workshops cover noxious weeds, sustainable landscaping and insects.

• Conservation Roundtable, Ag and Environment Dialog, Environmental Film Series

The Land Trust works closely with a wide variety of landowners,
conservation groups, farmers, and resource agencies to develop innovative
approaches to natural resource management. The Conservation Roundtable
seeks to facilitate communication and collaboration among conservation
groups. This dialog fosters understanding and collaboration among
farmers, agriculture groups, and environmental groups to promote
sustainable, productive, and profitable farms in the region. The Land Trust
sponsors a monthly environmental film series (Chelan-Douglas Land Trust
website).

The Land Trust is able to work quickly and creatively with local citizens, helping to preserve the unique character of the region and enhance the quality of life for residents, visitors, and future generations. For more details, contact the Chelan-Douglas Land Trust by e-mail: info@cdlandtrust.org or phone: (509) 667-9708.

4.14 Chelan County Public Utility District Efforts

Habitat Conservation Plan

The Chelan County Public Utility District (PUD) is collaborating with local, state, and federal governments; tribes; and private landowners to restore and protect salmon and steelhead habitat in the mid-Columbia and its tributaries. As part of the Habitat Conservation Plan (HCP) Tributary Program, the PUD funds projects to help protect and enhance salmon and steelhead spawning, rearing and migration. These projects will help the PUD meet its HCP commitment of "nonet-impact" to migrating fish. One such project includes the acclimation and rearing of summer steelhead on Blackbird Island in Leavenworth. The PUD, as part of its mitigation responsibility for the Wenatchee River basin, will rear summer steelhead in the Blackbird Island fish pond each spring, beginning in 2009 (D. Davies, e-mail correspondence, March 9, 2009). Additional information about steelhead acclimation on Blackbird Island is found in the Trout Unlimited section below (Section 4.15).

Potential PUD projects may include bank and shoreline restoration, removal of migration barriers, enhancing stream flows, native riparian plantings, wetland restoration, constructing in-stream habitat structures, acquiring conservation easements or other means to preserve critical floodplain properties, and reconnecting relic side channels to provide rearing habitat (CCPUD website). Any individual or group can propose an HCP project through either of following two funding options. The General Salmon Habitat Program will fund projects costing \$25,000 or more. The Small Projects Program is for projects costing less than \$25,000 and is designed to encourage community groups working in cooperation with landowners (CCPUD website). Table 5 shows the PUD's current projects underway as part of the HCP Tributary Program.

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Table 5. Chelan County PUD's HCP current project list (provided by T. Larson, CCPUD, March 11, 2009).

ROCKY REACH PLAN SPECIES ACCOUNT	Project Small/GSF	Sponsor	Total Projected Cost	Trib Contribution	Project Status
Entiat Instream Structure Engineering	GSF	Cascadia Conservation District	\$59,340.00	\$59,340.00	in progress
LWD/Rootwad Acquisition & Transport	Small	Cascadia Conservation District	\$24,600.00	\$24,600.00	in progress
Entiat Canal Log Boom Installation	Small	Cascadia Conservation District	\$10,660.00	\$7,160.00	in progress
Below the Bridge	GSF	Cascadia Conservation District	\$398,998.00	\$150,000.00	in progress
Rocky Reach Total			\$94,600.00	\$91,100.00	
	Project		Total Projected		
ROCK ISLAND PLAN SPECIES ACCOUNT	Small/GSF	Sponsor	Cost	Trib Contribution	Project Status
WRIA's 45/46 Riparian Restoration	Small	Cascadia Conservation District	\$50,000.00	\$25,000.00	in progress
Entiat PUD Canal System Conversion	GSF	Cascadia Conservation District	\$631,584.00	\$99,360.00	in progress
Roaring Creek Flow Enhancement	GSF	Cascadia Conservation District	\$147,000.00	\$25,000.00	in progress
Keystone Canyon Habitat Restoration	GSF	Cascadia Conservation District	\$193,805.00	\$29,100.00	in progress
Cashmere Pond Off-Channel Habitat Project	GSF	Chelan County Natural Resources	\$914,076.00	\$249,110.00	in progress
Rock Island Total			\$1,936,465.00	\$427,570.00	

The PUD has a new 43-year license for continued operation of the Rocky Reach Hydroelectric Project (issued on February 19, 2009). The new license is based on a settlement agreement submitted to the Federal Energy Regulatory Commission (FERC) on March 17, 2006, between PUD and stakeholders that includes the local communities, state and federal agencies, tribes, and environmental groups. The new license contains requirements for operating the 1,300-megawatt project that are estimated to cost the PUD approximately \$425 million over the 43 years, including continuation of the HCP for salmon and steelhead, maintaining existing parks on the Rocky Reach reservoir, providing renovation of Entiat Park, and enhancements to Lincoln Rock and Daroga State Parks. In addition, the new license has provisions to ensure safe passage of bull trout and lamprey past the dam, research on possible hatchery facilities to supplement the white sturgeon population, an evaluation of resident fish for future recreational fishing, funding for habitat restoration projects on federal and state wildlife lands, and a variety of other actions. (The above information is directly from the CCPUD website).

FERC Licensing

Aside from HCP projects, the PUD is working on three additional efforts as part of the requirements for their FERC relicensing (T. Larson, e-mail communication, March 11, 2009), including the:

- 1. Dryden off-channel enhancement project (side channel in the Wenatchee River),
- 2. Chelan River projects: Reach 4 and tailrace habitat enhancement, Low level outlet, and Pump Station, and the
- 3. Lake Chelan tributary barriers removal and restoration.

For more information about the above projects, contact Jeff Osborn at jeff.osborn@chelanpud.org

Expanding on the above, the PUD has restored a historic Wenatchee River side-channel as off-channel refuge and rearing habitat for salmonids. Located near Dryden, the groundwater-fed channel was enhanced (into pool/riffle habitat with large woody debris) and now provides spawning and rearing habitat. Monitoring reports have identified juvenile chinook and coho salmon and steelhead rearing, and adult coho salmon spawning in the enhanced channel (J. Osborn, personal communication, March 17, 2009). Continued monitoring of the site will include electrofishing and snorkel surveys and the collection of temperature data (J. Osborn, personal communication, March 17, 2009).

The PUD has begun an extensive recovery effort that includes year-round discharge at the Chelan Dam and stream restoration along the Chelan River's lowest reach (Reach 4), near the dam's powerhouse (in the town of Chelan Falls). Year-round flow (minimum 80cfs) will be restored to the Chelan River via a new low-level outlet structure, allowing continuous flow, even when the lake level is below the 1087-foot Chelan Dam elevation (J. Osborn, personal communication, March 17, 2009). With this low-level outlet structure, flow will be provided to the river down to the lakes lowest elevation of 1079 feet (J. Osborn, personal communication, March 17, 2009).

The Reach 4 enhancement includes construction of a new side channel, along the river's right bank. LWD and gravels will be added instream to provide fish refugia and spawning areas, and develop pool/riffle habitats ideal for refuge during the spring high flows (4,000-6,000 cfs) and overwintering habitat for juvenile salmonids. A pump station will also be constructed to pump water from the tailrace upstream into this new side channel, in addition to the guaranteed minimum 80 cfs year-round flow, to provide additional spawning and rearing habitat (J. Osborn, personal communication, March 17, 2009). Native vegetative cover along the new side channel will be improved, adding habitat complexity and contributing to LWD and residual fish recruitment. Additionally, approximately 1.75 acres of new spawning habitat for chinook salmon and steelhead has been created in the tailrace. Appropriate sized gravel was placed instream during the summer of 2008, and were used heavily by salmon during the fall spawning period. Monitoring and evaluation of this restoration project and future opportunities will continue. Restoration attention could be focused on the section of the Chelan River downstream of City limits in the 3.9 miles (6.3 km) of steep, rocky gorge downstream of the Chelan Dam.

The PUD has identified various migration barriers (depth, velocity, gradient) for Westslope cutthroat to Lake Chelan tributary streams in the Lucerne basin. Site reconnaissance and site-specific restoration plans are currently being developed

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for removing these remote alluvial barriers and restoring upstream passage for adult spring spawning cutthroat trout. The PUD plans to start on-the-ground restoration in 2011, addressing two tributaries per year over a five-year period.

Other Projects

The Chelan Wildlife Area currently consists of approximately 32,540 acres of WDFW-owned and -managed lands (WDFW website). Primarily in eastern Chelan County, subunits of the Wildlife Area include the Chelan Butte, Entiat, Swakane and White River subunits. The PUD provided WDFW with funding to purchase 20,397 acres within the Chelan Butte, Entiat, and Swakane subunits (J. Osborn, personal communication, March 17, 2009). These lands have been impacted by past land uses; therefore, the PUD will be restoring 1,400 acres of the Wildlife Area as shrub steppe habitat for the bighorn sheep, mule deer, upland game birds, and numerous other wildlife species that inhabit the area (J. Osborn, personal communication, March 17, 2009). These restored lands may also be utilized for recreation by the community.

The PUD also develops and maintains a number of parks within the County. Several of these parks include boat launches, short-term boat moorage, parking, extensive day use facilities, overnight camping, picnic shelters, restrooms, showers, shoreline trails, tennis courts, playground equipment, and swimming areas. More information about Chelan County PUD habitat and restoration projects can be found online at http://www.chelanpud.org/habitat-restoration-protection.html.

Education and Outreach

The PUD offers public tours of the Rocky Reach Hydroelectric Project that begin at the Rocky Reach Visitor Center. These tours include detail about the PUD's fish recovery efforts throughout the Columbia River basin in addition to the dams fish bypass system, assorted hatchery projects and restoration/mitigation projects.

4.15 Trout Unlimited Efforts

The mission of the Washington Council of Trout Unlimited and the Icicle Chapter is to, ""CONSERVE, PROTECT AND RESTORE" cold water fisheries, their watersheds and ecosystems, as a means of maintaining our quality of life!" Trout Unlimited has been on the forefront of fisheries restoration work at the local, state and national levels. Their website explains that they remain committed to applying "the very best information and thinking available" to conservation work and have developed cutting-edge tools to help direct efforts toward those fish populations most in need of protection or restoration.

Trout Unlimited's Icicle chapter, with backing from the City of Leavenworth, is attempting to restore a fish pond on Blackbird Island to make it suitable for raising 53,000 steelhead per year in cooperation with the Chelan County PUD. Trout Unlimited acquired water rights which will allow constant stream flow into the pond from the Wenatchee River via inlet/outlet structures installed in October of 2008. The goal is to acclimate (imprint) steelhead, beginning in March 2009, on Wenatchee River water in hopes of having returning adults and potentially a Wenatchee River steelhead fishery in years to come. The steelhead are scheduled to be volitionally released beginning in May 2009 (D. Davies, email correspondence, March 9, 2009). The pond will be stocked with cutthroat trout and will open to children for recreational fishing in the summer months after the all steelhead have emigrated. Additional information can be found online at http://icicletrout.org.

4.16 United States Fish and Wildlife Service Efforts

Restoration

The USFWS has been involved in numerous restoration projects and activities in Chelan County. Currently the USFWS is involved in the implementation of habitat restoration projects associated with the Entiat and Wenatchee Watershed Planning Units, Integrated Status and Effectiveness Monitoring Project (ISEMP), CCNRD, CCD, and the Yakama Nation. The USFWS actively participates on several interdisciplinary teams that work towards Entiat and Wenatchee watershed restoration efforts including: the Upper Columbia Regional Technical Team (RTT), Upper Columbia Salmon Recovery Board, the Mid-Columbia HCP Tributary Sub-Committee and the Priest Rapids Coordinating Committee's Habitat Sub-Committee. The USFWS also provides funding for restoration activities through the Western Native Trout Initiative, the National Fish Passage Program (NFPP), Partners for Fish and Wildlife and the Fisheries Restoration and Irrigation Mitigation Program. More information about the USFWS involvement in these programs can be found online at http://www.fws.gov/pacific/Fisheries/sp_habcon/index.html.

The USFWS acts as an active partner in several stream and riparian restoration efforts along the lower 26 river miles of the Entiat River. In Chelan County, the USFWS is the lead agency on three extensive projects in the Entiat and Wenatchee basins. These projects are summarized below.

Entiat River Restoration

Currently in design phase, the USFWS's Entiat National Fish Hatchery (NFH) is updating hatchery facilities and undertaking a stream enhancement project on the adjacent Entiat River (located at approximately RM 7). The project hopes to improve juvenile rearing habitat (especially during high flow events), increase instream LWD retention, increase stream

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habitat complexity and off-channel refugia, and improve floodplain connectivity. The hatchery water intake system will be redesigned and will encompass a fish-friendly screen to prevent fish entrapment. There will also be a new public fishing pond (for Kids Fishing Day events) built to facilitate recreation and learning opportunities within the Entiat basin (R. Parrish, personal communication, February 25, 2009).

• Icicle Creek Restoration

In 2006, the BOR and the USFWS convened a Project Alternative and Solution Study (PASS) to sequentially evaluate habitat restoration and water intake for the Leavenworth NFH. Goals for this project are to: improve fish passage and stream habitat; improve management and conservation efforts for water use by the irrigation district, Leavenworth NFH and Sleeping Lady Resort; and increase fish survival and spawning success in Icicle Creek. A group of policy and technical representatives from the USFWS, BOR, other federal and state resource agencies, the Yakama Nation, and the Wild Fish Conservancy were all invited to contribute staff to a technical team. Beginning in October 2006, the technical team collaborated and developed a preferred alternative design for the new Leavenworth NFH water intake system, which was approved for implementation by the USFWS and the BOR in November 2007. Final approval for the project is still pending due to the required completion of NEPA, various permits, and related actions. The BOR has set-aside several million dollars for implementation of this alternative and it is estimated that construction of a new water intake system will begin in 2009-2010.

In February 2008, the PASS effort shifted focus towards habitat restoration within the historic channel of Icicle Creek (adjacent to Leavenworth NFH). Restoration will include the construction of roughened fish passage channel and restoration of a normative flow regime. Additional habitat improvements may include LWD placement and native riparian plantings. The BOR has budgeted funds for PASS meetings, facilitation, engineering design, and related efforts during FY 2009 in support of the technical team's goal of finalizing plans for the restoration project as soon as possible. Once the project plan is finalized and approved, the USFWS will re-initiate and complete consultation on implementation of the plan and Leavenworth NFH operations, in addition to completing NEPA compliance procedures prior to initiating construction of this project. (The above information was provided via e-mail communication with Jim Craig, USFWS Mid-Columbia FRO, March 10, 2009).

Chumstick Passage Barrier Removal
 The USFWS and the CCNRD are working with local land owners to remove
 17 fish passage barriers along Chumstick Creek. Approximately 20 miles of

instream habitat will be restored to steelhead, spring chinook and reintroduced coho salmon with the removal of barriers on Chumstick Creek (including the North Road). This project is possible with funding from Bonneville Power Administration (BPA) and the National Fish Passage Program (NFPP). (The above information was provided via e-mail communication with Jim Craig, USFWS Mid-Columbia FRO, March 10, 2009).

Education and Outreach

The USFWS's Mid-Columbia FRO is also a lead and partner in several education and outreach programs throughout the County. They inform the public about local restoration efforts, while providing environmental education to the community. The FRO, in cooperation with other agencies, sends out an annual newsletter informing the Entiat community about local watershed projects. The USFWS is involved in several educational events at both the Entiat and Leavenworth NFHs including: National Fishing Week events, Salmon in the Classroom, Wanapum Archeology Days, in addition to field and classroom events and those listed below.

- Kids in the Creek
 The USFWS partners with the CCD on this program, described in detail in CCD section above.
- Wenatchee River Salmon Festival
 The USFWS is one of the lead entities that host the Wenatchee River Salmon
 Festival each year at the Leavenworth National Fish Hatchery. The CCD is
 one of the festival sponsors. Detail about the festival can be found in section
 4.8 above.

For more information about the USFWS's programs and/or reports, contact the Mid-Columbia Fisheries Resource Office (FRO) in Leavenworth at (509) 548-7573 or look online at http://www.fws.gov/midcolumbiariverfro.

4.17 United States Forest Service Efforts

Restoration

The USFS is responsible for vegetation/fuel and road management and is an active participant in watershed-level restoration efforts throughout Chelan County. The Leavenworth Ranger District may assist in watershed planning efforts in addition to the research and monitoring programs for fish and wildlife species of the watershed, including participation in the ISEMP. Within the Entiat basin, the USFS provides technical assistance to lead entities involved in instream and riparian restoration projects (P. Archibald, personal communication, February 26, 2009).

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Education and Outreach

The USFS is implementing its *Respect the River* program that educates recreational users about riparian protection, managing and restoring riparian vegetation, reducing stream bank erosion, and improving floodplain water storage (Chelan County Conservation District 2006).

4.19 Yakama Nation Efforts

Yakama Nation projects throughout the mid- and upper-Columbia's ceded lands follow the tribes mission, "to preserve, protect, enhance, and restore culturally important fish populations and their habitats throughout the Zone of Influence of the Yakama Nation and to protect the rights of Yakama Nation members to utilize these resources as reserved for them in the Treaty of 1855." The Entiat and Wenatchee basins are areas in Chelan County that the Yakama Nation hopes to "demonstrate the fishery benefits of integrated land and water management practices" (Yakama Nation website). Currently the Yakama Nation is involved in an instream habitat enhancement project along the lower Entiat River's keystone reach (B. Rogers, e-mail correspondence, February 19, 2009).

The Yakama Nation's Mid-Columbia Field Station (located in Peshastin) has lead restoration efforts that have successful returned extirpated coho salmon to the Wenatchee basin. Restoration efforts are focused on upper Wenatchee River tributaries, with rearing at the Leavenworth NFH and naturalized acclimation ponds along Nason Creek. The Yakama Nation also participates in numerous salmon recovery and watershed planning efforts, in addition to the research and monitoring programs for fish species of the watershed, including participation in the ISEMP.

Please see the following website for more information about the Yakama Nation Fisheries program: http://host119.yakama.com

5. LIST OF ADDITIONAL PROJECTS AND PROGRAMS TO ACHIEVE LOCAL RESTORATION GOALS

5.1 City of Wenatchee

Additional restoration opportunities, not previously mentioned in WRIA and other watershed planning efforts, were identified in the *Analysis Report* (TWC and J&S 2009) as follows:

Wenatchee Parks (Riverfront and Confluence State Parks): Reduction of shoreline armoring, removal of non-native vegetation, native revegetation, shoreline stabilization, and the addition of interpretive nature and/or historical signs. Enhance and maintain the habitat along the south Confluence State Park wetland area.

<u>General</u>: Reduce shoreline armoring, improve shoreline stabilization, and remove non-native plantings. A combination of native vegetation and bioengineering techniques could be provided to secure the shoreline from excessive erosion.

6. Proposed Implementation Targets and Monitoring Methods

As previously noted, the shoreline areas in Chelan County occupy industrial, commercial, agricultural, multi- and single-family residences, and public recreation/open space areas. Therefore, efforts should be made to improve and retain shoreline ecological function through the promotion of restoration and healthy practices at all levels, from large-scale industrial users to single-family property owners. The City of Wenatchee already has a very active environment-focused community with a strong restoration and education focus. Continued improvement of shoreline ecological functions along the many shorelines requires a comprehensive watershed approach, which combines all planning and implementation efforts.

The following table outlines possible schedules and funding sources for implementation of a variety of efforts that could improve shoreline ecological function, and are described in previous sections of this report.

Table 6. Implementation Schedule and Funding for Restoration Projects, Programs and Plans.

Restoration Project/Program	Schedule	Funding Source or Commitment
4.1 WRIA 40a/b Participation	WRIA 40a Watershed Plan: 1) Development of Phase 4 - DIP is ongoing 2) Implementation of goals for water quality and quantity improvements are ongoing	 The WRIA 40a DIP is currently being developed, with opportunities and feasibility to be evaluated. Water quality and quantity implementation goals were ranked according to their level of importance (in Appendix D and E respectively of the WRIA 40a Watershed Plan) and will be implemented as funds become available.

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Restoration Project/Program	Schedule	Funding Source or Commitment
4.2 WRIA 45 Participation	WRIA 45 DIP: 1) Implementation is ongoing	Implementation goals identified in the WRIA 45 DIP are being completed in addition to salmon recovery and water quality actions that have evolved since the DIP was adopted. Funding entities have been identified in the DIP and will be addressed as funds become available.
4.3 Chelan County Department of Natural Resources	Ongoing	Continue with implementation of actions as guided by the UCSRB Implementation Plan, the Wenatchee River CMZ study and watershed plans and DIP's (listed above) as funding and grant money is available.
4.4 Comprehensive Plan Policies	1) Chelan County (amended 2005) 2) City of Wenatchee (amended 2008)	The county and the city make substantial staff time commitments in the course of project and program reviews to determine consistency and compliance with the recently updated comprehensive plans.
4.5 Critical Areas Regulations	1) Chelan County (amended 2005) 2) City of Wenatchee (amended 2008)	The county and city make substantial staff time commitments in the course of project and program reviews to determine consistency and compliance with the recently updated critical areas regulations.
4.6 Stormwater Management and Planning	Ongoing	Drainage systems will be updated as new development occurs. The County/City make substantial staff time commitments in the course of multiagency drainage studies, management and planning efforts.
4.7 Public Education	Ongoing	Education is identified as essential to the region in several park/recreation and comprehensive plans. County/City staff time and materials are provided in developing and planning for public education and outreach opportunities.
4.8 City Efforts	Restoration and Education/Outreach projects: Ongoing - as funds and opportunities allow	Staff time, materials and assorted funds support these efforts, in addition to the project specific partners and grant/funding arrangements. Examples follow: City of Wenatchee The Wenatchee Waterfront Sub-Area Plan is primarily funded by the City, CCPUD and private land owners.
4.9 Audubon Society Efforts	Ongoing	NCW Audubon will continue to contribute and partner in planning efforts and education/outreach opportunities as funding and volunteer time allows.
4.10 Cascadia Conservation	Ongoing	The CCD will continue to lead, contribute and partner in planning efforts, project

Restoration Project/Program	Schedule	Funding Source or Commitment
District Efforts		implementation, and education/outreach opportunities as state and grant funding allows.
4.11 Chelan- Douglas Land Trust Efforts	Ongoing	The Land Trust will continue to lead land protection efforts and contribute and partner in planning efforts, project implementation, and education/outreach opportunities as state and grant funding allows.
4.12 Chelan County Public Utilities District Efforts	Ongoing	CCPUD is committed to achieving goals and opportunities identified in the HCP tributary program in addition to projects required as part of their FERC relicensing. CCPUD will continue to support community education and park/recreation opportunities.
4.13 Trout Unlimited Efforts	Ongoing	Trout Unlimited will continue to lead and partner in fish protection and conservation efforts throughout the region as funding and volunteerism allows.
4.14 United States Fish and Wildlife Service Efforts	Ongoing	The USFWS will continue to lead and partner in restoration, conservation and education/outreach opportunities throughout the region. Project specific funding sources may vary over time.
4.15 United States Forest Service Efforts	Ongoing – limited projects	Staff time, materials and assorted funds may be available to support restoration, research, monitoring and education/outreach opportunities and partnerships.
4.16 Yakama Nation Efforts	Ongoing	Staff time, materials and assorted funds may be available to support watershed planning, restoration, research, and monitoring opportunities and partnerships. The Yakama Nation may act as a project specific lead or partner and may provide varying grant/funding sources over time.

County and City planning staff will track all land use and development activity, including exemptions, within their respective shoreline jurisdictions, and will incorporate actions and programs of other departments as well. Reports will be assembled by each jurisdiction that provides basic project information, including location, permit type issued, project description, impacts, mitigation (if any), and monitoring outcomes as appropriate. Examples of data categories might include square feet of non-native vegetation removed, square feet of native vegetation planted or maintained, reductions in chemical usage to maintain turf, linear feet of eroding stream bank stabilized through plantings, linear feet of shoreline

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armoring removed or modified levees, changes to square footage of over-water cover, or number of fish passage barriers corrected.

The report would also recommend or describe relevant updates to WRIA, County and City goals and implementation plans, and outline current and ongoing implementation of various programs and restoration actions (by local government or other groups) that relate to watershed health.

The staff reports will be assembled to coincide with Comprehensive Plan updates and will be used, in light of the goals and objectives of the Shoreline Master Program, to determine whether implementation of the SMPs is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the *Analysis Report* (TWC and J&S 2009). In the long term, each local government should be able to demonstrate a net improvement in their respective shoreline environments.

Based on the results of these assessments, each local government may make recommendations for changes to its SMP.

7. RESTORATION PRIORITIES

This restoration plan, a phase of the Shoreline Master Program update process (consistent with WAC 173-26-201(2)(f)), includes "goals, policies and actions for restoration of impaired shoreline ecological functions." Restoration opportunities have been "designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program." This Restoration Plan demonstrates how specific potential projects match and meet regional or County/City-wide goals and objectives of the region, watershed planning entities, and environmental organizations that contribute or could potentially contribute to improved ecological functions of the shoreline. Prioritization of specific projects and project types, implementation strategies, and schedules will be based on information found in watershed or basin plans.

The process of prioritizing actions that are geared toward restoration of the County/City shoreline areas involves balancing ecological goals with a variety of site-specific constraints. Briefly restated, the County/City environmental protection and restoration goals include 1) protecting watershed processes, water quality and quantity; 2) protecting open/recreational space and the habitats for fish and wildlife; and 3) contributing to ESA listed spring chinook and steelhead conservation and recovery efforts. Constraints that are specific to the City of Wenatchee include 1) the community's diverse past and present land uses and desires, 2) rivers that have been confined by roads, railroads or that have altered flow regimes from the construction of dams and/or irrigation diversions, and 3)

the highly developed shorelines along the Columbia/Wenatchee Rivers. While much of the County lands offer good ecological functions (generally the upper basins and forest/wild lands of each drainage), opportunities have been recognized to further enhance ecological functions, conservation and education of these shorelands. Goals and constraints were used or will be used in the various watershed plans and implementation plans to develop shoreline restoration actions and a ranking prioritization of projects, programs, or subbasins specific to each WRIA.

Although restoration project/program scheduling has been suggested and summarized in each watershed and entity planning effort identified in Chapters 3 and 4, the actual order of implementation may not always correspond with the priority level assigned to that project/program. This discrepancy is caused by a variety of obstacles that interfere with efforts to implement projects in the exact order of their perceived priority. Some projects, such as those associated with riparian planting, are *relatively* inexpensive and easy to permit and should be implemented over the short and intermediate term despite the perception of lower priority than projects involving extensive shoreline restoration or large-scale capital improvement projects. Projects with available funding will be initiated immediately for the worthwhile benefits they provide and to preserve a sense of momentum while permitting, design, site access authorization, and funding for the larger, more complicated, and more expensive projects are under way.

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8. REFERENCES

- Archibald, Phil. U.S. Forest Service. Personal communication. February 26, 2009.
- Bugert, Bob. Executive Director, Chelan- Douglas Land Trust. E-mail correspondence. February 13, 2009.
- CCPUD [Chelan County Public Utilities District] website. http://www.chelanpud.org/environmental.html
- CCPUD. 2004. Recreation Resources Management Plan, Fifth Draft Rocky Reach Hydroelectric Project.
- Chelan-Douglas Land Trust website. http://www.cdlandtrust.org
- Chelan County. 2005. Comprehensive Plan. Adopted in 2000. Amended February 14, 2005. http://www.co.chelan.wa.us/bl/data/compplan.pdf
- Chelan County Website. Chelan County Natural Resource Department (CCNRD). http://www.co.chelan.wa.us/nr/nr_entiat_watershed.htm
- Chelan County Conservation District (CCCD). 2006. Entiat WRIA 46 Detailed Implementation Plan. Prepared for the Entiat WRIA Planning Unit. February 2006.
- Chelan County Conservation District (CCCD). 2004. Entiat WRIA 46 Management Plan. Prepared for the Entiat WRIA Planning Unit. October 2004.
- Chelan-Douglas Land Trust website. http://www.cdlandtrust.org/
- City of Cashmere. 2008. City of Cashmere Comprehensive Land Use Plan "The Heart of Cashmere". Adopted January 25, 1999. Amended January 14, 2008.
- City of Chelan. 2008. Strategic Plan 2008-2009. Approved on September 11, 2008 at City of Chelan Council meeting.
- City of Chelan. 2007. City of Chelan Comprehensive Land Use Plan. Adopted June 25, 1998.
 - http://www.cityofchelan.us/planning/pdf/PlanningPDF/Misc/2007%20Comprehensive%20Plan.pdf
- City of Chelan. Chelan Municipal Code. http://www.cityofchelan.us/mrsc/chelanmunicipalcode.htm
- City of Chelan Parks and Recreation Department. 2007. Parks and Recreation Comprehensive Plan 2008-14. July 26, 2007.
- City of Entiat. 2008. City of Entiat Waterfront Visioning Process 2008/2009. October.
- City of Entiat. 2009a. City of Entiat Comprehensive Land Use Plan.
- City of Entiat. 2009b. Lake Entiat Waterfront Business District Subarea Plan. November 2009.

- City of Leavenworth. 2007. Downtown Master Plan. Prepared by the Community Development Department. September 2007.
- City of Leavenworth. 2003. City of Leavenworth Comprehensive Plan. Adopted in 2001. Amended August 12, 2003.
- City of Wenatchee. 2008. Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan. Adopted April 26, 2007. Amended September 11, 2008.
- City of Wenatchee and Chelan County Public Utility District (CCPUD). 2003. Wenatchee Waterfront Sub-Area Plan.
- Davies, Dan. Trout Unlimited Icicle Chapter. E-mail correspondence. March 9, 2009.
- Droll, R. 2007. Don Morse Park Master Plan Summary. Prepared for City of Chelan. April 2007.
 - http://www.cityofchelan.us/parks/pdfdocs/donmorseparkmasterplanexecsummary.pdf.
- Ecology [Washington State Department of Ecology]. 2009. Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Plan (Draft). Washington State Department of Ecology Publication No. 09-10-075. October 2009.
- ESA Adolfson. 2009. Waterfront Master Plan. Prepared for City of Entiat, December 2009.
- Frampton, Brian. Senior Planner, City of Wenatchee. Personal communication. April 2008.
- GeoEngineers, Inc. 2007. Habitat Farming Enterprise Program: Conceptual Riparian and Aquatic Habitat Restoration Plan Sanray Orchards, Entiat River Valley, Chelan County, WA. Prepared for Initiative for Rural Innovation and Stewardship (IRIS). June 2007.
- Jones and Stokes. 2004. Wenatchee River Final Channel Migration Zone Study Phase 2. Prepared for Chelan County Natural Resource Program. April 2004.
- J.T. Atkins & Company PC. 2003. Upper Valley Plan. Prepared for the Steering Committee and the Chelan County PUD (CCPUD).
- Laura Berg Consulting. 2004. Lake Chelan Subbasin Plan. Prepared for the Northwest Power and Conservation Council. May 28, 2004. http://www.nwppc.org/fw/subbasinplanning/lakechelan/plan/EntirePlan.pdf
- Landerman-Moore Associates and Robert W. Droll. 1997. City of Leavenworth Parks and Recreation Comprehensive Plan. Prepared for the City of Leavenworth.
- Malinowski, Rich. Project Coordinator, Cascadia Conservation District. Personal communication. February 17, 2009.
- NCW Audubon website. http://www.ncwaudubon.org/

Page 48 May 2010

- Osborn, Jeff. License Program Coordinator, Chelan County Public Utility District (CCPUD). Personal communication. March 17, 2009.
- Oswood, Mark. President, Audubon Society North Central Washington (NCW) Chapter. E-mail correspondence. March 7, 2009.
- Parrish, Robes. U.S. Fish and Wildlife Service. Personal communication. February 25, 2009.
- Patrick, J. 2008. 'Group looks to reopen pond closed to fishing since 2003', The Wenatchee World. April 3, 2008.
- RH2 Engineering, Inc. 2007. WRIA 40A Watershed Plan. Prepared for WRIA 40A Squilchuck/Stemilt Planning Unit. May 2007.
- RH2 Engineering, Inc. and Geomatrix Consultants. 2008. Lake Chelan WRIA 47 Final Draft Planning Unit Charter. Prepared for Chelan County Natural Resources Department. Approved December 13, 2007.
- Rogers, Brandon. Habitat/Fisheries Biologist, Yakama Nation Fisheries. E-mail correspondence. February 19, 2009.
- Silverline Projects, Inc. 2000. Lakeside Trail Feasibility Study. Prepared for City of Chelan. September 28, 2000.
- The Watershed Company and ICF Jones & Stokes. 2009. Shoreline Inventory and Analysis Report. Prepared for Chelan County and the Cities of Cashmere, Chelan, Entiat, Leavenworth, and Wenatchee.
- UCSRB [Upper Columbia Salmon Recovery Board]. 2009. Memo from the board members (L. Carlson, B. Towey, J. Morgan, D. Van Marter and C. Baldwin) regarding Funding and Project Coordination of Salmon Recovery Projects in the Upper Columbia and the Development of the Mid-Range Implementation Plan/3-Year Work Plan. January 16, 2009.
- UCSRB [Upper Columbia Salmon Recovery Board]. 2007. Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan. August 2007.
- Upper Columbia Salmon Recovery Board (UCSRB). 2005. Draft Upper Columbia Spring Chinook Salmon, Steelhead, and Bull Trout Recovery Plan. December 2005
- Upper Columbia Regional Technical Team (UCRTT). 2002. A Biological Strategy to Protect and Restore Salmon Habitat in the Upper Columbia Region, A Report to the Upper Columbia River Salmon Recovery Board. June 2002. Available from the Upper Columbia Salmon Recovery Board, Chelan, Washington.
- WDFW [Washington Department of Fish and Wildlife]. 2006. Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek. http://wdfw.wa.gov/hab/tapps/reports/wria40paper.pdf
- WDFW [Washington Department of Fish and Wildlife] website. Wildlife Areas: Chelan Wildlife Area. http://wdfw.wa.gov/lands/wildlife areas/chelan/index.php.

Wenatchee Watershed Planning Unit. 2006. Wenatchee Watershed Management Plan. Vol. 1. April 26, 2006. http://www.co.chelan.wa.us/nr/nr watershed plan.htm

WRIA 40A Planning Unit. 2008. Final WRIA 40A Detailed Implementation Plan. October, 2008.

WWPU [Wenatchee Watershed Planning Unit]. 2008. Phase IV – Detailed Implementation Plan. April 15, 2008.

Yakama Nation Fisheries website. http://host119.yakama.com

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9. LIST OF ACRONYMS AND ABBREVIATIONS

BLM U.S. Bureau of Land Management

BOCC.....Board of County Commissioners

BOR..... Bureau of Reclamation

CCCD Chelan County Conservation District

CCD Cascadia Conservation District

CCNRD Chelan County Natural Resource Department

CCPUD...... Chelan County Public Utilities District

CDLT Chelan Douglas Land Trust

cfs......cubic feet per second

CMZ...... channel migration zone

DIP Detailed Implementation Plan

DPS Distinct Population Segment

ESA Endangered Species Act

ESU Evolutionarily Significant Unit

EWPU...... Entiat Watershed Planning Unit

FEMA Federal Emergency Management Agency

FERC.....Federal Energy Regulatory Commission

FRO..... Fisheries Resource Office

FWHCAFish and Wildlife Habitat Conservation Area

GIS Geographic information systems

HFEP...... Habitat Farming Enterprise Program

IRIS Initiative for Rural Innovation and Stewardship

ISEMP......Integrated Status and Effectiveness Monitoring Project

LWDLarge Woody Debris

NEPA...... National Environmental Policy Act

NFH...... National Fish Hatchery

NOAA Fisheries....... National Marine Fisheries Service

NPDES...... National Pollutant Discharge Elimination System

NPS...... National Park Service

NRCS...... Natural Resources Conservation Service

OHW/Mordinary high water/mark

PUDPublic Utility District

RCW Revised Code of Washington

SMA.....Shoreline Management Act

SMP.....Shoreline Master Program

UCRTT Upper Columbia Regional Technical Team

UCSRB...... Upper Columbia Salmon Recovery Board

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...... Watershed Resource Inventory Area

WWMP...... Wenatchee Watershed Management Plan

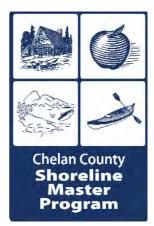
WWPU Wenatchee Watershed Planning Unit

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Appendix D

Visioning Workshop

Chelan County Grant No. G0800231



COMMUNITY VISION WORKSHOP SUMMARY

for Shorelines in Chelan County and the Cities of Cashmere, Chelan, Entiat, Leavenworth and Wenatchee

Project: Comprehensive Shoreline Master Program Update

Task 7: Summarize Community Visioning Process

Prepared for:



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1. Introduction

1.1 Background and Purpose

Chelan County and the Cities of Cashmere, Chelan, Entiat, Leavenworth, and Wenatchee have collectively initiated a Shoreline Master Program (SMP) update in accordance with the Washington State Shoreline Management Act and Shoreline Master Program Guidelines. The update process includes an inventory; environmental analysis and characterization; shoreline policies, environment designations, and use regulations; cumulative impacts and uses analysis; shoreline restoration plan; and a formal local adoption process. The SMP will apply to shorelines of the state, generally including lakes greater than 20 acres and streams with a mean annual flow greater than 20 cubic feet per second (cfs), together with shorelands within 200 feet of the ordinary high water mark and associated wetlands (RCW 90.58.030).

In May 2008, a Public Involvement Plan (PIP) was developed to guide community outreach efforts throughout the five project phases anticipated to conclude by summer 2010: awareness raising, visioning, SMP shoreline management recommendations, draft SMP policies and regulations, and SMP public approval process. During that time, the County and partner Cities will engage all shoreline users and those interested in the SMP process.

In October and November 2008, the County and partner Cities conducted the SMP Community Vision Workshop series to capture citizen questions, concerns, goals and aspirations regarding county and city shorelines. The nine interactive meetings represented the first round of community outreach focused on three key topic areas: public access and recreation, shoreline use and development, and environmental protection. Citizen input gathered at these meetings will help the project team develop shoreline goals, policies and regulations. Subsequent meetings will cover shoreline analysis, shoreline management recommendations, and draft policies and regulations. At least 195 citizens attended overall (some people did not sign in, so the total combined attendance is higher), with an average of 21 participants per meeting. The results of the workshops together with other public input (e.g., letters, e-mails and comment cards) will help guide the County and Cities' SMP update process through 2010.

Vision Workshop Attendance

Meeting Focus Area	Meeting Date	Meeting Location	Postcards Mailed	Participants Who Signed In
City of Chelan and UGA	October 21	Chelan City Hall	2,000	36
City of Wenatchee and UGA	October 22	Wenatchee Community Center	10,022	10
City of Cashmere and UGA / Lower Wenatchee Watershed (County)	October 23	Cashmere Riverside Center	5,166	28
Upper Wenatchee Watershed / Lake Wenatchee (County)	October 25	Lake Wenatchee Recreation Club	3,292	39
City of Leavenworth and UGA	October 27	Leavenworth City Hall	1,243	27
City of Entiat and UGA	October 28	Entiat Grange Hall	463	13
Stemilt-Squilchuck Watershed (County)	October 29	Malaga Fire Hall	1,507	10
Chelan Watershed (County)	October 30	Chelan Fire Hall	3,894	25
Entiat Watershed / Columbia River above Wenatchee (County)	November 5	Entiat Grange Hall	778	7
TOTALS			28,315	195

1.2 Format

All nine workshops followed the same general format: a welcome and staff introductions, brief project update, question and answer session, break-out groups, and recap of key themes. At each meeting, Chelan County SMP project manager Erin Fonville or the local City planning staff welcomed meeting participants, thanked them for their involvement, and introduced County and consultant project team members. Ms. Fonville or the local City planning staff reviewed the SMP update requirements, and summarized how the visioning process and public comments all help produce a countywide plan that acknowledges each City's and the County's individual character, geography and land use related goals. ICF Jones & Stokes consultant Meg O'Leary explained that the purpose of the workshop series was to gather community feedback on the three key topic areas in order to help the project team develop shoreline goals, policies and regulations. She reviewed the meeting format and encouraged participants to submit their comments via a comment card, letter or email.

The Watershed Company consultant project manager Amy Summe led the question and answer session at most meetings. The 15- to 20-minute session was followed by break-out group discussions structured around three key topic areas: public access and recreation, shoreline use and development, and environmental protection. Station facilitators led 20-minute group discussions for each topic area and asked participants to respond to a list of questions (see Appendix C for the questionnaire). The break-out group structure varied depending on the number of attendees. At two workshops, participants remained seated and the facilitators rotated; at all other meetings each group remained with the same facilitator and discussed all three topics together.

The meeting facilitators included the following staff:

- Chelan County: Erin Fonville, SMP Project Manager, Department of Natural Resources; Mike Kaputa, Director, Department of Natural Resources; Lilith Yanagimachi, Planner II, Department of Community Development.
- City of Cashmere: Mark Botello, Planning/Building Director
- City of Chelan: Craig Gildroy, Planning Director; Agnes Kowacz, Assistant Planner; and Rob Jordan, Building Inspector, Code Enforcement Officer
- City of Entiat: Susan Driver, City Planner
- City of Leavenworth: Connie Krueger, AICP, Community Development Director and Nicole Hill, Permit Coordinator
- City of Wenatchee: Brian Frampton, Associate Planner
- Consultants: Amy Summe, Consultant Team Project Manager, The Watershed Company; Suzanne Tomassi, Wetland/Wildlife Biologist, The Watershed Company; Meg O'Leary, Public Involvement Lead, ICF Jones & Stokes; Lisa Grueter, AICP, Senior Planner, ICF Jones & Stokes

See Appendix A for detailed workshop comments.

1.3 Materials

Participants were asked to sign in upon their arrival, then given a meeting agenda, project brochure and comment card. Maps were displayed at each of the break-out group stations, depicting waterbodies, proposed shoreline jurisdictions, parks and open space lands, and County and City boundaries and Urban Growth Areas (UGAs). Two displays showed the countywide shoreline jurisdictions and project timeline. See Appendix B for workshop displays and maps, and Appendix C for the workshop brochure and comment card.

1.4 Notification

1.4.1 Email Distribution

On September 24, 2008, the County emailed the workshop schedule to the SMP Advisory Committee and interested parties email distribution lists.

1.4.2 Posters

On October 13, 2008, color posters (11"x17") were delivered to the partner Cities for posting in various community locations, including city halls, post offices, grocery stores, and other high-pedestrian traffic areas. Posters were also placed throughout Chelan County.

- Entiat & Columbia River Area: Cooper's Store (Ardenvoir), Public access point on Entiat River near the mouth, Entiat Grocery Store, Entiat U.S. Post Office, and BJ's Shell Gas Station.
- Lake Chelan Area: Lake Chelan Reclamation District, Reed's Marine, Red Apple Market (Manson), Manson U.S. Post Office, Old Mille Park Boat Launch and Picnic Area (4 posters), Lake Chelan Shores Community Center, Lady of the Lake, Subway & Gas, Pat & Mike's Texaco, and 25 Mile Creek State Park Boat Launch (2 posters).
- Lake Wenatchee Area: Cole's Corner Gas Station, Parkside Market, Midway Market, Lake Wenatchee State Park, Midway Grocery, Cove Resort, and Just Plain Grocery.
- Malaga Area: Squilchuck Market, Malaga Market, and Malaga U.S. Post Office.
- Wenatchee Valley Area: Tom, Dick & Harry's (Monitor), Dryden U.S. Post
 Office, Dryden Grocery & Hardware, BJ's Shell Gas Station at Big Y, Peshastin
 U.S. Post Office, and Monitor U.S. Post Office.

1.4.3 **Media**

On October 15, 2008, the County emailed the workshop schedule to the following news sources: Cherry Creek Radio Stations, KOHO Radio, Wenatchee World, Cashmere Valley Record, Lake Chelan Mirror, Leavenworth Echo, and the Wenatchee Public Library.

1.4.4 Direct Mail

On October 14, 2008, postcard workshop announcements (Appendix C) were mailed to 28,315 addresses countywide. Postcards were mailed to every Chelan County property owner. The City of Chelan included a flyer in their monthly utility bill.

1.4.5 Web Sites

- Chelan County Public Utility District (PUD) posted workshops dates in their monthly "PUD News Line" (September 23, 2008 edition) at www.chelanpud.org/5822.html
- Chelan County posted workshop dates on their Web site www.co.chelan.wa.us/nr/nr_shoreline_master_program.html
- An invite to the October 25, 2008 Lake Wenatchee workshop was posted on the Lake Wenatchee Info Web site www.lakewenatcheeinfo.com

2. KEY THEMES

The purpose of the workshops was to identify participants' questions, concerns and goals regarding their community shorelines. The workshops were structured to explore existing conditions, ideas for improvements, and plans for future development and shoreline use. The following key themes emerged during the workshop break-out sessions. See Appendix A for detailed workshop comments.

2.1 Overall Key Themes

The following ten key themes arose consistently during break-out discussions at many of the County and City workshops.

- People are drawn to the natural beauty of the area. They recognize its importance environmentally and economically, and the need for a balance of shoreline uses.
- Countywide need for signage and well defined public access points.
- Many are concerned about the water quality of local ponds, creeks, streams, rivers and lakes and recommend improved water quality testing and monitoring, stormwater management and erosion control.
- Many are concerned about noise impacts from motorized vehicles on County rivers and lakes.
- Improve management of new development and density through zoning, and enhance pedestrian and bicycle connectivity.
- Keep new development in areas where existing development is located.
- Establish and maintain view corridors and scenic view roadway turnouts.
- Identify publicly owned land that could be adapted for new public access (e.g., street ends and rights-of-ways).
- Initiate and support ongoing efforts for cleanup and removal of litter, debris
 and junk metal in the water and along our shorelines.
- We have many parks and trails. Expand existing facilities before building new. Ensure existing public access, landscape and natural character are maintained.

2.2 Public Access and Recreation

Participants were asked how they currently use community shorelines, how easy it is to access those areas, which areas need new or improved public access, and what they imagined their community's shorelines will look like in the future. Participants

regularly use shoreline areas for walking, biking, fishing, rafting, kayaking, boating, tubing, jet skiing, swimming, bird watching, wildlife viewing, beach combing, scenic viewpoints, educational purposes, and even gold panning. Some feel that public access is inadequate because of private ownership, and difficult to find due to lack of clearly defined access points. Others feel their communities have fairly good public shoreline access. Participants recommend the County and partner Cities consider clear signage; more public docks, marinas and boat launches; more trails and access for non-motorized uses; improved amenities (restrooms, parking and dumpsters) at access points; and dog friendly areas. Some recommend an inventory of publicly owned land that could be converted for public access. Participants pointed out the conflicts between permitted private uses adjacent to public land and suggest prioritizing public access opportunities based on use and the potential impacts to private land.

2.2.1 City of Cashmere and UGA / Lower Wenatchee Watershed

- Public areas are difficult to access need well defined access points. People create their own path and cause safety problems and river bank degradation.
- More access for fishing, boat launches and picnics (e.g., Mission Creek, Wenatchee River and Rodeo Hole)
- Identify existing sites for new public access and parking (e.g., mulch center)
- More highway turnoffs for scenic view points
- Confirm commitment of Railroad for involvement in shoreline protection, management, stewardship

2.2.2 City of Chelan and UGA

- Strong desire for public access to 3 Fingers (consider City purchase of land)
- More public access for a variety of uses
- Identify and protect non-motorized use areas concerns about pollution, air quality, health, safety
- Identify street ends and vacant right-of-ways for public access
- Better signage and maintenance of unmarked public access
- Establish trails along lake and down river
- Create transitions between water and land uses
- Conflicts between permitted private uses adjacent to public land
- Prioritize public access opportunities based on use and impact on private land
- Fear of losing lake views stagger building heights
- Parking and public transportation to and from access points

Consider waterfront restaurant

2.2.3 Lake Chelan Watershed

- The more public access, the better especially in summertime
- Concern that more parks equals more boats, and therefore more wildlife damage
- Micro parks, public docks, boat launches and beach access
- Non-boater access for walking, hiking, biking, horseback riding and dog owners
- Need to maintain view corridors
- Access needed on both sides of Lake Chelan
- Trail along the gorge, all the way to Chelan Falls
- Preserve, identify and clearly sign all street ends and rights-of-way for public access
- Don't force private owners to provide [public access]
- Consider purchase of private property for additional public parks

2.2.4 City of Entiat and UGA

- Public access is a priority for Entiat! Need more public access rather than private or exclusive uses.
- Balance habitat and development
- Signage for existing public access
- Trail and mini-parks along waterfront with multiple access points for commercial
- Entiat park with access to swimming beach and pedestrian bridge to islands
- Full-service public marinas fueling, pump out, restroom, waterfront restaurant
- Connect waterfront via community loop trail
- Concerns about congestion problem at single boat launch

2.2.5 Entiat Watershed / Columbia River above Wenatchee

- Inadequate public access
- Lots of access to forest lands, so there is not necessarily inadequate access locally just not much "urban" access, more backcountry
- Need uses that promote local economic vitality

- Inventory scenic vistas and turnout points (especially above Rocky Reach)
- Identify public ownership areas, then determine more public access points
- Inventory recently purchased land trust properties
- Need public access along Entiat River and Columbia River lots of private ownership currently
- Signage needed for public access points with no clear access, people make their own pathway across private property without permission
- Boat launch on Chelan County side of Columbia River
- Fishing access along Entiat River

2.2.6 City of Leavenworth and UGA

- Clear signage for public access
- Preservation of scale is important
- Public access to golf course year round for walking, cross-country skiing
- Keep public access at well site for non-commercial rafting or limit numbers
- Require LEED building design on shorelines
- Scale buildings and set them back in areas directly adjacent to park areas require buffering
- Continuous pedestrian and bicycle paths, outside of right-of-way
- Trail system along entire shoreline development restriction
- Purchase additional property in commercial zone
- Need East Leavenworth boat launch
- Need flexibility (e.g., fisherman's access) if not in use, flexibility for [use of] private properties
- Riparian vegetation is important for atmosphere and environment
- Blackbird Island vegetation management for safety, balance
- Tax incentives to allow public access
- Private land access concerns about land owner liability
- Model Europe all shorelines accessible, even on private property (managed with signage, fences)

2.2.7 Stemilt-Squilchuck Watershed

- There will be growth in next 20 years need to plan appropriately
- Current parks are under-served

- District has shut off access due to vandalism
- Free public boat launch with parking and garbage cans
- Better boat access to Wenatchee River and Lake Wenatchee
- Access north of dam, south of Wenatchee
- Concerns about erosion at boat launch areas
- Consider County land purchase for launch and park in Malaga
- Improve areas where access actually occurs, otherwise people make their own
- Don't want to force public access

2.2.8 City of Wenatchee and UGA

- Balance of appropriate use in the right place
- Minimize environmental impacts
- Expand existing facilities rather than building new sites and facilities
- Feel good about waterfront access today want to keep it part of Wenatchee charm
- More kayak, paddle boat and tuber access
- No new beaches, especially in natural areas small beach access okay for kids
- Could use more lighting near 5th Street

2.2.9 Upper Wenatchee Watershed

• No comments gathered at the workshop for this topic area.

2.3 Shoreline Use and Development

Participants responded to questions about the scope and scale of their community's shoreline uses (e.g., what is there too much or too little of?), what type of development they would like to see, and the most suitable locations for future development. In general, participants feel it is important to create more public access for a variety of uses, establish and maintain view corridors, improve management of new development and density through zoning, address trash and litter along shorelines, improve pedestrian and bicycle connectivity, and control the noise and environmental and impacts of motorized crafts on the County's lakes and rivers.

2.3.1 City of Cashmere and UGA / Lower Wenatchee Watershed

- More habitat, open space and recreation
- Designated public access for fishing

- Better public access for non-fishermen at Rodeo Hall and Sleepy Hollow
- River trail between Wenatchee and Leavenworth for biking and walking
- Add parking and restrooms in high use areas
- Consider waterfront hotel, restaurant City benefit, take advantage of scenery
- Like to see fewer business and commercial uses on waterfront (e.g., concrete plant, warehouses)
- No need for high intensity development
- Existing Wenatchee River boat launches are inadequate
- Inappropriate use of Wenatchee River bridges –causes parking problems
- Inappropriate launch area at Mission Creek near Wenatchee and at Jarvis spawning salmon
- Preserve floodplains
- Clean up car junkyards on Riverfront Drive and along Mission Creek
- Water crafts and jet skis on Lake Wenatchee are noisy and destroy banks
- Concern about impacts to water quality from overuse of pesticides and road salt (Blewett Pass)

2.3.2 City of Chelan and UGA

- Need consistent year round water level in Lake Chelan
- Lake Chelan is our primary asset. Don't restrict our economy. Need more year round moorage and public access. Tourism big part.
- Concern about shoreline and marina congestion
- Concern about boat refueling water quality (i.e. fuels spills from no automatic shut-offs) and swimmer safety
- Lessen standards for docks to allow for existing dock maintenance. Some docks are falling apart.
- Design review and City plan needed to maintain cohesive character
- Density requirements on shoreline we only have so much space
- Concern about height blocking views just under 50 feet
- Too much condo and home development
- Current standards make it difficult for private owners to make dock repairs
- Concern about large woody debris improperly placed, aesthetics, navigation

Add camping areas

- Proposed trails conflict with existing parking
- More habitat for fish concern about impacts of shoreline noise and activity
- More and more garbage floating on lake clean it up

2.3.3 Lake Chelan Watershed

- Enough residential, business, agriculture and irrigation
- More commercial outside urban area (gas refueling stations, restaurants, retail, etc.)
- More non-motorized use and development kayak, canoes, bike, pedestrian pathways
- More boat rental and dock spaces
- Dog friendly access
- Buoy line for swimmers
- Safe pedestrian walkway along water with connectivity to downtown shops
- Better, more affordable access uplake (besides Lady of the Lake) for non boat owners a shuttle?
- Need view corridors
- Improve signage for public access
- Open up street ends or combine to make single large park
- Concerns about residential development
- Concerns about water quality, aesthetics appalling development, particularly on steep slopes
- Concerns about loud water crafts, fast boats, wakes, gas tanks, marinas and increased septic
- Removal of junk cars around lakes above Manson

2.3.4 City of Entiat and UGA

- Establish retail and restaurant businesses
- We have enough residential
- Concerns about jet ski noise and enforcement of Entiat River "No Wake" zone
- No high intensity, manufacturing, detrimental waste-producing uses (e.g., livestock, junk yards)

2.3.5 Entiat Watershed / Columbia River above Wenatchee

• More commercial within Entiat city limits and along shoreline

- Waterfront hotel
- Concerns about too much residential
- Concerns about additional access and usage impacting Entiat River
- Concerns about conflicting fishing and water craft uses
- Marina may help reduce private dock construction
- Pocket parks
- Community pool or aquatic center

2.3.6 City of Leavenworth and UGA

- We like our existing shoreline uses
- Houses 25 feet from river seems too close other areas have larger buffers
- Would be nice to have a waterfront restaurant
- No high intensity uses!
- Pedestrian connection from Blackbird Island to golf course
- Better park system maintenance

2.3.7 Stemilt-Squilchuck Watershed

- County needs to review Malaga Vision Plan and Stemilt-Squilchuck
 Community Vision Plan many of your shoreline questions are answered
- No multifamily units design rural riverfront, small lot, single family
- No more waterfront homes
- Concern about litter and squatters along shoreline
- Lake Entiat (on Entiat side) is suitable for high intensity development
- Orondo suitable for high intensity recreation, support facilities (e.g., fueling)
- Development that enhances fishing and builds fish habitat
- Protect existing agriculture

2.3.8 City of Wenatchee and UGA

- Plenty of parks and trails currently make sure public access, natural character and landscape are maintained
- Interpretive signage at confluence and wetlands areas
- Public access across Highway 2
- Odabashian Bridge extension of loop trail

- Pedestrian/bicycle connectivity from downtown to water across railroad and in all directions in northern UGA
- No high-intensity development except marina and education center
- Don't want to see hotels near parks waterfront parks require mixed use
- Consider waterfront restaurant
- Don't want motorized crafts
- Limited additional water-oriented commercial kayak rental, fishing guides
- Want to see small marina, docks don't want permanent slips
- Lacking open space for recreation
- Concerns about value of waterfront property
- Scenic view protection

2.3.9 Upper Wenatchee Watershed

- Too much removal of riparian vegetation along shorelines by landowners
- Too many Beach/Community Clubs along Lake Wenatchee
- Too much impervious surfaces impacting runoff
- Maintain opens spaces and parks possibly add a dog park
- Not enough restroom facilities
- Concerns about future multi-family and commercial uses and development outside of shorelines
- Noise pollution from jet skis, boats, music from boats
- Light pollution
- No safe, contained boat refueling areas educate public about safe refueling

2.4 Environmental Protection

Participants were asked which community natural areas should be protected and the best approach for preservation. They identified degraded shoreline areas that should be restored and discussed who should be responsible for restoration efforts. Many expressed concern about the water quality of local ponds, creeks, streams, rivers and lakes and recommend improved water quality testing and monitoring, stormwater management, and erosion control. Some pointed out the need for better management of refueling stations and the need for reductions in pesticide and chemical spray use. Others noted the loss of views, view corridors, and public access due to increased private development. Most agreed that public

education—especially of children—plays an important role in environmental stewardship, preservation and restoration.

2.4.1 City of Cashmere and UGA / Lower Wenatchee Watershed

- Preserve Wenatchee River waterfront, Lake Jarvis, salmon spawning grounds near Jarvis Station, Mission Creek, Sand Creek, Peshastin Creek, Brender Creek, and Mill Pond
- Encourage preservation through interpretive signs and public outreach
- Coordinate volunteer, community-based clean up with service clubs and schools
- Create landowner incentives instead of regulations
- Establish better mechanisms for enforcement of environmental regulations
- Clean up dump areas, debris and garbage in and around waterbodies
- Dikes near recycling center get degraded because rafters scramble to water
- Restore dike where it has been eroded by people seeking river access

2.4.2 City of Chelan and UGA

- Alarmed about loss of lake view, access points, corridor preserves, noise pollution and water quality
- Any area that is currently public should remain public (e.g., Park Street)
- Need water quality study and more water quality regulations and monitoring
- Require water testing near marinas and high impact use areas (e.g., refueling stations)
- Create automatic shut-offs for boat refueling
- Limit buoys at public access points
- Too many marinas
- Concerns about milfoil in Lake Chelan
- Concerns about lake level for Lake Chelan
- Coordinate parking with public access
- Educate and encourage private businesses to upgrade their facilities

2.4.3 Lake Chelan Watershed

- Already afforded degree of environmental protection programs already in place we have enough
- Continue to be protected under existing [regulations], but don't add more

- Columbia River docks and banks concerned about private use, not protection
- Concern about access on Upper Stehekin Valley Road
- Improve stormwater management
- Concern about sediment and pollutant runoff to lake and river
- Erosion protection in developed area is the County's responsibility
- Concern about Chelan valley runoff from fires
- Concern about clearing and grading around lake
- Concern about woody debris
- More local control
- Would like to see top 30 miles [of lake] remain natural, as is concern about private holdings there and would prefer to have it remain public

2.4.4 City of Entiat and UGA

- Columbia River areas need to be enhanced and restored to natural condition (e.g., re-vegetation)
- Entiat waterfront plan building theme or style should tie together
- Need volunteer involvement Tree Board
- New hotel to bring more tourists and invite new residents
- Incorporate viewpoints and small parks like PUD
- Concerns about increased beaver population
- City should be responsible for restoration in cooperation with PUD

2.4.5 Entiat Watershed / Columbia River above Wenatchee

- County should review Entiat watershed plan includes list of areas for preservation
- Preserve area from PUD substation northward, near Earthquake Point, where cliffs come to Columbia River heavily used by waterfowl
- PUD could surplus land for conversion to public access (e.g., southern tip of Earthquake Point)
- Preserve environmentally sensitive area in front of proposed marina
- Preserve springs and streams at mouth of Columbia River
- Inventory land that could become wildlife habitat
- Concern about beaver damage to trees

County should be responsible for restoration

2.4.6 City of Leavenworth and UGA

- Blackbird Island habitat restoration on north side and erosion protection on south side
- Concerns about erosion along river banks due to access and use
- Avoid over-development of Chumstick Creek

2.4.7 Stemilt-Squilchuck Watershed

- Control off-road vehicles tearing up meadows and low lying areas, going near water and causing siltation in the Stemilt Basin and on Birch Mountain
- Address erosion along Columbia River
- Address littering problem in water and along shoreline
- Inventory state or public lands protect and preserve those areas
- Offer rewards and incentives
- Why do we need a reward to do the right thing?
- Consider local fundraisers, local business donations and Adopt-a-Stream/Reservoir/Lake
- Involve the kids
- Incentives for private owners to preserve?
- Trees blow over and cause erosion need native vegetation
- County should review WRIA 40a plan
- Improved roads make it easier to get in and impact natural areas
- County needs to advertise positive restoration activities completed or in progress

2.4.8 City of Wenatchee and UGA

- Protect unique areas, but balance other areas for appropriate uses
- Replanting north of confluence area (e.g., drought tolerant plants)
- Preserve Horse Lake Road, south bank of Wenatchee, for possible future park
- Ensure adequate, aesthetic lighting but shielding so it doesn't impact neighborhoods
- Public education involve the kids
- Coordinate volunteer restoration efforts

- Is City helping the homeless?
- City should improve irrigation near 5th Street could become a view point
- Restoration is not just a responsibility, it's a privilege

2.4.9 Upper Wenatchee Watershed

- Preserve north and south shore drinking water sources public health concern
- Preserve White River, Fish Lake wetlands, Lake Wenatchee's north shore, and smaller lakes (e.g., Hidden Lake)
- Investigate opportunities to preserve private property
- Enjoy and appreciate current mix of public, private variety of access and uses
- Limit future commercial and high density use
- Better education would lead to less need for regulation
- Volunteer restoration programs for kids would help build appreciation and stewardship
- Restoration efforts could be supported by Chelan-Douglas Land Trust through Conservation Easements
- Concerns about land clearing and impacts to shorelines and streams
- Maintain native vegetation as much as possible
- Concern about spraying along roads near water

3. SHORELINE MANAGEMENT RECOMMENDATIONS

Public Comment Matrix and Recommendations

Creek, Peshastin, Wenatchee

Limit development in those areas

or specific types, e.g., cabin vs.

riverfront

subdivisions

area

family

More commercial (gas refueling

Need restaurant on shoreline

• There is going to be too much

No more waterfront homes

Concerns about residential

residential in Entiat watershed

• No multifamily units, so design as

rural river front - small lot, single

• Small lot residential okay if can meet

engineering/architecture [standards]

stations, retail) outside urban area

						_
	V	ision Workshop Meeting L	ocation / Coverage Area			
Lake Wenatchee / Upper Wenatchee Watershed, Malaga / Stemilt- Squilchuck-Colockum Watershed, City of Entiat / Entiat Watershed, City of Chelan / Chelan Watershed	City of Cashmere / City, UGA, and Lower Wenatchee Watershed	City of Chelan / City and UGA	City of Entiat / City and UGA	City of Leavenworth / City and UGA	City of Wenatchee / City and UGA	Recommendations / Portion Shoreline Master Program where Topic will be Address
Shoreline Use: The SMA requires that "uses shall be prefered" uses include single family resipeserved for "water-oriented" uses, include The Act affords special consideration to Statement; preserve the natural character of	dences, ports, shoreline recreational us ing "water-dependent", "water-related" a shorelines of Statewide Significance	ses, water dependent industrial and co and "water-enjoyment" uses. that have greater than regional importa	mmercial developments and other deve	elopments that provide public access op	portunities. To the maximum extent	state wide interest over local
horeline area." http://www.ecy.wa.gov/programs/sea/sm	a/st_guide/intro.html)					
Areas suitable for high intensity development – Lake Entiat on Entiat side of Columbia River Orondo for high intensity recreation and support facilities, e.g., fueling [note: in Douglas County] Protect existing agriculture Enough agriculture and irrigation Agriculture zone on water is no longer available Need marina infrastructure Problems with lake erosion at steep bluff in Manson – could be good site for shops, other waterfront development Waterfront hotel Need more commercial within Entiat city limits and along shoreline Not enough commercial For CUPs, consider requiring some kind of water access, marina, e.g., at waterfront restaurant	 No need for high intensity development Agriculture – concern about use of pesticides Restaurants, resorts – make nice development that takes advantage of scenery Might be good to have a waterfront hotel or restaurant – benefit the City No economic, commercial uses on waterfront Wenatchee River already developed – put resorts in developed areas Need more commercial within Entiat city limits and along shoreline Add commercial There is going to be too much residential Protect Upper Mission Creek, 	 Transitions between water and land uses Concern about lack of car and boat trailer parking Need to address scale (e.g., marina) Can we get zoning on the lake? Co-locate jet skis, marinas, fueling? House boats – need to regulate like mansions in county Too much condo and home development Concern about river – land use regulations Need parking and public transportation to access points 	No high intensity uses along Entiat Balance habitat and development Marinas – public with full services like fueling, pump out, restroom, waterfront restaurant Less multi-storey buildings Future condos – need City plan to protect character – avoid out of scale with adjacent low intensity uses – wedding cake look Need density requirements on shoreline Waterfront restaurant Hotel is first step to bringing houses and tourists Need more retail, restaurants, businesses No manufacturing No detrimental use, waste	 No high intensity uses! Avoid over development of Chumstick Creek Would be nice to have restaurant on waterfront Require Leadership in Energy and Environmental Design (LEED) rated building design on shorelines Scale buildings and set them back in areas directly adjacent to park areas – require buffering Preservation of scale is important – keep scale 	Need waterfront restaurants Don't want bunch of hotels near parks – waterfront parks require mixed use Waterfront last place for development Ensure adequate, aesthetic lighting but shielding so it doesn't impact neighborhoods Maintain natural character/landscape Maintain natural shoreline – want balance	Shoreline use provisions will addressed in all portions of the SMP, but are most directly for in sections with an asterisk: SMP Contents a. Review and revise goals* b. Conduct inventory & analytic. Determine environment designations* d. Analyze cumulative impactive. Develop restoration plantiful for the content of the

Residential is adequate

can be applied in Cities and

UGAs, e.g. commercial and

oriented uses. Where allowed,

Waterfront restaurants can be

Agricultural uses are allowed

consistent with SMA and the

these will be consistent with local

addressed as a water-enjoyment

similar, particularly water-

comprehensive plans.

use in appropriate use

environments.

Vision Workshop Meeting Location / Coverage Area						
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development, e.g., across from 25 Mile Creek Enough residential and business Restrooms between Wenatchee and City of Chelan Community pool or aquatic center Need uses that promote local economic vitality						SMP guidelines. Residential at different densities will be allowed – but consistent with the local comprehensive plans. Recreation uses and support facilities, e.g. restrooms and parking, will be addressed in use policies and regulations. Building height is anticipated to be limited to SMA standards, unless there is an overriding public interest.
Public Access: "the public's opportunity to enjoy the phy (http://www.ecy.wa.gov/programs/sea/sm	na/st_guide/intro.html)	·				
 Shut down Black Lake due to vandalism Don't want to force public access Near Alcoa – good area for public access, viewpoints Lack of good launches south of Rock Island – really steep Need launch with parking, garbage 	 Not enough formal designated spaces for access Need clear, obvious public access Area down river – not an official boat launch, need to make it safer Protect private property Highway turnoffs for views Entire Wenatchee River as view 	 Prioritize public access opportunities based on use and impact on private land 3 Fingers Park public access Want to be able to walk/access lake physically, frequently Public access/land strictly for public, no private uses 	 PUBLIC ACCESS IS A PRIORITY FOR ENTIAT! Trail along waterfront with multiple access points for commercial Mini parks along waterfront north of existing city park Public facilities, no exclusive 	 Clear signage Year round golf course access Purchase additional property in commercial zone Blackbird reserve to Blackbird Island – any connections punch through 13th Commercial floaters on Icicle 	 Open, easily accessible, natural More kayak/paddle type access No new beaches, especially in natural areas Small beaches okay, e.g., for child access 	Public access provisions will be addressed in all relevant portions of the SMP, particularly those with an asterisk: SMP Contents a. Review and revise goals*

Columbia River. • Want free public access

cans and public access

launch to avoid erosion

Require improvement of immediate

Wenatchee on the west side of the

No public access north of Rock

Island Dam to just south of

- Consider purchase property for launch and park in Malaga in partnership with County.
- Focus where access occurs, otherwise people make their own
- Ravens Wing get easement for public access
- Railroad crossing issues safety
- Need better boat access to Wenatchee River and Lake Wenatchee
- Get County public works maps of street ends right of way for public
- Preserve, identify and sign all street ends right of way for public access
- Need view corridors
- Need more sandy beaches
- No vehicle turnoff/viewpoint between

- corridor
- More access for fishing, views, picnics, boating
- More maintained access with amenities – dumpster, porta
- Difficult to access only six points of public access between Dryden and Wenatchee
- People making own access causes safety problems and dike/bank degradation
- Formalize mulch center site as
- Mission Creek needs access
- Cashmere dike access
- Too little access, e.g., Mission
- Rodeo Hole more public access
- Avoid land locked public land Three Lakes, Malaga is private, no public access
- Need highway turnouts
- Contained dog park
- Historical perspective interpretive signs and public outreach
- Additional access and usage

- Define public beach access available at low lake level
- Improve public lands for accessible public access
- Beach areas for children
- Non-motorized boat access
- Waterfront park dog access areas Conflicts between permitted private uses on/adjacent to public
- Improve kayak haul out areas
- Develop street ends/vacant rightof-ways
- Access map for cyclists
- Not happy with shorelines need access – tourism is big part
- Alarmed about loss of lake view, access points and corridor preserves
- Preserve area west of lakeside as swim lane
- Fear we will lose views of lake with fences and buildings
- Staggered building heights
- Public access/land should be usable, sanctioned - add signage
- Camping accessible from parks

- uses
- Entiat park with access to swimming beach, pedestrian bridge to islands
- Parking, under bridge, does City/PUD have plan? Prior plans unfinished.
- Another park on Entiat canoe, kayak, docks, swimming, water is
- How about a rustic park by kiosk near the mouth of the Entiat
- City storage yard dump wood chips - road/turn around improve public access
- See old PUD park plan can PUD do more?
- Congestion problem at single boat launch
- No signage/identification of existing legal public access
- No other public access, 20 miles up and down Entiat river
- Current access not good, especially when water is down – one dock
- Lake view disappearing due to

- interrupting privacy of private land owners
- Need flexibility, fisherman's access, some overgrown – if not in use, flexibility for private properties
- Model Europe all shorelines accessible, trail with fence
- Public visual access make park entries visible
- With development, consider views, access
- Keep public access at well site for non-commercial rafting or limit numbers
- Tax incentives to allow public access
- Private land access liability concern, protect land owners
- Want more trails
- Trail system along entire shoreline – development restriction
- East Leavenworth boat launch
- Continuous pedestrian/bicycle paths, outside of right-of-way

- Need balance appropriate use in the right place
- Minimize environmental impacts
- Expand existing facilities rather than building new sites (e.g., boat launches)
- When parks designed consider safety and civility, e.g., tree placement
- Could use more lighting near 5th Street
- Need access near railroad south - there are access roads but owned by BNSF
- Maintain pedestrian bridge for safety
- Active access areas away from natural areas
- Kayak/tube haul out, Wenatchee River Make sure access is
- maintained Want to maintain loop trail and
- parks Want to retain park for all, not just folks that live nearby Interpretive signage in

- b. Conduct inventory & analysis*
- c. Determine environment designations
- d. Analyze cumulative impacts
- e. Develop restoration plan
- f. Amend permit provisions g. General policies and
- regulations* h. Modification policies and regulations*
- i. Use policies and regulations*
- j. Public and agency involvement

Public access standards will be developed. Public access is likely to be required with most new shoreline uses, except for singlefamily residential, particularly when a shoreline trail plan is in effect. Exceptions will be noted, and may include when access would interfere with a use (e.g. water-dependent industrial) or create hazards to life or property. View protection would be addressed through building

heights (see Shoreline Use

		/ision Workshop Meeting Lo	ocation / Coverage Area]
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Chelan and Manson Access needed both sides of lake Public access uplake of 25 Mile Creek Pocket parks Non-boating access for hiking, biking, horseback riding Antilon Lake – need hiking opportunities Micro parks – bike, pedestrian access More parks equals more boats, more wildlife damage Identify existing public access sites – street ends, right of way Kayak areas – non motorized water trails/pathways Hiking, walking along water Buoy line for swimmers Dog friendly access Need incentives and regulations for view corridor Need public access along Entiat River and Columbia River With no clear public access, people make their own pathway across private property without permission County needs to identify public property and easements along Entiat River, then determine opportunities for more public access Signage needed for public access points Need boat launch on Chelan County side of Columbia River Petition PUD for public area on waterfront near Earthquake Point Lots of access to forest lands, so there is not necessarily inadequate access locally – just not much "urban" access, more backcountry Inventory scenic vistas and turnout points (especially above Rocky Reach) Would like trail from 25 Mile Creek state park to Box [canyon or creek?] Need a trail along the gorge, all the way to Chelan Falls Safe pedestrian walkway along water with connectivity to downtown shops Concern about Howe Sound dock falling down	 stresses the river Fishing and water craft are conflicting uses Tubing groups – volume of people on water – environmental issue. Limit use. Want biking/walking trail connecting Cashmere, Dryden, Peshastin, Leavenworth, Wenatchee Need formal designated kayak/float launch, other than Recreation Center Boat launches at Lake Wenatchee, existing is inadequate Want Rose Lake – "no wake" lake 	with reasonable facilities City should develop existing opportunities and purchase additional park land All public lands maintained for non-motorized boating/swimming Better signage/maintenance of unmarked access All uses in short supply, but limited land – use land wisely, find coordinated plan More trails along lake and down river Need more use for non-motorized activities No wake zone in lower 2 miles of Lake Pedestrian bridge to Leavenworth Road Add bike lane connections to bridges and Highway 2 Motorized transportation should be encouraged Lessen standards for docks to allow for existing dock maintenance. Some docks are falling apart. Difficult for private owners to make repairs Not allowed to resurface my dock except if using recycled wood Narrow channel for travel lanes to buoys Hold line on boat launches and marinas – too many buoys New private marinas or dock development – set aside open space Boats equal sound, gas, smell	vegetation Want viewpoints – signage about wildlife and Entiat At new access points, need parking with landscaping, benches, etc. Need lighting, restrooms No private/exclusive uses Inappropriate – jet skis, noise Need to enforce no wake zone at Entiat River – difficult to enforce Bike and walking trails Connect waterfront via community loop trail Want a marina – public and private		confluence/wetlands areas Lacking open/recreation space Horse Lake Road – south bank of Wenatchee, possible future park area, flat Irrigation near 5th Street – could be a view point Need view points Need marina Don't want motorized crafts – want kayaks, canoes at waterfront park Want small marina, docks – don't want permanent slips Want a boathouse to store kayaks, etc. Connectivity – pedestrian/bicycle – from downtown areas to water across railroad Want bicycle trails in all directions in northern UGA Richard Odabashian Bridge – extension of loop trail	above) and shoreline setbacks. Dock, marina, and other in-water structures and activities will be addressed in the SMP. To the extent possible standards will be coordinated with those of other agencies to streamline the process, and the standards will recognize the need to maintain structures for safety.

V	ision Workshop Meeting Lo	cation / Coverage Area			
of Cashmere / City, UGA, and er Wenatchee Watershed	City of Chelan / City and UGA	City of Entiat / City and UGA	City of Leavenworth / City and UGA	City of Wenatchee / City and UGA	Recommendations / Portion of Shoreline Master Program where Topic will be Addresse
			" against adverse effects. All allowed	uses are required to mitigate advers	e environmental impacts to the
ook into Chelan Falls land ventory ore trees for eagle perches, bitat almon spawning grounds near rvis Station otect Upper Mission Creek, and Creek, Mill Pond, Brender eek, Peshastin, Wenatchee erfront indowner incentives instead of gulations, e.g., Conservation eserve Program (CRP) lands ervice clubs and volunteerism, lunteer clean up days eed educational program to help otect natural areas oncern about what [substance] ilroad uses for weed control, fire introl ean up car junkyards on verfront Drive and Mission eek ould like garbage, metal debris moved inforce removal of trash – less pensive trash removal inforcement issues – need to be enter mechanism excareful how planted buffer and indiscaping is done	 Preserve existing conditions as much as possible Lake is the biggest asset Need more habitat for fish – concern about [shoreline] sound and activity Too much large woody debris as mitigation given lake elevation. Improperly placed. Aesthetics and navigation. During low water levels, old portions of concrete are visible – remove unnatural materials Increase landscaping, besides grass Non-motorized – water quality, noise Water sources, input into Lake Chelan that affects water quality – minimize impacts with landscaping and maintenance; Big polluters – ducks and geese on water and grass. Need to monitor benzene sources – motor boats, etc. Safe guards – water quality, garbage Water quality concerns – drinking water, milfoil Butte area – limits on development, protect water quality 	Want Entiat to be natural Need volunteer involvement – Tree Board City should be responsible for restoration via plans and cooperation with PUD What can be done with railroad bed and island? If railroad ties are pulled out, what is liability with creosote, etc.? Columbia River areas need to be enhanced/restored to natural condition – revegetation	 Riparian vegetation is important for atmosphere and environment Revisit buffers on east [side of lcicle Creek] Do not allow construction in repetitive flood areas Can vegetation be thinned to avoid blocking views if mitigated elsewhere? Beaches important – getting smaller, need to restore vegetation Erosion – what could be done legally to preserve beaches or public areas? Houses 25 feet from river – seems too close – other areas have larger buffers 	Restoration not just responsibility but privilege In replanting areas, have work parties Plaque or recognition for helping with restoration Need education – have kids fall in love with the area Protect unique areas, but balance other areas for appropriate uses Protect some distance upstream of confluence/Wenatchee River Want native plants in shoreline landscapes Need drought tolerant replanting north of confluence	Environment provisions will be addressed in all portions of the SMP but are most directly foun in sections with an asterisk: SMP Contents a. Review and revise goals* b. Conduct inventory & analysistic. Determine environment designations* d. Analyze cumulative impacts* e. Develop restoration plan* f. Amend permit provisions* g. General policies and regulations* h. Modification policies and regulations* i. Use policies and regulations j. Public and agency involveme Environment provisions will incorporate local government critical areas regulations, as amended per GMA best available science requirements Environment provisions are like to incorporate by reference Stawater quality standards and loc stormwater management plans Restoration plans can address management of erosion, and
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Vision Workshop Meeting Location / Coverage Area						
Lake Wenatchee / Upper Wenatchee Watershed, Malaga / Stemilt- Squilchuck-Colockum Watershed, City of Entiat / Entiat Watershed, City of Chelan / Chelan Watershed	City of Cashmere / City, UGA, and Lower Wenatchee Watershed	City of Chelan / City and UGA	City of Entiat / City and UGA	City of Leavenworth / City and UGA	City of Wenatchee / City and UGA	Recommendations / Portion of Shoreline Master Program where Topic will be Addressed
particularly steep slopes Some eroded banks – responsibility depends on ownership Storm drain overflow pulling sediment into lake, causing erosion (South Harris Avenue in Manson) All sediment and pollutants going into lake Clearing and grading around lake Visual impacts of erosion – need flexibility to repair, fill waterward of ordinary high water mark	 Portions of dike where it has been eroded Minimize impacts from highway runoff Protection of floodplains Avoid salt on roads, use sand Water crafts on Lake Wenatchee – jet skis – noisy, destroys river edges 	minimize impacts with landscaping and maintenance; Big polluters – ducks and geese on water and grass. Need to monitor benzene sources – motor boats, etc. Safe guards – water quality, garbage Water quality concerns – drinking water, milfoil Butte area – limits on development, protect water quality Milfoil problem just starting – avoid spread Tingers – remove fill and restore to pre-existing conditions, prevent development				update will reference the needs and programs identified by the watershed and sub-basin plans, many of the additional items identified by workshop attendees can also be incorporated.

APPENDIX A: WORKSHOP COMMENTS, COMMENT CARDS, LETTERS AND EMAILS

A.1 Workshop Comments

The following represents citizen comments gathered during the workshop question and answer session and break-out group discussions. Comments were taken directly from station flip charts (minor edits were made for grammar and clarity). The notes were intended to capture—to the extent possible in an interactive workshop setting—key issues and the overall tone of each group's discussion. The comments will better inform the project team of community questions, perceptions, concerns and priorities related to current and future shoreline access, use and development.

A.1.1 City of Chelan and UGA

October 21, 2008 Chelan City Hall – 135 E Johnson Avenue 6:00 to 8:00 pm 36 participants

Question and Answer Session

- Q How many new docks and boat lifts now and in future?
- A Granite Ridge, Good Fellow, Caravel in process now, about 200 slips SMP doesn't address buoys, City doesn't have inventory
- **Q** What about on Morse Park?
- A Approx 160 slips, council wants to revisit design
- **Q** Is there a map or list of public access sites? Near 3 Fingers?
- A Have preliminary inventory and maps. Are working on street ends inventory.
- **Q** Is map of future public access part of process?
- A Can identify potential sites. City would need to go through public process. Have City plans for access.
- **Q** Is there going to be vision statement?

- A Will use input towards goals, policies and regulations. There will be much public input and decision-maker review. Then will go to [the Washington State Department of] Ecology. City wants to form a local steering committee.
- **Q** Local SMP to be updated?
- A Yes. Local SMP that becomes part of state SMP. Will need to integrate state requirements and local input. 3 goals: protect shoreline ecology; encourage water dependent uses; public access. Need to balance goals.
- **Q** What is done to monitor water quality?
- A Chelan Hills Div. monitoring. County's Lake Chelan Water Quality Committee. Lake Chelan WRIA not yet developed. SMP will address stormwater/water quality but more focus on development.
- Q Will there be more comment opportunity at draft plan stage?
- A Yes, more meetings to come. See County web site for details.
- Q Surprised at lake level last 2 years/seasons. PUD did lower. Didn't hear about it.
- A We encourage participants to sign-in on sheet for future contact. Pass word on to your neighbors.
- Q Will we be addressing floating businesses?
- A City currently does not allow in UGA. Can be a topic for SMP.
- **Q** Is PUD part of process?
- A PUD subject to federal rules. PUD contacted, and involved in County SMP advisory committee.

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - Parks should remain as is
 - 3 Fingers public access
 - 3 Fingers park
 - 3 Fingers

- Fear we will lose views of lake with fences and buildings
- Staggered building heights
- Want to be able to walk/access lake physically, frequently
- Public access/land strictly for public, no private uses
- Define public access to beaches formed at low lake level
- Public access/land should be usable, sanctioned add signage
- Need parking and public transportation to access points
- Improve all public lands for accessible public access –eliminate rip-rap
- Beach areas for children non motorized boat access
- Dog access areas all congregating at USFS need dedicated space
- No wake zone in lower 2 miles of Lake
- Encourage trails along lake and down river
- More types of upland activities in parks interpretive signs, Frisbee golf
- Transitions between water and land uses
- Better signage/maintenance of unmarked access
- Waterfront restaurant
- Chelan gorge
- Not much area left within city
- Maintain parks as existing
- Class 3 stream near Chelan Butte Road
- 2. How do you use the shorelines? (View points, trails, parks or recreation areas, boating, rafting, swimming, etc.)
 - Boating, swimming, kayaking, beach combing, paddle boarding
 - USFS site is popular
 - Sailing, rowing, kayak, swimming, skiing, walking, motorboats, jet skis, biking
 - Woody debris at lakeside limits access and use
 - Dedicated/protected space for non motorized uses pollution, air quality, health, safety
 - Motorized transportation should be encouraged [at public access points]
 - Can't swim at Campbell's
 - Triathlon training protected long swim areas

- Low impact tourism
- Swimming, boating, walking, biking, living, kayaking
- Don Morse to lakeside trail proposal
- Dog access
- It's working
- 3. How do you feel about your level of waterfront access, both visual and physical?
 - Not enough
 - Good
 - [Don't want] loss of existing parks or park opportunities
 - Not enough, need more
 - Diminishing
 - Possible expansion (e.g., Darnell's, 3 Fingers)
 - Partnerships with private parties
 - Dog park on waterfront with poop scoop
 - Variety of park types/areas for different uses/users
 - Major local vs. visitor issues
 - Conflicts between permitted private uses on/adjacent to public land
 - Slippery slope governing/regulations private property development rights
 - City needs to get behind the trail to implement
 - New SMP needs to enable development
 - Still maintain access to existing docks
 - Kayak/bicycle groups want to develop a comprehensive plan
 - Terrible in September with low lake
- 4. Are there areas that need public access (that currently don't have any)?
 - Buy 3 Fingers for park
 - PUD beach by water/terrace lakeside
 - Improve kayak haul out areas
 - Parking
 - Develop street ends/vacant right-of-ways to take pressure off major parks

- Map for cyclists to access parks and bike racks
- City should develop existing opportunities and purchase additional park land
- Camping accessible from parks with reasonable facilities for lower income visitors (e.g., Teanaway)
- Prioritize public access opportunities based on use and impact on private land
- Increase landscaping, besides grass
- USFS ranger station better physical access to water from lawn area steps over rip-rap

SHORELINE USE AND DEVELOPMENT

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - Need year round moorage
 - Need year round water in Lake Chelan
 - Need density requirements on shoreline we only have so much space
 - Narrow channel for travel lanes to buoys
 - Concern about parking where will people leave cars and boat trailers?
 - If use goes in [along shoreline] need to provide parking
 - Need open space
 - Have parks Plan has acres/population standard
 - Twisted Pearl water based business. Concerned about noise. City doesn't allow.
 - Need to address scale (e.g., marina)
 - Lake is primary asset. Don't restrict economy. Need more moorage. Need less pressure on public facilities.
 - What will be standards for new docks vs. maintenance?
 - Lessen standards for docks to allow for existing dock maintenance. Some docks are falling apart.
 - Too much large woody debris as mitigation given lake elevation. Improperly placed. Aesthetics and navigation.
 - More public access
 - More habitat
 - If more access, then will have more boats, especially in marinas in summer

- Hold line on boat launches and marinas too many buoys
- New private marinas or dock development set aside open space
- Proportional access could buy access somewhere else
- Boats equal sound, gas, smell
- Would like camping areas less expensive
- Less multi-storey buildings
- There are no areas for additional high intensity development
- Streamlined permitting, equitable rules. Cost account for project size, type.
- Distinction between public and private parks. Shortage [of public spaces] and will get worse.
- What about liability for public/private shoreline access? Concern someone would harm themselves.
- Taxes increase on private owners, yet dealing with tourists
- Harder for private owners to make repairs
- Not allowed to resurface my dock except if using recycled wood
- Sailchelan.com agencies dealing with mitigation
- All uses in short supply, but limited land use land wisely, find coordinated plan
- Particularly balance in UGA
- Real density of marinas/jet ski areas need it but there's concern if we extend more
- Can we get zoning on the lake? Co-locate jet skis, marinas, fueling?
- Would it affect water quality?
- Need quiet part of lake to swim
- Although dense in corridors not well used –jet ski and marina areas could be better configured
- Don't have design review, e.g., Lake House
- Commercial [should] look like commercial, and houses like houses
- Identify districts
- Concern about height blocking views just under 50 feet
- Future condos need City plan to protect character avoid out of scale with adjacent low intensity uses wedding cake look

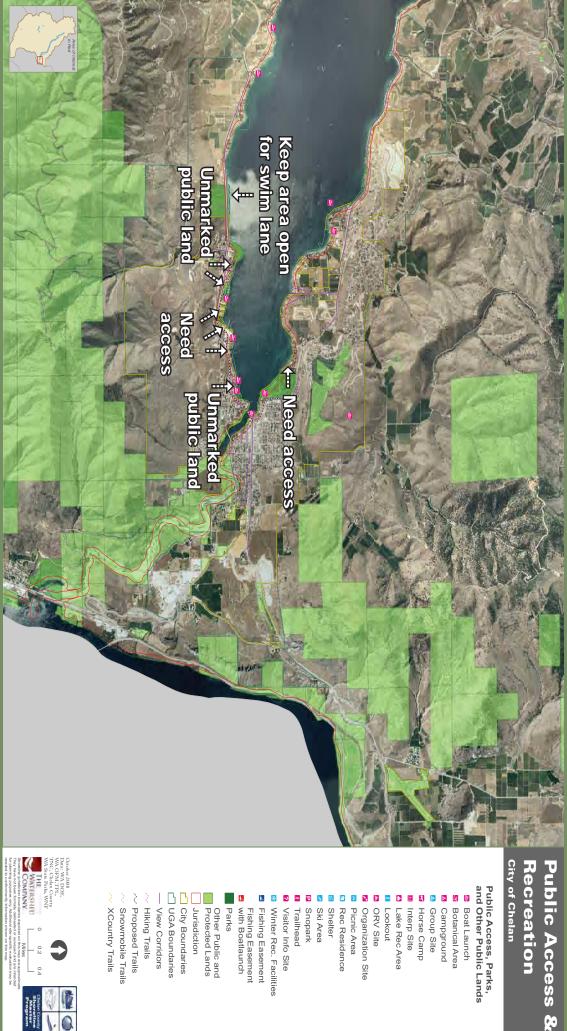
- Corridors of marinas, rental, refueling safety and water quality avoid swimming in this area
- Need more separation of uses
- How will regulations be coordinated City? PUD?
- Consider zoning
- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Water and shoreline congestion 88 jet skis are too much
 - House boats need to regulate like mansions in county
 - Too much condo and home development
 - Controversy over trail from Don Morse Park/Water Street
 - Proposed trails conflict with existing parking
 - Treat different beach/access areas differently based on condition, e.g., appropriate sites for camp fires
 - Possible conflicts with uses and drinking water withdrawals
 - Prohibit beach alternation, e.g., digging
 - USFS parking near lake
 - More and more garbage floating on lake clean it up
 - Docks falling apart safety will come out where marina is developed, take out in interim
 - Fill down lake ship and shore drive-in near lake
 - Avoid blocking view
 - Big box condo has blocked views
 - What is realistic UGA boundary to protect shoreline?
 - Not happy with shorelines need access tourism is big part
 - Not making more land focus on public uses
- 3. Aside from public access and recreational uses, what other developments would you like to see on the shoreline? Where?
 - Need more habitat for fish concern about [shoreline] sound and activity
 - Need more use for non-motorized activities
 - Want to see PUD property near Mill Bay add marina, take traffic out of city

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - Commerce around lake within Chelan quality of lake
 - Alarmed about loss of lake view, access points and corridor preserves
 - Any area that is currently public should remain public, e.g., Park Street
 - Limit buoys at public access points
 - Coordinate parking with public access
 - River walk park don't allow boat buoys along river
 - Preserve existing conditions as much as possible
 - Water quality concerns drinking water, milfoil
 - Butte area limits on development, protect water quality
 - Lake is the biggest asset
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Encourage and educate private businesses to upgrade their facilities
 - Grants
 - Need water quality study
 - Shoreline requirements that are based on present water quality
 - Stormwater runoff
 - Limit fertilizers
 - Require water testing near marinas and high impact use areas, refueling stations
 - Too many marinas why are these being permitted?
 - Large demand for boat slips
 - Needs to be more regulations on water quality and monitoring
 - Maintain from lakeside westward
 - Greatest asset is the lake itself
 - Noise pollution and safety
 - Automatic shut-offs for boat refueling
 - Promote electrical boats

- Water quality
- Public health
- Geese and ducks affect water quality look into how City of Seattle handles it
- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?
 - Chemicals, spray
 - Federal rule on chemicals? Check case
 - Milfoil problem just starting avoid spread
 - Are there unlimited withdrawals? Discharge waterfront park, pipe at USFS
 - Don Morse Park beach restoration, City has master plan
 - All public road ends need to be restored and identified return to natural state
 - Connection to public trails
 - Not enough views losing views because of condos
 - Parking, access to swimming
 - All public lands maintained for non-motorized boating/swimming
 - Motorized transportation should be encouraged
 - Access not marked at street ends
 - Preserve area west of lakeside as swim lane
 - Non-motorized water quality, noise
 - Balance
 - Recognize undevelopable areas up lake
 - 3 Fingers remove fill and restore to pre-existing conditions, prevent development
 - Sand bar, pond that forms, milfoil grows
 - Discharge pipe at USFS
 - Storm water discharge and lake water quality
 - Don't allow 2 cycle motors (boats and jet skis) to protect water quality
 - Noise pollution
 - Hydro planes
 - Enforcement of milfoil introduction
 - Lady of the Lake pier falling into water

- Bottom of lake milfoil amount has tripled
- 3 Fingers
- Water sources, input into Lake Chelan that affects water quality minimize impacts with landscaping and maintenance; Big polluters – ducks and geese on water and grass.
- Need to monitor benzene sources motor boats, etc.
- How is water quality enforced?
- Concern about PUD lake level
- Concern about river land use regulations
- Safe guards water quality, garbage
- 4. When you imagine the future shoreline, what will it look like in terms of environmental condition?
 - Better than existing
 - Places with rip-rap look at possibilities to restore and enhance
 - During low water levels, old portions of concrete are visible remove unnatural materials
 - Large woody debris concern and need for clean up



Recreation

City of Chelan

Public Access, Parks, and Other Public Lands

- Boat Launch
- Botanical Area
- Campground
- Group Site
- Horse Camp
- Lake Rec Area
- Lookout
- ORV Site
- Rec Residence
- Ski Area
- Snopark
- Trailhead
- Winter Rec. Facilities
- Fishing EasementFishing Easementwith Boatlaunch
- Other Public and Protected Lands
- Jurisdiction
- City Boundaries
- ☐ UGA Boundaries
- View Corridors
- Hiking Trails
- XCountry Trails Snowmobile Trails





A.1.2 City of Wenatchee and UGA

October 22, 2008
Wenatchee Community Center – 504 S Chelan Avenue
6:00 to 8:00 pm
10 Participants

Question and Answer Session

- Q What are the three topics we're discussing tonight?
- A Shoreline use, public access, environmental protection. Match SMP principles and balance uses.
- **Q** What is in the shoreline jurisdiction?
- A 200' landward of ordinary high water mark, associated wetlands and floodways.
- **Q** Last SMP developed in 1975?
- A Yes. In 2003 Ecology prepared new shoreline guidelines. It's a 2 to 3 year process [to prepare the SMP update].
- **Q** What is the current policy for grazing cattle?
- A In general, existing uses like grazing can continue. If changing a use, then rules apply. The City doesn't allow grazing within city limits. May need to replant if damaging. Most of city waterfront is public. County would need to respond regarding critical areas.
- **Q** Does the SMP address native bees and non-native pollinators?
- A SMP doesn't address this. County SMP does support agriculture.
- **Q** Once new SMP is in place, can it be amended?
- A Yes. There is an amendment process. Also, periodic evaluation is required. There will be some monitoring requirements on ecological functions.
- Q How will no-net-loss of ecological function work?
- A Still developing criteria, e.g., riparian vegetation, setbacks, etc.
- Q Are we looking at percent standard for public access?
- A There are no prescribed standards. Subject to local input.

- **Q** How is SMP funded?
- A State grant from Department of Ecology [awarded] to County
- **Q** Can we use volunteers to determine baseline environmental conditions?
- A Would need to set standards to ensure methods are scientific, appropriate.
- **Q** There are local scientists that can address native pollinators. There are no criteria [regarding native pollinators] currently.
- A SMP can address locally based criteria. Can use available information to set monitoring protocols. SMP focuses on 200 foot jurisdiction, and broader issues.
- Q How do we get the City's input? How does this process plug into City plans?
- A City has provided adopted plans to consultant team, including the Waterfront Subarea Plan. Many parks exist within the shoreline jurisdiction. Most redevelopment areas are not in the shoreline jurisdiction. Waterfront plan identifies 5 land use areas. See the 2007 Comprehensive Plan. The Waterfront plan has diagrams. Some development has occurred. Will incorporate the current Waterfront plan for consistency.
- Q Use of shoreline for education can this be part of SMP?
- A Yes. Have only developed an inventory at this point. Will be preparing analysis and draft policies and regulations. Education is part of public access.
- **Q** Is there an outline of how (and what percent of) land will develop?
- A Suggest review of Waterfront plan.
- **Q** Will City have its own SMP?
- A Yes. Part of regional effort. Each city will have their own chapter, outlining local issues.
- Q Are there similar meetings on the other side of river?
- A Douglas County is nearly finished with their SMP. Okanogan is a little ahead. Yakima has submitted their plan. Chelan County is an early adopter in order to obtain funding, otherwise SMP due in 2013.
- **Q** What is the adoption process?

A After local adoption, the SMP will be sent to Ecology. Ecology has time to review, comment, adopt.

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - Open, easily accessible, natural
 - Inclusive
 - Marina
 - More kayak/paddle type access
 - No new beaches, especially in natural areas
 - Small beaches okay, e.g., for child access
 - Need balance appropriate use in the right place
 - Minimize environmental impacts
 - Expand existing facilities rather than building new sites (e.g., boat launches)
- 2. How do you use the shorelines? (View points, trails, parks or recreation areas, boating, rafting, swimming, etc.)
 - Biking, swimming, running, bird watching, boat access
- 3. How do you feel about your level of waterfront access, both visual and physical?
 - Feel good about waterfront access today want to keep it
 - Good!
 - Part of Wenatchee charm
 - Quiet, people walking or biking, feels safe
 - Waterfront plan promotes retention of parks
 - When parks designed consider safety and civility, e.g., tree placement
 - Could use more lighting near 5th Street
 - Does City solicit help for cleanup?
 - Cleanliness part of design process City uses inmate workers for maintenance
- 4. Are there areas that need public access (that currently don't have any)?

- Area near confluence, private or public? Some properties near park are owned by PUD, other are private property
- Any more trails? Unlikely to expand near wetlands.
- Near railroad south there are access roads but owned by Burlington Northern Santa Fe (BNSF) – residents have continual access
- Need to maintain pedestrian bridge for safety City is studying
- Senator George Sellar Bridge adding public access cantilevered on one side
 no north sidewalk may not be able to access both sides in short term
- Active access areas away from natural areas
- Kayak/tube haul out, Wenatchee River

SHORELINE USE AND DEVELOPMENT

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - Want copies of park and recreation maps (County will consider providing hard copies or CD at print shop; web links available on line)
 - Have zero public access across Highway 2
 - Stemilt may do some restoration in 200 foot area
 - Area south of bridge lot owned by BNSF. Some provide ownership south.
 PUD may control.
 - Will still be maintaining parks?
 - There are no restaurants on water need some
 - Lacking open/recreation space
 - Make sure access is maintained
 - Want a marina
 - Waterfront restaurant
 - Maintain natural character/landscape
 - Plenty of parks/trails currently
- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Concern about value of waterfront property City has some concessionaries. Will see some restaurants near Convention Center.
 - Skate area will become mixed use. City close to completing sale. Area can go to 90 foot under regulations.

- Don't want motorized crafts want kayaks, canoes at waterfront park
- Currently nothing on shoreline is inappropriate
- 3. Aside from public access and recreational uses, what other developments would you like to see on the shoreline? Where?
 - Want to maintain loop trail and parks
 - New development will need to provide parking
 - Parking will likely be located 200 foot away to avoid additional permit costs
 - New condos have underground parking still expensive
 - Want to retain park for all to use, not just folks that live nearby there are lots on PUD property
 - Want to see small marina, docks don't want permanent slips
 - City is in permitting for dock river too swift for marina
 - Will boathouse be developed? Part of pedestrian overlay.
 - Want a boathouse to store kayaks, etc.
 - View protection
 - Go to statues of coyotes area for views, Walla Walla Park
 - City moving in December 2008. Current public works property for sale. Are there height restrictions?
 - Limited additional water oriented commercial kayak rental, fishing guides
 - Interpretive signage in confluence/wetlands areas
 - Connectivity pedestrian/bicycle from downtown areas to water across railroad
- 4. Are there areas of your community shorelines that you feel are suitable for high-intensity development?
 - No, except water oriented marina and education center
 - What is high intensity development? Industrial, higher building heights
- 5. When you imagine the future shoreline, what will it look like in terms of shoreline use and development?
 - Hard to envision anything in 20 years, other than industrial north of Wenatchee

- Want bicycle trails in all directions in northern UGA
- Richard Odabashian Bridge extension of loop trail
- Don't want bunch of hotels near parks waterfront parks require mixed use
- Confluence will it be touched? No. State park owned for wildlife and recreation.
- Other areas north bank of Wenatchee high bank, less likely to develop in city/UGA
- Limited and regulated
- Shoreline sacred
- Waterfront last place for development
- 6. What do you like best about your community waterfront now?
 - Open and available lots of parks
 - Clean, well maintained
- 7. What concerns you most about your community waterfront now?
 - Land south of the Senator George Sellar bridge

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - Near 5th Street, part of foothills
 - Horse Lake Road south bank of Wenatchee, possible future park area, flat
 - Confluence area
 - Protect unique areas, but balance other areas for appropriate uses
 - Protect some distance upstream of confluence/Wenatchee River
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Need education have kids fall in love with the area
 - Volunteer for shoreline, e.g., Chelan-Douglas Land Trust
 - Regulations
- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?

- Areas for restoration south side of bike trail (see map)
- Is City helping homeless? City has community planner focused on programs.
- Need replanting north of confluence drought tolerant plants 2 irrigation pumps grand-fathered
- Bureau of Land Management (BLM) has restoration experts in town
- Irrigation near 5th Street City should improve, could be a view point. Does PUD have access? Yes, near tourist beach. Would need to screen in "off hours". Kids accessing/jumping.
- Who should do restoration? Not just responsibility but privilege would like private involvement
- Development should mitigate?
- In replanting areas, have work parties
- Plaque or recognition for helping with restoration
- Involve the kids
- South of Senator George Sellar bridge (see map)
- Railroad public access
- 4. When you imagine the future shoreline, what will it look like in terms of environmental condition?
 - No worse than it is today and better
 - Showcase native flora and fauna
 - Areas for lighting in public access areas and trails
 - Ensure adequate, aesthetic lighting but shielding so it doesn't impact neighborhoods
 - Term "environmental" may be better to say "habitat" or other word
 - Maintain natural shoreline
 - Want balance
 - Want native plants in shoreline landscapes

A.1.3 City of Cashmere and UGA / Lower Wenatchee Watershed

October 23, 2008 Cashmere Riverside Center – 201 Riverside Drive 6:00 to 8:00 pm 28 participants

Question and Answer Session

- Q What time of year is 20 cubic feet per second (cfs) measured?
- A It's taken from average annual flow rates. 10 years of data and model to calibrate.
- **Q** Is the City/County dealing with Mission Creek?
- A Yes, in Cashmere, shorelines include Mission Creek and the Wenatchee River. Several more streams and lakes in Basin, Countywide there are about 130 waterbodies considered in SMP update.
- **Q** What is definition of wetland? Mill Pond?
- A Ecology defines it by soil type, amount and location of water, vegetation. Look at soils and NWI inventory. Wetlands in floodplain and within 200 feet.
- **Q** Who is responsible for dikes?
- A Constructed in 1930s and 1940s, deeded to Cashmere when highway was aligned.
- **Q** Are dikes open to public access?
- A Yes, when the dike is located on public property.
- **Q** If water body doesn't qualify for shoreline jurisdiction, may still have wetlands, riparian?
- A SMP focuses on jurisdictional streams, lakes and associated wetlands.
- **Q** Who is responsible for cleaning water bodies, e.g., car parts, etc.
- A Not City responsibility. Would notify WDFW. Ecology handles water quality.
- **Q** Is trash part of river?
- A Not City jurisdiction. City or County calls agencies. Responsibility not clear. Happy to have volunteers. Part of SMP will address restoration opportunities.

- **Q** Will shoreline rules become more restrictive?
- A It is early in the process. It is possible. Need to be consistent with other agency rules/regulations. Will be considering Ecology guidelines.
- **Q** Any involvement of railroad, highway department?
- A WSDOT representative is on SMP Advisory Committee. Will look at adding Railroad representatives.
- **Q** Are there major changes since 1975 SMP?
- A Current SMP omits several uses which means more process. Plan to identify uses and rules. Want to provide more certainty about allowed uses, e.g., boat lifts in Lake Chelan and pier regulations.
- **Q** Are rules set up by Ecology or legislature?
- A Ecology rules implement state law. Rules not adopted by legislature. Rules are located in the WAC [Washington Administrative Code].
- **Q** Is the 200 foot designation a buffer?
- A It's a zone, subject to SMP. Not necessarily a buffer or set back.
- Q Is restoration scheduled?
- A There are 3 watershed plans. SMP will incorporate these projects. Watershed subcommittees have developed projects.

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - Access for public use not always well defined. Obvious at park. Not a safe area for swimming. Need a defined use. Discourage sending children down. Safety is an issue.
 - Not enough formal designated spaces for access
 - Need clear, obvious public access
 - Area down river not an official boat launch, need to make it safer
 - Where are city limits? Near Mission Creek or bridge?

- Peshastin groomed, clean, landscaped access
- Point on Wenatchee River Dryden Dam, Peshastin
- Protect private property
- Everyone understands ownership and access rights
- Railroad commitment for involvement in shoreline protection, management, stewardship
- Better developed, marked access with amenities dumpster, porta potties
- More trees for eagle perches, habitat
- Highway turnoffs for views
- River trail between cities
- Entire Wenatchee River as view corridor
- More access for fishing, views, picnics, boating
- More maintained access with amenities
- Would like garbage, metal debris removed
- 2. How do you use the shorelines? (View points, trails, parks or recreation areas, boating, rafting, swimming, etc.)
 - Walking, biking, swimming, bird watching, tubing, fishing, rafting, kayaking, gold panning
 - Wenatchee River fishing, kayaking, wildlife, scenic views
- 3. How do you feel about your level of waterfront access, both visual and physical?
 - Sleepy Hollow and Rodeo use for enjoying water
 - Access problems at Sleepy Hollow bridge during summer
 - Want less trash keep river accesses clean
 - Concern about what [substance] railroad uses for weed control, fire control
 - Mission Creek debris and garbage
 - Contact City about dirt falling off dike, erosion
 - Pressure WFDW to allow fishing
 - Add trails in lower area there are trails in upper area
 - In 1958 PUD acquired accesses

- Difficult to access only six points of public access between Dryden and Wenatchee
- People making own access causes safety problems and dike/bank degradation
- 4. Are there areas that need public access (that currently don't have any)?
 - Official access at Mission Creek/Wenatchee River launch area
 - Formalize mulch center site as access parking available
 - Mission Creek needs access
 - Cashmere dike access
 - Too little access, e.g., Mission Creek
 - Rodeo Hole more public access

SHORELINE USE AND DEVELOPMENT

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - Need public access for fishing Rodeo hole so many kayakers, but need fishing permit
 - Need access for non-fishing
 - Game department purchased for fishing rafters have taken over, haven't followed permits
 - Would like to limit rafters
 - Lake Wenatchee, huge line of boats owe to limited fishing
 - Add restrooms in high use areas
 - Need greater habitat, open space and recreation priorities
 - Like to see less business and less commercial, e.g., concrete plant, warehouses
 - Will set backs be different for city or County?
 - Path on dike, but deed extended to middle of river can't use top of dike
 - Agriculture use of pesticides
- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Every Wenatchee River bridge is used for public access inappropriate public access, parking problems (kids at Sleepy Hollow)

- House next to dike can see rafters, hundreds go by. Rafters walk on dike, knock off dirt and vegetation into yard – no respect
- Inappropriate use near Blewett Pass/Highway 97 near Peshastin Creek would like to move road out of flood plain
- Protection of floodplains
- Avoid salt on roads, use sand
- Mission Creek near Wenatchee launch area seems inappropriate
- Car junkyards on Riverfront Drive and Mission Creek need clean up
- Jarvis launch inappropriate salmon spawning
- Railroad too close to water
- Not happy if [public] access 10 feet from house area where photographers go
 want privacy
- Problems with anticipated gold panners
- Is log jam removal for safety? Yes, removal of debris and garbage for safety
- Jet skis on Columbia River and Lake Wenatchee don't want on Wenatchee
- Water crafts on Lake Wenatchee jet skis noisy, destroys river edges
- Tubing groups volume of people on water is this an environmental issue?
 Other areas are limited.
- 3. Aside from public access and recreational uses, what other developments would you like to see on the shoreline? Where?
 - Leavenworth to Wenatchee trail for biking/walking
 - Need formal designated kayak/float launch, other than Recreation Center
 - Better access for non-fishing users at Rodeo Hall/Sleepy Hollow
 - Boat launches at Lake Wenatchee, existing is inadequate
 - Liked Cougar Inn on Lake Wenatchee now private home miss it
 - Restaurants, resorts make nice development that takes advantage of scenery
 - Might be good to have a waterfront hotel or restaurant benefit the City
 - Golf course might be detrimental
 - Want trails
 - Have one on Love Lane Bed & Breakfast
 - Avoid land locked public land –Three Lakes, Malaga is private, no public access

- Want Rose Lake "no wake" lake
- Fishermen access opposite side
- Want trail connecting Cashmere, Dryden, Peshastin, Leavenworth, Wenatchee
 probably some resistance safety, orchardists, pets
- Want designated fishing access
- Parking is it enough? Sleepy Hollow Bridge
- Need highway turnouts
- Contained dog park
- 4. Are there areas of your community shorelines that you feel are suitable for high-intensity development?
 - No economic, commercial uses on waterfront
 - No need for high intensity development
 - Wenatchee River already developed put resorts in developed areas

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - Salmon spawning grounds near Jarvis Station
 - Resuscitate Lake Jarvis west side of Aplets Way Bridge
 - Mission Creek (near 800 Mission Creek Road)
 - Wenatchee River waterfront east of boat launch more riparian planting on slopes
 - Sleepy Hollow trash and more parking
 - Upper Mission Creek and Sand Creek
 - Limited amounts of public access
 - Mill Pond, Brender Creek
 - Below bridge and Peshastin
 - Brender Creek between River, Evergreen Drive and No Name Creek (Mill Pond area)
 - Mission Creek
 - Wenatchee Riverfront from mulching center to end of city limits

- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Trash bins at Rodeo Hole
 - Historical perspective interpretive signs and public outreach
 - Limit development in those areas or specific types, e.g., cabin vs. subdivisions
 - Landowner incentives instead of regulations, e.g., Conservation Reserve Program (CRP) lands
 - Volunteerism as a backup can't rely solely on [City/County]
 - No dumping along river
 - Enforcement issues need to be better mechanism
 - Service clubs and volunteerism, volunteer clean up days
 - Using high school students to help community service
 - Existing City regulations to protect areas
 - Public outreach and community-based clean up opportunities
 - Adopt a stretch of river projects and groups
 - Be careful how planted buffer and landscaping is done
 - Need educational program to help protect
 - Enforce removal of trash less expensive trash removal
- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?
 - Dikes near recycling center get degraded because rafters climb/scramble to water
 - Juvenile lake, west of Aplets Way
 - Log storage area near Ingalls Creek (a tributary to Peshastin Creek) near Valley-Hi.
 - Blewett Pass, sharp curves, road cut banks
 - Noxious weed control
 - Junction of Sand Creek and Mission Creek
 - Large metal in river
 - Railroad land
 - Think water quality is pretty good
 - Mission Creek milfoil

- Mess at top of Mission Creek dump area
- Portions of dike where it has been eroded
- Rafting companies
- Log jams placed near Monitor Park, before Sleepy Hollow bridge
- 4. When you imagine the future shoreline, what will it look like in terms of environmental condition?
 - No garbage in rivers
 - Landowner coordination orchard or homes
 - Lack of public access
 - Trail system great idea
 - Return of land in natural area state to public land
 - Minimize impacts from highway runoff
 - Would look at lot like it does now
 - More trees
 - Dredged

A.1.4 Upper Wenatchee Watershed

The meeting format for this workshop was different from the other eight, with the purpose being a joint meeting to discuss the County's efforts to evaluate water quality in Lake Wenatchee and the SMP workshop. County staff began meeting at 9:30 a.m. with the water quality portion of the meeting. The purpose was to update participants on the status of the work taking place in Lake Wenatchee with a presentation from the consultant that is conducting a baseline survey of the lake. The consultant will be developing a monitoring plan over the next couple of months. At 11:15 a.m., the Shoreline Master Program Workshop portion of the workshop began with a 20-minute question and answer session. Participants were invited to visit one of the three stations (Public Access and Recreation; Shoreline Use and Development; and Environmental Protection) and respond to the topic-specific questions. Approximately 80 percent of the participants chose to provide input at the Shoreline Use and Development station. The remainder of the group provided comments at the Environmental Protection station. No participants provided comments at the Public Access and Recreation station. The County posted the workshop questions on the LakeWenatcheeinfo.com Web site and encouraged participants to submit additional input online if interested.

October 25, 2008 Lake Wenatchee Recreation Club – 14400 Chiwawa Loop Road 11:00 am to 12:30 pm 39 participants

Break-Out Group Discussion

SHORELINE USE AND DEVELOPMENT

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - Too much removal of riparian vegetation along shorelines by landowners (e.g. tree cutting).
 - Too many Beach/Community Clubs along Lake (both formal & informal)
 - Too much impervious surfaces impacting runoff clearing and grubbing
 - Maintain open spaces and parks possibly add a dog park to area
 - Access is both a +/-, parking is an issue
 - Not enough restrooms or facilities

- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Concerns about future multi-family and commercial uses
 - Noise pollution (e.g. jet skis, boats, music from boats)
 - Concerns about development outside of shorelines
 - Light pollution
 - Boat refueling there are no places where it's contained and safe. Educate on ways to do it yourself safely

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - South shore water source drinking water from creek (public health concern)
 several on north shore
 - Spraying along roads near water (County)
 - Clearing Issues (homeowners insurance) could be helped through education (e.g., how much is okay?)
 - White River
 - Smaller lakes (e.g. Hidden Lake)
 - Fish Lake wetlands
 - Lake Wenatchee north shore west of YMCA camp existing shore is in good condition, owned by UW?
 - Private Property preservation opportunities through Chelan-Douglas Land Trust (CDLT)
 - Forest Service property on north shore Lake Wenatchee keep as much of existing natural condition as possible and preserve
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - CDLT through Conservation Easements
 - Education mailings, newspapers, radio, websites, better education on regulations
 - Better education would lead to less need for regulation

- Important to provide information and education early enough in the process
- Awareness of impacts to neighbors.
- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?
 - Land clearing outside of shoreline impacts shorelines and streams
 - Some individual landowners
 - Noxious weeds
 - Riparian areas
- 4. When you imagine the future shoreline, what will it look like in terms of environmental condition?
 - Maintain native vegetation as much as possible
 - Enjoy and appreciate the current mix of public and private, variety of access (campgrounds and nice homes), variety of economics, YMCA, Campfire, etc.
 - Limit future use: commercial and high density
 - Volunteer Programs for kids to do some work would help build appreciation/stewardship

A.1.5 City of Leavenworth and UGA

October 27, 2008 Leavenworth City Hall – 700 Highway 2 6:00 to 8:00 pm 27 participants

Question and Answer Session

- Q Will there be a contractor working on the channel migration zones (CMZ)?
- A CMZ study for Wenatchee is complete. Can use available information. May identify potential data gap.
- **Q** Any new federal guidelines to consider?
- A State SMP guidelines and laws mostly apply. Will consider relevant federal laws for consistency. City will address critical areas.
- **Q** What time of year was 20 cfs determined?
- A We have used USGS report/data. 20 cfs (cubic feet per second) is mean annual flow based on regression model. Includes wet and dry years, 1970s to 1980s. Rolled in other available data. USGS best available info. County is investigating several waterbodies to confirm.
- **Q** A lot of proposed jurisdictions are on federal lands. How will this impact the study?
- A Private development on federal lands would be subject to the SMP. Fairly rare.

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - Clear signage
 - Access to golf course year round
 - Continuous pedestrian/bicycle paths, outside of right-of-way
 - Purchase additional property in commercial zone
 - East Leavenworth boat launch
 - Blackbird reserve to Blackbird Island any connections punch through 13th

- Float, use of river
- Commercial floaters on Icicle interrupting privacy of private land owners
- Need flexibility, fisherman's access, some overgrown if not in use, flexibility for private properties
- Model Europe all shorelines accessible, trail with fence
- 2. How do you feel about your level of waterfront access, both visual and physical?
 - Do not allow construction in repetitive flood areas
 - Require Leadership in Energy and Environmental Design (LEED) rated building design on shorelines
 - Trail system along entire shoreline development restriction
 - Scale buildings and set them back in areas directly adjacent to park areas require buffering
 - Public visual access make park entries visible
 - Viewpoints Leavenworth good heights
 - Commercial street could create views
 - Good views from golf course
 - With development, consider views, access
 - Preservation of scale is important keep scale
 - Best view from Blackbird Island
 - Riparian vegetation is important for atmosphere and environment
- 3. Are there areas that need public access (that currently don't have any)?
 - Pedestrian bridge to Leavenworth Road
 - Keep public access at well site for non-commercial rafting or limit numbers
 - Provide public access into F&W property on East Leavenworth Road Fish Hatchery
 - Add bike lane connections to bridges and Highway 2
 - More managed access
 - Blackbird Island vegetation management for safety, balance
 - Can vegetation be thinned to avoid blocking views if mitigated elsewhere?
 - If managed, is there an area for wildlife

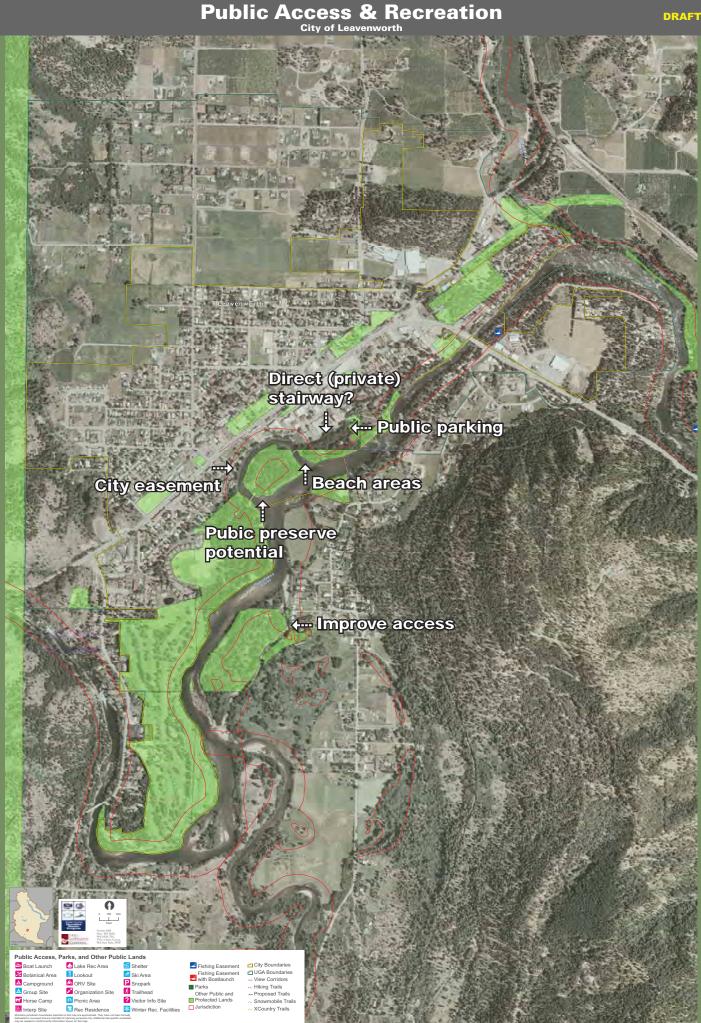
- Only golf course used by golfers or skiers in winter make accessible to walkers
- Add trails
- Scotland no such thing as trespassing land open for walking/hiking, but must respect owners' land, keep gates closed, etc.
- Consider fisherman's access
- Houses on river bend have to allow public access
- Beaches important getting smaller, need to restore vegetation
- Valley trail, Leavenworth to Wenatchee
- Tax incentives to allow public access
- Private land access liability concern, protect land owners

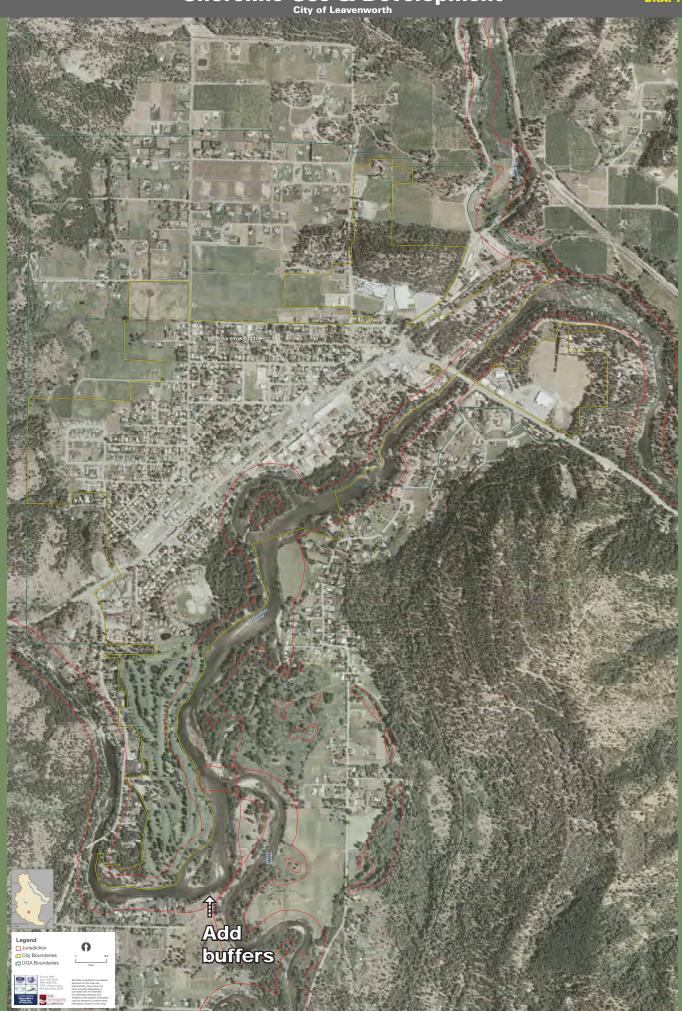
SHORELINE USE AND DEVELOPMENT

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - Like what we have
 - Better park system maintenance
 - Continue trail on golf course (winter and summer)
 - Will SMP include buffers? Revisit buffers on east [side of Icicle Creek]
 - Houses 25 feet from river seems too close other areas have larger buffers
 - Much shoreline is public and won't change
 - Would be nice to have restaurant on waterfront
 - Want pedestrian connection from Blackbird Island to golf course
 - Barn Beach favorite
 - KOA campground is a favorite can wade when water is low no public access across
 - Want to see more trails
- 2. Are there areas of your community shorelines that you feel are suitable for high-intensity development?
 - No high intensity uses!

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - PUD park keep natural
 - Clean up well site, promote non-motorized access
 - Blackbird Island habitat restoration on north side, protect south side from erosion
 - Erosion what could be done legally to preserve beaches or public areas?
 - Chumstick Creek Byron Village
 - Avoid over development of Chumstick Creek
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Best protection reasonable, regulations w/purchase
 - Patrick Walker, Chelan-Douglas Land Trust
 - Run ditches year round, produce energy
 - Mini golf area additional development is there an erosion concern?





A.1.6 City of Entiat and UGA

October 28, 2008 Entiat Grange Hall – 14108 Kinzel Road 6:00 to 8:00 pm 13 participants

Question and Answer Session

- Q Does PUD have a role in SMP update?
- A PUD doesn't have jurisdiction; cities and County have jurisdiction. PUD is a stakeholder and has some regulations associated with SMP. PUD has review/permit responsibilities for waterfront. All reservoirs under PUD, e.g., marina, dock need multiple permits, including City shoreline permit and other agency permits

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - Trail along waterfront with multiple access points for commercial
 - Mini parks along waterfront north of existing city park
 - Public facilities, no exclusive uses
 - Entiat park with access to swimming beach, pedestrian bridge to islands
 - Marinas public with full services like fueling, pump out, restroom, waterfront restaurant
 - Want a marina public and private
 - Bike and walking trails
 - Connect waterfront via community loop trail
 - Main concern Entiat
 - Parking, under bridge, does City/PUD have plan? Prior plans unfinished.
 - Another park on Entiat canoe, kayak, docks, swimming, water is clean
 - Want Entiat to be natural
 - How about a rustic park by kiosk near the mouth of the Entiat River?
 - Was once used for ice skating

- City storage yard dump wood chips road/turn around improve public access
- See old PUD park plan can PUD do more?
- Dock will be redone with re-licensing
- How is WDFW involved in process? Permit conditions?
- Balance habitat and development
- 2. How do you feel about your level of waterfront access, both visual and physical?
 - Pretty lousy, except at park
 - Congestion problem at single boat launch
 - Waterfront plan will help remedy areas north of park
 - Limited access
 - No signage/identification of existing legal public access (up Entiat River watershed)
 - No other public access, 20 miles up and down Entiat river
 - Current access not good, especially when water is down one dock
 - Lake view disappearing due to vegetation
- 3. Are there areas that need public access (that currently don't have any)?
 - PUBLIC ACCESS IS A PRIORITY FOR ENTIAT!
 - Complement each other, design priority
 - Want viewpoints signage about wildlife and Entiat
 - Restore near museum/old highway do as part of park area
 - At new access points, need parking with landscaping, benches, etc.
 - Restrooms needed Columbia and Entiat Rivers
 - Loop trail with parking
 - Need lighting
 - Materials to prevent vandals
 - Security/enforcement can be costly

SHORELINE USE AND DEVELOPMENT

1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?

- There will be
- There's not much of anything
- Residential adequate
- Missing retail/restaurant businesses and public access
- Have all four uses, including agriculture
- Don't have enough businesses have land but no business
- Have enough residential in plan projecting 300 to 400
- Inappropriate jet skis, noise
- Need to enforce no wake zone at Entiat River difficult to enforce
- Sand bar people come when water level is low for place to play
- Next to railroad more business may be good industrial convert to business
- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Would like to move railroad tracks barrier
 - No manufacturing
 - No detrimental use, waste producing, e.g., stock, junk yards
 - No private/exclusive uses
- 3. Are there areas of your community shorelines that you feel are suitable for high-intensity development?
 - Yes, waterfront plan boundaries
 - No high intensity uses along Entiat, just parking to support access to trailheads
- 4. When you imagine the future shoreline, what will it look like in terms of shoreline use and development?
 - See waterfront plan and parks plans, including Antiaqua on Entiat River
 - The possibilities!
 - Make sure SMP doesn't preclude City from implementing its waterfront vision
- 5. What concerns you most about your community waterfront now?
 - Lack of access, use, development

- Non restrictive use benefits public
- [Entiat has had] 50 years of isolation

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - Columbia River areas need to be enhanced/restored to natural condition revegetation
 - Entiat not currently natural
 - Favorite place swimming hole
 - City park and dock area
 - Tie together with trail at mouth of Entiat River
 - Pateros good example outside of Entiat PUD park
 - Walla Walla Park in Wenatchee [good example]
 - Chelan Falls
 - Chelan park on river
 - Waterfront plan need theme or style to tie together
 - Need amphitheater
 - So many meetings when will PUD park happen? Once license signed, then permits infrastructure expensive.
 - Too late to protect more new development
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Through implementation of waterfront and park plans
 - Need volunteer involvement Tree Board
 - City developing regulations to implement waterfront plan
 - PUD plans have shown amphitheater
 - Money not stretching far need grants
 - Hotel is first step to bringing houses and tourists
 - Like vegetation planted for mitigation
 - Document what's been planted
 - Can they be relocated?

- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?
 - All currently degraded
 - What can be done with railroad bed and island? PUD owns it? Leave natural area, but add pedestrian access.
 - If railroad ties are pulled out, what is liability with creosote, etc.?
 - Railroad restore, trade off for marina
 - Can vegetation be managed need mitigation
 - Where is shoreline jurisdiction in the water body?
 - Who governs old railroad bed?
 - If dock extends, need to lease land?
 - PUD has to follow federal guidelines, deeds
 - Can we clarify ownership and permit process? User guide?
 - When can citizens comment on PUD rules? Need to know what the rules are. Notification if rules are changing.
 - Surprised that we need permits for buoys need permanent buoys, less impact than temporary. Require open space in new development.
 - Incorporate viewpoints, small parks like Wenatchee PUD
 - Replace top soil
 - Need embankment
 - Beautification
 - Who's responsible? Developers follow rules, not volunteer
 - Develop recommendations and funding work with WDFW
 - Entiat problems with beavers plant willow and then it's gone
 - City should be responsible for restoration via plans and cooperation with PUD

Public Access & Recreation City of Entiat --- Bridge? Take out old foundation Waterfront park potential Boat Launch Botanical Area Campground Group Site Horse Camp Interp Site △ Lake Rec Area ☐ Lookout △ ORV Site Shelter Ski Area Snopark City Boundaries UGA Boundaries View Corridors Hiking Trails Proposed Trails Snowmobile Trails XCountry Trails Fishing Easement with Boatlaunch Organization Site Picnic Area Rec Residence Trailhead Visitor Info Site

A.1.7 Stemilt-Squilchuck Watershed

October 29, 2008 Malaga Fire Hall – 3760 West Malaga Road 6:00 to 8:00 pm 10 participants

Question and Answer Session

- **Q** How will we address docks? Columbia River is different than other water bodies.
- A There will be different regulations, depending on use and purpose.
- **Q** Does SMP go to federal agencies for review?
- A No, the SMP is a state and local partnership. The U.S. Army Corps of Engineers has its own jurisdiction.
- **Q** If no wetlands today, but due to beaver activity one forms, will SMP apply?
- A Critical Areas Ordinance will apply. County uses NWI mapping. Would take a while to form wetland.
- **Q** Is there time limit?
- A Depends if wetland meets 3 criteria: vegetation, soils, hydrology. May require a report to delineate.
- **Q** Who decides what to do with beavers?
- A Multiple agencies, potentially. Most likely State WDFW, DNR.
- Q Would reservoirs need permits to work on banks?
- A SMP not designed to limit irrigation districts maintaining facilities.
- **Q** Is the SMP focused on Chelan County or are other jurisdictions/counties involved?
- A All counties are required to prepare an SMP. Each plan varies depending on local conditions and vision. All SMPs must meet state guidelines.
- **Q** Is SMP creating loopholes for development?
- A SMP will have use environments to identify appropriate use

- **Q** Bank erosion on Columbia River becoming a problem. Encourage County to obtain funding for restoration. Lack of roots/bonding due to boating.
- A SMP will address restoration. Incorporate watershed planning. County working on programmatic permit. SMP has exemption for restoration.
- **Q** Does Ecology have funds for restoration?
- A Not aware of any. SMP could be used to apply for other funding sources such as SRFB (Salmon Recovery Funding Board).

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - SMP doesn't change ownership, but will identify possible need or locations
 - District has shut off access due to vandalism
 - Would like to shut down Black Lake due to vandalism
 - Don't want to force public access
 - Who assumes liability?
 - Squilchuck doesn't meet CFS [cubic feet per second] investigating Colockum
 - Sometimes new development has requirement to provide public access consider safety
 - Near Alcoa good area for public access, viewpoints
 - Lack of good launches south of Rock Island really steep
 - Not crazy about some jet skiers
 - Need launch with parking, garbage cans and public access Idaho public garbage is free, not so much junk
 - Require improvement of immediate launch to avoid erosion
- 2. How do you feel about your level of waterfront access, both visual and physical?
 - Current parks under-served
 - No public access north of Rock Island Dam to just south of Wenatchee on the west side of the Columbia River.
 - Walla Walla Park good example of keeping green

- Want free public access we don't go to confluence because of \$5 fee
- Below Frosty Hanson does Grant County PUD have jurisdiction?
- Nice launch below dam, but not accessible any longer from dam up, there's nothing
- There will be growth in next 20 years need to plan appropriately
- There's a lot of undeveloped industrial property
- Consider purchase property for launch and park in Malaga in partnership with County
- Focus where access occurs, otherwise people make their own
- Ravens Wing get easement for public access
- Railroad crossing issues safety
- Need better boat access to Wenatchee River and Lake Wenatchee

SHORELINE USE AND DEVELOPMENT

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - See Malaga Vision Plan
 - No multifamily units, so design as rural river front small lot, single family
 - Favorite places Hydro Park no congestion
 - Hydro Park erosion is a problem due to boat wakes, etc.
 - Tarpsican Road launch dog access, swimming
 - Squilchuck fishing
- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Litter, homeless people
- 3. What other developments would you like to see on the shoreline? Where?
 - Development that enhances fishing build habitat
 - No more waterfront homes
 - Protect existing agriculture
- 4. Are there areas of your community shorelines that you feel are suitable for high-intensity development?

- Areas suitable for high intensity development Lake Entiat on Entiat side of Columbia River
- Orondo for high intensity recreation and support facilities, e.g., fueling

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - All reservoirs have to meet Ecology dam safety may not have vegetation
 - Is there a conflict between dam safety and shoreline rules?
 - Trees blow over then cause erosion need native vegetation
 - See WRIA 40a plan
 - Control off-road vehicles tearing up meadows and low lying areas, going near water and causing siltation in the Stemilt Basin and on Birch Mountain Need real consequences for crime/vandalism along public property
 - Need to address littering problem in water and along shoreline
 - Inventory of state or public lands protect and preserve those areas
 - Assessor has ownership map in GIS
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Offer rewards and incentives, e.g., game offers points to turn in poachers
 - Why do we need a reward to do the right thing?
 - County owns some property. Identify shoreline property not used for agriculture or residential and purchase it. Put in a park. May add value.
 - Local fundraisers?
 - Make it a partnership
 - Does Alcoa have property available for sale?
 - How about Adopt-a-Stream/Reservoir/Lake? Like the Wenatchee Valley Fly Fisherman, Spring Hill Reservoir
 - Incentives for private owners to preserve? It works.
 - Have improved roads, but makes it easier to get in and impact natural areas
- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?

- Erosion along Columbia River
- Lower end of Squilchuck, junk scattered in area
- Garbage on Columbia River pressure land owners to clean up
- Who should be responsible? Everyone.
- Make a joint effort County doesn't have the money to do it alone
- Need land owner involvement
- County Natural Resource Department (NRD) has money for restoration projects
- Need volunteers
- Have a Clean Up Day
- Involve interested groups, e.g., bicyclists
- Local business could help donations
- Bring kids out
- County needs to advertise positive restoration activities completed or in progress
- Take inmate work crew to help clean up areas
- 2-week event to get community help
- AmeriCorps could help coordinate volunteers

A.1.8 Lake Chelan Watershed

October 30, 2008 Chelan Fire Hall – 232 East Wapato Avenue 6:00 to 8:00 pm 25 participants

Question and Answer Session

- **Q** How different from City workshop area of coverage
- A City workshop covered City and UGA, this workshop covers the Chelan watershed area outside of the City and its UGA.
- **Q** State approval?
- A Yes, State (Ecology) will approve the plan and certain permits (Conditional Use and Variance). Project funded by a grant from Washington Department of Ecology
- **Q** Dock, seawall?
- A Yes, SMP will continue to govern these activities, add consistency with other agencies
- O New rules?
- A Yes, RCW requirements
- **Q** State rules flexible?
- A Some are; others not. Set a baseline with this plan.
- **Q** Effect of rules, current and new?
- A New rules still to be developed, some requirements will increase because of State requirements. Major objective is to streamline permitting process, increase consistency with other agency requirements, and reduce ambiguity. Existing SMP will be compared to new rules and results shared with public.
- **Q** State, federal and county coordination?
- A Yes, the goal is to clean up and simplify process, increase consistency.
- **Q** Existing structures?

- A Existing structures and uses may continue as before. Modifications (other than standard repair and maintenance) and new structures/uses need review new rules. Those exempt continue as exempt.
- Q Septic systems?
- A Covered in two areas watershed/water quality and SMP.
- **Q** Set back, existing and new?
- A Not changing. Buffers established in County critical areas regulations apply.
- Q Building permits, contamination of the lake?
- A Looking at uses which affect water quality
- Q 20 feet per second?
- A Based on mean annual flow as projected by USGS study.
- Q 100 to 200 foot buffers?
- A The 200-foot shoreline jurisdiction is similar to a zoning overlay. Used to identify areas where shoreline rules apply. Shoreline jurisdiction is not a buffer in itself.
- **Q** Access? Along water edge? Parks?
- A Right of way. Project team is reviewing.
- **Q** Boat lifts?
- A Under current process, permitted as a Conditional Use Permit (CUP). Want to add boatlifts to SMP to specify lower level of review.
- Q When new vs. old vesting?
- A [Vesting occurs] after determination of complete permit application.

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - Dog friendly access
 - More public access the better

- Micro parks bike, pedestrian access
- Not every park needs vehicle parking
- Questions about private property
- Public benefit for community
- Multifamily developments are required to provide access, but who maintains and ensures? Burden shouldn't be on owner/developer. County should be required to maintain.
- Need another state park(s)
- Need more public docks and boat launches
- For CUPs, consider requiring some kind of water access, marina, e.g., at waterfront restaurant
- Worried that money goes to state staff rather than for land purchases for public access
- Need more state parks
- No more state parks
- Get County public works maps of street ends right of way that should be public access
- Preserve, identify and sign all street ends right of way for public access adjacent property owners chase off users
- Kelly's Resort visitors trespass on private property
- Where does private ownership end and PUD/DNR ownership begin?
- More parks equals more boats, more wildlife damage
- Would like trail from 25 Mile Creek state park to Box [canyon or creek?]
- 2. How do you feel about your level of waterfront access, both visual and physical?
 - Not enough access in summertime
 - More high rises blocking views, e.g., Lakehouse, Campbell's
 - Need view corridors Coeur d'Alene, Idaho is a good example
 - Need more sandy beaches lawns are soggy, goose poop
 - Beaches lost with PUD control
 - Visual impacts of erosion need flexibility to repair, fill waterward of ordinary high water mark

Excellent

- No vehicle pull off to view lake between Chelan and Manson need viewpoint signage
- 3. Are there areas that need public access (that currently don't have any)?
 - Every place needs more
 - Don't force private owners to provide [public access]
 - Possible purchase of private property to add parks
 - Community waterfront areas work well guidelines for hillside developments
 - Need a trail along the gorge, all the way to Chelan Falls
 - Access needed both sides of lake
 - Public access uplake of 25 Mile Creek
 - Non-boating access for hiking, biking, horseback riding
 - Antilon Lake need hiking opportunities
 - Identify existing public access sites street ends, right of way, etc.
 - More parks for non-boat users
 - More boat access (docks, buoys) uplake from 25 Mile Creek

SHORELINE USE AND DEVELOPMENT

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - Enough residential and business
 - Not enough commercial
 - Need to get barge access on Lake Chelan
 - Enough agriculture and irrigation
 - Agriculture zone on water is no longer available
 - Small lot residential okay if can meet engineering/architecture [standards]
 - Lack of restaurants outside urban area
 - More commercial (gas refueling stations, retail, etc.) outside urban area
 - Need restaurant on shoreline
 - Limited public access
 - More residential large parcels to be developed

- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Loud water crafts
 - Too many fast boats wakes
 - Gas tanks, marinas
 - More septic
 - No, [shoreline uses] overprotected uses are okay
 - Above Kelly's Resort vacant now, proposed for residential, marina and boat slips – natural and beautiful as is, proposed for homes
 - Concerns about residential development, e.g., across from 25 Mile Creek
 - Concerns about water quality, aesthetics appalling development, particularly steep slopes
 - Twisted Pearl boat rented for parties
 - Too many private marinas, too many parked boats, affect public enjoyment
 - Junk cars around Mason Lakes
 - Hydro races
 - Howe Sound dock falling down
 - Lady of the Lake causes waves
- 3. What other developments would you like to see on the shoreline? Where?
 - Kayak areas non motorized water trails/pathways
 - Destination boating stops
 - Parks, commercial areas, restaurant
 - Hiking, walking along water
 - Restaurants plus other water related uses like Campbell's
 - Need more boat rental and dock spaces
 - Dog friendly access
 - Need access, right of way
 - More non-motorized use and development kayak, bike, etc.
 - Buoy line for swimmers requires education
 - Hiking, biking trail
 - Commercial, e.g., White Rock, British Columbia

- Open up street ends or combine to make single large park
- Safe pedestrian walkway along water with connectivity to downtown shops
- Better access uplake (besides Lady of the Lake) for non-boat owners maybe a shuttle
- Designated dog park access via Marymoor
- Sandy beaches, shallow water access (without walls at lakeside)
- More developed parks at Wapato, Dry and Roses Lake
- Trails along Chelan Gorge
- Problems with lake erosion at steep bluff in Manson could be good site for shops, other waterfront development
- Need view corridors need incentives and regulations for view corridor
- Improve signage for public access/street ends
- Fields Point Landing now blocked for launching
- Like to walk beaches when water is low
- 4. Are there areas of your community shorelines that you feel are suitable for high-intensity development?
 - Flexibility CUPs for commercial, water oriented uses possibility for changetaker

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - Lake Chelan already 3/4 protected enough protection
 - Columbia River docks and banks concerned about private use, not protection
 - No concerned about it
 - Some [areas] are ugly, but green up should have to replant west of Manson
 - I don't care, it doesn't bother me
 - [Preservation] has locked up so much of the state
 - Already afforded degree of protection programs already in place
 - Concern about access on Upper Stehekin Valley Road

- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Should continue to be protected under existing [regulations], but don't add more protections
 - Historical wetlands already degraded
 - Storm water management
 - Govern/ruled that development does not affect lake quality
 - Too much a lot better 30 to 40 years ago
- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?
 - Some eroded banks responsibility depends on ownership
 - Want flexibility to encroach slope beach building
 - Whoever is at fault pays, but if area-wide and County/state wants it corrected, they should take care of it
 - Storm drain overflow pulling sediment into lake, causing erosion (South Harris Avenue in Manson)
 - All sediment and pollutants going into lake
 - Downtown Manson near fire station old swimming hole, not the new park
 - Area across from Fields Point and 25 Mile Creek
 - County ruined shoreline by improving highway County should restore
 - Erosion protection in developed area is the County's responsibility
 - Water reclamation and treatment in Manson
 - Storm water treatment no follow through
 - Chelan Valley runoff from fires (lake wide)
 - Mitigation banking fee in lieu
 - Residential development across from Kelly's Resort let them be, build a road
 - Clearing and grading around lake
- 4. When you imagine the future shoreline, what will it look like in terms of environmental condition?
 - Problem with WDFW boat putting in large woody debris, trying to bring in fish that don't belong why?
 - Don't want large woody debris sticking out

- Want waterline to be attractive, no brush
- Columbia River would like to see milfoil program
- Put regulation into County hands
- Want to know why dock regulations and mitigation exist
- No large woody debris historically
- More local control
- Would like to see shoreline study stay as is natural particularly top 30 miles [of lake] concerns that there are private holdings there, but would prefer to have it remain public



A.1.9 Entiat Watershed / Columbia River above Wenatchee

November 5, 2008 Entiat Grange Hall – 14108 Kinzel Road 6:00 to 8:00 pm 7 participants

Question and Answer Session

- Q What does clearing and grading cover?
- A Water dependent uses
- Q How will enforcement be managed?
- A County will consider enforcement/management structure based on available budget. Permitting process will help determine, manage and define enforcement. County wants to streamline permitting process.
- Q Does streamlining include agency review?
- A County ensures consistency with agency requirements and thus helps with permit streamlining.

Break-Out Group Discussion

PUBLIC ACCESS AND RECREATION

- 1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
 - Need public access along Entiat River
 - Need public access to Columbia River lots of private ownership currently
 - With no clear public access, people make their own pathway across private property without permission
 - Entiat River property purchased by WDFW are there any opportunities?
 - County needs to identify public property and easements along Entiat River, then determine opportunities for more public access
 - Signage needed for public access points
 - Need boat launch on Chelan County side of Columbia River
 - Petition PUD for public area on waterfront near Earthquake Point
 - Railroad tracks are an obstacle

- 2. How do you use the shorelines? (View points, trails, parks or recreation areas, boating, rafting, swimming, etc.)
 - Walk, wildlife viewing, hydro plane races, waterfront Chamber of Commerce events (e.g., Summer Fest), camping, boating, fishing, canoeing, kayaking, graffiti, hunting, education, swimming, jet skis and personal water craft
- 3. How do you feel about your level of waterfront access, both visual and physical?
 - Need uses that promote local economic vitality
 - Inadequate public access
 - Lots of access to forest lands, so there is not necessarily inadequate access locally – just not much "urban" access, more backcountry
 - Lack of access along Columbia River
 - Lack of public viewpoints
 - Inventory scenic vistas and turnout points (especially above Rocky Reach)
 - Parking and viewpoints used above the dam may not be legal
- 4. Are there areas that need public access (that currently don't have any)?
 - Need fishing access along Entiat River
 - Identify public ownership areas, then determine more public access points
 - Inventory land trust properties (recently purchased acreage)

SHORELINE USE AND DEVELOPMENT

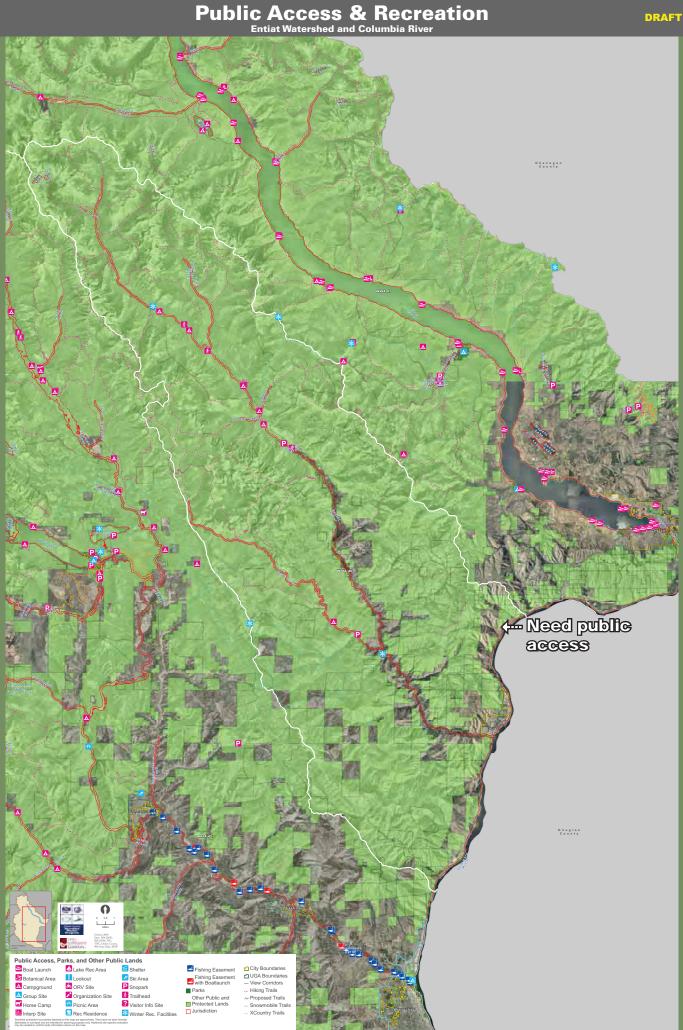
- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? What is there too much or too little of?
 - There is going to be too much residential
 - Additional access and usage stress the river
 - Fishing and water craft are conflicting uses
 - Need more commercial within Entiat city limits and along shoreline
 - Look into Chelan Falls land inventory
 - Add commercial
- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?
 - Find balance between wildlife and proposed marina

- Marina may help reduce private dock construction
- 3. What other developments would you like to see on the shoreline? Where?
 - Waterfront hotel
 - Pocket parks
 - Restrooms between Wenatchee and City of Chelan
 - Marina infrastructure
 - Community pool or aquatic center
- 4. Are there areas of your community shorelines that you feel are suitable for high-intensity development?
 - We have enough residential, but have areas available for commercial
 - Hotel for multi-day use vs. our existing 2-room day-use facility
 - Port of Chelan is investing in the area

ENVIRONMENTAL PROTECTION

- 1. Does your community have natural areas that you feel should be preserved or protected?
 - Entiat watershed plan has list of areas for preservation
 - From PUD substation north, where cliffs come to Columbia River heavily used by water fowl near Earthquake Point
 - PUD could surplus land for conversion to public access (southern tip of Earthquake Point)
 - PUD has staff dedicated to enhancing waterfowl habitat and raptor research
 - Sensitive area in front of proposed marina
 - Inventory land that could be potential wildlife habitat
 - Need perches and nesting poles for osprey as development increases
 - Concern about beaver damage to trees
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase)
 - Grant funding
 - Lots of inventorying to be done by PUD

- 3. Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration?
 - Oklahoma Gulch supposed to be restored? Area with Lewis' woodpeckers and rattlesnakes
 - Springs and streams at mouth of Columbia River
 - County should be responsible for restoration



A.2 Comment Cards and Questionnaires

Comment Card Chelan County Shoreline Master Program

Please print legibly.

Shor Ma:	County eline ster gram

Name

Affiliation Address



Judy Terry 2995 Malaga Alcoa Hwy. Malaga, WA 98828

City/State/Zip

Would you like someone to contact you? ☐ Yes ☐ No If yes, what is the best way to contact you? ☐ E-mail ☐ Phone

E-mail

Phone

Foi	r additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program. or e-mail erin.fonville@co.chelan.wa.us
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	negit de a Shoreline
	ownership inventory.

Chelan County Shoreline Master Program

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Address 16609 N SHORE DR

City/State/Zip LEAVEN WORTH

Would you like someone to contact you? Yes No If yes, what is the best way to contact you? F-mail Phone

E-mail griffvicki e gmail

Please share your comments on the Shoreline Master Program. Thank you for your time and participation. For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html or e-mail erin.fonville@co.chelan.wa.us

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about 150 feet SE of where Brown Road
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Chelan County Natural Resource Department

Attn: Erin Fonville S PM 316 Washington Street, Suite 401 Wenatchee, WA 9880 30 007



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Would you like someor If yes, what is the best v	ne to contact you? ☐ Yes ☐ No way to contact you? ☐ E-mail ☐ P	hone .
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E-mail Please share your comments on the Shoreline Master Program. Thank you for your time and participation. For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html or e-mail erin.fonville@co.chelan.wa.us

Comment Card Chelan County Shoreline Master Program

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Name Gordon Ille
Affiliation City Cashme.e
Address 101 Nowberry
City/State/Zip Pashmere W.A 58815
Would you like someone to contact you? ☐ Yes ☑ No If yes, what is the best way to contact you? ☐ E-mail ☐ Phone
E-mail Phone

Please share your comments on the Shoreline Master Program. Thank you for your time and participation. For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html or e-mail erin.fonville@co.chelan.wa.us

Chelan County Shoreline Master Program

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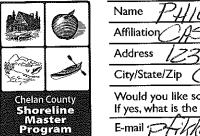


Name Victus Cubicly		
Affiliation Cathrere resident		
Address 301 Freveat Dr.		
City/State/Zip Cashmere, 98815		
Would you like someone to contact you! ☐ Yes ☑ No If yes, what is the best way to contact you! ☐ E-mail ☐ Phone		
mail Phone		

 $Please \ share \ your \ comments \ on \ the \ Shoreline \ Master \ Program. \ Thank \ you \ for \ your \ time \ and \ participation.$ For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html or e-mail erin.fonville@co.chelan.wa.us

Comment Card Chelan County Shoreline Master Program

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Name PHIL FINAN
Affiliation CASHMENE RESIDENT
Address 123 RIVERFICENT DR
City/State/Zip CASHMENE, WA 98815
Would you like someone to contact you? Yes I No If yes, what is the best way to contact you? E-mail Phone
E-mail Ptikkan Cicrian. Phopse 509-782-822.

Please share your comments on the Shoreline Master Program. Thank you for your time and participation. For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html or e-mail erin.fonville@co.chelan.wa.us

Comment Card Chelan County Shoreline Master Program

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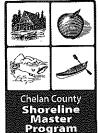
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		Affiliation BLVE			
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Chelan Shor e	eline	Would you like someone if yes, what is the best wa			
Master Program		E-mail			

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City/State/	Zip	SHIPLE	RE.	WA	<u>9881</u>
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Please share your comments on the Shoreline Master Program. Thank you for your time and participation. For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html or e-mail erin.fonville@co.chelan.wa.us
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Chelan County Shoreline Master Program

Please print legibly.



Name CARIN SMITH

Affiliation Community Member + Koyaker

Address 9001 Derby Caryon

City/State/Zip Pestrustin 98847

Would you like someone to contact you? IT Yes II No Not New Coffee

Would you like someone to contact you?

Yes No Not Next Hard If yes, what is the best way to contact you?

Phone

Program E-mail Carnesmithet, ComPhone
Please share your comments on the Shoreline Master Program. Thank you for your time and participation. For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html or e-mail erin.fonville@co.chelan.wa.us
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Chelan County Shoreline Master Program

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Name Dan Rolfs
Affiliation
Address 508 Day Road A
City/State/Zip Wingtihle
Would you like someone to contact you? ☐ Yes ☐ No If yes, what is the best way to contact you? ☐ E-mail ☐ Phone
E-mail donnalfs @ add com

Please share your comments on the Shoreline Master Program. Thank you for your time and participation.

For additional information, please visit www.co.chelan.wa.us/nr/nr_shoreline_master_program.html

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Chelan County Shoreline Master Program

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or e-mail erin.fonville@co.chelan.wa.us

- What Is the Status OP the Fingless
- Shoreline Area? Could this Land
- Be purchased For purice Access
- Development?

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Comment Card Chelan County Shoreline Master Program

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Name Dixie J. Baker		
Affiliation		
Address 2025 W. TERRACE AUE.		
City/State/Zip CHELAN WA. 98816		
Would you like someone to contact you? ☐ Yes ☐ No If yes, what is the best way to contact you? ☐ E-mail ☐ Phone		

E-mail divie bakeranwi Phone +

Please share your comments on the Shoreline Master Program. Thank you for your time and participation. $For additional \ information, please \ visit \ www.co.chelan.wa.us/nr/nr_shoreline_master_program.html$ or e-mail erin.fonville@co.chelan.wa.us

There is enough off shore businesses
Corrently in operation. The
currently in operation. The traffic on the lake is congested
enough, I would favor leaving
things capped off as is with
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existing number of businesses
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Kecural 10/30/08

Chelan County Shoreline Master Program Community Workshops Questionnaire

Thank you for your interest in the Shoreline Master Program update and for attending the City of Chelan's Community Workshop. Below are the questions that were asked during the Community Workshop on October 21, 2008. Any information that you can provide will be very helpful to the update process. Feel free to provide feedback on any or all of the questions. Please either e-mail your responses to erin.fonville@co.chelan.wa.us or mail to: Erin Fonville, Chelan County Natural Resource Department, 316 Washington St., Suite 401, Wenatchee, WA 98801

Purpose

The purpose of the first round of community workshops is to capture citizen goals and aspirations with respect to the findings of the shoreline inventory. Information gathered during these meetings will help in the development of shoreline goals, policies and regulations. Subsequent meetings will cover shoreline analysis, shoreline management recommendations, and draft policies and regulations.

Community Workshop Questions

Sh	oreline Use & Development
1.	Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? Yes, most of the usable shortine 15 being used a. What is there too much of? 3 the skis, loud hoats noise
2.	b. What is there too little of? Control of lake level lake should remain full especially for Sept. + Oct Are there current community shoreline uses that you feel aren't appropriate? Why? Jet ski business, due To lake 4 noise polition

- 3. Aside from public access and recreational uses, what other developments would you like to see on the shoreline? Where? Nice restrayant near downtown
- 4. Are there areas of your community shorelines that you feel are suitable for high-intensity development? NO!
- 5. When you imagine the future shoreline, what will it look like in terms of shoreline use and development?

Hope it does not change, no more Cordo's on The shoreline

Chelan County Shoreline Master Program Community Workshops Questionnaire

- 6. What do you like best about your community waterfront now?
- 7. What concerns you most about your community waterfront now?

High density development

Public Access & Recreation

1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?

Same

2. How do you use the shorelines? (View points, trails, parks or recreation areas, boating, rafting, swimming, etc.)

All the above

3. How do you feel about your level of waterfront access, both visual and physical?

OK

4. Are there areas that need public access (that currently don't have any)?

No

5. How do you think your community should balance provision of additional public access, if needed, against uses that might provide direct economic benefits to your community?

Public access should be near Town

6. How often do you visit shorelines in Chelan County? Which ones?

A wit Lake Chelan

Environmental Protection

- 1. Does your community have natural areas that you feel should be preserved or protected?
- 2. How can these areas best be protected? (Volunteer actions, regulations, purchase, etc.)

Chelan County Shoreline Master Program Community Workshops Questionnaire

3.	Are you aware of any degraded areas that you feel should be restored? Who should be responsible
	for shoreline restoration?
	Boat duck on way into Town. It should be easier
	for people to get permits to maintain & improve
	for people to get permits to maintain 2 improve lake shore properties Dealing with shoreline might, Lishered City. Corp of Eng Lept of Ecology, is way to difficult When you imagine the future shoreline, what will it look like in terms of environmental condition?
	Cty, Corp of Eng, - dept of Ecology,
4.	when you imagine the future shoreline, what will it look like in terms of environmental condition?
	Home The Pollution from increased boating & Je
	1. It is the the south and
	Also That all the above agencys
	to the Shoreline
	dealing with people who want to keep the shoreline
	looking good

Thank you for your interest in the Shoreline Master Program update and for attending the City of Chelan's Community Workshop. Below are the questions that were asked during the Community Workshop on October 21, 2008. Any information that you can provide will be very helpful to the update process. Feel free to provide feedback on any or all of the questions. Please either e-mail your responses to or mail to: Erin Fonville, Chelan County Natural Resource Department, 316 Washington St., Suite 401, Wenatchee, WA 98801

Purpose

The purpose of the first round of community workshops is to capture citizen goals and aspirations with respect to the findings of the shoreline inventory. Information gathered during these meetings will help in the development of shoreline goals, policies and regulations. Subsequent meetings will cover shoreline analysis, shoreline management recommendations, and draft policies and regulations.

Community Workshop Questions

Shoreline Use & Development

- 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture?
 - a. What is there too much of?
 Too much traffic.
 - b. What is there too little of? Too little parking.
- 2. Are there current community shoreline uses that you feel aren't appropriate? Why?

 The proposal to make parks or micro parks out of road ends is inappropriate. In some instances the shoreline is too steep and dangerous. In other instances there is little to no parking available to accommodate a park facility, no space for bathrooms, and it would create an intrusion into quiet neighborhoods that are not zoned TA.
- 3. Aside from public access and recreational uses, what other developments would you like to see on the shoreline? Where? Lake Chelan is currently too congested as it is to promote additional recreational uses on the shoreline. Parking is a long standing issue and a problem that has yet to be addressed.
- 4. Are there areas of your community shorelines that you feel are suitable for high-intensity development? No. Absolutely not.

5.	When you imagine the future shoreline, what will it look like in terms of shoreline use and development? At the current rate, without more restrictions, I foresee more congestion, and high rise condominiums blocking the lake view.
6.	What do you like best about your community waterfront now? Beautiful views. Availability to boat launches, Lakeside Park, etc.
7.	What concerns you most about your community waterfront now? Section J of the proposed trail and the proposed Micro Park coming into the neighborhood creating more congestion and parking problems than we currently experience every Summer.
Pul	olic Access & Recreation
	When you imagine the future shoreline, what will it look like in terms of public access and recreation? Lakeside Park and Don Morse Park are great recreational areas for public access.
2.	How do you use the shorelines? (View points, trails, parks or recreation areas, boating, rafting, swimming, etc.) Boating, rafting, trails, and swimming.
3.	How do you feel about your level of waterfront access, both visual and physical? Good.
4.	Are there areas that need public access (that currently don't have any)? No.
5.	How do you think your community should balance provision of additional public access, if needed, against uses that might provide direct economic benefits to your community?

6.	How often do you visit shorelines in Chelan County? Which ones?
Env 1.	vironmental Protection Does your community have natural areas that you feel should be preserved or protected? The Lake and Chelan Butte.
	How can these areas best be protected? (Volunteer actions, regulations, purchase, etc.) gulations must be enforced. Parking should be acquired AND REQUIRED to accommodate any posed useage.
3.	Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration? Three fingers should be restored to the public.
4. 5.	When you imagine the future shoreline, what will it look like in terms of environmental condition? Overuse and congestion can only mean noise and pollution.

Received 11/18/2008

Chelan County Shoreline Master Program Community Workshops Questionnaire

Thank you for your interest in the Shoreline Master Program update and for attending the City of Chelan's Community Workshop. Below are the questions that were asked during the Community Workshop on October 21, 2008. Any information that you can provide will be very helpful to the update process. Feel free to provide feedback on any or all of the questions. Please either e-mail your responses to erin.fonville@co.chelan.wa.us or mail to: Erin Fonville, Chelan County Natural Resource Department, 316 Washington St., Suite 401, Wenatchee, WA 98801

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The purpose of the first round of community workshops is to capture citizen goals and aspirations with respect to the findings of the shoreline inventory. Information gathered during these meetings will help in the development of shoreline goals, policies and regulations. Subsequent meetings will cover shoreline analysis, shoreline management recommendations, and draft policies and regulations.

Community Workshop Questions

Community workshop Questions	
Shoreline Use & Development 1. Are there adequate areas for residential, business, recreation, public access, habitat, open space and agriculture? A safe shoulder or path for biking, walk to running would be good. a. What is there too much of? PWC'S	
b. What is there too little of? Low wafer decking and low wafer decking for book aunchined 2. Are there current community shoreline uses that you feel aren't appropriate? Why?	;†
3. Aside from public access and recreational uses, what other developments would you like to see on the shoreline? Where? I think all the things that I think of are recreational. More boat moorage	=-~
4. Are there areas of your community shorelines that you feel are suitable for high-intensity development? Maybe Manson Bay	

5. When you imagine the future shoreline, what will it look like in terms of shoreline use and development? Reco garish development of the water front

Chelan County Shoreline Master Program Community Workshops Questionnaire

6. What do you like best about your community waterfront now? Ease of USC and Space I
7. What concerns you most about your community waterfront now? Overcrowding at the City Park + Lakeside in the peak summer season
Public Access & Recreation
1. When you imagine the future shoreline, what will it look like in terms of public access and recreation?
2. How do you use the shorelines? (View points, trails, parks or recreation areas, boating, rafting, swimming, etc.) We boat + 5w m
Swimming, etc.) USE COCKET TO WAY
3. How do you feel about your level of waterfront access, both visual and physical? Pretty good except when the lake drops below
1085.5
4. Are there areas that need public access (that currently don't have any)? Not that I can think of except low water recreational boating access
5. How do you think your community should balance provision of additional public access, if needed, against uses that might provide direct economic benefits to your community? Finding That
6. How often do you visit shorelines in Chelan County? Which ones? Lake Chelan Marina,
200+ days a trear - Manson Bay Mill Bacy, Environmental Protection
Environmental Protection
1. Does your community have natural areas that you feel should be preserved or protected? Yes - Mills
2. However these expendent he protected? (Valuntour actions, regulations, purchase atc.)
By making sure the development doesn't allow run off
allow run off

Chelan County Shoreline Master Program Community Workshops Questionnaire

3.	Are you aware of any degraded areas that you feel should be restored? Who should be responsible for shoreline restoration? Primarily PUD funding. Community Volunteer work could augment.
4.	When you imagine the future shoreline, what will it look like in terms of environmental condition? Well managed, and protected from pollulants litter and unsightly development
/	litter and unsightly development

A.3 Letters and Emails

December 2008 111

SMP WORKSHOP FOR CHELAN COUNTY and CASHMERE

OCT 23, 2008

I went with Amy to listen to people's access ideas and issues from three groups;

GROUP 1

Considerable discussion on the Sleepy Hollow area.

Access problems at Sleepy Hollow bridge during summer Question on do we know what the railroad uses to kill weeds, fight fires, etc.

Cashmere Dike access

Keep the river accesses clean

I talked to Mr. Peterson on river access. He owns a large ranch that has a fishing access area with toilet. He is very supportive on the river access areas.

Group 2

Question on whether the property line is the high water line or the centerline of the riverbed

Lots of different activities to use the river access points; fishing, kayaking, bird watching, canoes, etc

Record/document owners along the river

Railroad ownership/rules/regulations

Need to consider what is planned for bike trail from Wenatchee to Leavenworth

Impact of local gold mining on the salmon, et al, fishery and water quality

TBD Cashmere area boat launch that puts boats right over salmon spawning beds

Group 3

Interest in seeing riverbank restaurants in Cashmere Keep access areas clean Provide poles, etc, to build eagle nest platforms Will increase water usage result in liability issues Very expensive wastewater fixes being mandated

Received 10/27/08

Thank you for your questionnaire on the development of out future shoreline. This narrative is centered on our first meeting and that is the shoreline within the city of Chelan.

We are at a critical point in the development of our shoreline within the City of Chelan. With the increased pressure for development we must stop the random development of each individual project and look to a comprehensive plan for the entire shoreline. Some Suggestions:

Access to the lake is not just physical. We need new plans to maintain both the physical and "lake experience" access to the lake. This includes sight, sound and even smell. It's ironic that we are building a great trail to surround the lake while at the same time we are approving 50 foot high building projects on the shoreline that will cut off both the physical and "lake experience" access. It reminds me of Lake Tahoe. On the California side you have great "lake experience" access. You can see the lake as you drive by. You have public parks and open space with low height development. Buildings are not jammed together and are (I Think) at least 30 feet apart to maintain this lake experience for all. You hit the Nevada border and the lake disappears. High rise development jammed on 5 foot borders on the shoreline cuts the lake off.

Or lesson should be to develop high density projects in the hills not the shoreline. We should make sure all projects must leave adequate boundaries (15 foot from line) between neighbors. Projects must be low enough to maintain the view of the lake from the trail. We new a new zoning requirement for just shoreline projects.

Water quality is a must. We can not keep approving projects that will put more and more boats in the lake. All boats leak and will pollute. Putting 500 and more boats in marines just up lake and up current from our water supply is not only not smart but dangerous. Additional boats mean additional boat traffic, more noise pollution, more rough boat wakes and more conflict on the water. We need quiet water areas.

New projects must provide adequate parking for boat trailers.

We need good restaurants on the shoreline.

We need a first class year round city marina that would provide sea plane and charter boat public access.

We need the lake to be full year round.

However if I were King I would make sure our shoreline would end up a lot more like that of Kelowna, B.C. I would move the trail down to the shoreline. I would require all projects add this trail and ready access in all their plans. I would include parks and open area with benches. Low rise commercial areas would be built in the area just up from the trail complex. I would insure that the entire lake experience was part of the long term heritage of what we do now.

Thank you for this opportunity and I would like to be involved in the Shoreline Master Program.

Lyle Mettler P.O. Box 63 Chelan, WA Flying4chelan@aol.com 509-682-2328



Washington State Senate

Senator Linda Evans Parlette

Senate Republican Caucus Chair 12th Legislative District District Office:

625 Okanogan, Suite 301 Wenatchee, WA 98801 Phone: (509) 663-9702 E-mail: Parlette.Linda@leg.wa.gov Hotline: 1-800-562-6000

Fax: (360) 786-1266 October 30, 2008

Olympia Office:

316 Legislative Building

P.O. Box 40412

Olympia, WA 98504-4012

Phone: (360) 786-7622

Erin Fonville, Natural Resource Specialist Chelan County Natural Resources 316 Washington St. Suite 401 Wenatchee, WA 98801

RE: Update Shoreline Master Plan; Chelan County

Dear Erin,

Thank you for inviting me to comment on Chelan County's purposed Shoreline Master Plan (SMP). As a member of a Lake Chelan Pioneer family, the beauty of the Lake and the sensible use of it's shoreline is important to me. The shorelines in our region are a limited resource which, when developed, should be used for the highest and best use for the communities who reside near them.

Over the past two years, my family and I have been working through the process of contesting a shoreline decision made by the Chelan County hearing examiner regarding a purposed community dock on Lake Chelan. Our case went in front of the Shoreline Hearings Board, whose decision upheld our position. It was a very expensive process to go through and I believe much of it could have been avoided if the City of Chelan updated their Shoreline Master Plan as required by law when a piece of lake frontage was annexed into the city limits.

I share this because, I understand Chelan County, and the encompassed cities, will have proposed shoreline jurisdiction over an area that is distributed among 80 rivers and streams, 54 lakes and reservoirs, as well as four Watershed Resource Inventory Areas (WRIAs). The amount of new growth in areas surrounding our waterways has greatly increased in the past few years and I am glad Chelan County and the municipalities with it's border are taking the time to update the Shoreline Master Plan to bring everyone on the same page.

I would hope the final recommendations are found to be clear, consistent, and feasible for those charged with implementation. Public access to water ways is of importance to me. I would hope that lands owned by public utility districts on Chelan County waterways will be looked at carefully to see if there is any potential for public access. I would encourage the planning group to seek out input from the P.U.D. to learn more about their vision for more public access on shorelines they own.

I would also hope the updated SMP will give guidance to local jurisdictions that may have a marina or dock already in place that has potential for expansion or modernization; for example, the City of Chelan's docking facility. Capitalizing on existing infrastructure for highest and best use for public benefit is a fiscally prudent way to maximize our shoreline use.

Thank you for opportunity to comment on this very important process.

Sincerely,

LINDA EVANS PARLETTE Washington State Senator

12th Legislative District

From:

patti cassell [pattinevarilcassell@hotmail.com]

Sent:

Friday, October 17, 2008 7:37 PM

To:

Erin Fonville

Subject:

Shoreline Master Program

Follow Up Flag: Follow up Flag Status:

Yellow

Hello, and thank you for the notice of the Community Workshop for the Chelan Co. Master Shoreline Program on October 30th.

I am sorry to say I am unable to attend this workshop, and hope that this email can serve as my solicited input. My husband and I purchased land and built a home in Manson 15 years ago, drawn by the unbelievable beauty of the area, and the small town feel.

I have to say that over these past years we have been increasingly frustrated by the seemingly uncontrolled growth, especially at the waterfront. I get the feeling that if growth continues this way, the only people that will even get to view the lake from the highway are the wealthy property owners. Please, please put some covenants in place that prevents enormous multistory homes and/ or multiple use dwellings directly at the waterfront. The lake and it's views should be available for all to enjoy, not the just the elite class. Sincerely, Patti Cassell

Store, manage and share up to 5GB with Windows Live SkyDrive. Start uploading now

From:

Mark Cassell [mcasel@msn.com]

Sent:

Friday, October 17, 2008 7:01 PM

To:

Erin Fonville

Subject:

Chelan County Shorline Master Program

Follow Up Flag: Follow up Flag Status: Yellow

Erin,

We can't attend....but...we would like to see the lake as we drive around it! No high rise buildings right on the Lake....no dock extending out more than 50'...max!

No floating stores, no mega houseboats.

Septic systems must be state of the art if there are no sewers.

Keep multi family, hotels and condos in Chelan.

No uplake past Wapato Point multifamily!

Thanks for asking.

Mark Cassell 30 Washington St Manson

From:

Cordy Beckstead [cordy@becksteadelectric.com]

Sent:

Wednesday, October 22, 2008 3:04 PM

To:

Erin Fonville

Subject:

Shoreline Use & Development issues

Follow Up Flag: Follow up Flag Status: Yellow

Re: Your questionnaire for tonight's meeting.

- 1. I would like to see a public docking area on each side for those who might like to ride their boats to work. Perhaps they already exist.
- 2. I prefer a real mix of uses so it would be a real challenge for me to say so.
- 3. I would like to see retail spaces such as shops or eating places. There is a wonderful mix of shops on a pier that goes out into the lake at Sandpoint Idaho, for example. A restaurant on the edge would be lovely, too. Fairbanks, Alaska, has several and they are great to sit outside (in the summer of course) and watch the boats go by. I would also favor businesses on the river. Trees or bushes along the edge would of course be important for fish management.
- 4. Yes, several, particularly along the loop trail.
- 5. In the future I imagine a 3rd bridge across the river at about the bottom of 5th St. This location would be important primarily because Wenatchee needs more lanes out of town for safety purposes. I imagine every foot of the shoreline within the 2 current bridges is used extensively by the community and tourists. I imagine another park perhaps by the Olds Bridge on the east side. I hope for a mix of commercial and residential and industrial much like the waterfront in Seattle on the sound with the smells and sights of a diverse population enjoying a diverse number of activities and purposes. For example I think it is great that Columbia Cold Store is located at 5th St. and Worthen. It is tremendous to get the ice for the rink from their business (I realize that may be ending) and for the City it is great to get the revenue. The inconvenience of the trucks is a small price to enjoy the diversity.
- 6. The loop.
- 7. I am most concerned that regulations and policies will be too firm, tight and cover every activity imaginable. I vote for more flexibility and diversity of ALL kinds.

Thank you so much, Erin, for making this available. Flisabeth

From:

Erin Fonville

Sent:

Wednesday, October 29, 2008 9:20 AM

To:

'Darren Talley'

Subject: RE: Community Workshop Questions

Darren,

Thanks for your comments and concern. I apologize if everything mentioned was not correctly written down during the workshop and appreciate you following up with me. I'll add the information below to what we collected during the workshop.

Thanks,

Erin Fonville SMP Project Manager/ Natural Resource Specialist Chelan County Natural Resources 316 Washington St. Suite 401 Wenatchee, WA 98801

Office: (509) 667-6324 Cell: (509) 699-9016

E-mail: erin.fonville@co.chelan.wa.us

Website: www.co.chelan.wa.us/nr_main.htm

From: Darren Talley [mailto:Darren@TalleyFinancial.com]

Sent: Monday, October 27, 2008 10:38 AM

To: Erin Fonville

Subject: RE: Community Workshop Questions

Erin.

Thank you for putting together a good work shop. I noticed that we are getting voices from everyone, with just their pet peeves. For instance one person said, all public access points on the lake should only be for non motorized transportation... like kayaks. That point was written down by the moderator (I think it was Amy). To be the counter point to that type of thinking I said, that motorized transportation should be encouraged. My point did not get written down by the moderator. This could skew the general voices being heard if someone reads through all that was written down, and counter balancing points are left out. It would lead someone who was not at the meeting or receives a letter from the workshop to believe that everyone's general opinion was taken into account, when in fact only certain points were written down helping to shape an certain outcome. I am not saying Amy did this intentionally, but really to every point that is brought out at these workshops there is a counter point that should be listed.

Thanks for listening,

Darren Talley

Darren J. Talley & Dean W. Talley Lake Chelan Development, LLC Granite Ridge, LLC PO Box 969 Chelan, WA 98816

APPENDIX B: WORKSHOP MATERIALS

B.1 Display Board

December 2008 121



What is an SMP?

Shoreline Master Programs (SMP) are a combination of rules and comprehensive planning that are developed by local governments to guide the development of stream and lake shorelines in accordance with the State Shoreline Management Act (RCW 90.58). Chelan County's current SMP was adopted in 1975 and contains goals, policies and regulations for shorelines within the local area. Chelan County and the Cities of Cashmere, Chelan, Entiat, Leavenworth, and Wenatchee are partnering to update their SMP as part of a county-wide effort with project funding from the Department of Ecology (DOE). The updated SMP, as required by DOE, will provide environmental protection for shorelines, preserve and enhance public access, and encourage appropriate development that supports water oriented uses.

What are shorelines?

Shorelines are special water bodies that meet certain size or flow criteria under the Shoreline Management Act, including the adjacent uplands. They specifically include lakes greater than 20 acres, streams and rivers with an average annual flow greater than 20 cubic feet per second (cfs), lands within 200 feet of the ordinary high water mark, floodways, some floodplains, and associated wetlands. Chelan County has at least 130 shorelines that meet the definition, which include approximately 50 lakes and 80 streams or rivers.

What do shoreline rules cover?

Shoreline rules apply to any land use activity that occurs within the shoreline jurisdiction as defined in the SMP. The rules cover the following:

- construction of new structures such as houses, sheds, and decks
- · building height
- construction of in-water and over-water structures such as docks, buoys, and piers
- water-dependent uses such as residential docks and marinas
- land development such as clearing, grading, dredging, or filling
- other activities along the shorelines, including restoration (e.g., riparian planting, bank stabilization), trails, and public access.

Get involved!

The County and Cities invite you to become actively engaged in the SMP update process. The many ways to participate are:

- attend our public meetings and workshops
- invite us to attend your community organization meetings
- sign up for our e-mail distribution list
- · learn more about shorelines
- talk to your neighbors and friends
- ask questions and provide comments on the products developed during the update

Our meeting schedule is available on the Internet, along with meeting notes and agendas, project updates, and products developed through the process. Visit the website for more information:

www.co.chelan.wa.us/nr/ nr_shoreline_master_program.html



B.2 Brochure

December 2008 123

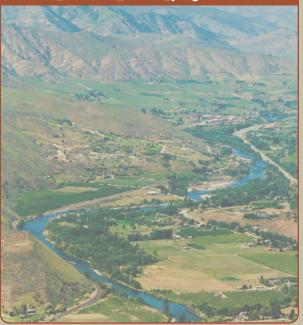
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Need more information?

Chelan County

Erin Fonville, SMP Project Manager Natural Resource Department

316 Washington St., Suite 401, Wenatchee, WA 98801 (509) 667-6324 • erin.fonville@co.chelan.wa.us

Chelan County

Lilith Yanagimachi, Planner II

Community Development Department 316 Washington St., Suite 301, Wenatchee, WA 98801 (509) 667-6586 • lilith.yanagimachi@co.chelan.wa.us

City of Cashmere

Mark Botello

101 Woodring St., Cashmere, WA 98815 (509) 782-3513 • mark@cityofcashmere.org

City of Chelan

Craig Gildroy

P.O. Box 1669, Chelan, WA 98816 (509) 682-8020 • cgildroy@cityofchelan.us

City of Entiat

Susan Driver

P.O. Box 228, Entiat, WA 98822 (509) 784-1500 • susan@smdsolutionsncw.com

City of Leavenworth

Connie Krueger, AICP

P.O. Box 287, Leavenworth, WA 98826 (509) 548-5275 • cddirector@cityofleavenworth.com

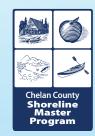
City of Wenatchee

Brian Frampton

P.O. Box 519, Wenatchee, WA 98807 (509) 664-5999 • bframpton@wenatcheewa.gov

Washington Department of Ecology

Clynda Case, Project Officer Central Regional Office 15 W. Yakima Ave., Ste. 200, Yakima, WA 98902 (509) 457-7125 • clca461@ecy.wa.gov



Shoreline Master Program



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- construction of in-water and over-water structures such as docks, buoys, and piers
- water-dependent uses such as residential docks and marinas
- land development such as clearing, grading, dredging, or filling
- other activities along the shorelines, including restoration (e.g., riparian planting, bank stabilization), trails, and public access.

How long will it take?

The SMP update and adoption process is anticipated to take two years (with completion by June 30, 2010). Existing County and City SMPs will remain in effect until the updated plans are adopted by Ecology, the Board of Chelan County Commissioners, and the City Councils.

2008 2009 2010

Public Outreach and Involvement

Shoreline Inventory/Analysis

Shoreline Management Recommendations/Community Visions

Draft Policies/Regulations, Restoration Plan, and Cumulative Impacts Analysis

Public Approval Process

B.3 Postcard Announcement

December 2008 125



Save the Date!

What? Community Workshop for the Chelan County Shoreline Master Program

Update

Why? Do you care about what the shorelines within the Lake Chelan, Manson and

surrounding areas will look like in the future? Join us for a workshop to gather public insight on future shoreline use & development; public access and

recreation; and environmental protection.

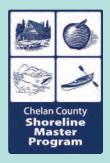
When? Thursday, October 30th, 6 - 8 p.m.

Where? Chelan Fire Hall

232 East Wapato Avenue, Chelan

For More Information

Erin Fonville
Chelan County Natural Resource Dept.
(509) 667-6324
erin.fonville@co.chelan.wa.us





Save the Date!

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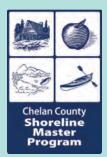
When? Thursday, October 30th, 6 - 8 p.m.

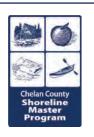
Where? Chelan Fire Hall

232 East Wapato Avenue, Chelan

For More Information

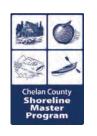
Erin Fonville
Chelan County Natural Resource Dept.
(509) 667-6324
erin.fonville@co.chelan.wa.us





Chelan County

Natural Resource Department Attn: Erin Fonville 316 Washington Street, Suite 401 Wenatchee, WA 98801 PRESORTED
FIRST-CLASS MAIL
U.S. POSTAGE PAID
WENATCHEE, WA
PERMIT NO. 90

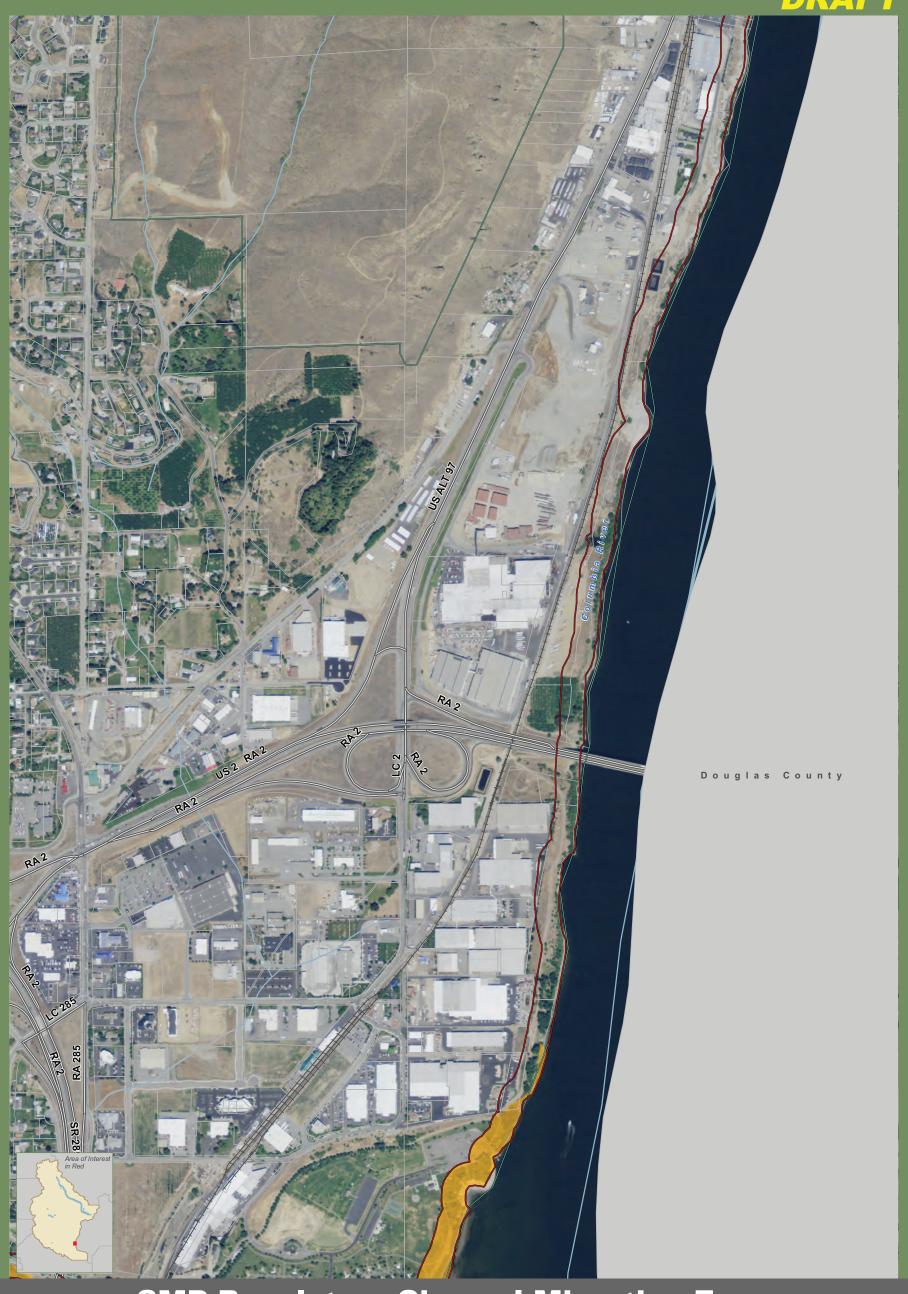


Chelan County

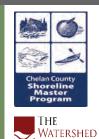
Natural Resource Department Attn: Erin Fonville 316 Washington Street, Suite 401 Wenatchee, WA 98801 PRESORTED
FIRST-CLASS MAIL
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WENATCHEE, WA
PERMIT NO. 90

Appendix E

Channel
Migration
Zone



SMP Regulatory Channel Migration Zone Wenatchee 02



COMPANY

1

0 250 500

Feet
1 inch = 800 feet

July 2011 Data: WA DOE, WA OFM, USFWS, FEMA, NPS Channel Migration Zones

Rivers & Streams

→ Rivers & Streams→ Highways

Jurisdiction

City Boundaries

UGA Boundaries

Shoreline jurisdiction boundaries 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.



SMP Regulatory Channel Migration Zone Wenatchee 03



Watershed

COMPANY





July 2011 Data: WA DOE, WA OFM, USFWS, FEMA, NPS



Rivers & Streams

 \approx Highways

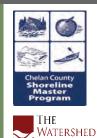
Parcels

Jurisdiction

City Boundaries UGA Boundaries Shoreline jurisdiction boundaries 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.



SMP Regulatory Channel Migration Zone Wenatchee 04



COMPANY



500

Feet 1 inch = 800 feet

July 2011 Data: WA DOE, WA OFM, USFWS, FEMA, NPS



Rivers & Streams

 \sim Highways

Parcels

Jurisdiction

City Boundaries

UGA Boundaries

Shoreline jurisdiction boundaries 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.

Appendix F

Public Access

Plan

Wenatchee Shoreline Public Access Plan

This Wenatchee Shoreline Public Access Plan documents how the City has planned for parks and recreation in the community, and particularly along the Columbia and Wenatchee Rivers, pursuant to WAC 173-26-221 (4)(c), including identifying specific public needs and opportunities to provide public access through an open public process. This plan is based on the Wenatchee Urban Area Comprehensive Plan, City of Wenatchee 2012-2018 Parks, Recreation and Open Space Comprehensive Plan, and the Wenatchee Waterfront Sub-area Plan. The City's efforts address a variety of shoreline access opportunities and circulation for pedestrians, bicycles, and vehicles between shoreline access points, and include recommended projects, actions and view access locations.

Shoreline Public Access Laws and Rules

Public access refers to the ability of the general public "to reach, touch, and enjoy the water's edge, to travel on the waters of the state, and to view the water and the shoreline from adjacent locations" (WAC 173-26-221(4)(a)). Public access can be physical access such as via a trail or park and/or visual such as a view corridor from a road.

Public access is a preferred use per the Shoreline Management Act (RCW 90.58.020). The Shoreline Master Program (SMP) Guidelines require that public access be provided with most new development, except that more flexibility is allowed where there is a coordinated public access planning process (WAC 173-26-221(4)(c)). When public access is addressed in a SMP, it implements the "public trust doctrine" which is a common law principle holding that "the waters of the state are a public resource owned by and available to all citizens equally for the purposes of navigation, conducting commerce, fishing, recreation and similar uses." While the doctrine "protect(s) public use of navigable water bodies below the ordinary high water mark," the doctrine "does not allow the public to trespass over privately owned uplands to access the tidelands." Generally, public or private landowners are limited in terms of liability when there are unintentional injuries to any public access users based on state law at RCW 4.24.210.

Shoreline Recreation Plans and Goals

The Wenatchee Urban Area Comprehensive Plan, City of Wenatchee 2012-2018 Parks, Recreation and Open Space Comprehensive Plan, and the Wenatchee Waterfront Sub-area Plan address shoreline

¹ See the State of Washington's Department of Ecology's website at: http://www.ecy.wa.gov/programs/sea/sma/laws-rules/public-trust.html. Accessed January 2013.

public access within the City of Wenatchee and its urban growth area. The following goals and policies promoting shoreline public access are found in the above identified plans:

- The City of Wenatchee should acquire and develop an interconnected system of multifunctional parks, trails, recreation facilities and open spaces that is attractive, safe and available to all segments of the City's population.
- The City of Wenatchee should recognize that the Wenatchee waterfront is a unique regional recreational resource.
- The City of Wenatchee should provide visual access to the water whenever possible. Develop viewpoints where the topography prevents direct access.
- The City of Wenatchee should develop and use waterfront parks for activities and interests specifically related to the shoreline environment.
- The City of Wenatchee should provide opportunities for walking and visits where terrain and shore conditions permit public access.
- The City of Wenatchee should implement the adopted Waterfront Sub Area Plan policies and projects for parks, trails, and public access.
- The City of Wenatchee should protect the environmental integrity of the waterfront trail and park. Specifically:
 - o Minimize the loss of open space and landscaped areas within the park.
 - Expand and improve the waterfront trail, where necessary, to support usage and minimize conflicts between different types of users.
 - o Design park improvements to complement and enhance surrounding park features.

Parks and Recreation Plans and Public Review Process

The City's Parks and Recreation goals and plans have been created with extensive public review. Public participation opportunities included public open houses, meetings, hearings, and other activities. Notice was provided to a variety of agencies and citizens.

Parks Documentation and Process	Description
Plans	Wenatchee Urban Area Comprehensive Plan Adopted 2007. Periodically amended through a docket process.
	City of Wenatchee Parks, Recreation & Open Space Plan. Adopted 2011. Plan includes existing system, goals and standards, and implementation action plan. Wenatchee Waterfront Sub-area Plan, 2003. Includes goals and policies, concept plans, and implementation activities.

Parks Documentation and Process	Description
Public Involvement Process	Comprehensive Plan: Planning Commission meetings and legislative hearings. Waterfront Sub-area Plan: Open Houses, Planning Commission meetings and legislative hearings.
	Parks and Recreation Plan: Community meetings, survey, news ads, Parks and Recreation Board and Parks, Recreation & Open Space Comprehensive Plan Update Advisory Committee meetings, and legislative hearings.

Current and Future Facilities in Shoreline Jurisdiction

Open space and park acres within the shoreline jurisdiction include about 120 acres total on the Wenatchee and Columbia Rivers, with more than two-thirds of the acres on the Columbia River and one third on the Wenatchee River. Several park areas offer water access via boat launches, piers, or trails. Waterfront parks and trails in the City and UGA of Wenatchee include the following identified areas:

- Washington Confluence State Park at the "confluence" of the Columbia, and Wenatchee Rivers: The facility was built and is owned by the Chelan County PUD, but is operated and maintained by Washington State Parks and includes overnight RV and tent campsites, a boat launch, swimming beach, restrooms, showers, picnic shelter, volleyball, tennis courts, playground, pedestrian bridge across the river, 4.5 miles of trail, wildlife habitat, and interpretive graphics.
- **Riverfront Park:** This 31-acre park is managed by the Chelan County PUD, and contains restrooms, a boat launch, short-term moorage and boat trailer parking, 1.1 miles of shoreline trail, a non-motorized boating storage facility and launch at Ninth Street (Wenatchee Row and Paddle Club), and a "special event" mini-railroad.
- Walla Walla Park: This 70-acre park adjoins the Riverfront Park, and contains restrooms, picnic shelters, ballfields, swimming area, 1.2 miles of trail, tennis and volley ball courts, horseshoe pits, a playground, and fishing pier platform.
- **Apple Capital Loop Trail:** This trail fronts the Columbia River along Wenatchee in Chelan County and "loops" through East Wenatchee in Douglas County. The portion in Wenatchee is a multi-use trail approximately 5 miles long. It was established in 1990.

Community Parks and Recreation Standards

The City's 2012-2018 Parks, Recreation and Open Space Comprehensive Plan includes a level of service standard for different facilities community wide. These standards were considered in the development of specific parks and recreation improvements for the current and future City of Wenatchee population.

CLASSIFICATION TYPE	ACRES (A)	STANDARD (D)
Park System Standard	325.31	10 acres/1,000 people
Neighborhood Park	25.35	2 acres/1,000 people
Community Park	93.40	7 acres/1,000 people
Regional Park	206.56	8 acres/1,000 people
Natural Open Space	566.04	20 acres/1,000 people
Special Use Areas	213.38	5 acres/1,000 people
SPECIALIZED FACILITY TYPE	EXISTING FACILITIES	RECOMMENDED STANDARD
Trails	4.7	0.5 miles/1,000 people
Pathways	3.6	0.25 miles/1,000 people
Bikeways	3.6	0.25 miles/1,000 people
Baseball Field	3	1 field/8,500 people
Youth Baseball Field	7	1 field/2,500/ people
Basketball Hoops	49	1 hoop/1,000 people
BMX Area	0	1 area/30,000 people
Dog Off Leash Area	0	1 area/30,000 people
Football Field	4	1 field /8,000 people
Disc Golf Course	1	1 course/35,000 people
Gymnasium	12	1 gym/2,500 people
Horseshoe Pitch	5	1 pitch/10,000 people
Picnic Area	15	1 area/2,000 people
Play Area	13	1 area/2,000 people
Indoor Pool	1	1 pool/30,000 people
Outdoor Pool	1	1 pool/30,000 people
Recreation Center	0	1 center/30,000 people
Golf Courses	0	1 course/50,000 people
Rock Climbing Wall	0	1 wall/35,000 people
Sand Volleyball Court	3	1 court/10,000 people

Skate Spot, Dot, Area	1	1 area/2,000 people
Soccer Field	9	1 field/2,500 people
Softball Field	10	1 field/2,500 people
Tennis Court	19	1 court/2,000 people
Indoor Tennis Court	0	1 court/30,000 people
Indoor Soccer Field	0	1 field/30,000 people
Water Play Area	4	1 area/5,000 people

Design Standards for Trails

Trails, pathways and bikeways are designed to provide walking, bicycling and other non-motorized recreational opportunities. By providing linkages to other areas and facilities, they allow safe, non-vehicular options for travel throughout the community. Trails can be designed for single or multiple uses.

<u>Primary Trails</u> are intended for multiple uses, are accessible wherever possible, and are located conveniently to connect several community facilities. They are designed to be paved and have a minimum improved surface width of ten (10) feet with a one foot clear area on each side of the paved surface. Primary Trails should have limited road crossings, which disrupt the flow and continuity of the trail. For this reason, primary trails are built in greenways, along irrigation or river corridors or along utility easements or abandoned roads or railroads. Road crossings are limited and will be signed, identifying the crossing to the motorist and the trail user and designated with a crosswalk and bollards at the trail entrances. Trail alignments take into consideration ADA accessibility. Maximum gradients should not exceed a cross slope of 2% and a longitudinal slope of 5%.

<u>Pathways</u> are informal connections through or between neighborhoods, and are appropriate for pedestrian and bicycle use. The path is typically a minimum width of four (4) feet. It maybe native soil, wood chips, crushed rock, or paved depending on the use, location, and underlying conditions.

Design Standards for Trails

Bikeways are different than park trails in that their principal focus is on safe and efficient transportation. Typical bikeway users groups would include bicycle commuters, fitness enthusiasts, and competitive athletes. Their emphasis is on speed, which can be in serious conflict with recreation type trails and user groups. For this reason, it is important in planning trails and bikeways that the trails not be substitutes for bikeways (and vice-versa). If such dual

uses cannot be avoided, it is important that the trail or bikeway be designed with more flexibility, such as for higher speeds, including passing zones and greater widths.

<u>Class I Bikeways</u> are paved trails separated from public rights-of-way, principally for the use of bicycles, but typically also shared with other trail users so they are actually Primary Trails when serving this multi-use function. The minimum paved width is ten (10) feet, with one foot clearance on both sides. Generally, the bikeway has a two-way traffic separated by a centerline.

Public Access Analysis & Objectives by Shoreline Reach

Much of the Wenatchee waterfront is in public ownership by the Chelan County Public Utility District, State of Washington, or City. The majority of the publicly owned land has been put to public access and recreational use as identified in the plans identified above and attached maps. These plans have scheduled parks and recreation improvements in or near the shoreline to include, but not limited to waterfront parking, waterfront trail upland access, and a boathouse.

The Shoreline Inventory and Analysis Report (Appendix A of the Shoreline Master Program) identifies public access conditions in numbered reaches and provides maps. See table below for an inventory of current and planned facilities from the shoreline inventory and analysis report, the Wenatchee 2012-2018 Parks, Recreation and Open Space Comprehensive Plan, the Wenatchee Waterfront Sub-area Plan, and the State of Washington's Wenatchee Confluence Area State Parks Management Plan (2007). (Inventory maps and City waterfront, parks, and recreation maps are found at the conclusion of this document.)

Waterbody and Reach	Current Shoreline Facilities	Planned Shoreline Facilities	Discussion
Columbia River			
CWN 01, 02	None	None	Access is difficult due to rail lines. Future planned use is industrial.
CWN 03, 04, 05	None. Land in PUD ownership.	None	Access is difficult due to rail lines. Future planned use is industrial.
CWN 06	Locomotive Gateway Park (aka Mission Street Park) Potential right of way access	Re-landscape Locomotive Gateway Park	
CWN 07	Riverfront Park, Linden Tree Area Park, Walla Walla Park	Waterfront Sub-Area Plan includes improvements for three nodes in this reach (see Waterfront Sub Area Plan diagrams).	Southern node: new pedestrian plaza; park and trail enhancements; new waterfront park south of the cross-river bridge; enhance the south end shoreline environment.

Waterbody and Reach	Current Shoreline Facilities	Planned Shoreline Facilities	Discussion
			Central node: construct non-motorized boat facility; east of Riverside Drive expand and improve Waterfront Park with multipurpose shelters; develop a public viewpoint and sternwheeler moorage and dock at 5th Street; and aquatic environmental enhancements vicinity of 9th Street.
			Northern node, waterfront plan area: access, parking, trail, and ball field improvements to Walla Walla Park; environmental education center/urban agricultural center north of Hawley Street; and shoreline environmental enhancements.
CWN 08	Confluence Park	Park improvements are addressed in the 2007 Wenatchee Confluence Area State Parks Management Plan	State plan addresses: Expansion/improvement of visitor services and facilities Recreation design- grounds improvements Expansion of trail network
CWN 09	Confluence Park	See above	See above
CWN 10	None. Land in PUD ownership.	Trail extension	
CWN 11	None	None	
CWN 12	None	None	
CWN 13	None. Land in PUD ownership.	None	
Wenatchee River			
CWN 01	Confluence Park	Park improvements are addressed in the 2007 Wenatchee Confluence Area State Parks Management Plan	State plan addresses: Expansion/improvement of visitor services and facilities Recreation design- grounds improvements Expansion of trail network

Waterbody and Reach	Current Shoreline Facilities	Planned Shoreline Facilities	Discussion
CWN 02	None. Land in PUD ownership.	None	
CWN 03	None.	None	
CWN O4	WDFW ownership and fishing easement	None	WDFW is reviewing each of their fishing easements to determine exact location and potential feasibility for use.
CWN 05	None	None	

Implementation

The City will implement this shoreline public access plan through implementation of its Wenatchee Urban Area Comprehensive Plan, 2012-2018 Parks, Recreation and Open Space Comprehensive Plan, and the Wenatchee Waterfront Sub-area Plan. The City's 2012-2018 Parks, Recreation and Open Space Comprehensive Plan and the Wenatchee Waterfront Sub-area Plan include sections on implementation including costs and funding sources. As well, capital improvements and funding sources are found in the City's budget under the capital improvement program – Capital Facilities Plan. The Capital Facilities plan is adopted each year into the Wenatchee Urban Area Comprehensive Plan. Lastly, along the Wenatchee Loop trail there are view access locations. An inventory of these existing view access locations has been completed from both waterward and landward of the OHWM. These view access locations are intended to be preserved.

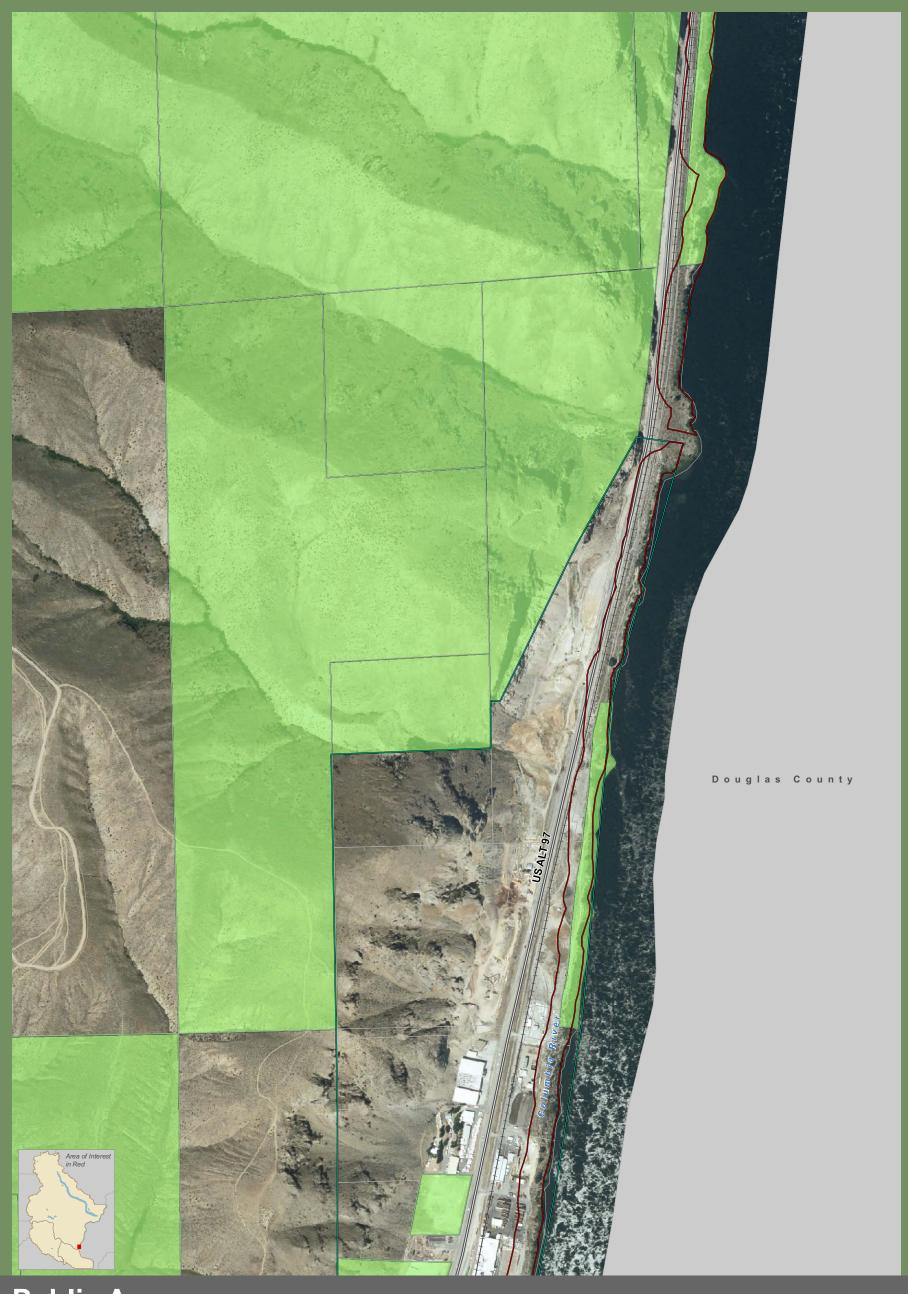
In addition, the Shoreline Master Program contains public access and recreation standards designed to be compatible with and support this shoreline public access plan.

The City may revisit this shoreline public access plan during periodic reviews of the SMP, anticipated every eight years. (RCW 90.58.080)

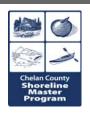
Supporting Maps

The following attached maps are provided for reference and in support of the shoreline public access plan:

- Public Access maps prepared for the Shoreline Master Program, July 22, 2010
- 2012-2018 Parks, Recreation and Open Space Comprehensive Plan: Existing City Park and Recreation Facilities, Existing Community Parks, Existing Neighborhood Parks, Neighborhood Park Service Area, and Community Park Service Area
- Wenatchee Waterfront Sub-area Plan Concept Map, 2003



Public Access Wenatchee 01





WATERSHED COMPANY



July 20, 2011 Data: WA DOE, WA OFM, TPL, TNC, Chelan County, WA State Parks, WNF

Public Access, Parks, and Other Public Lands



▲ Campground

Fishing Access

Morse Camp

Marina

Comm. Dock/Marina

Other Boating Facility

Picnic Area RV Camp

🧭 Ski Area

✓ SnoPark

Trailhead

? Visitor Info Site

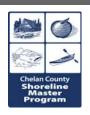
Winter Rec. Facility

- Fishing Easement
 - Fishing Easement with Boatlaunch
- Parks
- Other Public and Protected Lands
- Potential ROW Access View Corridors
- / Hiking Trails
- Proposed Trails
- \sim Highways
- → Railroads
- Parcels
- Jurisdiction City Boundaries
- UGA Boundaries

Shoreline jurisdiction boundaries 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.



Public Access Wenatchee 02





July 20, 2011 Data: WA DOE, WA OFM, TPL, TNC, Chelan County, WA State Parks, WNF WATERSHED COMPANY

Public Access, Parks, and Other Public Lands



▲ Campground

Fishing Access

Morse Camp

1 Marina

Comm. Dock/Marina

Other Boating Facility

Picnic Area RV Camp

🧷 Ski Area

♣ SnoPark

Trailhead

? Visitor Info Site

Winter Rec. Facility

Fishing Easement Fishing Easement with Boatlaunch

Other Public and Protected Lands

View Corridors

Potential ROW Access

Parks

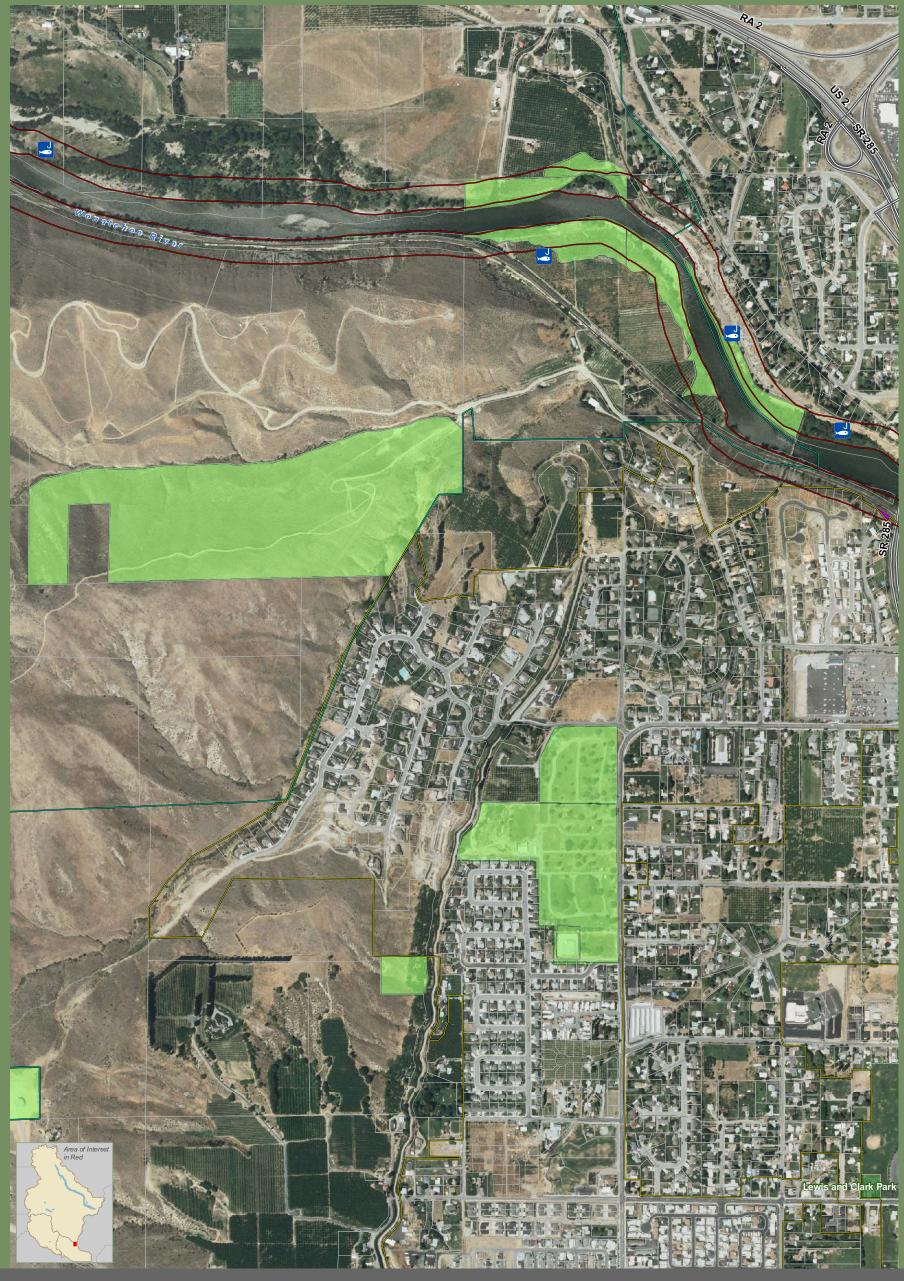
/ Hiking Trails

Proposed Trails

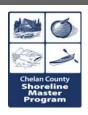
 \sim Highways

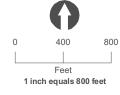
→ Railroads Parcels

Jurisdiction City Boundaries UGA Boundaries Shoreline jurisdiction boundaries 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.



Public Access Wenatchee 03





WATERSHED COMPANY

July 20, 2011 Data: WA DOE, WA OFM, TPL, TNC, Chelan County, WA State Parks, WNF

Public Access, Parks, and Other Public Lands



Comm. Dock/Marina

Other Boating Facility

Fishing Access

Horse Camp

1 Marina

Picnic Area RV Camp

🧷 Ski Area

♣ SnoPark

Trailhead

? Visitor Info Site

Winter Rec. Facility

Fishing Easement

Fishing Easement with Boatlaunch

Parks

Other Public and Protected Lands

View Corridors

Potential ROW Access

/ Hiking Trails

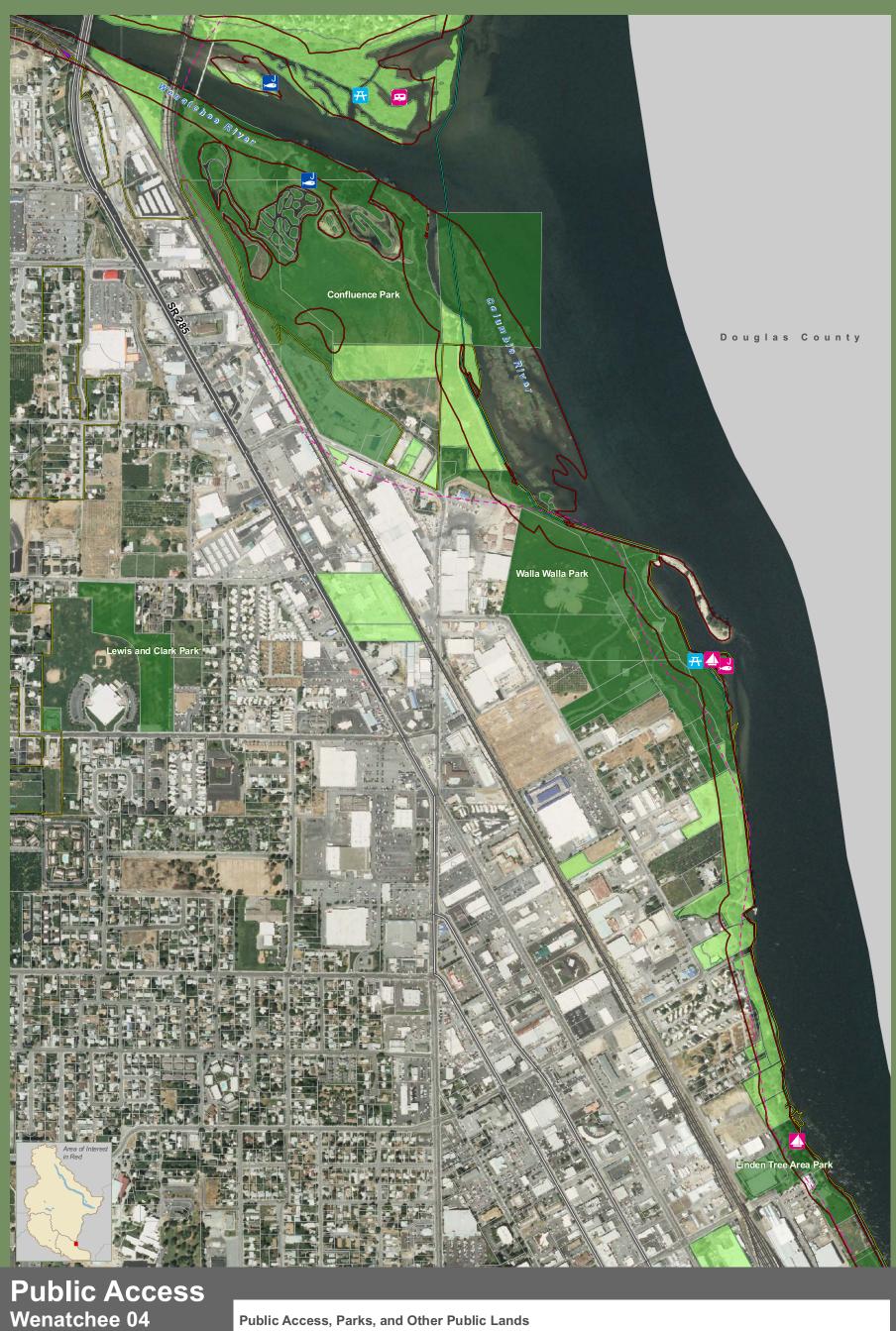
Proposed Trails

→ Highways

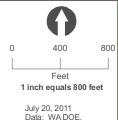
~ Railroads

Parcels Jurisdiction

City Boundaries UGA Boundaries Shoreline jurisdiction boundaries 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.



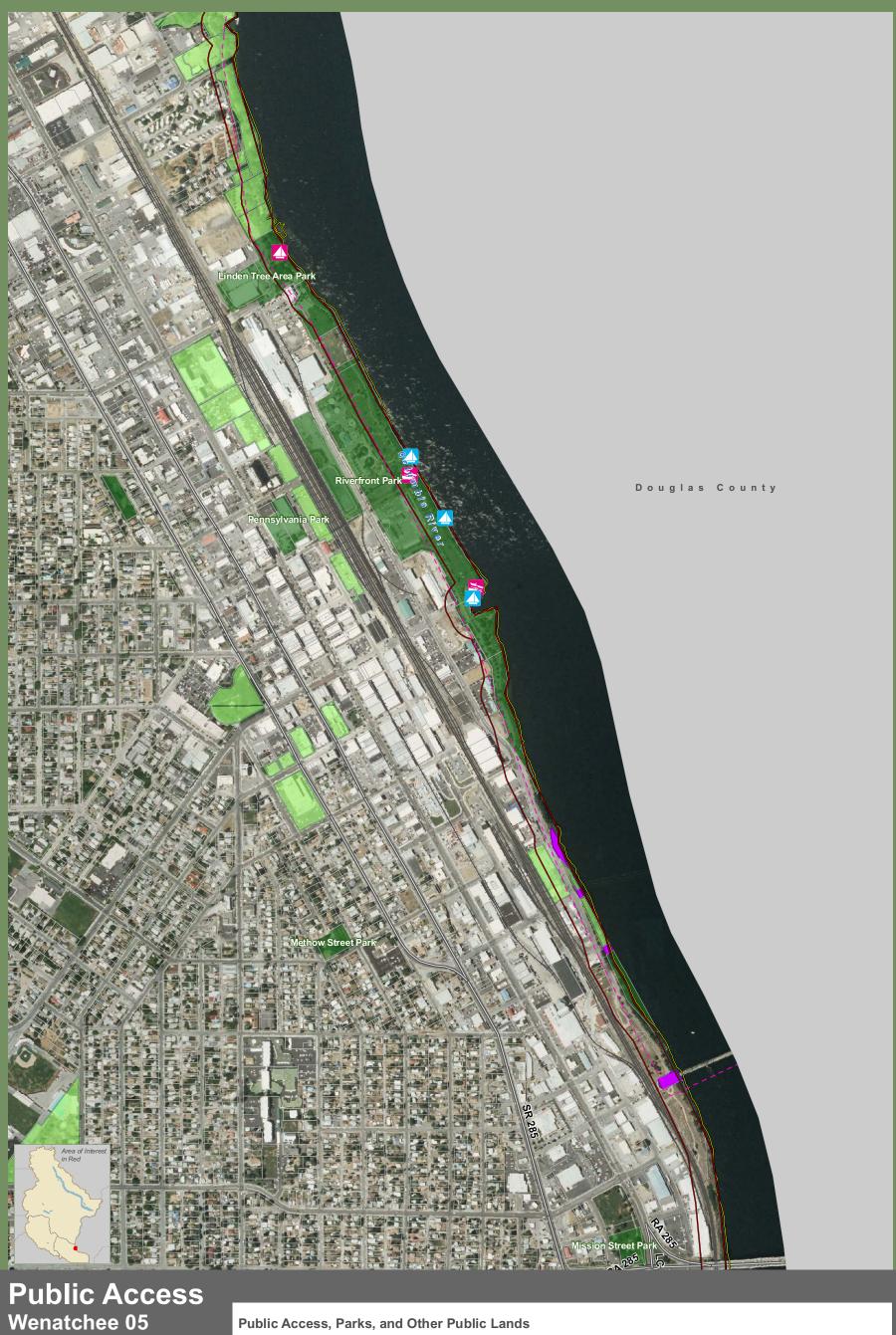




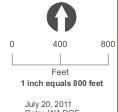
July 20, 2011 Data: WA DOE, WA OFM, TPL, TNC, Chelan County, WA State Parks, WNF WATERSHED COMPANY



- ▲ Campground Comm. Dock/Marina
- Fishing Access
- Morse Camp 1 Marina
- Other Boating Facility
- Picnic Area
- RV Camp
- 🌌 Ski Area ♣ SnoPark
- Trailhead
- ? Visitor Info Site Winter Rec. Facility
- Fishing Easement
- Fishing Easement with Boatlaunch Parks
- Other Public and Protected Lands
- Potential ROW Access View Corridors
- Hiking Trails
- Proposed Trails
- \sim Highways
- → Railroads Parcels
- Jurisdiction City Boundaries UGA Boundaries
- Shoreline jurisdiction boundaries 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.







THE Data: WA DOE, WA OFM, TPL, TNC, Chelan County, WA State Parks, WNF



Comm. Dock/Marina

Other Boating Facility

Fishing Access

Morse Camp

1 Marina

Picnic Area

RV Camp

🧭 Ski Area

♣ SnoPark

Trailhead

? Visitor Info Site

Winter Rec. Facility

Fishing Easement
Fishing Easement
with Boatlaunch

Hiking TrailsProposed Trails

 \sim Highways

Parks

Other Public and Protected Lands

View Corridors

Potential ROW Access

Railroads
Parcels

Jurisdiction

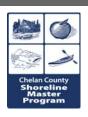
City Boundari

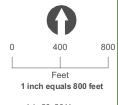
City Boundaries
UGA Boundaries

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Public Access Wenatchee 06





July 20, 2011 Data: WA DOE, WA OFM, TPL, TNC, Chelan County, WA State Parks, WNF WATERSHED COMPANY

Public Access, Parks, and Other Public Lands



Comm. Dock/Marina

Other Boating Facility

Fishing Access

Horse Camp

Marina

Picnic Area RV Camp

🧭 Ski Area

Trailhead

? Visitor Info Site

Winter Rec. Facility

Fishing Easement Fishing Easement with Boatlaunch

Other Public and Protected Lands

View Corridors

Potential ROW Access

Parks

/ Hiking Trails Proposed Trails

 \sim Highways

→ Railroads

Parcels

Jurisdiction City Boundaries

UGA Boundaries

Shoreline jurisdiction boundaries 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.

Existing City Owned Park and Recreation Facilities Special Use Areas Neighborhood Parks Community Parks Natural Open Spaces

Figure 3.1: Existing City Park and Recreation Facilities

Figure 3.1.2: Existing Community Parks

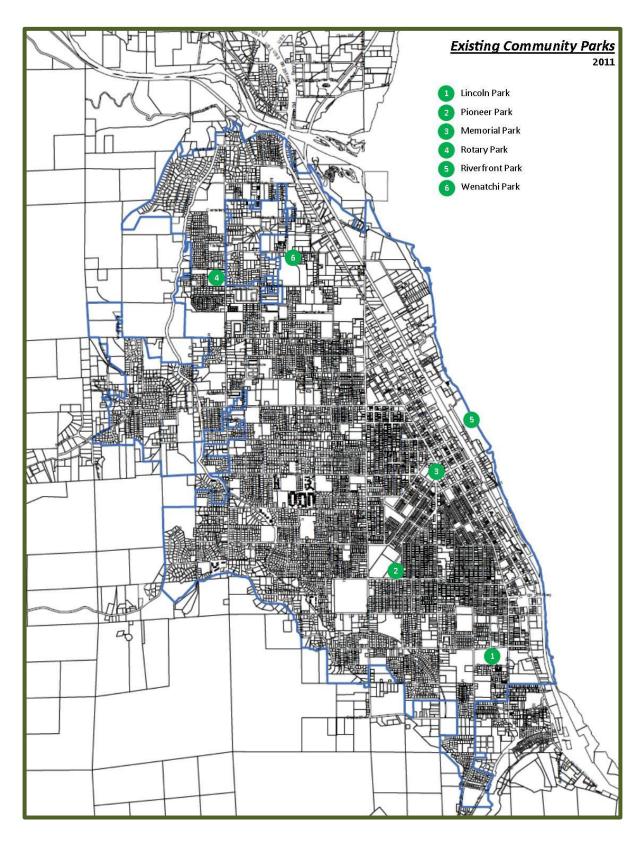


Figure 3.1.1: Existing Neighborhood Parks

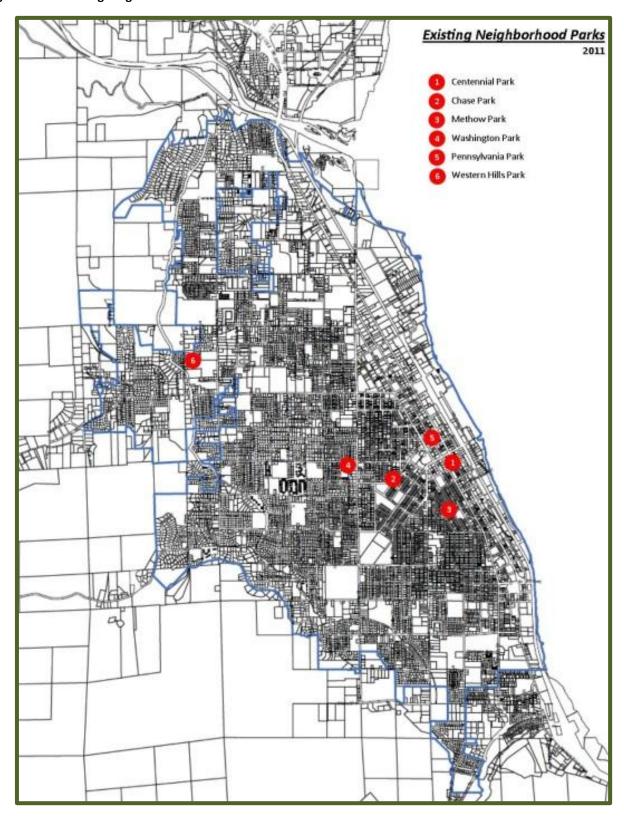


Figure 4.1.1: Neighborhood Park Service Area Map

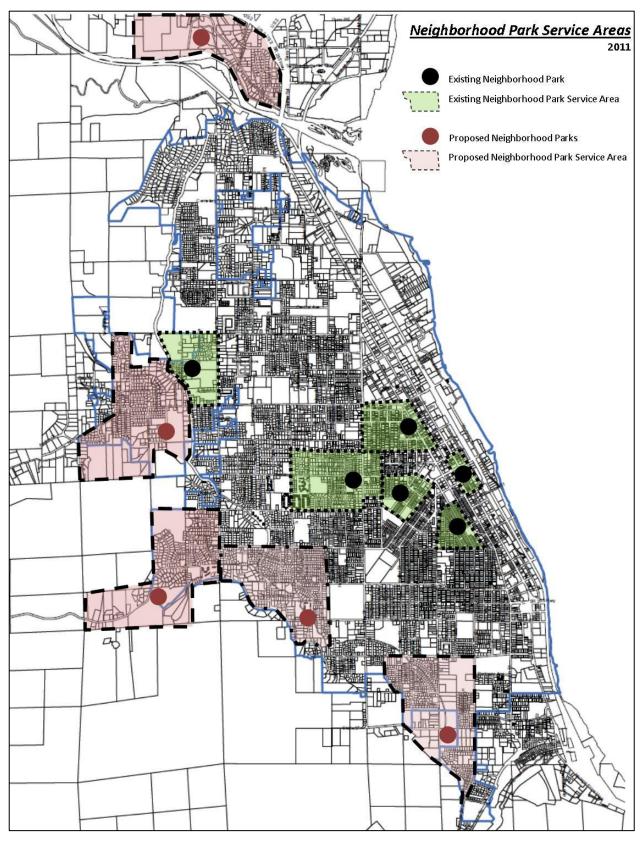
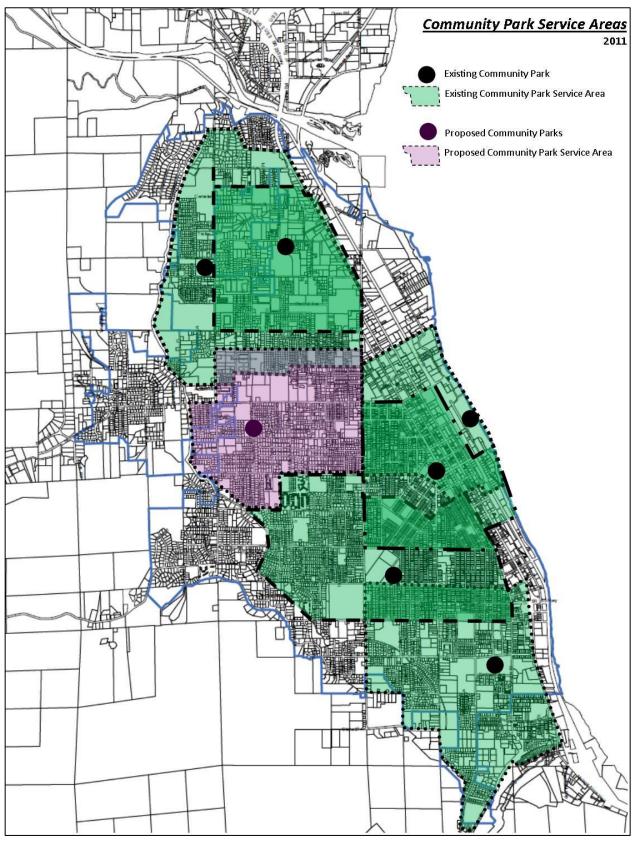


Figure 4.1.2: Community Park Service Area Map



Plan Concept

The consultant team first identified the desired types of development through a public process. Citizens wanted to create a variety of development opportunities, so the following plan concept was developed to provide a focused vision for future development.

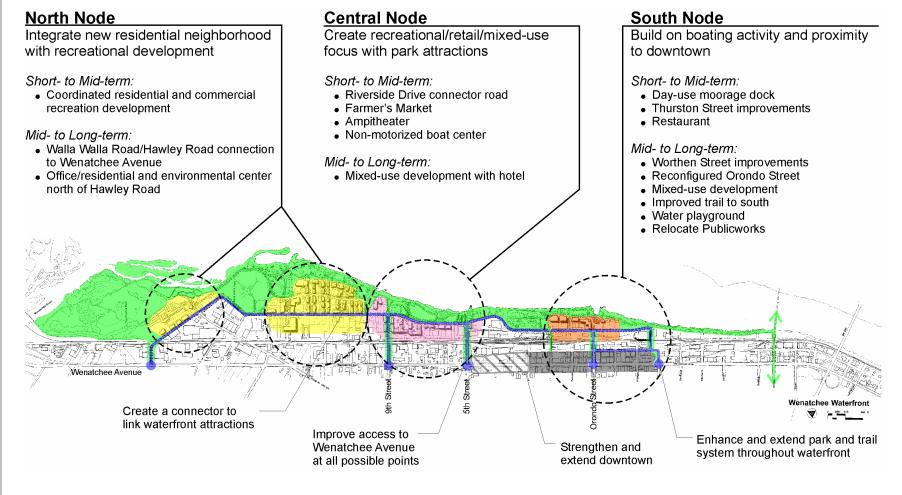


Figure 2. Concept Illustration

Appendix G

Shoreline
Inventory and
Assessment



FINAL DRAFT

SHORELINE INVENTORY AND ANALYSIS REPORT For City of Wenatchee Shorelines



This document was prepared by the following consultants and has been modified by the City of Wenatchee:





750 Sixth Street South Kirkland WA 98033



an ICF International Company

710 Second Avenue, Suite 550 Seattle WA 98104

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	1.4.2 Historic Geology, Topography, and Drainage Patterns	
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CHELAN COUNTY SHORELINE MASTER PROGRAM UPDATE FINAL SHORELINE INVENTORY AND ANALYSIS

1. Introduction

1.1 Background and Purpose

Chelan County (County) obtained a grant from the Washington Department of Ecology (Ecology) in 2007 to conduct a comprehensive Shoreline Master Program (SMP) update. The Cities of Cashmere, Chelan, Entiat, Leavenworth and Wenatchee are active partners with the County, and will participate in all SMP Update-related efforts. This effort is precipitated by new Shoreline Master Program Guidelines (Chapter 173-26 WAC) promulgated by Ecology in 2003.

The Shoreline Inventory and Analysis report and accompanying map folio (see DVD mounted in back cover of this report) establishes the framework for future steps in the SMP update process. Those future steps include development of the updated SMP, and preparation of the Cumulative Impacts Analysis and Restoration Plan. This Shoreline Inventory and Analysis report will serve as the baseline from which the possible effects of potential development actions in the shoreline will be measured. The Guidelines require the County to demonstrate that its updated SMP yields "no net loss" in shoreline ecological functions relative to the baseline due to its implementation. Ideally, the SMP in combination with other County, City and regional efforts, will ultimately produce a net improvement in shoreline ecological functions.

1.1.1 Shoreline Inventory

As laid out in the Guidelines, one of the first steps of the update process is to prepare an inventory of all County and City shorelines as defined by the State's Shoreline Management Act (SMA) (RCW 90.58). The inventory is conducted according to direction provided in the Guidelines (WAC 173-26-201) and in the Grant Agreement promulgated by Ecology. A key excerpt from the WAC is presented below:

Gather and incorporate all pertinent and available information, existing inventory data and materials from state agencies, affected Indian tribes, watershed management planning, port districts and other appropriate sources... Local governments shall be prepared to demonstrate how the inventory information was used in preparing their local master program amendments. Collection of additional inventory information is encouraged and should be coordinated with other watershed, regional, or statewide

inventory and planning efforts in order to ensure consistent methods and data protocol as well as effective use of fiscal and human resources. Data from inter-jurisdictional, watershed, or regional inventories may be substituted for an inventory conducted by an individual jurisdiction, provided it meets the requirements of this section.

WAC 173-26-201(3)(c) includes a detailed list of information that should be gathered "to the extent such information is relevant and reasonably available." The references list (Chapter 9) outlines information sources for each general topic. The references was generated by soliciting information from County, City, State, and Federal agencies; utilities; private non-governmental organizations; and Advisory Committee members, among others. In addition, the County compiled a list of key potential stakeholders and interested groups. Many parties on the list became active participants in the Advisory Committee for the SMP Update; the remaining parties have been and will continue to be notified at key project stages and provided with opportunities to submit relevant information. Collected information was supplemented with other resources such as scientific literature, personal communications, aerial photographs, and Internet documents.

Chapters 3 and 4 contain the Shoreline Inventory component of this report.

1.1.2 Shoreline Analysis

WAC 173-26-201(3)(d) contains direction regarding analysis of the information gathered as part of the Shoreline Inventory. Accordingly, Chapters 5, 6 and 7 analyze the shorelines by waterbody and/or by reach, as appropriate, for ecological function/ecosystem-wide processes, land use, and public access. Chapter 8 contains additional analyses and specific recommendations related to development of the updated Shoreline Master Program. The Guidelines encourage use of available "regional environmental management plan[s]" when available. This Shoreline Inventory and Analysis utilizes the existing watershed and sub-basin plans to the maximum extent practicable given the Guidelines and the topical coverage of those management plans.

1.2 Study Area

Chelan County encompasses 2,294 square miles and is located in the north-central part of Washington. The county is bordered to the south by Kittitas County, to the southwest by King County, to the west by Snohomish County, to the northwest by Skagit County, to the northeast by Okanogan County, and to the east by Douglas County. Chelan County is predominantly rural in nature, with unincorporated areas making up most of the land area. Incorporated areas of the County include the cities of Cashmere, Chelan, Entiat, Leavenworth, and Wenatchee.

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The study area for this report includes all land currently within the County and each City's proposed shoreline jurisdiction. This area is distributed among 80 rivers and streams and 53 lakes and reservoirs. Federal lands on which shoreline waterbodies lie are included in this report, but discussion is more limited in keeping with the application of the future SMP only to certain actions undertaken by non-federal parties on those lands.

The City of Wenatchee has removed a portion of the information related to Chelan County and the Cities of Cashmere, Chelan, Entiat, and Leavenworth so that this analysis is more reflective of the City of Wenatchee.

1.3 Shoreline Jurisdiction

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the State plus their associated "shorelands." At a minimum, the waterbodies designated as shorelines of the State are streams whose mean annual flow is 20 cubic feet per second (cfs) or greater or lakes whose area is greater than 20 acres. In addition, shorelines of statewide significance are those streams and rivers that meet one or more of the following criteria:

- "i. that have either: a mean annual flow of 200 cubic feet per second or more, *or*:
- the portion downstream from the first 300 square miles of drainage areas.

Shorelands are defined as:

"those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter.... Any county or city may determine that portion of a one-hundred-year-floodplain to be included in its master program as long as such portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom.... Any city or county may also include in its master program land necessary for buffers for critical areas..." (RCW 90.58.030)

The County and City shoreline boundaries have been updated (subject to Board of County Commissioners (BOCC), City Councils, and Ecology approval) concurrent with this inventory. While extension of jurisdiction to encompass the

¹ Future climate change could affect precipitation patterns and snowpack in Chelan County in ways that are not yet fully understood or predictable. These changes will affect mean annual flow and lake size, which may alter the extent of shoreline jurisdiction. This shoreline inventory effort does not consider climate change impacts as part of its scope.

entire 100-year floodplain and critical areas buffers are options, the County and Cities have elected to regulate the minimum required jurisdictional area in their SMPs. In summary, improved stream flow modeling by the United States Geological Survey (USGS) and improved lake area mapping has resulted in increased accuracy of jurisdiction identification and mapping.

The Shoreline Management Act had always intended that jurisdiction extend onto federal land, but an error originally made by USGS in the early 1970s and perpetuated by Ecology omitted federal lands from jurisdiction maps and lists. As stated in WAC 173-27-060(3), "The policies and provisions of chapter 90.58 RCW [Shoreline Management Act], including the permit system, shall apply statewide to all nonfederal developments and uses undertaken on federal lands and on lands subject to nonfederal ownership, lease or easement, even though such lands may fall within the external boundaries of a federal ownership." These past mapping errors by USGS and Ecology have been corrected so that federal lands are no longer excluded from shoreline jurisdiction.

The current Shoreline Master Programs regulate 23 streams/rivers and 18 lakes. As considered in this shoreline inventory, 80 streams/rivers and 53 lakes may meet shoreline jurisdiction criteria. The total acreage of upland shorelands (excluding area of the shoreline waterbodies) is 42,693. Federal lands make up 68 percent of that acreage, or 29,211 acres total. Of the 133 total shoreline waterbodies, 94 are entirely on federal lands and another 17 have more than 50 percent of their shoreland areas on federal land. The three federal entities that own the majority of the federal land are the U.S. Forest Service (USFS), the National Park Service (NPS), and the U.S. Bureau of Land Management (BLM). Four USFS wilderness areas are found along Chelan County shorelines: Lake Chelan Sawtooth Wilderness, Glacier Peak Wilderness, Henry M. Jackson Wilderness, and Alpine Lakes Wilderness. These areas have the greatest level of protection and stringent prohibitions on alteration. A large area at the north end of Lake Chelan is also part of the National Park Service's Lake Chelan National Recreation Area.

Minor additional changes have been made based on new information about floodways, floodplains and wetland boundaries. Tables 1 presents the list of shoreline jurisdictional waterbodies, and some basic jurisdictional history. The "total length of proposed shoreline" column in Table 1 represents the combined length of shoreline of current and potential additional jurisdiction based on USGS data. The length of existing stream shoreline is not available.

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Table 1. Shoreline Jurisdiction Streams and Rivers

River/Creek Name	Mapped as Shoreline Under Existing SMP	Total Length of Proposed Shoreline (ft)	River/Creek Name	Mapped as Shoreline Under Existing SMP	Total Length of Proposed Shoreline (ft)
Columbia River*	Yes	395,252 ²	Wenatchee River ¹	Yes	278,629 ²
		•	TOTAL: 6	73,881 ft (12	27.63 miles) ²

Streams/rivers that are partial or complete Shorelines of Statewide Significance.

1.4 Chelan County Watersheds

1.4.1 Geographic Context

Stemilt/Squilchuck - Colockum (WRIA 40a/b)

WRIA 40a/b encompasses the southeast portion of the County and continues southward into neighboring counties. In this vicinity, the County boundary does not follow stream or watershed boundaries, so portions of the WRIA boundary and the County boundary do not coincide. Because of this discrepancy, the WRIA was divided into two parts – WRIA 40a, the Stemilt/Squilchuck, and WRIA 40b, the Alkali/Colockum. Chelan County includes most of WRIA 40a, and significant portions of Colockum Creek. These drainages are tributary to the Columbia River, bounded on the north and east by the Columbia, and on the west by Mission Peak and Naneum Ridge. Mission Creek, which also drains Mission Ridge to the north, is a tributary to the Wenatchee and not part of WRIA 40.

WRIA 40a is the smallest WRIA in the State, at about 49,000 acres, or just over 76 square miles. It consists of four primary sub-basins: Stemilt (21,430 acres), Squilchuck (17,600 acres), Malaga (7,490 acres), and Wenatchee Heights (2,200 acres). Elevations in the basin range from close to 6,900 feet at Mission Ridge to 605 feet at the Columbia.

The Colockum Basin is approximately 36 square miles (23,000 acres), over half of which is located within the County limits. It lies immediately south of the Malaga and Stemilt basins, and like the others in WRIA 40a/b, it drains directly to the Columbia. Elevations range from about 5,800 feet at Naneum Ridge to 550 feet at the Columbia.

Wenatchee (WRIA 45)

The Wenatchee basin is the largest basin in the county, at approximately 1,370 square miles (877,000 acres), draining an area from the Cascade Crest to the Columbia immediately north of the WRIA 40 drainages. The basin is oriented

² The length is for the total length of each river and not the limits within the City of Wenatchee.

with headwaters in the northwest and the confluence with the Columbia to the southeast, at the City of Wenatchee. It is the most heavily populated of the basins in Chelan County, with Leavenworth, Cashmere and Wenatchee as the primary population centers. Over 80 percent of the land in the basin is federally or State owned (Wenatchee Watershed Planning Unit [WWPU] 2006).

There are seven major tributaries to the Wenatchee. The White River originates at the south side of Glacier Peak, the least well known of the Cascade volcanoes, and empties into Lake Wenatchee. Glacial runoff from Glacier Peak gives the river its name. The Little Wenatchee drains from non-glaciated portions of the Cascade Crest south of Glacier Peak, and also flows into Lake Wenatchee. The outlet of Lake Wenatchee forms the mainstem Wenatchee River. The Chiwawa, which originates between Fortress and Buck Mountains northeast of Glacier Peak, joins the Wenatchee just north of the town of Plain. Nason Creek originates south of the Little Wenatchee basin near Stevens Pass and flows into the Wenatchee just downstream of Lake Wenatchee. Icicle Creek drains an area south of the Nason Creek basin, including the west side of Mt. Stuart and the Chiwaukum Mountains, and meets the Wenatchee in Leavenworth. The Peshastin Creek drainage includes the south side of Mt. Stuart and the Stuart Range as well as the Blewett Pass area. Peshastin Creek meets the Wenatchee at Peshastin. Mission Creek drains the area to the west of the Peshastin Basin, from Naneum Ridge northward to its confluence with the Wenatchee at Cashmere.

In total, there are about 230 miles of major stream in the Wenatchee Basin (WWPU 2006). The Wenatchee itself has about 61 linear miles of stream accessible to salmonids (Laura Berg Consulting, et al. [Berg] 2004b).

1.4.2 Historic Geology, Topography, and Drainage Patterns

Topography and Geology

Throughout most of the County, the upper elevations area are characterized by deeply incised, high-relief terrain of the eastern Cascade Mountains, consisting primarily of metamorphic and intrusive igneous rocks, though significant sedimentary and volcanic rocks occur in the Stemilt/Squilchuck basin and portions of the Wenatchee basin. The Cascade Range has been formed over the last 37 million years by the subduction of the oceanic Juan de Fuca plate under the continental North American plate. The plate boundary is just off the coast of Washington, and as the Juan de Fuca plate subsides, it is forced downward at an angle under the North American plate. As the plate moves downward, the temperature around it increases to the point that the plate begins to melt. The melted material moves upward, forcing its way through and blending with the overriding continental crust. Where the melted material emerges at the surface, volcanoes are formed, including Glacier Peak near Chelan County. The upward migration of material also created a general uplift in the area, forming the Cascade Range

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The Cascades have been heavily influenced by Quaternary mountain glaciation, with landforms typical of such glaciation, including cirques, arêtes, U-shaped valleys, and moraines. The valleys bottoms are largely filled with glacial and fluvial deposits, primarily unconsolidated silts, sands and gravels, as well as significant volumes of landslide/debris flow deposits. In the Wenatchee basin, deposits of glacial and post-glacial material are up to 170 feet thick (EEC and Golder 1998), and on the Icicle in Leavenworth, deposits are up to 300 feet thick (Andonaegui 2001).

Along the extreme eastern edge of County, nearest the Columbia as well as throughout most of the upper elevations of the Stemilt/Squilchuck watershed, flood basalts of the Columbia Plateau are the prevalent bedrock. These rocks were formed over a period of 10 million years or so, beginning about 17 million years ago, as several series of vents released massive volumes of basaltic lava, which flowed over most of the lower-lying areas of Eastern Washington and continued to the Pacific Ocean through the Columbia Gorge. These vents were located along several nearly north-south lines, up to 100 miles long, ranging from central Oregon to the Tri Cities, Spokane, Pullman, and central Idaho. Over 300 individual flows have been identified, with accumulations of over 6,000 feet in places. Broad plateaus or gently rolling hills with steep-walled, incised, stream-carved valleys, typify the topography.

The lower elevation areas of the county were heavily influenced by continental glaciation. At its maximum extent, the Cordilleran ice sheet reached a point just south of present-day City of Chelan within the county. In the Chelan Basin, the combination of mountain glaciation from the Cascades and continental glaciation combined to carve out and dam the lake. The valley flooded by the lake is a typical U-shaped mountain-glacier carved valley. The valley was subsequently dammed by moraine deposits from the Cordilleran ice sheet (Hillman and Giorgi 2000). Because of this, the lower lake, from Wapato Point eastward, is relatively shallow, having been filled with glacial deposits that form the dam. The upper lake, by contrast, is exceptionally deep, with steep walls that plunge deep into the water with little or no beach formation.

In other low-lying parts of the County, especially in the more northern portions close to the terminus of the Okanogan-Columbia Valley lobe, loess plains were formed as wind deposited fine sediments that had been eroded out of glacially deposited materials. Along the Columbia, massive floods scoured and deposited material when lakes that were dammed by the Cordilleran ice sheet were catastrophically released.

Drainage Patterns

There is significantly more precipitation in the upper portions of the basins in Chelan County than in the lower basins. The greatest discrepancy is in the Wenatchee basin, where the upper portions see up to 150" of precipitation

annually, and the lower portions less than 10" (Berg 2004b). In the smaller, and less-steep Stemilt/Squilchuck basin, the difference is less pronounced, with 32" in the upper reaches and about 8" in the lower (RH2 Engineering, Inc. 2007).

In all the basins, precipitation in the higher elevations usually occurs in the winter as snowfall (RH2 Engineering, Inc. 2007; WWPU and Chelan County Natural Resources 2003; Berg 2004a, c), though the White River is the only major tributary with heavy glacial input. Because most of the precipitation is snowfall, peak flows tend to be in the spring and summer months, as the snow melts. However, rain-on-snow events in the late fall and winter can produce dramatic flood events. Occasional, localized summer thunderstorms occur, which can lead to localized flash flood events.

The upper basins, being primarily rock with little soil or stored sediment, tend to have little sub-surface storage of water, though jointing and faulting can produce some potential water storage. Most of the snowmelt instead runs off to lower elevation/lower relief areas. The alluvial and/or glacial sediments that tend to fill the valleys store a significant portion of the runoff as groundwater. As stream flow decreases during the hot, dry summers water stored in the valley floor sediment re-enters the stream and contributes to low flow volumes. However, even with this contribution, summer flows tend to be quite low. Water withdrawals, both from the streams directly and from the valley-floor sediments, exacerbate the problem. In the Wenatchee basin, for example, the mainstem Wenatchee River, and the Icicle, Chumstick, Peshastin, and Mission Creeks, to name a few, have been included on the State 303(d) list for lack of flow (as well as low dissolved oxygen content, high temperatures, and pH) (Berg 2004b).

1.4.3 Major Land Use Changes and Current Shoreline Condition

Stemilt/Squilchuck - Colockum (WRIA 40a/b)

According to the 2000 Washington State Census, the population in the Stemilt/Squilchuck basin was 3,770. Most of these people work outside the drainage, mostly in the city of Wenatchee. The upper portion of the basin is predominately zoned as commercial forest land. However, the upper basin is also a popular place for recreational activities, including hunting, snow-machining, hiking, biking, fishing and skiing. The Mission Ridge ski area hosts 100,000 visitors annually.

The lower portions of the basin are primarily rural residential/resource or commercial agriculture. Unlike the other basins in the County, public land makes up very little of this basin.

Agricultural land is dominated by fruit trees, with cherry being the most common. The Wenatchee Heights sub-basin "Most relatively flat area[s in this basin] are covered by orchard" (RH2 Engineering 2007).

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The industrial properties that exist in the drainage are located in the Malaga subbasin, along the Columbia River. However, subsurface gold mining and some hydropower generation have occurred historically in the lower Squilchuck basin.

Wenatchee (WRIA 45)

The Wenatchee basin is home to approximately 54,000 people, according to Chelan County Long Range Planning Office. The majority of the population is concentrated in the lower basin, with major population centers including Wenatchee, Cashmere, and Leavenworth.

The City of Wenatchee is located at the confluence of the Wenatchee and Columbia Rivers. With a population of about 36,000 people, it makes up two-thirds of the overall basin population. It is expected to grow to about 54,000 by 2025 (Chelan County Community Development).

Cashmere is located at the confluence of Mission Creek and the Wenatchee River. It is the second largest city in the basin, with a population of 11,000. As with Wenatchee, Cashmere is expected to grow significantly in the future, with 17,000 expected by 2025 (Chelan County Community Development).

Leavenworth is located at the confluence of Icicle Creek and the Wenatchee River, near RM 25.6. Leavenworth, a popular tourist destination, has a full-time resident population of about 6,000 people, or roughly 11 percent of the basin total. Like the other cities in the basin, the population of Leavenworth is expected to increase significantly over the next 20 years, to 8,500 by 2025.

Peshastin is a small community established in the 1890s, during which time a depot was erected along the Northern Pacific Railroad. Today, Peshastin is a small unincorporated community located within the newly adopted Peshastin UGA. The UGA contains 610 acres, 93 acres of which lie in shoreline jurisdiction along the Wenatchee River and approximately 3 acres of which lie in shoreline jurisdiction along Peshastin Creek. A majority of the area is surrounded by orchards, with some wineries and bed and breakfasts. According to the Peshastin Urban Growth Area Comprehensive Plan, the community is expected to grow to approximately 1,110 residents within the Peshastin UGA by 2025.

Publicly owned lands dominate the basin, with 76% of the basin, totaling 671,000 acres, owned by the USFS. Of this area, 316,000 acres is designated wilderness, 243,000 acres is designated as multiple resource (i.e. forestry, recreation, water supply, etc.), and 112,000 acres is designated as no-cut forest (Berg 2004b).

Though less than 25% of the basin is privately owned, private landholders border two-thirds of the lineal extent of anadromous streams (Chelan PUD 1998, Berg 2004b). The largest industry in the basin is agriculture, dominated by fruit trees. Indeed, the region is internationally recognized for its fruit production, especially winter pears (WWPU 2006). Low rainfall in the lower portions of the basin makes it necessary to irrigate in order to have fruit production (WWPU

2006). Such irrigation must be year-round and continuous, since unlike annual crops, the trees live year-round and take several years to mature. One interruption in irrigation can damage or kill the trees, which cannot be quickly replaced (WWPU 2006).

2. CURRENT REGULATORY FRAMEWORK SUMMARY

This section presents a brief summary of land use regulations that are related to shoreline activities. The *Shoreline Management Recommendations* report provides additional analysis of shoreline, critical area, and zoning regulations in particular.

2.1 Existing Shoreline Master Programs

The Shoreline Management Act of 1971 (Chapter 90.58 RCW) was established to:

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

The SMA emphasizes accommodation of reasonable and appropriate uses, protection of shoreline environmental resources and protection of the public's right to access and use the shorelines" (http://www.ecy.wa.gov/programs/sea/sma/st_guide/intro.html). Ecology is responsible for developing and overseeing implementation of Shoreline Master Program Guidelines (Chapter 173-26 WAC), which provide direction to local governments regarding development and implementation of local Shoreline Master Programs. While cities and counties are the primary regulators under the Shoreline Management Act, Ecology has final approval authority over the local government's SMP. Ecology also reviews and has final approval over Shoreline Conditional Use and Shoreline Variance permits processed under the local jurisdiction's SMP.

The first City of Wenatchee Shoreline Master Program (SMP) was adopted by the City and Washington State Department of Ecology in 1975. There are currently four shoreline environment designations: Urban, Rural, Conservancy and Natural (Figure 1). The City modified the procedural sections slightly to

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increase administrative decision-making. The SMP requires all proposed projects to comply with the State's Shoreline Management Act (RCW 90.58), Washington Administrative Code (WAC) Chapter 173-26, and the Shoreline Master Program. In addition, all proposed projects must be consistent with local comprehensive plans, development regulations, International Building Code, and other local and federal laws.

2.2 Existing Critical Area Regulations

The City of Wenatchee each has a set of critical area regulations that dictate protection of environmentally sensitive areas, including wetlands, streams (fish and wildlife habitat conservation areas), geologically hazardous areas, frequently flooded areas, and aquifer recharge areas. These regulations use a version of the Department of Ecology's Eastern Washington Wetland Rating System.

Figure 1 below identifies the shoreline environmental designations as they were originally adopted for Chelan County and the Cities; on one map.

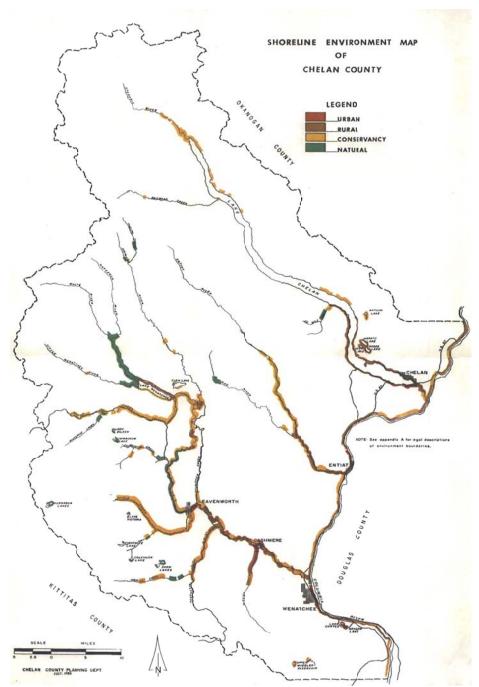


Figure 1. Shoreline jurisdiction and environment designations under the existing Shoreline Master Program.

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Table 2 summarizes critical areas regulations by jurisdiction:

Table 2. Critical Area Regulations summary (as of 2013)

Jurisdiction	Date of Last Update	Wetland Rating System	Stream Classificatio n System	Buffer Width (feet)			
City of Wenatchee	2009	Ecology E. WA- (2004/	None	Wetlands	Low Impact Land Use	Moderate Impact Land Use	High Impact Land Use
		2007)	2007)	Cat 1	50-100	75-150	100-200
Title No. Chapter 12.08.130-170 Wetlands; Crit. Aq.				Cat 2	50-100	75-150	100-200
				Cat 3	40-75	60-110	80-150
0	Recharge Areas; Freq. Flooded Areas; Geo.			Cat 4	25	40	50
Haz Areas; Fish & Wildlife Hab. Cons. Areas				Streams	General protection stan fish and wildlife habitat areas, no dimensional s buffers	life habitat con	servation

The City of Wenatchee's critical areas regulations were recently updated (2007), and are considered to be consistent with Growth Management Act "best available science" standards. No further revisions to the regulations in the near future are anticipated.

Because the City's critical areas regulations do not establish shoreline buffers or setbacks, they have greater flexibility in establishing a new environment designation scheme, possibly mirroring the suggested designation system presented in the SMP Guidelines. The City's critical areas regulations will be included in the SMP as an appendix, likely with minor revisions necessary to meet Shoreline Management Act requirements.

2.3 City of Wenatchee

Comprehensive Plan: The Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan provides for urban land use designations in the City and UGA, and addresses other important elements such as capital facilities (e.g. parks and recreation). The Waterfront Subarea Plan is a part of the City's Comprehensive Plan and guides the development of the Columbia River waterfront. The Comprehensive Plan may be updated no more frequently than on an annual basis.

Zoning Code: Wenatchee City Code Title 10 (as amended) contains the City's zoning standards which regulate land in the city limits related to uses, building bulk, scale, and location, and other design considerations. Until land is annexed, the County is responsible for permitting in the UGA. However, the County has a Memorandum of Understanding with all the Cities, including Wenatchee,

regarding the adoption and use of the City zoning and zoning standards for review of proposals in the City's UGA.

Floodplain Regulations: Chapter 2.05 of the Wenatchee City Code (WCC) addresses flood hazard prevention. These regulations apply to lands identified as "special flood hazard areas" on the federal Flood Insurance Rate Maps (FIRM). Standards for preventing flood hazards are provided for all types of special flood hazard areas located in the City, including requirements for anchoring, construction methods and materials, utilities, design standards for residential and nonresidential construction, including manufactured homes, and recreational vehicles and crawlspaces.

Additional specific standards are provided for "shallow flooding areas," which generally corresponds to those areas that experience sheet flow between depths of 1 to 3 feet outside of a defined channel. Despite being in the City code, presently, the City does not have any A1-30 zones. WCC 12.08.150 of the critical areas code contains complementary regulations for frequently flooded areas.

Shoreline Permit History: Wenatchee reports relatively little shoreline permit activity, primarily related to bridges, the Riverside Dock, and other public docks (Table 3). The Public Utility District owned park provides a buffer that exceeds shoreline jurisdiction over much of the City's shoreline, which may be responsible for the limited permit activity over the past decade.

of Year Cases Bridge Wenatchee River 1999 1 2001 1 1 2004 1 1 2006 1 1 2007 1 1 2008 2 **TOTAL** 7 2 2 3

Table 3. Shoreline Permit History in the City of Wenatchee since 1999.

2.4 State Agencies/Regulations

Aside from the Shoreline Management Act, State regulations most pertinent to development in the City's shorelines include the State Hydraulic Code, the Growth Management Act, State Environmental Policy Act, tribal agreements and case law, Watershed Planning Act, Water Resources Act, and Salmon Recovery

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Act. A variety of agencies (e.g., Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources) are involved in implementing these regulations or otherwise own shoreline areas. The Department of Ecology reviews all shoreline projects that require a shoreline permit, but has specific regulatory authority over Shoreline Conditional Use Permits and Shoreline Variances. Other agency reviews of shoreline developments are typically triggered by in- or over-water work, discharges of fill or pollutants into the water, or substantial land clearing.

Depending on the nature of the proposed development, State regulations can play an important role in the design and implementation of a shoreline project, ensuring that impacts to shoreline functions and values are avoided, minimized, and/or mitigated. During the comprehensive SMP update, the City will consider other State regulations to ensure consistency as appropriate and feasible with the goal of streamlining the shoreline permitting process. A summary of some of the key State regulations and/or State agency responsibilities follows.

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

<u>Chelan County Public Utility District</u>: Although the Chelan County PUD is not a State agency, it does act like an agency in its review and denial or approval of certain projects on the Columbia River (Rock Island Reservoir).

• Rock Island Reservoir: Rock Island Dam was originally constructed in 1933, and then modified in 1953 and 1979. The current project boundary for the Rock Island Hydroelectric Project, as licensed with the Federal Energy Regulatory Commission (FERC), is delineated on a set of maps labeled Exhibit G. The PUD owns the majority of land within the project boundary on the Rock Island reservoir. Similar to the restrictions on the Rocky Reach Reservoir, alteration of the land within the project boundary is restricted. The PUD maintains and operates a number of parks on its land along the Rock Island Reservoir. The 1976 Lake Chelan Project Exhibit R Recreation Plan identified seven sites on the Rocky Reach Project for recreational development. Three were completed by the Chelan PUD and opened to the public in the late 1970's, one in the 1980's

and three in the 1990's. The parks include: Rocky Reach Dam Site, Orondo Park, Entiat Park, Lincoln Rock State Park (Eastbank), Daroga State Park, Chelan Falls/Powerhouse Parks, and Beebe Bridge Parks.

Section 401 Water Quality Certification: Section 401 of the federal Clean Water Act allows states to review, condition, and approve or deny certain federal permitted actions that result in discharges to State waters, including wetlands. In Washington, the Department of Ecology is the State agency responsible for conducting that review, with their primary review criteria of ensuring that State water quality standards are met. Actions within shoreline waterbodies, or wetlands and streams within the shoreline zone that require a Section 10 or Section 404 permit (see Section 2.5 below), will also need to be reviewed by Ecology.

Watershed Planning Act: The Watershed Planning Act of 1998 (Chapter 90.82 RCW) was passed to encourage local planning of local water resources, recognizing that there are citizens and entities in each watershed that "have the greatest knowledge of both the resources and the aspirations of those who live and work in the watershed; and who have the greatest stake in the proper, long-term management of the resources." Chelan County and partners in the County have taken advantage of the available funding for watershed planning to complete the watershed management plans for the Entiat watershed (WRIA 46) in 2004, the Wenatchee watershed (WRIA 45) in 2006, and the Stemilt/Squilchuck watershed (WRIA 40a) in 2007. WRIA 40b (the Alkali Squilchuck, which includes Colockum Creek and is otherwise located primarily in Kittitas County) does not have a watershed management plan.

<u>Hydraulic Code</u>: Chapter 77.55 RCW (the Hydraulic Code) gives the Washington Department of Fish and Wildlife (WDFW) the authority to review, condition, and approve or deny "any construction activity that will use, divert, obstruct, or change the bed or flow of State waters." These activities may include stream alteration, culvert installation or replacement, pier and bulkhead repair or construction, among others. WDFW can condition projects to avoid, minimize, restore, and compensate adverse impacts.

Water Pollution Control Act: Chapter 90.48 RCW establishes the State's policy "to maintain the highest possible standards to insure the purity of all waters of the State consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the State, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the State of Washington." The Department of Ecology is the agency charged with crafting and implementing rules and regulations in accordance with this legislation.

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2.5 Federal Agencies/Regulations

Federal regulations most pertinent to development in the Cities' and County's shorelines include the Endangered Species Act, the Clean Water Act, and the Rivers and Harbors Appropriation Act. Other relevant federal laws include the National Environmental Policy Act, Anadromous Fish Conservation Act, Clean Air Act, and the Migratory Bird Treaty Act. A variety of agencies (e.g., U.S. Army Corps of Engineers [Corps], National Marine Fisheries Service, U.S. Fish and Wildlife Service) are involved in implementing these regulations, but review by these agencies of shoreline development in most cases would be triggered by in- or over-water work, or discharges of fill or pollutants into the water. Depending on the nature of the proposed development, federal regulations can play an important role in the design and implementation of a shoreline project, ensuring that impacts to shoreline functions and values are avoided, minimized, and/or mitigated. During the comprehensive SMP update, the City will consider other federal regulations to ensure consistency as appropriate and feasible with the goal of streamlining the shoreline permitting process. A summary of some of the key State regulations and/or State agency responsibilities follows.

Section 404: Section 404 of the federal Clean Water Act provides the Corps, under the oversight of the U.S. Environmental Protection Agency, with authority to regulate "discharge of dredged or fill material into waters of the United States, including wetlands" (http://www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf). The extent of the Corps' authority and the definition of fill have been the subject of considerable legal activity. However, it generally means that the Corps must review and approve many activities in shoreline waterbodies, and other streams and wetlands. These activities may include wetland fills, stream and wetland restoration, and culvert installation or replacement, among others. Similar to Washington State Environmental Policy Act (SEPA) requirements, the Corps is interested in avoidance, minimization, restoration, and compensation of impacts.

Section 10: Section 10 of the federal Rivers and Harbors Appropriation Act of 1899 provides the Corps with authority to regulate activities that may affect navigation of "navigable" waters. The Columbia River is a designated navigable waters. Accordingly, proposals to construct new or modify existing in-water structures (including piers, marinas, bulkheads, breakwaters), to excavate or fill, or to "alter or modify the course, location, condition, or capacity of" these waterbodies must be reviewed and approved by the Corps.

<u>Federal Endangered Species Act (ESA)</u>: Section 9 of the ESA prohibits "take" of listed species. Take has been defined in Section 3 as: "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The take prohibitions of the ESA apply to everyone, so any action of the City that results in a take of listed fish or wildlife would be a

violation of the ESA and exposes the County and Cities to risk of lawsuit. Per Section 7 of the ESA, activities with potential to affect federally listed or proposed species and that either require federal approval, receive federal funding, or occur on federal land must be reviewed by the National Marine Fisheries Service (NOAA Fisheries) and/or U.S. Fish and Wildlife Service (USFWS) via a process called "consultation." As previously mentioned, a Corps permit under Section 10 of the Rivers and Harbors Appropriation Act is required for projects in the Columbia River, and Section 404 permits are required for discharges of fill material into other river, streams and wetlands within shoreline jurisdiction. Since the listing of chinook salmon, sockeye salmon, steelhead trout, and bull trout as Threatened under the ESA, the Corps, NOAA Fisheries and USFWS have jointly developed a number of Regional General Permits (RGPs) or programmatic consultations to streamline permitting of projects in waterbodies containing listed fish, including:

RGP 8: Authorizes fish passage improvement projects, including culvert replacement and removal, on National Forest Service lands.

A programmatic biological opinion is also available for restoration or enhancement of aquatic and associated riparian habitat, including culvert replacements (nine separate categories of work are covered). Applicable to Washington State waters, with exceptions to some categories of work on main stem Columbia River.

Phase 1 programmatics are also available in Chelan County for:

- Placement of navigation aids and regulatory markers, including placement of buoys for such purposes.
- Replacement of up to eighteen existing piling.
- Placement of new devices or replacement of old devices (with no greater dimensions than those already in place) whose purpose is to measure and record scientific data such as staff gages, tide gages, water recording devices, water quality testing and improvement devices, and similar structures.
- Activities required for the containment (but not cleanup) of oil and hazardous substances, including placement of booms and anchors.
- Placement of up to 25 cubic yards of fill material waterward of the
 ordinary high water (OHW) line to meet mitigation requirements
 imposed by Washington State Department of Fish and Wildlife (WDFW)
 in association with an Hydraulic Project Approval (HPA) where all other
 work (the bank stabilization activity and associated stockpiling) is outside
 Corps jurisdiction (landward of the OHW line) and has already been
 constructed (Not applicable to Columbia River mainstem).

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Clean Water Act: The federal Clean Water Act has a number of programs and regulatory components, but of particular relevance to Chelan County is the National Pollutant Discharge Elimination System (NPDES) program. In Washington State, the Department of Ecology has been delegated the responsibility by the U.S. Environmental Protection Agency for managing implementation of this program. The City of Wenatchee is engaged in compliance with the NPDES Phase II Municipal Stormwater General Permit requirements that address stormwater system discharges to surface waters (see Section 3.3.2 below).

3. Shoreline Inventory

The following discussion identifies each of the required inventory elements and sources of information for each element, and may provide a brief Countywide or watershed-wide narrative. In this chapter discussions and calculations are broken as needed into the four Watershed Resource Inventory Areas (WRIAs) (WRIA 40a - Stemilt-Squilchuck and part of WRIA 40b located in Chelan County [Colockum Creek basin], WRIA 45 - Wenatchee, and the City of Wenatchee. The WRIA discussions and calculations do not include data for the incorporated City of Wenatchee. The City's discussion and calculation includes the UGA. Additional watershed-, shoreline-, or City-specific discussion can be found in Section 4.0. Table 4 lists those relevant inventory elements for which data is available for the County and Cities' shorelines. The table also provides a brief description of the general utility of the data for general planning purposes versus site-specific analysis. Data gaps, assumptions, and limitations are identified in the following sections (3.1-3.13). Map Figures are provided in the Map Folio, and they depict the various inventory pieces listed in the table, as well as additional analysis.

 Table 4.
 Shoreline Inventory Elements, Data Sources, Assumptions, and Limitations.

Inventory Element	Information Gathered	Data Source	Assumptions/Limitations
Physical Setting			
Surficial Geology	Geologic classifications	WA Department of Natural Resources, Division of Geology and Earth Resources, Surface Geology	Based on broad scale geologic classifications Useful for broad scale assessment of geologic conditions Not to be used in place of site-specific studies
Soils	Soil types	USDA NRCS (SSURGO)	 Based on broad scale soil mapping Useful for broad scale assessment of soil conditions Not to be used in place of site-specific studies
Precipitation, Rain-on-snow	Annual precipitation Areas of rain-on-snow	PRISM group, OSU WA Department of Natural Resources	Useful for broad scale assessment of soil conditions Groundwater flow patterns data were not available- Data gap Not to be used in place of site-specific studies
 Land Use/Deve 	elopment		
Land Use	Current land use Land ownership Water-oriented uses	Chelan County Assessor data The Nature Conservancy City and citizen input	 Gross scale characterization (e.g., urban, forest, rural/ag) Identifies publicly owned land by agency (e.g., USFS, WA Parks, County, City) Useful in assessing existing intensity and type of development at broad-scale planning level Data may not be up-to-date
Patterns	Future land use	County and City Comprehensive Plans	Based on area-wide categorization- includes roads, easements, and utilities Comparison to current use indicates likely changes in intensity and type of development Useful in planning to accommodate future land use changes at broad-scale planning level
Transportation	Roads Railroads	WA Department of Transportation	Road data include publicly maintained streets and highways Railroad data include abandoned and in-use railways Data may not include private roads

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Inventory Element	Information Gathered	Data Source	Assumptions/Limitations
Stormwater/ Sewer facilities	Stormwater outfalls Sewer lines and points Large on-site sewage systems	County and City GIS data WA Department of Health	Stormwater data was occasionally unavailable or unavailable in GIS format Stormwater data may be incomplete
Water Supply	Water supply infrastructure	County and City Comprehensive Plans and Water System Plans Chelan County PUD Lake Chelan Reclamation District	Includes public water infrastructure and irrigation district information
Impervious Surfaces	General impervious surface	US Geological Survey	 Based on interpretation of multispectral imagery at 30 x 30 meter cell resolution Data captures impervious surfaces (e.g., rooftops, roads, parking lots), but may not capture areas with reduces infliltration potential (e.g., compacted areas) Useful for broad scale assessment of impervious surface coverage May overestimate impervious surface coverage Not useful for accurate characterization of fine scale data (e.g., City or parcel level)
Vegetation	Terrestrial vegetation type and land cover	US Geological Survey	Based on interpretation of multispectral imagery at 30 x 30 m cell resolution Useful for broad scale assessment of vegetation coverage Not useful for accurate characterization of fine scale data (e.g., City or parcel level, species composition)
Shoreline Modifications	Docks and other overwater structures	WA Department of Natural Resources	Overwater structures may include piers, boatlifts, moorage covers, and bridges, Shoreline stabilization is a data gap

Inventory Element	Information Gathered	Data Source	Assumptions/Limitations
Public Access Areas	 Parks Trails Recreation Sites Snowmobile Trails X-Country Ski Trails Proposed Trails WDFW Fishing Easements Utility Corridors and other easements Key visual access corridors 	 Chelan County Assessor Washington State Parks and Recreation USFS Trust for Public Lands City GIS data 	Includes established parks and recreation sites Includes no-owner parcels and easements Requires ongoing future review and evaluation to verify and add to information collected
Historical/ Archeological/ Cultural Sites	Historical sties Archeologically significant sites	WA Department of Archaeology and Historic Preservation	Data not mapped in shoreline inventory report Data represent only known sites; additional, presently unknown sites may exist
Critical Areas/Ot	her Ecological Condition	ns	
Geologically hazardous areas	Geohazards	Washington Department of Natural Resources, Geology and Earth Sciences Division	Specific type of geohazard (e.g., steep slope, seismic hazard) is not mapped Data are primarily DNR derived landslide hazard areas, but they also show City of Chelan steep slopes and City of Wenatchee critical area categories erosion hazards and slide hazards. Useful for broad scale assessment of geologically hazardous areas Requires site-specific review to verify presence/absence of geohazards
Frequently flooded areas	FloodplainsFloodwaysChannel Migration Zone (Wenatchee	Federal Emergency Management Agency (FEMA) Consultant studies	Floodplain and floodways based on federally established models Channel migration zone delineation based on LiDAR, geologic and soil mapping, current aerial photographs, and County-wide road and railroad data. LiDAR data was

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Inventory Element	Information Gathered	Data Source	Assumptions/Limitations
	River Only)		corrected for ground returns and mapped by both percent slope and "differential elevation."
Wetlands	Potential wetlandsHydric soils	U.S. Fish and Wildlife Service National Wetland Inventory (NWI) Hydric Soils, Natural Resource Conservation Service, Soil Survey (SSURGO)	 Useful for broad scale assessment of soil conditions and potential wetlands NWI mapping based on interpretation of multi-spectral imagery and ground truthing Hydric soils based on broad scale soil mapping Many wetlands are not identified by NWI or hydric soils mapping; mapped wetlands may not meet wetland criteria Not to be used in place of site-specific studies
Surface water	Lakes Streams	Pacific States Marine Fisheries Commission WA Department of Natural Resources	Small, intermittent or ephemeral streams may not be identified in data
			WDFW maps do not capture every priority species location or habitat, particularly for rare species or species that use shoreline habitats seasonally or intermittently
WDFW Priority Habitats &	 Priority fish Priority wildlife Priority habitats	WA Department of Fish and Wildlife	Absence of mapping information does not indicate absence of a particular species
Species			The number of documented species may reflect the relative amount of past survey efforts
			New data will need to be obtained at the time of project application
Aquifer Recharge Areas	NA	NA	Data not available- Data Gap
Water quality impairment	303(d) waters and regulated sites	WA Department of Ecology	Water quality impairments are based on monitoring at specific locations Impairments may extend beyond the mapped area
Restoration opportunities	Site-specific and general projects	Watershed Plans Subbasin Plans	Restoration opportunities are not limited to those identified in this report

3.1 Land Use Patterns

3.1.1 Existing and Planned Land Use

Land use patterns were derived from geographic information system (GIS) data provided by County and partner cities, including County Assessor records for current land use and Comprehensive Plan designations for planned land use. The method and approach to data collection are described below:

- Unincorporated shorelines are addressed by watershed, i.e. WRIAs. City and associated Urban Growth Areas (UGAs) are addressed by jurisdiction. Each area is more specifically described in Section 4.
- Assessor use types were sorted into similar categories to show current use patterns (e.g. Commercial includes retail, business services, and other related activities). Existing land use information is parcel based and relatively extensive except in government owned forested areas where data is omitted. Assessor existing land use data is not the most important piece of information in County assessments and thus it is not updated as frequently as other property information. However, it represents the best readily available information on current land use in the shoreline area². Due to City and citizen input, current land use maps have been modified in some locations through the inventory review process, with emphasis on shoreline jurisdictional areas. Current land use was generally not updated for areas outside of shoreline jurisdiction.
- Future land use categories are based on adopted Comprehensive Plans and are reported by the category names in the City comprehensive plan. Future land use data is based on area-wide classifications and include roads, resource lands (unlike Assessor data), etc., which tends to mean the future land use acres are greater than existing land use acres for the same jurisdictional area.

In the unincorporated WRIAs, the current land use patterns are predominantly rural residential, government/utility, and forestry and agriculture resource lands with exceptions – such as small towns along rivers and streams, lake communities, and some focused areas of rural industrial and rural waterfront commercial.

Relatively more urban and intensive development is found in the City of Wenatchee (utility and industrial). The City of Wenatchee has extensive open space along its shorelines due to PUD and State park lands.

Future land use designations tend to reinforce current land use patterns. Unincorporated shorelines that are in private ownership tend to be planned for

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² The County has an on-going inventory of land use data; however, the focus has been on non-shoreline areas; therefore the Assessor's data was considered the best available for the SMP inventory and analysis.

rural residential, rural commercial/waterfront, or rural industrial uses. City shorelines are planned for a wider variety of activities that support their role as centers of the local community – residential at a variety of single family and multifamily densities, local and tourist oriented commercial, manufacturing/industrial, mixed use, open space and recreation. Many areas in the City are already developed, but some are likely to see re-development as discussed in Section 3.1.3.

As is true for nearly all developments around the world, most human settlements (both pre-historic and historic) in Chelan County have developed along waterbodies where lands are more arable and level, water for drinking or irrigating is present, the climate is more accommodating, wildlife (for food, clothing and other uses) tend to congregate, and transportation is available (on navigable waterbodies). Maps of existing land use today are a testimony to this pattern, and location along waterbodies is still perpetuated. The developed communities are likewise connected along waterbodies by transportation and utility corridors.

3.1.2 Water-Oriented Uses

According to Ecology's SMP Guidelines (173-26-020 WAC), "water-oriented use means a use that is water-dependent, water-related, or water-enjoyment, or a combination of such uses." The Shoreline Management Act promotes uses that are "unique to or dependent upon use of the State's shoreline" as well as "ports, shoreline recreational uses including but not limited to parks, marinas, piers, and other improvements facilitating public access to shorelines of the State, industrial and commercial developments which are particularly dependent on their location on or use of the shorelines of the State and other development that will provide an opportunity for substantial numbers of the people to enjoy the shorelines of the State." (RCW 90.58.020)

Definitions and examples of water-oriented uses are included in Table 5 below.

Table 5. Water-Oriented Uses Definitions and Examples.

Water-Oriented Use Definitions	Water-Oriented Use Examples
"Water-dependent use" means a use or portion of a use which cannot exist in a location that is not adjacent to the water and which is dependent on the water by reason of the intrinsic nature of its operations. (WAC 173-26-020(36))	Examples of water-dependent uses may include ship cargo terminal loading areas, ferry and passenger terminals, barge loading facilities, ship building and dry docking, marinas, aquaculture, float plane facilities, sewer outfalls, and water diversion facilities, such as agricultural pump houses.
"Water-related use" means a use or portion of a use which is not intrinsically dependent on a waterfront location but whose economic viability is dependent upon a waterfront location because: (a) The use has a functional requirement for a waterfront location such as the	Examples of water-related uses may include warehousing of goods transported by water, seafood processing plants, hydroelectric generating plants, gravel storage when transported by barge, oil refineries

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Water-Oriented Use Definitions	Water-Oriented Use Examples
arrival or shipment of materials by water or the need for large quantities of water; or (b) The use provides a necessary service supportive of the water-dependent uses and the proximity of the use to its customers makes its services less expensive and/or more convenient. (WAC 173-26-020 (40))	where transport is by tanker, log storage, and (potentially) agriculture and agriculturally related water transportation systems.
"Water-enjoyment use" means a recreational use or other use that facilitates public access to the shoreline as a primary characteristic of the use; or a use that provides for recreational use or aesthetic enjoyment of the shoreline for a substantial number of people as a general characteristic of the use and which through location, design, and operation ensures the public's ability to enjoy the physical and aesthetic qualities of the shoreline. In order to qualify as a water-enjoyment use, the use must be open to the general public and the shoreline-oriented space within the project must be devoted to the specific aspects of the use that fosters shoreline enjoyment. (WAC 173-26-020 (37))	Primary water-enjoyment uses may include, but are not limited to, parks, piers and other improvements facilitating public access to the shorelines of the State; and general water-enjoyment uses may include, but are not limited to restaurants, museums, aquariums, scientific/ecological reserves, and resorts/hotels (as part of mixed use development or with significant public access or restoration components), and commercial/office as part of a mixed-use development.

Based on a review of County Assessor records, the current use categories that were considered most likely to meet the definition of water-oriented uses were selected as follows:

- Agriculture
- Hotels/Motels (as part of mixed-use development or with significant public access or restoration components)
- Marine Craft Transportation
- · Open Space
- Parks
- · Recreational Activities
- Resorts and Group Camps
- Retail Trade-Eating/Drinking (as part of mixed-use development)

In the unincorporated portions of the County, much of the potential water-oriented uses are agricultural. Agriculture is considered a potential water-oriented use where the shoreline waterbody provides a source of water to the crops or other agricultural product. Also, many orchardists along shoreline waterbodies have indicated that they are sited near the water to take advantage

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of the riparian microclimate that is important to agricultural operations, such as mediating temperatures.³

Recreation and group camp water-oriented uses tend to be located on the major rivers and lakes such as the Columbia River and Wenatchee River.

More urban examples of water-oriented uses, including hotels/motels as part of a mixed-use development or that provide public access and ecological restoration and eating/drinking places that provide public access and ecological restoration, are found in the cities as well as in compact rural areas.

3.1.3 Developing or Redeveloping Waterfronts

This inventory compiles several sources of information to characterize which shorelines are likely to see new development or redevelopment. The data includes local government land use plans, Assessor information regarding parcels without buildings, and permitting activity in the recent past.

The City of Wenatchee's Waterfront Subarea Plan contains the vision and strategies for waterfront redevelopment, where a mostly industrial waterfront is planned to change to a mixed-use area with nodes. The *Wenatchee Waterfront Subarea Plan* provides guidance for how this redevelopment will occur. Most of the redevelopment activity will take place outside of shoreline jurisdiction as a large percentage of the Columbia River frontage in the *Wenatchee Waterfront Subarea Plan* is already developed with PUD parks and the Burlington Northern Santa Fe railroad corridor.

All of the WRIAs are likely to see additional rural residential growth as well, since aside from resource lands, rural residential categories are applied most frequently in unincorporated Chelan County.

The City of Wenatchee has a limited number of parcels within shoreline jurisdiction lacking buildings. These parcels include vacant properties and properties in a use that does not require buildings, such as parcels with agriculture or government activities. These properties without structures could see shoreline permits for new structures or improvements in the future.

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location.

³ Washington Apple Country Tours reports that "The topography surrounding the lake [Lake Chelan] creates something of a 'micro-climate' along the lakeshore which moderates the temperatures during the colder months of winter and the hotter months of summer."
(http://www.appleorchardtours.com/hist01.htm). Tiny's Orchards in East Wenatchee is close to the

Columbia River in Douglas County "in a superb microclimate with weather conditions ideal for growing stone fruit ..." The orchardist reports that this particular location has "only experienced frost and/or extreme cold conditions or hail or damaging winds only a couple of times since ...1979." The other orchard location is close to the airport in East Wenatchee and temperatures in this location away from the river generally "run 5 to 10 degrees cooler than at the lower river elevation." See http://www.ilovetiny.com/OurFarmandHarvestDates.aspx. While in Douglas County, Tiny's fronts the Columbia River, a shared shoreline waterbody with Chelan County. Attendees at several shoreline visioning workshops verbally corroborated the relationship between shoreline microclimate and orchard

However, a review of permitting indicates that most shorelines have not seen rapid development with the exception of the Wenatchee River (see Table 2 in Section 2.3).

3.2 Transportation

As outlined below, there are several State and federal highway road sections and railroad corridors in Wenatchee and its UGA that either parallel, cross, or are otherwise located in existing or future shoreline jurisdiction.

- U.S. Highway 2 frequently crosses or parallels shoreline jurisdiction along a majority of the Wenatchee River between Lake Wenatchee and the City of Wenatchee. It also crosses the Columbia River within the City of Wenatchee UGA, where it combines with US 97.
- U.S. Highway 97 crosses the Columbia River within the Wenatchee UGA.
- Alternate U.S. Highway 97 (97a), between the City of Wenatchee and Lake Chelan, parallels the Columbia River and Lake Chelan shoreline jurisdictions, as well as crossing the Entiat River at the confluence with the Columbia.
- SR 285 crosses shoreline jurisdiction at the Wenatchee River Bridge just west of the confluence with the Columbia River and also at the Columbia River Bridge between the cities of Wenatchee and East Wenatchee.
- The Malaga Alcoa Highway (actually a County road) also parallels the Columbia River south of Wenatchee to the County line, and is within shoreline jurisdiction in a few areas.
- Burlington Northern Santa Fe (BNSF) rail lines parallel the Columbia
 River and the Wenatchee River. A main track line runs along the south
 bank of the Wenatchee River from the western County limits to the City
 of Wenatchee, and then south along the west shore of the Columbia
 River.
- A RailAmerica, Inc. subsidiary named Cascade & Columbia River Railroad operates a line parallel to the Columbia River from Wenatchee north to Oroville. The line has an interchange station in Wenatchee.

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These major transportation corridors have had and continue to have a variety of affects on watershed processes and shoreline function by limiting channel migration, interfering with natural recruitment of gravels and woody debris, eliminating or minimizing riparian vegetation, constricting flows, and providing a source of pollutants such as hydrocarbons and heavy metals. The remainder of the transportation corridors within shoreline jurisdiction is city access or private

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roads, and driveways. These roadways can have similar impacts on processes and functions, but generally on a smaller scale.

The Wenatchee Valley Transportation Council (WVTC) is the Metropolitan Planning Organization (MPO) consisting of nine State and local agencies that work within the greater Wenatchee Valley area. This group, along with the North Central Regional Transportation Planning Organization (NCRTPO), which consists of all communities located within Okanogan, Chelan, and Douglas Counties and the Confederated Tribes of the Colville Nation, coordinates longrange transportation planning projects in the region. Typically, federal law requires MPOs to submit a transportation improvement program annually, while the NCRTPO is required by State law to submit a regional transportation improvement program every two years. The partnership between the WVTC and NCRTPO has developed the North Central Washington Regional Transportation Improvement Program (NCW RTIP), the most recent of which is the 2008-2013 NCW RTIP. The NCRTPO is already planning an update.

- There are 10 federally funded Urban transportation projects identified in the NCW RTIP that are located within the Wenatchee urban area of Chelan County, three of which are either partially or fully within shoreline jurisdiction. These include bridge repairs, paving, and a congestion relief study.
- There are 26 federally funded Rural transportation projects identified in the NCW RTIP that are located in rural areas of Chelan County, 3 of which are fully within shoreline jurisdiction. The three projects within shoreline jurisdiction are the Chelan River Bridge within the City of Chelan, the Old Blewett Bridge #1 replacement south of U.S. Highway 2, and the Wenatchee River Bridge replacement along Highway 2 near the City of Cashmere.
- In addition to the fully funded projects listed above, there are 72 planned projects within Chelan County that are currently unfunded. None of these projects are confirmed to be within or outside of shoreline jurisdiction as information and specific map locations are currently unavailable.
- A new regional transportation corridor in Wenatchee is included in the North Wenatchee Avenue Transportation Master Plan (Wenatchee Valley Transit Council 2011). The plan includes the construction of a new "Confluence Parkway", which will cross over the Wenatchee River near the confluence with the Columbia, and occur in portions of shoreline jurisdiction in the City of Wenatchee.
- A North Central Washington Transportation Plan and Metropolitan Transportation Plan were recently adopted, and these plans establish strategic priorities for transportation infrastructure development in the

Wenatchee Valley. Options to improve regional transportation include upgrades to existing infrastructure or development of new transportation infrastructure. Options considered in the Metropolitan Transportation Plan include new bridges over the Wenatchee and Columbia Rivers.

The County is currently planning an update of the transportation element of its Comprehensive Plan, including a prioritized list of transportation projects (motorized and non-motorized) that compiles the work in the *Chelan County Six-Year Transportation Improvement Program* (2007-2012) and, where appropriate, regional plans/projects. Shoreline projects are planned for 10 sub-areas. The one relevant to the City of Wenatchee and the Wenatchee UGA is outlined briefly below:

• Sunnyslope sub-area: Roadway improvements to Sleepy Hollow Road along and crossing the Wenatchee River, non-motorized improvements leading to Columbia River south of bridge to East Wenatchee

The NCRTPO is working on an update of the Regional Transportation Plan.

3.3 Utilities

3.3.1 Wastewater

General Information Sources

Basic information about wastewater facilities and programs was derived from meeting notes with City staff, Washington Department of Ecology website, City of Wenatchee website, City of Wenatchee Comprehensive Plan, and data provided by the Washington Department of Health.

City of Wenatchee

The City of Wenatchee provides wastewater services to residents within the City limits, residents within Olds Station north of the Wenatchee River Bridge, and areas within the UGA boundary of Sunnyslope and the Boodry Street area. The City has one treatment plant located in downtown Wenatchee along the shores of the Columbia River. In order to reduce the number of pollutants that enter the treatment plant, the City utilizes a pre-treatment program to remove contaminants prior to entering the system. As mentioned previously, the Sunnyslope and Olds Station areas are provided wastewater services under a revenue sharing agreement with Chelan County. In 2008, the City updated its General Sewer Plan, which identifies specific details about the wastewater network.

3.3.2 Stormwater

General Information Sources

Basic information about City stormwater management was derived from the City

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Wenatchee Valley Stormwater Technical Advisory Committee

In April 2006, the Wenatchee Valley Stormwater Technical Advisory Committee (WVSTAC) was established through an interlocal agreement with Chelan County, Douglas County, the City of East Wenatchee and the City of Wenatchee. According to the City of Wenatchee website, the goal of the committee is to develop a regional stormwater program and meet the requirements of the Eastern Washington Phase II Municipal Stormwater Permit. This permit requires public involvement through education, outreach and participation, illicit discharges detection and elimination, construction site stormwater runoff and post-construction stormwater facility discharge management, pollution prevention and good housekeeping for municipal operations and stormwater monitoring.

As part of the WVSTAC's role in public involvement, the *Public Involvement*, *Education and Outreach Plan* was developed in February 2008. In addition, the Wenatchee Valley Stormwater Program Development Steering Committee was formed, which includes elected officials, private citizens, business owners and community stakeholders. Through the review of program elements, public education and recommendations to local jurisdictions, the Committee is tasked with protecting the water quality in the Wenatchee Valley urbanized area.

In May 2008, the *Wenatchee Valley Stormwater Management Program* was completed. This document will be reviewed and updated annually in accordance with the NPDES permit.

City of Wenatchee

The City of Wenatchee's stormwater system includes a series of catch basins and stormwater pipes that divert stormwater to 12 separate outfalls along the Columbia River. The system, originally installed in 1952, includes over 100 miles of drainage pipe. In 1994, the City's stormwater utility was formed. As a member of WVSTAC, the City is working together with other member cities to meet the NPDES permit requirements.

According to the City's Comprehensive Plan, the City is considering alternative methods for stormwater treatment, including low-impact development. Additionally, the City is also considering filtering stormwater through wetlands, re-using stormwater for irrigation, and educational efforts about the effects stormwater has on water quality.

3.3.3 Water Supply

General Information Sources

Basic information about the City water supply was derived from the City comprehensive plan and water system plan, and Chelan County PUD website.

Chelan County PUD

A majority of the County's drinking water is supplied by Chelan County PUD. The District assumed ownership of water operations in 1974 after Wenatchee Valley Water Company was unable to finance system improvements. Today, there are nine water systems that the District operates.

In 1979, the District entered into an agreement with the City of Wenatchee for joint development of a regional water supply system using a groundwater aquifer near Rocky Reach Dam. The system, which includes the aquifer, regional wells and water mains, was brought into operation in 1983 and is operated by the City of Wenatchee. The City provides wholesale water to the PUD, who then provides the water to their customers. East Wenatchee Water District, located in Douglas County, became a partner with the District in 1998, and today all residents in the greater Wenatchee area are served by one regional water system. The District also provides water to the Sunnyslope, Olds Station, Monitor, and western and southern boundaries of the greater Wenatchee areas. Improvements are continually being made to improve service in outer service areas. Four other systems operated by Chelan County PUD include Chelan Falls, Chelan Ridge, Olalla Canyon, and Dryden (LCRD website).

During summer 2008, the PUD extended drinking water service to the Monitor community from the Sunnyslope area. The new line crossed the Wenatchee River, mounted underneath the Monitor Bridge.

City of Wenatchee

The City of Wenatchee and its UGA are supplied with water by the City of Wenatchee in its service area and Chelan County PUD in its service area. The City serves approximately 24,297 people over a 7.4-square-mile area, covering portions of areas within and outside of City limits. City-supplied drinking water originates in regional wells and is then stored in four reservoirs for distribution into supply lines.

Other Sources

Along with the water districts listed above, there are several other small water, reclamation and irrigation districts throughout the City of Wenatchee and Wenatchee UGA. These include: Pioneer Water Users, Wenatchee Reclamation District, Greater Wenatchee Irrigation District, and Lower Squilchuck Irrigation.

3.4 Impervious Surfaces

Impervious surface mapping and analysis was developed using the U.S. Geological Survey National Land Cover Data (NLCD 2001). The data captured include impenetrable surfaces such as rooftops, roads, or parking lots, but may not include reduced perviousness caused by compaction or vegetative changes. The data was generated using 30×30 meter cells, with each cell reporting the

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percentage of that cell that is impervious. For purposes of this analysis, each cell was considered to be completely impervious if it had any percentage of impervious surfaces. While this results in a net over-estimation of actual impervious, it allows for a useful comparison of impervious surface between waterbodies. Impervious surface summaries are not useful for planning or assessing conditions at the site level or project scale. Impervious surface coverage estimates are generally less sensitive to differences or changes in impervious surface coverage in cities with existing development compared to unincorporated areas with patchy impervious surface coverage.

The following tables (6a and 6b) show percent impervious surface for those shoreline areas that have impervious surfaces; shorelines with no impervious surfaces (or impervious surface data) are not listed. All waterbodies in the cities and their UGAs have impervious surface percentages greater than 10 percent. Shoreline areas with impervious surface percentages greater than 10 percent in the remainder of the county are shaded for easy identification.

Table 6a. Total Impervious Surface within Each Shoreline in Unincorporated Chelan County by WRIA, Outside of Cities and Their Urban Growth Areas.

Waterbody	Total Upland Shoreline Area (Acres)	Impervious Surface (acres)	% Impervious	
WRIA 40a/b (Stemilt/Squilchuc	k - Colockum)			
Columbia River	413.66	22.90	6%	
WRIA 45 (Wenatchee)				
Columbia River	112.87	34.15	30%	
Wenatchee River	4,070.47	776.60	19%	

Table 6b. Total Impervious Surface within the City, Including the Urban Growth Areas.

Waterbody	Total Shoreline Area (Acres)	Impervious Surface (acres)	% Impervious
Wenatchee and UGA			
Columbia River	177.78	65.87	37%
Wenatchee River	104.27	20.10	19%

Impervious surface is relevant to shoreline functions because of the relationship between impervious surfaces and stormwater runoff. In a number of ways, vegetated areas slow the movement and reduce the quantity of runoff that makes its way into streams and other waterbodies. Increases in impervious surface coverage, and the consequent reduction in soil infiltration, have been correlated with increased velocity, volume and frequency of surface water flows. This hydrologic shift alters sediment and pollutant delivery to streams and other receiving bodies (Booth 1998; Arnold and Gibbons 1996).

Increased surface water flows associated with impervious surface coverage of suburban areas (20-30%) has been linked to decreased bank stability and increased erosion (May et al. 1997a). Rainwater can evaporate off of vegetation without ever reaching the ground, infiltrate into the soils to recharge groundwater, infiltrate into the soils where it is taken up by vegetation and evapotranspirated, or move slowly over the surface or subsurface into a waterbody. Again, data presented in this study likely overestimates impervious surface coverage, so percent coverage estimates should not be compared to the 20-30 percent standard above.

In parts of Chelan County, generally lower lying areas in the eastern portions of the County, low precipitation combined with pervious soil types allows for infiltration of much of the annual rainfall. The effect of increased impervious surface in these areas may be less pronounced. Such areas generally have little vegetation given the dry climate and well-drained soils. With less vegetation, transpiration and interception rates are lower than in more heavily vegetated areas, so that the loss of vegetation has less of an effect on runoff volumes. Nevertheless, the loss of direct infiltration caused by impervious surfaces still has an effect on runoff volume and the associated bank stability and erosion issues that result from increases in runoff volumes.

3.5 Vegetation

Vegetative cover mapping and analysis was generated using the U.S. Environmental Protection Agency's 2001 National Land Cover Data (NLCD). Other data sets were evaluated, including information from the U.S. Forest Service (USFS) and the Interior Columbia Basin Ecosystem Management Project (ICEBMP). However, the USFS data, while providing exceptional detail for forest lands, lumped or mis-categorized non-forest lands. The ICEBMP data is at a much larger scale than the NLCD (1,000 meters rather than 30 meters), and is older (1994 vs. 2001). NLCD provided the most accurate mapping of the entire County, with vegetation classifications that would be most useful to SMP development. An additional benefit of the NLCD is the integration of impervious surface data in the classification of various intensities of developed lands. The following cover type descriptions are those developed in conjunction with and pertaining directly to the NLCD data. While each is present as a unit within Chelan County shorelines, individual components included in the NLCD cover class definitions grouped and summarized below may be absent from Chelan County shorelines.

Developed (high, medium and low intensity) cover classes

Development in Chelan County shorelines ranges from high intensity to low intensity. These categories are defined primarily by amount of impervious surface. Percentage of impervious cover in "high intensity" developed areas ranges from 80 to 100. "Medium" and "low" intensity developed areas have 50

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to 79 percent and 21 to 49 percent cover by impervious surface, respectively. Commercial and industrial development tends to characterize high intensity areas, while single-family structures predominate in medium intensity areas, and low intensity areas feature trees, grasses, and landscaping in addition to the types of structures in medium-intensity developed areas. Areas where parks, golf courses, and other land uses that may be considered development but generally do not require large expanses of impervious surface are classified as open space development.

Cultivated crops and pasture/hay cover classes

Per the NLCD general definition, cultivated crops are primarily annual bean and vegetable crops, nurseries, orchards, vineyards, and all actively tilled lands. In contrast, the pasture/hay classification comprises grasses and legumes planted for livestock, typically untilled and on a perennial cycle. [Note: pasture/hay also captures areas of lawn on a number of park and residential properties]

 Grassland/herbaceous, scrub/shrub deciduous forest, coniferous forest, and mixed forest cover classes

Upland vegetative cover types with more natural compositions are the grassland/herbaceous category, which includes meadows, fields, and naturally vegetated undeveloped lands, covering at least 80 percent of the area. Grassland/herbaceous land can be grazed, but is generally not intensively managed.

The scrub/shrub cover category is typically at least 20 percent shrub canopy cover and includes both shrub species and early seral stage tree species, provided the area is dominated by vegetation less than 5 meters tall. Early seral stands are made up of shade-intolerant species such as western larch, western white pine, ponderosa pine, and Douglas-fir, as well as dense shrubs, grasses, and forbs. Johnson and O'Neil (2001) categorize eastern Washington scrub/shrub as "Eastside canyon shrublands," which are most commonly dominated by mallowleaf ninebark, bitter cherry, choke cherry, oceanspray, or Rocky Mountain maple. Species compositions vary with location and may include snowberry, rabbitbrush, smooth sumac, currants, Nootka rose, black hawthorn, and various grasses.

Deciduous, evergreen, and mixed forest cover types are dominated by trees greater than 5 meters in height, again in quantities amounting to at least 20 percent of canopy cover. At least 75 percent of trees species in evergreen forest maintain leaves year-round, the same percentage lose leaves in deciduous forest, and neither evergreen nor deciduous trees make up more than 75 percent of the cover in mixed forest. Montane conifer and mixed forest in Chelan County is usually dominated by Pacific silver fir, mountain hemlock, subalpine fir, Shasta red fir, Engelmann spruce, noble fir, or Alaska yellow-cedar. Possible co-

dominants are Douglas-fir, lodgepole pine, western hemlock, western red cedar, ponderosa pine, or white fir.

Forest cover types generated by NLCD data can be more finely described for Chelan County shorelines using sources specific to the Northwest. Eastern Washington interior forest is typically dominated by mixed coniferous forest and includes Douglas-fir and other dominant or co-dominant species, the composition of which often depends on elevation and moisture regime and may include western red cedar, western hemlock, ponderosa pine, or grand fir. Deciduous forests include quaking aspen and Garry oak as dominants, although Oregon white oak can be found in areas (Johnson and O'Neil 2001; Franklin and Dyrness 1988). Understories support numerous and diverse shrub and herbaceous species. These also tend to vary with elevation and moisture. Common species are vine maple, serviceberry, oceanspray, ninebark, fool's huckleberry, low huckleberry, snowberry, baldhip rose, Oregon grape, vanilla leaf, wild ginger, false Solomon seal, lupines, plantains, and many others.

Numerous wetlands are associated with Chelan County shorelines. In accordance with the NLCD system, wetlands are classified according to vegetative cover. Palustrine emergent wetlands include those dominated by persistent emergent vascular plants, mosses, and lichens. In the study area, emergent wetlands are most likely to be sedge meadows and montane meadows, although numerous variations of this cover type occur throughout Chelan County. Some representative dominant groups are the bulrushes, sedges, slough sedges, rushes, and spike rushes. The forbs species arrowleaf groundsel and lady fern occasionally dominate in montane meadow wetlands (Johnson and O'Neil 2001). Total vegetative cover must exceed 80 percent for inclusion in this category.

Palustrine forested wetland is also documented in Chelan County shoreline jurisdiction. This category includes wetlands dominated by woody vegetation at least 5 meters in height and forming at least 20 percent cover. The most common type of woody wetland in the study area is mountain coniferous wetland, which most often occurs along watercourses. Indicator tree species of this type of forested wetland are Engelmann spruce, subalpine fir, western hemlock, and western red cedar. Douglas-fir, grand fir, quaking aspen, and black cottonwood can co-dominate. Common in the understory are devil's club, stink currant, swamp gooseberry, red-osier dogwood, Douglas spiraea, Sitka alder, sedges, spike rushes, and many other woody and herbaceous species (Johnson and O'Neil 2001).

Documented non-vegetated areas in shorelines are open water, barren land, and perennial ice/snow. The open water classification is assigned to areas with less than 25 percent cover by vegetation and soil and includes lakes, ponds, streams, rivers, and reservoirs. Barren land comprises talus, bedrock, sand dunes, glacial debris, gravel pit, dry riverbeds, and exposed rock, and generally has less than 10

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percent vegetative cover. Ice and snow must make up more than 25 percent cover for an area to be classified as perennial ice/snow.

The U.S. Forest Service also mapped old-growth corridors as part of its Northwest Forest Plan. Although this data set is old, the information is shown on the vegetation maps. Additional USFS land management allocations and vegetation management designations (e.g., late successional reserves, congressionally designated wilderness, MATRIX, etc.) will be considered in the analysis phase of this Shoreline Master Program update project.

Information about the dominant vegetation communities in specific shorelines of the County (by WRIA) and in the Cities with their UGAs is provided in Chapter 4

3.6 Shoreline Modifications

Shoreline modifications are human-caused alterations to the natural water's edge and nearshore environments, and include a variety of armoring types to protect bridge footings, roads, and upland structures on private property. City mapping of shoreline armoring is not available, but is expected to be most common at Confluence State Park, Walla Walla Park and Riverside Park at the public boat launches and public swimming area (Walla Walla). Armoring can also be found along roads or other transportation corridors that parallel shorelines or state routes that cross the Columbia River and Wenatchee River. Some armoring measures may have fish habitat benefits (such as log cribbing and jams, cabled logs), while others provide no direct habitat benefits (such as rip-rap or concrete bags) (Riedel 2008). These sorts of modifications alter the function of stream edges, change erosion and sediment movement patterns, block channel migration, affect the distribution of aquatic vegetation, and are often accompanied by upland/riparian vegetation loss.

City and County data is available for over-water structures, another common type of shoreline modification. The Washington Department of Natural Resources has digitized piers and other in-water structures such as boatlifts, boathouses, and moorage covers. The Columbia River is crossed by a number of bridges, mainly in the Wenatchee area, as well as Rock Island Dam, Rocky Reach Dam, and Wells Dam.

In the City of Wenatchee and Wenatchee UGA there is overwater cover on the Columbia River. This is attributed to the presence of piers and docks associated with boat launches and public access.

Table 7 below provides more detail on the extent of overwater structures in Chelan County shorelines as mapped by Washington Department of Natural Resources using aerial photographs from 2002 to 2006.

Table 7. Overwater Cover by Waterbody in Shoreline Jurisdiction

Area	Residential Docks Large Commercial or Public Facilities (incl. bridges) Area (ft²) Area (ft²)		Total Cover (ft ²)		
City of Wenatchee a	nd UGA				
Columbia River	3,558	17,690	21,248		
Wenatchee River		51,076	51,076		
WRIA 40a/b	WRIA 40a/b				
Columbia River	191,790	12,777	204,568		
WRIA 45					
Columbia River	261,145	89,658	350,803		
Wenatchee River	40,554	205,437	245,990		

Overwater cover calculations include piers and docks, but also include areas of covered moorage and boathouses.

Both measures, total overwater cover and number of structures, are relevant to ecological function assessment. Total overwater cover is an indication of the amount of water surface that may be shaded, which can impact growth of aquatic vegetation and subsequently the food chain as a whole. Overwater cover is also implicated in exacerbating the predator-prey relationship between native fish and non-native fish. The number of structures is relevant as it indicates the number of impedances to juvenile salmon migration along the shoreline.

3.7 Existing and Potential Public Access

Information about public access sites in the City was drawn from City GIS data, adopted parks and recreation plans, watershed plans, and other sources. Parks and public access categories include:

- Public or protected lands government owned, land trust, or similar properties
- View corridors identified by the City
- Public trails; campgrounds; picnic areas; fishing easements; and boat launches

The City contains extensive public or protected lands owned by the government, such as State Parks, County lands, and Chelan County PUD. The City contains trails, campgrounds, picnic areas, and boat launches. The PUD provides more formal parks, recreation, and open space opportunities.

The City of Wenatchee completed a public access plan as part the Shoreline Master Plan update. The City's 2012-2018 Parks, Recreation and Open Space Comprehensive Plan includes a level of service standard for different facilities community wide. These standards were considered in the development of

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specific parks and recreation improvements for the current and future City of Wenatchee population. (Table 8).

Table 8. Parks and Recreation Resources

CLASSIFICATION TYPE	ACRES (A)	STANDARD (D)
Park System Standard	325.31	10 acres/1,000 people
Neighborhood Park	25.35	2 acres/1,000 people
Community Park	93.40	7 acres/1,000 people
Regional Park	206.56	8 acres/1,000 people
Natural Open Space	566.04	20 acres/1,000 people
Special Use Areas	213.38	5 acres/1,000 people
SPECIALIZED FACILTY TYPE	EXISTING FACILITIES	RECOMMENDED STANDARD
Trails	4.7	0.5 miles/1,000 people
Pathways	3.6	0.25 miles/1,000 people
Bikeways	3.6	0.25 miles/1,000 people
Baseball Field	3	1 field/8,500 people
Youth Baseball Field	7	1 field/2,500/ people
Basketball Hoops	49	1 hoop/1,000 people
BMX Area	0	1 area/30,000 people
Dog Off Leash Area	0	1 area/30,000 people
Football Field	4	1 field /8,000 people
Disc Golf Course	1	1 course/35,000 people
Gymnasium	12	1 gym/2,500 people

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Horseshoe Pitch	5	1 pitch/10,000 people
Picnic Area	15	1 area/2,000 people
Play Area	13	1 area/2,000 people
Indoor Pool	1	1 pool/30,000 people
Outdoor Pool	1	1 pool/30,000 people
Recreation Center	0	1 center/30,000 people
Golf Courses	0	1 course/50,000 people
Rock Climbing Wall	0	1 wall/35,000 people
Sand Volleyball Court	3	1 court/10,000 people
Skate Spot, Dot, Area	1	1 area/2,000 people
Soccer Field	9	1 field/2,500 people
Softball Field	10	1 field/2,500 people
Tennis Court	19	1 court/2,000 people
Indoor Tennis Court	0	1 court/30,000 people
Indoor Soccer Field	0	1 field/30,000 people
Water Play Area	4	1 area/5,000 people

Due to extensive government and public ownership throughout the City, current park and public access opportunities are exceedingly abundant.

The City will implement the Shoreline Master Plan public access plan through implementation of its Wenatchee Urban Area Comprehensive Plan, 2012-2018 Parks, Recreation and Open Space Comprehensive Plan, and the Wenatchee Waterfront Sub-area Plan.

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3.8 Critical Areas

The inventory of critical areas was based on a wide range of information sources. A complete listing of citations used to compile information on critical areas is included in Section 5.0 at the end of this study. Shorelands mapped as one or more of the following critical area types are suitable only for certain uses and developments, which factor into future environment designations, along with existing development and ecological functions.

The Chelan County Multi-Jurisdiction Natural Hazard Mitigation Plan identifies Chelan County's natural hazard areas and provides strategic methods in mitigating for a number of natural hazards that County residents are subject to, including flooding, earthquakes, severe storms, volcanoes, landslides, drought, wildfires, and avalanches. The Plan's "Mitigation Strategy" provides a number of implementation measures that could mitigate the effects of these natural disasters and reduce the risk of damage to structures, property, and loss of life.

As identified in the Plan, the mission statement is:

"To promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property and the environment from natural hazards by increasing public awareness, documenting the resources for risk reduction and loss-prevention, and identifying activities to guide Chelan County towards building a safer, more sustainable community."

3.8.1 Geologically Hazardous Areas

Maps of geologically hazardous areas were developed using WDNR data. Presumably, WDNR based those designations on topographic information and soil types as cataloged by the Natural Resources Conservation Service (NRCS). The presence of geologically hazardous areas in shorelines can be a factor in determining suitability of the area for certain activities, including restoration and development. Human safety is an important concern for development in geologically hazardous areas. In addition, geologically hazardous areas can be important sources of large woody debris and sediment to the aquatic system, the latter to the benefit or detriment of aquatic life. This WDNR data provided coverage for areas outside of the Cities and their UGAs, except for 31 acres in the City of Chelan and its UGA. Mapped geohazards are also located just outside of Entiat and its UGA.

The Cities of Chelan and Wenatchee also contributed geologically hazardous areas mapping.

3.8.2 Frequently Flooded Areas

For all practical purposes, "frequently flooded areas" are those areas within the 100-year floodplain. Maps were developed using FEMA's floodplain data, as well as floodways where available.

Recent information prepared by the University of Washington Climate Impacts Group indicates that spring flooding may decrease in drainage basins that currently have high amounts of snow accumulation and where the biggest floods come from rain-on-snow events. Climate change is expected to raise the snow level, thus reducing the amount of snow stored in the basin. The rain event may be higher volume than in recent years, but the amount of snow available to be melted will be even less. The models for the zone between the west and east side of the Cascades predict less spring snow melt. However, less spring snow melt will not necessarily lead to lower peak flows on an annual basis. As the area experiencing rain-on-snow events is expected to increase, flooding during fall and winter is also expected to increase. Since the rain-on snow events will reduce the overall snowpack remaining, reduced peak flows are expected during the spring runoff. These models contain a high level of uncertainty, and future changes in flooding due to climate change cannot yet be reliably predicted.

3.8.3 Wetlands

Wetland mapping was assembled from the National Wetlands Inventory, and supplemented with hydric soils information contained in the Natural Resources Conservation Service's Soil Survey Geographic (SSURGO) Database. Soil types classified as "hydric" are often indicative of wetland soils. Wetlands provide a number of hydrologic functions, including water storage, groundwater recharge, and maintenance of stream base flows; water quality improvement functions; and fish and wildlife habitat functions. Shoreline wetlands should be targeted for protection and restoration. To establish the potential wetland area in shoreline jurisdiction by waterbody as presented in Chapter 4 below, the NWI and hydric soils layers were combined to determine net potential wetland area. In some instances, the reported percentages are elevated when the NWI polygon incorporates some open water, on Lake Chelan or the Columbia River for example.

Many wetlands are not identified by NWI or hydric soils, and some NWI wetlands may not meet wetland criteria. Whether or not they are captured by this mapping effort, actual wetland conditions that may or may not be found on a site determine shoreline jurisdiction on a site-specific basis.

3.8.4 Fish and Wildlife Habitat Conservation Areas

Streams and lakes are one type of fish and wildlife habitat conservation area (FWHCA). Stream data was gathered from WDFW, WDNR, and Pacific States Marine Fisheries Commission. Many shoreline and non-shoreline streams and lakes contain State or federally listed fish species, as well as other WDFW-designated "priority"⁴ fish species. Priority fish species include:

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⁴ Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance. Priority species include State

- Pacific lamprey (federal Species of Concern)
- White sturgeon
- Leopard dace (State Candidate)
- Umatilla dace (State Candidate)
- Mountain sucker (State Candidate)
- Bull trout (federal Threatened, State Candidate)
- Chinook salmon (federal Endangered, State Candidate)
- Coho salmon (State Candidate)
- Kokanee salmon
- Pygmy whitefish (federal Species of Concern, State Sensitive)
- Rainbow trout
- Steelhead trout (federal Threatened, State Candidate)
- Sockeye salmon (State Candidate)
- Westslope cutthroat trout (federal Candidate)

In addition to streams, lakes and priority fish, fish and wildlife habitat conservation areas include other priority habitats, habitat features and wildlife. WDFW Priority Habitats and Species map data are of two general types: habitat/feature polygons, either general features or specific habitats associated with a particular species, and Natural Heritage points. A number of habitats, features and species⁵ are found in Chelan County's shoreline areas. Many of the priority species rely on shoreline waterbodies or riparian areas to meet certain life cycle requirements. Table 9 highlights some of the major habitat components that are found in shoreline areas and utilized by priority wildlife species, and Table 10 identifies the federally listed species and their WRIA or City location.

Table 9. Priority species use of shorelines in Chelan County.

Species	Shoreline Habitat Components	
Birds		
Bald eagle	Fish-bearing waters (lakes, streams, rivers) for foraging Tall trees for nesting and perching	
Golden eagle	Rocky cliffs for nesting	
Osprey	Fish-bearing waters (lakes, streams, rivers) for foraging Tall trees for nesting and perching	

Endangered, Threatened, Sensitive, and Candidate species; animal aggregations (e.g., heron colonies, bat colonies) considered vulnerable; and species of recreational, commercial, or tribal importance that are vulnerable.

⁵ Although northern spotted owl habitat may be mapped by WDFW or other agencies in shoreline jurisdiction, these areas are not shown on the inventory maps because of the sensitivity of the information.

Species	Shoreline Habitat Components
Wood duck	Open water
	Forested riversides
	Cavities
Harlequin duck	Fast-moving mountain streams in breeding season
·	Gravel bars and in-stream rocks for roosting
	Rocky coastlines in winter
Common loon	Forested mountain lakes in breeding season
Trumpeter swan	Open water for foraging
Sandhill crane	Wet meadows
	River valleys
Great blue heron	Lakes and lakeshores
	Show-moving streams
	Wetlands
	Wet meadows
Spruce grouse	no specific habitat needs related to shorelines
Waterfowl	Open water
concentration	Meadows
	Wetlands
Mammals	
Marten	Riparian zones for winter foraging
	Lakeshores for winter foraging
Fisher	no specific habitat needs related to shorelines, but commonly
	found in forests interspersed with rivers and lakes
Western gray squirrel	no specific habitat needs related to shorelines
Mule deer	Streams and lakes for year-round water
Mountain goat	no specific habitat needs related to shorelines
Bighorn sheep	no specific habitat needs related to shorelines
Elk	Lakes, rivers, streams and wetlands for year-round water
	Wet meadows in winter
Lynx	no specific habitat needs related to shorelines
Herptiles	
Cascades frog	Streams with pools for breeding
	Ponds, bogs and wetlands with mud substrate for wintering
Tailed frog	Streams needed for all lifecycle stages
Columbia spotted frog	Ponds, lakes, and slow-moving streams year-round
Western toad	Pools, ponds, wetlands and lakes for breeding
	Soft substrate (e.g., wetland soils) for wintering
Racer	no specific habitat needs related to shorelines and in fact
	prefer arid climes, but frogs are common prey item so may
	benefit from the presence of aquatic habitats
Great Columbia spire	Clear, cold streams needed for all lifecycle stages
snail	

Table 10. Federal Endangered Species Act listed fish and wildlife species in shoreline jurisdiction of Chelan County.

Common Name Scientific Name	ESU/DPS ¹	Federal Status ²	Critical Habitat?	WRIAs / City
Bald eagle Haliaeetus leucocephalus	(none)	C, Monitor	No	45, 46, 47, City of Entiat
Bull trout Salvelinus confluentus	USA coterminous,	Т	Yes	40, 45, 46, 47

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	(lower 48 states)			
Canada lynx Lynx canadensis	USA	Т	Yes	45, 46, 47
Chinook salmon, spring run Oncorhynchus tshawytscha	Upper Columbia Basin, Spring Run	E	Yes	40, 45, 46, 47, all Cities
Fisher Martes pennanti	West Coast DPS	С	No	47
Great Columbia spire snail (Columbia pebblesnail) Fluminicola columbiana	(none)	SC	No	45
Northern spotted owl Strix occidentalis caurina	(none)	Т	Yes	Chelan County
Pacific lamprey Entosphenus tridentatus	(none)	SC	No	47, City of Entiat
Pygmy whitefish Prosopium coulteri	(none)	SC	No	47, City of Chelan
Steelhead trout Oncorhynchus mykiss	Upper Columbia River Basin	Т	Yes	40, 45, 46, Cities of Cashmere, Entiat, Leavenworth and Wenatchee
Western gray squirrel Sciurus griseus griseus	(none)	SC	No	47, City of Chelan
Westslope cutthroat trout Oncorhynchus clarki Iewisi	(none)	SC	No	40, 45, 46, 47, all Cities

¹ Status codes: C = Candidate, SC = Species of Concern, T = Threatened, E = Endangered, UR = Under review

Other priority habitats found in County or City shorelines include aspen stands, old-growth/mature forest, riparian zones, and wetlands. Priority habitat features found in County or City shorelines include talus slopes, cliffs, and snag-rich areas.

WDFW maps do not capture every priority species location or habitat in shoreline jurisdiction, particularly those species that use the water for foraging and drinking, but that nest or den farther from the shoreline. Absence of mapping information does not indicate that a particular species does not or could not utilize the shoreline or adjacent lands.

3.8.5 Critical Aquifer Recharge Areas

Specific information about locations of critical aquifer recharge areas could not be located. As noted in the County's 2008 critical areas regulations (Chapter 11.82), "There is insufficient scientific data at this time, to determine with any specificity the location of areas having a critical recharging effect on aquifers used for potable water within the boundary of Chelan County."

3.9 Floodplains and Channel Migration Zones

WAC 173-26-201(3)(c) directs local government to collect the "[g]eneral location of channel migration zones, and flood plains... to the extent such information is relevant and reasonably available. Towards that end, maps have been developed showing the locations of floodplains, floodways, and channel migration zones (CMZ), the definitions of which are provided below:

- Floodplain (SMA): synonymous with 100-year floodplain, land area susceptible to inundation with a one percent chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulation maps or a reasonable method which meets the objective of the SMA.
- Floodway (FEMA): channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height (FEMA definition)
- Floodway (SMA): area, as identified in a Shoreline Master Program, that either:
 - (i) Has been established in federal emergency management agency flood insurance rate maps or floodway maps; or
 - (ii) Areas flooded with reasonable regularity: "those portions of the area of a river valley lying streamward from the outer limits of a watercourse upon which flood waters are carried during periods of flooding that occur with reasonable regularity, although not necessarily annually."
 - (iii) Identified by soil and vegetation: floodway to be "identified, under normal condition, by changes in surface soil conditions or changes in types or quality of vegetative ground cover condition."
 - (iv) Not to include lands protected from floods by legal dikes and levees: "The floodway shall not include those lands that can reasonably be expected to be protected from flood waters by flood control devices maintained by or maintained under license from the federal government, the State, or a political subdivision of the State."
- Channel Migration Zone (SMA): the area along a river within which the channel(s) can be reasonably predicted to migrate over time as a result of

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natural and normally occurring hydrological and related processes when considered with the characteristics of the river and its surroundings.⁶

Floodplain boundaries have been determined for the majority of large rivers and creeks in Chelan County through FEMA mapping.

The FEMA mapping corresponds to the 100-year flood event and is typically limited to the lower reaches. FEMA-mapped floodplains are completed for portions of the following waterbodies: Wenatchee River, Entiat River, Stehekin River, Chelan River, Nason Creek, White River, Little Wenatchee River, Icicle Creek, Chumstick Creek, Peshastin Creek, and Mission Creek.

Chelan County's original Flood Insurance Study was prepared by CH2M-Hill for FEMA; it started in 1976 and became effective on February 4, 1981. Detailed studies were performed for portions of the Wenatchee, Chiwawa, Entiat, Mad and Stehekin Rivers, and Mission, Peshastin, Icicle, Chumstick and Squilchuck Creeks. A revision to the original study was also performed by CH2M-Hill for FEMA; this revision added detailed study for Nason Creek and portions of the Wenatchee River.

Available CMZ mapping from a Chelan County-commissioned study of the Wenatchee River and the lower portions of a few key tributaries, and from the National Park Service's assessment of the Stehekin River are provided on maps included in this report, and described below. A January 2009 study of the Entiat River is described below as well. Development of additional CMZ mapping was undertaken in conjunction with the development of this report for segments of the Wenatchee, White, and Entiat Rivers and Icicle, Nason, and Chumstick Creeks (See Map Folio). CMZ area was estimated using LiDAR, geologic and

When defining CMZ boundaries, the typical method is to define human-made hard points that will be maintained with some certainty as a CMZ boundary. This includes public roads, railroads, and levees that have a governmental agency or diking district overseeing maintenance. Erosion may occur to these locations of the CMZ boundary, but it is fairly certain that the responsible maintaining agency will repair the erosion. On the other hand, human-made hard points on private property, like private driveways and farm fields protected by riprap, are an area requiring judgment by the authors of the CMZ study as it is unknown if the landowner will maintain/restore the hard point or if damage occurs. Often these privately owned human-made hard points are not considered a CMZ boundary.

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⁶ As relayed by Martin Fisher, P.E., ICF Jones & Stokes, defining the CMZ also considers the influence of certain human-made structures. Many human-made structures like roads do not meet the current standard of being able to withstand the 100-year flood. Most of them were built 50 or more years ago and the science of fluvial geomorphology and river engineering have advanced significantly since then based on observations of performance of human made structures in the river environment. These structures, even if not up to current standards, represent a boundary for the CMZ. If damaged from erosion, as occurred on U.S. 97 in January 2009, the boundary would be restored by emergency maintenance. When maintenance activities occur, they are ideally implemented using modern methodologies and standards which lead to a more stable CMZ boundary.

soil mapping, current aerial photographs, and County-wide road and railroad data. LiDAR data was corrected for ground returns, then mapped by both percent slope and by a technique we referred to as "differential elevation." The differential elevation mapping was developed by digitizing the water surface on the LiDAR ground returns, then comparing the water surface elevation to the elevation of the land adjacent to the water on a line perpendicular to the channel. The resulting data were grouped and colored based on the height above the water surface. The groupings varied somewhat from stream to stream. For example, the smaller streams may have shown 1' elevation difference bands, while larger streams might have shown 2' or 3' elevation difference bands, depending on the overall elevation differential in the data. Also, as the elevation increased above the water surface, the band increment often increased, to 5' or 10' category ranges, again depending on the total relief of the data. The combination of slope data and differential elevation provided good insight on the topographic characteristics of the valley bottoms, emphasizing old channel scars and highlighting terrace scarps and valley walls. Assumptions were checked using geologic and soil mapping, and aerial photography.

From WAC 173-26-221(3) and following guidance from Ecology (Patricia Olson, pers comm., 3/3/2010; Peter Skowlund, pers comm., 4/5/2010) roads were considered to be a limit to future channel migration if they were County- or State- maintained. In cases where road ownership and/or responsibility could not be readily determined, it was generally assumed that paved roads (as determined from aerial photography) would be a barrier to future channel migration, but that unpaved roads would not.

This methodology is likely to provide a liberal assessment of the actual CMZ, in that it assumes that channel migration is occurring on the identified reaches, and that the entire geologic floodplain is potentially within the CMZ, unless separated from the channel by a CMZ-limiting structure.

It should be noted that some areas outside of the estimated CMZ may, in fact, be subject to future channel migration. For instance, terraces were assumed to be outside the CMZ, but in some instances, channel migration can occur on terraces, especially in disturbed basins. However, such migration is difficult to predict and does not typically meet the standard definition of CMZ as provided in the WAC, since terraces generally reflect channel activity much older than 100 years.

3.9.1 Wenatchee River and Tributaries

After major flooding on the Wenatchee River in November 1995 that exceeded 100-year discharges and, in some areas, 500-year discharges, FEMA contracted with the Corps of Engineers to revise the Wenatchee River floodplain maps in the vicinity of the City of Leavenworth, from the confluence with Chumstick Creek to the confluence with Icicle Creek. That study became effective on July 2, 2002. Subsequently, FEMA contracted with the Corps again to study the

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Wenatchee River from Leavenworth through Cashmere and down to Wenatchee. That study became effective on September 30, 2004.

As many of the rivers and creeks within Chelan County are confined due to geologic and human influences, the FEMA floodplains and CMZs are generally limited to natural areas directly adjacent to the waterbodies and not within dense human development, with some exceptions. Floodplain areas on the Wenatchee River near the City of Leavenworth at the Icicle Creek confluence do extend to include residential areas; however, most of the FEMA floodplain is composed of naturally vegetated islands and City Parks. On the lower Wenatchee River, the FEMA floodplain extends at the Mission Creek confluence to within residential areas in the City of Cashmere. The lower reaches of the Stehekin River also have mapped FEMA floodplains within residential areas.

The NHC study developed channel migration zone boundaries for the Wenatchee River, from above Leavenworth to the confluence with the Columbia River and the lower reaches of tributaries including the mouths of Icicle, Peshastin, and Mission Creeks, and the lower four miles of Nason Creek (2003). The CMZs were determined through interpretation of current and historic channel and floodplain features identified in aerial photographs and compiled within a GIS database. The CMZ determinations identified in the 2003 study were integrated into and updated in the most recent CMZ mapping (See Map Folio).

The CMZ analysis showed that the Wenatchee River is partly incised or entrenched with a narrow floodplain and has maintained the same general alignment for at least 100 years. Its banks are mostly stable due to both geologic and human constraints. Human development on the lower Wenatchee River has reduced the total floodplain area to 60 percent of the pre-development area. The loss of floodplain to development over time is due to construction of the railway, major roads, and levees, all of which are assumed to be barriers to flooding by the Wenatchee River. The Peshastin Creek floodplain has been reduced to 71 percent of the pre-development area primarily due to the construction of U.S. 97. Icicle Creek's floodplain has been reduced to 89 percent of the pre-development area (NHC 2003). The loss of floodplain area was not calculated for Nason Creek (NHC 2003).

The CMZ maps show erosion hazard zones based on the potential for channel migration. Erosion or migration potential on the Wenatchee River is generally limited to localized bank erosion on outer channel bends. Large channel avulsion or migration is typically not a threat due to both geologic and human confinement. However, bank stability (and curtailment of channel migration) is not an indicator that the area upland of those geologic and human conditions is protected from flooding, nor are any human alterations completely invulnerable to failure. Potential areas of channel migration include the confluence of the Icicle Creek and Wenatchee River, the area below South Dryden along Stines Hill

Road, and the Sleepy Hollow area on the Lower Wenatchee River. While these areas do have the potential for channel migration due to the lack of geologic or human confinement, the river banks are typically hardened in places with riprap which has greatly reduced the risk of migration. Human features, such as bridges, roads, and the railroad, that prevent channel migration are typically found downstream of the Peshastin River confluence. Bridges at Sleepy Hollow Road, Main Street in Monitor, and Cottage Avenue and Aplets Way in Cashmere limit the migration potential of the river. The construction of SR 2 downstream of Monitor also prevents the migration of the river and use of its historic floodplain. Upstream of the Peshastin River confluence, the river is more

3.10 Historical or Archaeological Sites

Throughout the City of Wenatchee there are known and unknown historical/cultural resource sites that occur within the shorelines. The existing City of Wenatchee Shoreline Master Program (1975) provides general goals and policies to protect and restore historical and cultural areas having significant historic, cultural, educational, or scientific value that are located within the shoreline jurisdiction.

According to the National Register of Historic Places and the Washington Heritage Register (list dated January 23, 2008) that are maintained by the Washington State Department of Archaeology and Historic Preservation (DAHP), there are known sites listed with the City of Wenatchee and Wenatchee UGA. The listed historical sites include the following:

- Wenatchee; Columbia and Okanogan Steamship Company Boat Yard; On Columbia River at Foot of Fifth Street
- Wenatchee; Columbia River Bridge; Spans Columbia River Between Wenatchee and East Wenatchee
- Wenatchee; Horan, Michael, House; 2 Horan Road
- Wenatchee vicinity; Columbia River Bridge at Wenatchee; U.S. Route 2 and Wenatchee, Spanning the Columbia River
- Wenatchee vicinity; Lincoln Rock; Directly Above Hwy 97, Between Wenatchee and Entiat, Near Rocky Reach Dam
- Wenatchee vicinity; Rock Island Dam; Spanning the Columbia River 8 Miles SE of Wenatchee
- Wenatchee vicinity; Wenatchee Avenue Southbound Bridge; State Route 285 at Wenatchee River
- Wenatchee vicinity; Wenatchee Flat Site; Address Restricted (8/14/1973)

In addition to these known historic sites and structures, the City of Wenatchee and Wenatchee UGA was once home to Native American tribes, many of which had permanent winter settlements along shoreline streams, rivers and lakes. The

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Wenatchi, Yakama, and Chelan tribes were three of the most prominent. In 1855, the Wenatchee chief and 13 other tribal leaders signed the Yakama Treaty, which ceded 10.8 million acres of land in exchange for reservation lands and other benefits. The Wenatchi, Chelan, and Yakama Tribes were now part of the "Confederated Tribes and Bands of the Yakama Nation". In 1902 and 1903, the Wenatchi, Chelan, Entiat and a few other tribes of the original Confederated Tribes and Bands of the Yakama Nation that had not moved to the Yakama Reservation were moved to the Colville Indian Reservation. These tribes and others became the Confederated Tribes of the Colville Reservation.

Many of these tribes were highly nomadic prior to establishment at the reservations, particularly between spring and fall. As a result, artifacts and campsites may be scattered along many of Chelan County's shorelines and other streams and lakes. Many of the County's shorelines are or have been of significance to the tribes, as indicated by many of the waterbody names. The tribes are actively involved with fish recovery and shoreline management in general. The tribes continue to exercise their traditional treaty rights in these areas. For example, as noted on the USFWS website for the Leavenworth National Fish Hatchery, "Adult salmon returning to the Hatchery are an important component of tribal fisheries activities. The focus of the fishery is the large pool located below the Leavenworth NFH spillway. The character of the river here provides access to construct scaffolds and fishing platforms. The fishery is important to tribal members as one of the few remaining places in Washington State that offers a productive fishing opportunity utilizing traditional methods."

3.11 Water Quality

As a requirement of Section 303(d) of the federal Clean Water Act that all waterbodies be "fishable and swimmable," Ecology classifies waterbodies into five categories:

- Category 1: Meets tested standards,
- Category 2: Waters of concern,
- Category 3: No data,
- Category 4: polluted waters that do not require a TMDL, and
- Category 5: polluted waters requiring a TMDL.

Individual waterbodies are assigned to particular "beneficial uses" (public water supply; protection for fish, shellfish, and wildlife; recreational, agricultural, industrial, navigational, and aesthetic purposes). Waterbodies must meet certain numeric and narrative water quality criteria established to protect each of those established beneficial uses. Waterbodies may provide more than one beneficial

use, and may have different levels of compliance with different criteria for those beneficial uses in different segments of the stream or lake. As a result, many waterbodies may be on the 303(d) list for more than one parameter in multiple locations. The following tables (Tables 11a-11c) outline the different parameters for which each shoreline waterbody is designated as Category 2, 4 or 5 polluted waters.

Table 11a. Category 2 - Waters of Concern.

Waterbody	Total Frequency	Ammonia-N	Chlorpyrifos	Dieldrin	Dissolved Oxygen	Fecal Coliform	Guthion (azinphos- methyl)	Нф	Temperature	Total Polychlorinated Biphenyls (PCBs)	Total Phosphorus	Water Column Bioassay
Columbia River	7								6			1
Wenatchee River	108	14			12	33		32	17		,	
TOTAL	115	14	0	0	12	33	0	32	23	0	0	1

Table 11b.Category 4 – Polluted Waters That Do Not Require a TMDL.

Waterbody	Total Of Frequency	Instream Flow	Invasive Exotic Species	Temperature	Total Dissolved Gas	Total Phosphorus
Columbia River	20				20	
Wenatchee River	5	5				
TOTAL	25	5	0	0	20	0

Table 11c. Category 5 – Polluted Waters Requiring a TMDL.

Waterbody	Total Frequency	Ammonia-N	Chlorpyrifos	Dieldrin	Dissolved Oxygen	Fecal Coliform	Guthion (azinphos-methyl)	На	Temperature	Total PCBs	Total Phosphorus	Water Column Bioassay
Columbia River	12										12	
Wenatchee River	290	33	33	33	33		8			38	79	33
TOTAL	302	33	33	33	33	0	8	0	0	38	91	33

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Water Quality Improvement Projects or Total Maximum Daily Loads (TMDLs) have been established or are under development for segments of the Wenatchee River Basin as outlined in Table 12. Local governments and the local community that will be impacted by implementation of a cleanup plan develop the TMDL, with agency support. TMDLs include a description of the type, amount and sources of water pollution and analysis of the necessary pollutant reduction needed to meet water quality standards. The final result is a strategy for controlling the targeted pollutant.

Table 12. Total Maximum Daily Load (TMDL) projects in Chelan County, Including Non-Shoreline Waterbodies.

Waterbody Name	Pollutant	Status (Approved by EPA, Under Development or Implementation)
Wenatchee River Basin	DDT Dissolved Oxygen pH ⁷	Approved, Completed in August 2009
Wenatchee River Basin	Fecal Coliform	Approved
Wenatchee River Basin Wenatchee River	Temperature	Approved

Source: http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html

The Washington State Department of Health has issued a statewide fish consumption for mercury that applies to all fresh waters and suggests that certain groups (e.g., pregnant women, children) should not eat more than two large- or smallmouth bass per month. Only two waterbody specific consumption advisories have been issued in Chelan County with one specific to this inventory - mountain whitefish in the Wenatchee River downstream of Leavenworth. In the Wenatchee River, PCBs are a concern in mountain whitefish, with a recommendation to consume none of that species.

3.12 Opportunity Areas

Ecology's *Shoreline Master Program Guidelines* (173-26 WAC) includes the following definition:

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

⁷ The TMDL developed to address dissolved oxygen and pH water quality exceedences targets control of phosphorus loading as the mechanism to restore dissolved oxygen and pH parameters.

Consistent with Ecology's definition, use of the word "restore," or any variations, in this document is not intended to encompass actions that reestablish historic conditions. Instead, it encompasses a suite of strategies that can be approximately delineated into four categories: creation (of a new resource), restoration (of a converted or substantially degraded resource), enhancement (of an existing degraded resource), and protection (of an existing high-quality resource).

There is a critical distinction between restoration and mitigation. Mitigation will require applicants whose shoreline proposals have adverse impacts to complete actions to mitigate those impacts or provide compensation in other ways for losses of ecological function. The City of Wenatchee cannot require applicants to go beyond returning the impacted area (or compensating in other ways for lost functions) to the condition it was in at the time of this inventory or as further detailed at the time of application. However, the County and Cities can encourage applicants to implement restoration actions that will improve ecological functions relative to the applicant's pre-project condition. As stated in WAC 173-26-201(2)(c):

It is intended that local government, through the master program, along with other regulatory and non-regulatory programs, contribute to restoration by planning for and fostering restoration and that such restoration occur through a combination of public and private programs and actions. Local government should identify restoration opportunities through the shoreline inventory process and authorize, coordinate and facilitate appropriate publicly and privately initiated restoration projects within their master programs. The goal of this effort is master programs which include planning elements that, when implemented, serve to improve the overall condition of habitat and resources within the shoreline area of each city and county."

The Opportunity Areas discussions in this section and in Chapter 4 present options for "restoration" that would improve ecological functions. For example, enhancement of riparian vegetation, reductions or modifications to shoreline hardening, minimization of in- and over-water structures, and improvements to fish passage would each increase one or more ecological parameters of the County and Cities' shorelines. These options could be implemented voluntarily by the local governments, non-profit entities, residents or, depending on specific project details, could be required measures to mitigate adverse impacts of new shoreline projects.

The mission statement of the Upper Columbia Salmon Recovery Board (UCSRB), whose planning area includes all of Chelan County except for the Chelan watershed, is:

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To restore viable and sustainable populations of salmon, steelhead, and other at risk species through collaborative, economically sensitive efforts, combined resources, and wise resource management of the Upper Columbia region.

The *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan* (UCSRB 2007) summarizes 12 factors for decline of the covered species:

- Social, Cultural, and Economic Factors
- Public Policy
- Management Actions
- Harvest
- Hatcheries
- Hydropower
- Habitat (includes alteration from land use practices, logging, mining, diversions, and other uses)
- Ecological Factors
- Factors Outside the ESU [Evolutionarily Significant Unit] and DPS [Distinct Population Segment]⁸
- Interaction of Factors
- Current Threats
- Uncertainties

Development and implementation of the updated SMP and its components will primarily influence public policy, management actions, and habitat factors, either directly or indirectly.

Projects included on the Restoration Projects maps in the enclosed DVD originate from data provided by Chelan County Department of Natural Resources and the Cascadia Conservation District.

A Restoration Plan document was prepared beginning in 2010 as a later phase of the Shoreline Master Program update process, consistent with WAC 173-26-201(2)(f). The Restoration Plan will "include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program." The Restoration Plan will mesh the specific potential projects mapped or identified in this report, with regional or County/City-wide efforts and programs of the County or Cities, watershed planning entities, and environmental organizations that contribute or could potentially contribute to improved ecological functions of the shoreline. Prioritization of specific projects

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⁸ ESU and DPS are terms used by National Marine Fisheries Service and U.S. Fish and Wildlife Service, respectively, to identify "distinct populations that are substantially reproductively isolated from other conspecific populations and that represent an important component of the evolutionary legacy of the species."

and project types, implementation strategies, and schedules will be based on information found in watershed or basin plans. The Restoration Plan will be finalized upon adoption of the Shoreline Master Program.

4. SHORELINE-SPECIFIC CONDITIONS

4.1 Stemilt/Squilchuck - Colockum (WRIA 40a/b)

The Stemilt/Squilchuck - Colockum watershed (WRIA 40a/b) is approximately 49,000 acres, and includes two shoreline streams/rivers and five lakes. The area of upland shoreline jurisdiction totals 739 acres along 137,001 linear feet (26 miles) of shoreline. A summary table (Table 13) provides further details on each waterbody's shoreline characteristics.

Table 13. Summary Table of Basic Characteristics of Each Shoreline Waterbody in WRIA 40a/b

Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Major Existing Land Uses ¹	Ownership Profile ²	Vegetation Profile³	Critical Area/Priority Habitat or Species (PHS)⁴ Presence
Streams/River	s				
Colockum Creek	180.48	Single Family Residential	• Private 98% • Public (PUD) 2%	Scrub/shrub 37%; grassland 37%; evergreen forest 9%	 PHS elk PHS mule deer PHS riparian zone PHS cliffs/bluff PHS fish 13% wetland 1.4% geohazard
Columbia River	413.66	Government/ Utility	 Private 64% Public (Federal, County, PUD) 36% 	Scrub/shrub 55%; evergreen forest 11%; deciduous forest 7%	 PHS mule deer PHS elk PHS riparian zone PHS cliffs/bluffs PHS fish FEMA floodplain 21% wetland 8.5% geohazard
Lakes				•	
Spring Hill Reservoir (aka Black Lake or Wheeler Hill Reservoir)	30.20	Government/ Utility	Private 56%Public (State) 44%	Scrub/shrub 38%; emergent wetland 24%; evergreen forest 21	PHS elk 6% wetland 100% geohazard

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FINAL City of Wenatchee Shoreline Inventory and Analysis

Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Area of Upland Shoreline Jurisdiction (acres) Major Existing Land Uses¹		Vegetation Profile ³	Critical Area/Priority Habitat or Species (PHS) ⁴ Presence
Cortez Lake	33.24	Single Family and Other Residential	• Private 100%	Low intensity development 28%; evergreen forest 25%; developed open space 21%	PHS wood duck21% wetland19.6% geohazard
Meadow Lake	30.88	Undeveloped	• Private 100%	Pasture/hay 59%; evergreen forest 30%; developed open space 9%	PHS wood duckPHS wetland14% wetland18.1% geohazard
Stemilt Project Reservoir	21.24	Government/ Utility	• Private 100% ⁵	Scrub/shrub 81%; evergreen forest 6%; emergent wetland 5%	2% wetland 100% geohazard
Upper Wheeler Reservoir	29.33	Forestry	Private 96%Public (State) 4%	Evergreen forest 62%; scrub/shrub 22%; high- intensity development 12%	PHS elk7% wetland82.3% geohazard

¹ Major existing land use is reported by acres located in the shoreline jurisdiction rather than full parcels. "Government/Utility" includes governmental services, utilities, and other transportation and communication

4.1.1 Land Use Patterns

Existing and Planned Uses

WRIA 40a/b is dominated by resource lands, including commercial agriculture and commercial forestry. Residential and industrial uses tend to congregate closer to the Columbia River and other waterbodies in the eastern portion of the WRIA (RH2 Engineering, Inc. 2007). The shorelands within WRIA 40a/b exhibit the following existing land uses:

utilities. ² Acres of shoreline owned by public or private entities. Public includes municipal, County, PUD, state, and federal lands.

Three dominant types listed. Consult maps for distribution and other types.
 PHS = Priority Habitat or Species as identified by WDFW
 Owned by the Stemilt Project irrigation purveyor.

- Agriculture 10%
- Cultural/Recreation/Assembly <1%
- Forestry 6%
- Government/Utility 22%
- Manufacturing/Industrial –3%
- Natural Resources 7%
- No Category <1%
- Other Residential 3%
- Single Family Residential 20%
- Transportation 1%
- Undeveloped 27%

The existing land uses vary by individual waterbody, with some shorelines dominated by governmental/utility uses (Stemilt Project Reservoir, Spring Hill Reservoir, Columbia River), resource uses (Upper Wheeler Reservoir), and rural residential (Cortez Lake, Colockum Creek), and undeveloped lands (Meadow Lake). While "governmental/utilities" represents the largest current use category on the Columbia River, its shoreline is characterized by the widest variety of existing uses, including single-family, agriculture, other natural resource, transportation, and manufacturing. The Columbia River is the only shoreline in WRIA 40a/b with transportation and manufacturing activities.

The County Comprehensive Plan includes a variety of rural and urban land use designations. WRIA 40a/b is predominantly rural in character and planned to continue that way. Much of the area along the Malaga Alcoa Highway in the Malaga community is designated for limited areas of more intensive rural development (LAMIRDs). LAMIRDs are designated in accordance with the Growth Management Act to identify more intense areas of existing development, and to minimize and contain those existing developed areas within the rural lands. LAMIRDs in the County Comprehensive Plan include:

- Rural Waterfront: Provides the opportunity for the development, redevelopment and infill of existing intensely developed shoreline areas for residential, and water related/water dependent recreational and tourist development.
- Rural Recreational/Residential: Provides the opportunity for the development, redevelopment and infill of existing intensely developed rural recreational/residential areas for residential, recreational and tourist development.

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- Rural Village: Recognizes the existence of intensely developed rural residential developments and communities, with densities less than 2.5 acres per dwelling unit, which typically will not have sewer service.
- Rural Commercial: Provide for a range of commercial uses to meet the
 needs of local residents, and small scale tourist or recreational uses
 including commercial facilities to serve those recreational or tourist uses
 within the rural areas to meet the needs of local residents and visitors.
- Rural Industrial: Recognize the need for rural industrial and resource based industrial activities within the rural areas.

Except for Rural Waterfront, all of the LAMIRD designations are present in WRIA 40a/b. In the shoreline jurisdiction, the predominant LAMIRD is Rural Industrial, which is designated along the Columbia River. Rural Recreational and Residential is designated surrounding Cortez Lake and applies to the golf course and homes.

Chelan County has planned the following uses for all the shorelines as a whole:

- Commercial Agriculture 4%
- Commercial Forest 8%
- Rural Industrial 22%
- Rural Recreation and Resource 5%
- Rural Residential 60%
- UGA < 1%9

Based on Chelan County's Comprehensive Plan, future land uses vary by waterbody as shown in Table 13. Rural Residential categories are designated along Colockum Creek, Cortez Lake, and Stemilt Project Reservoir. Resource lands categories predominate on the Spring Hill Reservoir, Meadow Lake, and Upper Wheeler Reservoir shorelines. Various categories of Rural Residential and Rural Industrial are planned on the Columbia River.

Current environment designations include Rural and Conservancy for shorelines currently in jurisdiction (see Table 14). Except along the Columbia River which shows both designations, only single designations are applied along smaller waterbodies, either Rural or Conservancy.

⁹ The UGA area is 0.30 acres. The WRIA 40a/b analysis is intended to focus on non-City and non-UGA lands. However, the data that the County and the individual cities maintain is not always 100% edge-matched. The small UGA figures are likely the result of slight discrepancies in boundary digitization.

Table 14. WRIA 40a/b Shorelines Land Use, Comprehensive Plan Designation, and Shoreline Environment Designation

Jurisdictional				
Streams/ Lakes (Existing/ Future Acres)	Existing Land Use	Comprehensive Plan Designation (Chelan County)		Current Shoreline Environment Designation (Chelan County)
Streams/Rivers				
Colockum Creek (167.66/ 180.48)	Single Family 48%, Undeveloped 39%, Agriculture 12%, Natural Resources <1%	• Rural Residential (5, 10, 20)	• 180.48 acres/100%	
Columbia River (341.39/ 381.01)	Government/Utility 32%, Undeveloped 24%, Natural Resources 14%, Single Family Residential 11%, Agriculture 11%, Manufacturing/ Industrial 6%, Transportation 2%, No Category <1%	Rural Residential (2.5, 5, 20) Rural Industrial Urban Growth Area	• 222.37 acres/58% • 158.64 acres/42% • 0.3/<1%	Conservancy Rural
Lakes			1	
Spring Hill Reservoir (aka Black Lake or Wheeler Hill Reservoir) (30.20/ 30.20)	Government/Utility 44%, Forestry 30%, Undeveloped 26%	Commercial Forest Lands	• 30.20 acres/ 100%	Conservancy
Cortez Lake (31.22/ 33.24)	Other Residential 69%, Single Family Residential 26%, Cultural/Recreation/ Assembly 4%	Rural Recreation & Resource	• 33.24 acres/ 100%	Rural
Meadow Lake (27.74/ 30.88)	Undeveloped 52%, Agriculture 30%, Single Family Residential 18%	Commercial Agricultural Lands Rural Residential (5)	• 28.53 acres/ 92% • 2.35 acres/ 8%	Rural
Stemilt Project Reservoir (21.24/ 21.24)	Government/Utility 90%, Undeveloped 9%, Single- Family Residential 1%	Residential Rural (10, 20)	• 21.24 acres/ 100%	
Upper Wheeler Reservoir (29.33/ 29.33)	Forestry 95%, Government/Utility 5%	Commercial Forest Lands Rural Residential (20)	• 28.52 acres/ 97% • 0.81 acres/ 3%	Conservancy

Subarea Plans

There are two planning efforts sponsored by Chelan County in conjunction with local citizens and stakeholders that have influenced plans or activities in WRIA 40a. The *Malaga Community Vision Subarea Plan* focuses on the community of Malaga and the future vision and land use. The *Stemilt-Squilchuck Community*

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Vision addresses the basin-level conservation and development of the Stemilt-Squilchuck basin area in WRIA 40a. Each plan is described below.

Malaga Community Vision Subarea Plan

In 2005 and 2006, the Malaga Area Vision plan was developed to identify the vision and potential land use designations that implement the vision for the Malaga community. The BOCC adopted the recommendations in 2006.

The vision, originally adopted in the year 2000 into the County Comprehensive Plan, states:

The citizens of the Malaga-Stemilt-Squilchuck Study Area believe that their greatest asset is the rural character of the community. Rural character may be defined as that mixture of open space, housing, and agricultural land uses which are believed to express and preserve the quality of life desired by the residents.

The citizens of the Malaga-Stemilt-Squilchuck Study Area envision future development that will complement and enhance, and not unreasonably impact, our rural character, our strong agricultural economy, and natural resource based industries.

We foresee maintaining the area's high quality of life while sustaining growth that can be served with the necessary public services and, facilities. Open spaces, wildlife conservation, and recreational opportunities will be encouraged.

We foresee expansion of transportation systems to allow efficient movement of goods, services and people within the planning area and connecting with the rest of Chelan County.

We foresee the establishment of quality educational facilities to meet the needs of community growth.

We foresee varied levels of development with suitable mitigation between different land uses. We envision that the expansion of our existing residential, commercial and industrial land uses will take place in those areas already characterized by that type of use.

We foresee the requirement to support sustainable hydroelectric power generation to maintain and meet our community growth.

In recognition of the importance of preservation of existing water rights and future need for water for our community and its agricultural base; we foresee the continued support, development and expansion, and maintenance of water supplies and their associated sources.

In conclusion we envision growth that will maintain the continuity of our rural character and quality of life while protecting the private property rights of the citizens of this area.

In the Malaga area, the future land use designations along the Columbia River, and Meadow Lake were largely left intact, but the designations outside of the shoreline jurisdiction and south of the Malaga Alcoa Highway and north of Malaga/Saturday Road were modified to add greater areas of Rural Residential Recreation, Rural Village, Rural Commercial, and Rural Residential 2.5. A small area changed to Rural Residential Recreation around Cortez Lake. All of these changes recognize the Malaga area as a LAMIRD consistent with the Growth Management Act.

Stemilt-Squilchuck Community Vision

The Washington State Department of Natural Resources (WDNR) proposed to privatize 2,500 acres of public land in the Stemilt basin. Chelan County formed The Stemilt Partnership including agriculture, wildlife, recreation, development, and conservation representatives. The plan describes a landscape-based vision and strategies for the overall Stemilt-Squilchuck basin that form a portion of WRIA 40a and places the importance of the exchange parcels in the context of the basin. The vision includes the following:

- Water resources are protected, ensuring adequate water supply for irrigation and domestic purposes
- Wildlife resources are conserved, maintaining critical habitat and corridors
- Recreational access to hunting grounds, trails, fishing reservoirs, and other recreational lands is maintained and enhanced where appropriate, and
- New development is low impact and well-planned, considers multiple
 uses where appropriate, and meets the requirements of the community's
 shared goals.

A conceptual plan identifies areas in use for agricultural activities as well as areas that are suitable or should be managed as snow retention areas, primary wildlife and habitat areas, secondary wildlife and habitat areas, recreational resources, and water storage priority. In terms of the shoreline jurisdiction waterbodies, the plan identifies the following:

- Columbia River: the land along the river is shown for low, moderate, and high development intensity, recreational resources, as well as agriculture
- Cortez Lake: lakeside property is shown for high development intensity
- Meadow Lake: lakeside property is shown for agriculture and low and moderate development intensity

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- Upper Wheeler Reservoir: land surrounding the reservoir is shown as low development intensity, primary wildlife and habitat area, snow retention area, water storage priority area and recreational resource
- Spring Hill Reservoir (aka Black Lake): shown as primary wildlife and habitat area, water storage priority area, and recreational resource
- Stemilt Project Reservoir: shown with low development intensity, primary wildlife and habitat areas, and water storage priority area

Colockum Creek is not included in the boundaries of the vision plan.

A land exchange between WDNR and Western Pacific Timber, LLC occurred in February 2008, but did not include the 2,500-acre Stemilt property (The Stemilt Partnership and Trust for Public Land, September 2008).

The vision plan includes strategies to help implement the plan. The plan is a resource for the County, citizens, and stakeholder groups. It has not been adopted by the BOCC as part of the County's Comprehensive Plan (pers. com., Lilith Yanagimachi, November 3, 2008).

Water-Oriented Uses

In WRIA 40a/b, potential water-oriented uses include agriculture at 68 acres, with most of the acreage on the Columbia River, followed by Colockum Creek and Meadow Lake. Also there are 9 acres of open space (noncommercial forest) along Spring Hill Reservoir (aka Black Lake).

Developing or Redeveloping Waterfronts

WRIA 40a/b shorelines tend to have parcels without buildings as follows:10

- Spring Hill Reservoir 4 parcels or 100% of shoreline acres
- Colockum Creek 18 parcels, 54% of shoreline acres
- Columbia River 65 parcels or 60% of shoreline acres
- Cortez Lake 18 parcels or 35% of shoreline acres
- Meadow Lake 5 parcels or 59% of shoreline acres
- Stemilt Project Reservoir 5 parcels or 99% of shoreline acres
- Upper Wheeler Reservoir 2 parcels or 5% of shoreline acres

As undeveloped lands convert to the planned future land uses, the shorelines are likely to see added single-family rural residential dwellings, which make up 23% of current uses, but are planned for 65% of the shorelands. Likewise, manufacturing/industrial uses account for 3% of the existing shoreline uses but are planned for 22% of the shoreline as rural industrial. Lands in

¹⁰ Note: Selected parcels have a BLDGAV of \$0. All parcels with the following Assessor Use Codes have been excluded from this analysis: 'agriculture-not in open space'; 'agric in open space rcw 84.34'; 'desig forest land rcw 84.33'; or 'mining activities'.

government/utility uses may not convert to rural residential or industrial uses since government/utility uses are allowed activities in multiple County land use and zoning districts.

4.1.2 Existing and Potential Public Access

WRIA 40a/b shorelines include properties characterized as open space that are either publicly owned or protected from development. Open space in the shoreline jurisdiction totals about 166 acres. Most of the acreage is on the Columbia River. By waterbody, the acres and the percent of that shoreline in open space are presented below:

- Colockum Creek, over 2 acres, 2% of shoreline jurisdiction
- Columbia River, approximately 162 acres, 47% of shoreline jurisdiction
- Spring Hill Reservoir (aka Black Lake or Wheeler Hill Reservoir), approximately 13 acres, 44% of shoreline jurisdiction
- Upper Wheeler Reservoir, over 1 acre, 4% of shoreline jurisdiction

Though there are areas of open space, no parks or recreation facilities have been inventoried along the two shoreline streams/rivers and five lakes.

Chelan County's Comprehensive Parks and Recreation Plan includes recommendations for subarea parks planning in the Malaga area. It also calls for a County trails plan. Depending on the more detailed parks planning results, additional shoreline public access may be possible. Other Comprehensive Parks and Recreation Plan recommendations address the Stemilt Basin Land Exchange. However, this project would not address public access on shorelines of the State.

4.1.3 Critical Areas

Shorelines in WRIA 40a/b contain a combined total of 569 acres of priority habitats and habitat features, including wetlands, riparian zones, cliffs/bluffs, elk and mule deer habitat, and wood duck breeding areas (see Table 14 above). The river and the stream each contain priority fish species as well. According to the NWI and hydric soils information, as much as 17% of the total shoreline area may be wetlands. Geologically hazardous areas (as mapped by WDNR) are common, particularly around the three reservoirs, which are considered to have 100% geohazard coverage.

4.1.4 Potential Restoration Opportunities

The purpose of the WRIA 40a Watershed Plan (RH2 Engineering Inc. 2007) was to assess water quantity and multi-purpose water storage. Water quality, instream flow, and habitat were not direct components of the WRIA 40a plan. However, as the plan notes:

"...increasing the flow and expanding the timing of water in streams may benefit riparian and wetland habitat conditions. Diverting excess storm

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runoff may reduce flooding risk, preserve instream habitat and mitigate some of the effects of development. Enlarging or creating new reservoirs may create new recreational and/or habitat conditions."

Actions and facilities that increase storage may also "substantially modify the landscape and change hydrologic conditions," potentially to the detriment of instream and riparian habitats.

The WRIA 40a Watershed Plan is the deliverable for Phase 3 of the watershed planning process. Phase 4 (implementation plan) is underway. When specific projects are carried forward for agency permits or grant funding, specific environmental assessments will be conducted that will evaluate the possible benefits and adverse impacts of each water quantity or water storage project. Any adverse impacts would be mitigated consistent with rules and guidelines established by the various reviewing agencies, which may include the U.S. Army Corps of Engineers, Washington Department of Fish and Wildlife, Washington Department of Ecology, National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Natural Resources, tribal governments, local government, and others.

WDFW completed a *Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek* in 2006. In the area of Colockum Creek identified as shoreline jurisdiction, at least five potential barriers to fish passage were identified. These are all recommended for removal or repair, as they block or hinder anadromous salmonids access to suitable habitat upstream. According to WDFW (2006), "Reconnecting fragmented habitat, increasing fish passage and decreasing juvenile mortality by correcting all passage barriers and screening surface water diversions could realistically be attained in the Colockum watershed due to the low quantity of barriers, habitat quality and current fish distribution."

4.2 Wenatchee (WRIA 45)

The Wenatchee watershed (WRIA 45) is approximately 1,370 square miles, and contains 45 shoreline streams/rivers and 29 shoreline lakes. The area of upland shoreline jurisdiction totals 24,652 acres along 2,159,741 linear feet (409 miles) of shoreline. The headwaters of WRIA 45 originate in the Cascade Mountain range as the Little Wenatchee and White Rivers. These rivers flow into Lake Wenatchee, the source of the Wenatchee River. Various tributaries to the Wenatchee River add significant volume to the river (WRIA 45 Planning Unit 2006). A summary table (Table 15) provides further details on each waterbody's shoreline characteristics.

Table 15. Summary Table of Basic Characteristics of Each Shoreline Waterbody in WRIA 45, Outside of Cities and their Urban Growth Areas.

	1	1	1	1	
Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Major Existing Land Uses ¹	Ownership Profile ²	Vegetation Profile ³	Critical Area/Priority Habitat or Species (PHS) ⁴ Presence
Streams/Rivers	l.	l.	I.	<u>I</u>	
Columbia River	112.87	Not applicable ⁴	 Private 57% Public (PUD) 43% 	Low-intensity development 29%; scrub/shrub 17%; high- intensity development 15%	 PHS bald eagle/bald eagle/bald eagle/nest PHS bighorn sheep PHS mule deer PHS riparian zone PHS fish 43% wetland FEMA floodplain 1.2% geohazard
Wenatchee River	4,070.47	Government/ Utility	 Private 64% Public (Federal, State, County) 36% 	Evergreen forest 28%; scrub/shrub and low- intensity development 12% each	Heritage Point bald eagle (4) Heritage Point great blue heron (2) Heritage Point great Columbia spire snail (3) Heritage Point mountain sucker (1) Heritage Point wosprey (16) Heritage Point Umatilla dace (2) PHS mule deer PHS aspen stand PHS riparian zone PHS cliffs/bluffs PHS fish 49% wetland FEMA floodplain Floodway Channel migration zone Flood zone 0.2% geohazard

Major existing land use is reported by acres located in the shoreline jurisdiction rather than full parcels. "Government/Utility" includes governmental services, utilities, and other transportation and communication utilities.

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4.2.1 Land Use Patterns

Existing and Planned Land Uses

The combined WRIA 45 shorelines exhibit the following existing land uses:

- Agriculture 3%
- Commercial 1%
- Cultural/Recreation/Assembly 1%
- Forestry 11%
- Government/Utility 58%
- Manufacturing/Industrial <1%
- Natural Resources 1%
- No Category 1%
- Open Space 3%
- Other Residential 11%
- Single Family Residential 6%
- Transportation <1%
- Undeveloped Land 3%

Government/utility uses and resource lands (forestry, agriculture, other natural resources) dominate along a majority of the 75 shorelines under review. Shorelines exhibiting a wider mix of uses, such as residential, commercial, industrial, recreation, or other uses, include:

- Chiwaukum Creek
- Chiwawa River
- Chumstick Creek
- Colchuck Lake
- · Columbia River
- Fish Lake
- Icicle Creek
- Lake Wenatchee
- Mission Creek

² Acres of shoreline owned by public or private entities. Public includes municipal, County, PUD, state, and federal lands.

³ Three dominant types listed. Consult maps for distribution and other types.

⁴ PHS = Priority habitats and species as identified by WDFW

- Nason Creek
- · Peshastin Creek
- Wenatchee River
- White River

WRIA 45 contains unincorporated and incorporated lands. Unincorporated lands are under the jurisdiction of Chelan County. The County has planned the following uses for its shorelines as a whole:

- Commercial Agricultural Lands 1%
- Commercial Forest Lands 65%
- Industrial <1%
- Commercial Mineral <1%
- Public Lands and Facilities 1%
- Rural Commercial <1%
- Rural Industrial <1%
- Rural Residential 24%
- Rural Recreational and Resource <1%
- Rural Village -< 1%
- Rural Waterfront 2%
- Urban Growth Area -<1%11
- Water 5%

Based on Chelan County's Comprehensive Plan, future land uses vary by waterbody as shown in Table 16. Shorelines that are dominated by government/utility uses or forestry uses tend to be designated as Commercial Forest Lands. Shorelines planned for a wider variety of uses including residential, commercial, industrial, recreation, or other uses tend to be those that currently exhibit a variety of uses.

Current shoreline use environment designations vary by waterbody, but typically include Rural and Conservancy through most of the unincorporated areas, though there are several areas identified as Natural, and more limited areas as Urban. Numerous shorelines are not currently in the SMP jurisdiction,

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¹¹ The UGA area is 64.71 acres – a fraction of the total shoreline acres of 24,652. The WRIA 45 analysis is intended to focus on non-City and non-UGA lands. However, the data that the County and the individual cities maintain is not always 100% edge-matched. The small UGA figures are likely the result of slight discrepancies in boundary digitization.

but appear to meet thresholds for jurisdiction in the proposed SMP based on currently available information.

Table 16. WRIA 45 Land Use, Comprehensive Plan Designation, and Shoreline Environment Designation

Jurisdictional Streams/Lakes (Existing/ Future Acres)	Existing Land Use	Comprehensive (Chelan	Current Shoreline Environment Designation (Chelan County)	
Streams/Rivers Columbia River (55.63/ 79.42)	Government/Utility (59%), Open Space (30%), Other Residential (11%),	Rural Residential (5, 20) Public Lands and Facilities Urban Growth Area Water Industrial	• 25.71 acres/32% • 20.96 acres/ 26% • 16.03 acres/ 20% • 15.54 acres/ 20% • 1.19 acres/ 1%	Conservancy Rural Urban
Wenatchee River (2,388.22/ 3,955.95)	Government/ Utility (30%), Other Residential (24%), Single Family Residential (12%), Forestry (11%), Agriculture (8%), Undeveloped (6%), Commercial (3%), No Category (2%), Open Space (1%), Cultural/Recreation/ Assembly (1%)	Rural Residential (2.5, 5, 10, 20) Water Commercial Forest Land Commercial Agricultural Land Rural Waterfront Public Lands and Facilities Rural Village Urban Growth Area Rural Industrial Rural Commercial Rural Recreational and Resource No Category	• 1,487.84 acres / 38% • 991.52 acres/ 25% • 769.99 acres/ 19% • 276.82acres/ 7% • 199.91 acres/ 5% • 67.48 acres/ 2% • 47.24 acres/ 1% • 17.49 acres/ <1% • 1.84 acres/ <1% • 0.07 acres/ <1%	Conservancy Natural Rural Urban

¹ There is no parcel-based current land use data for numerous waterbodies that are 100% in Federal ownership.

Water-Oriented Uses

Water-oriented uses along shorelines in WRIA 45 include agriculture, parks/recreation/recreational activities, resorts and group camps, hotel/motel,

eating and drinking places, and others. The following shorelines may contain water-oriented uses:

 Wenatchee River – approximately 210 acres in open space (noncommercial forest), 200 acres in agriculture, 27 acres in parks and open space, 16 acres in recreational activities, and less than 1 acre in eating/drinking

Developing or Redeveloping Waterfronts

WRIA 45 shorelines tend to have parcels without buildings largely due to the commercial forest lands in the watershed (Table 17).

Table 17. WRIA 45 Shorelines and Parcels without Buildings.

Waterbody	Total Parcels	Total Acres	Parcels Without Buildings	Parcels without Buildings - Acres	% Without Buildings
Columbia River	41	56	36	56	100%
Wenatchee River	1,453	2,400	598	1,467	61%
TOTAL	1,494	2,456	634	1,523	62%

Note: Selected parcels have a BLDGAV of \$0. All parcels with the following Assessor Use Codes have been excluded from this analysis: 'agriculture-not in open space'; 'agric in open space RCW 84.34'; 'desig. forest land RCW 84.33'; or 'mining activities'.

Most of the shoreline land is under government/utility use, and is expected to remain in that pattern even where there are vacant parcels. Where undeveloped lands convert to the planned future land uses, the shorelines are likely to see added rural residential which makes up 17% of current uses but is planned over 24% of the shoreline lands.

Lake Wenatchee and the Wenatchee River were the locations of numerous County shoreline permits between 2000 and 2007.

4.2.2 Existing and Potential Public Access

Parks and open space are found along numerous shorelines in WRIA 45. Open space is estimated at approximately 24,699 acres (Table 18). Park acres total about 17 acres and are found along the Columbia and Wenatchee Rivers.

Table 18. Open Space along Shorelines in WRIA 45.

Waterbody	Total Acres	Open Space Acres	% Open Space
Columbia River	114	33	29%
Wenatchee River	4,095	1,553	38%
TOTAL	4,209	1,586	37%

In addition, formal developed public access points include: trails, campgrounds, picnic areas, fishing easements, and boat launches. The trails are extensive,

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linking various waterbodies as well as running alongside waterbodies. The fishing easements and boat launches are located along the Wenatchee River.

There are 2 shoreline rivers in the proposed shoreline jurisdiction and both have formal recreation facilities per Table 19, predominantly consisting of campgrounds. Both have shoreline have trails per Table 20.

Table 19. WRIA 45 Public Access Facilities

Waterbody	Total Facilities	Campground	Horse Camp	Picnic Area	Trailhead
Wenatchee River	3	2		1	
Columbia River	1	1		1	

Table 20. WRIA 45 Trails

Waterbody	Trail Length – Linear Feet
Wenatchee River	21,561 [*]
Columbia River	26,400

*Includes areas outside City of Wenatchee Jurisdiction.

The County Comprehensive Parks and Recreation Plan identifies several parks and recreation projects in the Wenatchee watershed along the shoreline jurisdiction. The Comprehensive Parks and Recreation Plan recommends the preparation of a comprehensive trails plan and suggests that the plan address, among other items:

- Leavenworth-Wenatchee Valley Non-motorized Trail
- Wenatchee River Water Trail
- Monitor Connector Trail

Another relevant project includes the Wenatchee Row and Paddle Boating Facility Upgrade. Subarea planning for the Monitor and Sunnyslope areas may provide for additional parks and recreation facilities.

4.2.3 Critical Areas

Shorelines in WRIA 45 contain a combined total of 19,433 acres of priority habitats and habitat features. The most common habitats, in order of frequency of occurrence, are those for elk calving, migration, concentrations, or foraging and mountain goat breeding or concentrations. Twenty-seven separate osprey nest sites are mapped in shoreline jurisdiction, distributed on five waterbodies. Twenty-five additional point locations of 12 other species are also found in WRIA 45 shoreline jurisdiction. Many of the rivers, streams and lakes also contain priority fish species. According to the NWI and hydric soils information, as much as 39% of the total shoreline area may be wetlands. Floodplains and a few geohazard areas are also documented in the WRIA.

4.2.4 Peshastin Urban Growth Area

The Peshastin community was established in the 1890s along the Northern Pacific Railroad, and a depot was erected. Peshastin is a small town in unincorporated Chelan County, and is village-like in character surrounded by orchards. The Peshastin UGA contains 610 acres, with about 93 acres lying in the shoreline jurisdiction along the Wenatchee River. About 3 acres of shoreline jurisdiction lies along Peshastin Creek, though the waterbody immediately abuts the UGA and does not lie within the UGA.

4.2.5 Potential Restoration Opportunities

The Wenatchee River system provides important habitat for many life stages of spring and summer Chinook, steelhead, bull trout and other culturally important species, and needs to be protected, enhanced, and restored. The *Salmon*, *Steelhead*, and *Bull Trout Habitat Limiting Factors for the Wenatchee Subbasin (WRIA 45) and Portions of WRIA 40¹² within Chelan County (Squilchuck, Stemilt and Colockum Drainages). Final Report (Andonaegui 2001) identifies some broad habitat limiting factors for salmon.*

- Road and railroad construction and placement;
- Conversion of riparian habitat to agriculture and residential development;
- Reduced large woody debris (LWD) recruitment;
- Flood control efforts that include LWD removal, berm construction, and stream channelization;

These activities have generally been responsible for decreasing habitat complexity, function, and abundance and are primarily found in lower gradient, lower reaches of all Chelan County watersheds, not just WRIAs 40a and 45.

The WRIA 45 Planning Unit identified 25 opportunities for habitat actions in the Wenatchee watershed, including six short-term actions and four hatchery-oriented actions. Opportunities exist to increase habitat and/or restore complexity and riparian function to benefit ESA-listed endangered and threatened salmonid species throughout the Wenatchee watershed. The following opportunities for watershed-wide habitat actions are summarized from those in the *Wenatchee Watershed Management Plan*, as well as from the WDFW Habitat Work Schedule for Chelan County (http://hws.ekosystem.us/SiteView.aspx?sid=290#).

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¹² WRIA 40 (Alkali-Squilchuck) extends south outside of Chelan County. Discussions in this report are for the area known as 40a (Stemilt-Squilchuck) and the Chelan County-portion of WRIA 40b (the Colockum Creek basin).

- Restore floodplain function, particularly on the Wenatchee River from the Mission Creek confluence downstream to the Columbia River confluence and in the Nason Creek watershed
- Improve access to spawning habitat and migration corridors in the Chumstick Creek, Lower Wenatchee River, and Mission Creek watersheds by eliminating barriers for anadromous salmonids.
- Noxious weeds threaten aquatic and terrestrial ecosystems throughout the Wenatchee Watershed. Opportunities exist for control and eradication and should be supported.
- Improve channel structure and complexity on the lower Wenatchee River and in Nason Creek.
- Take efforts to reduce excessive sediment in the Lower Wenatchee River and improve overall water quality.
- Improve riparian areas and increase the amount of large woody debris in the Nason Creek watershed.
- Identify the presence of habitat limiting factors in Peshastin Creek drainage.

The Wenatchee Watershed Management Plan classifies the 12 sub-watersheds into three categories based on existing function, fragmentation, and salmonid habitat quality. Category 1 sub-watersheds are prioritized for protection because they "most closely resemble natural, fully functional aquatic ecosystems." Six sub-watersheds are ranked Category 1: White, Little Wenatchee, Chiwawa, Lake Wenatchee, Chiwaukum, and Upper Wenatchee. Category 2 sub-watersheds "are strongholds for one or more listed species," but "have a higher level of fragmentation." Four sub-watersheds are ranked Category 2: Nason, Icicle, Peshastin, and Lower Wenatchee. Finally, Category 3 sub-watersheds "support salmonids, but they have experienced substantial degradation..." Two sub-watersheds are ranked Category 3: Chumstick and Mission.

The U.S. Bureau of Reclamation prepared an assessment of processes and habitat for three reaches in a 10-mile-long stretch of Nason Creek, a tributary of the Wenatchee River. The purpose of the assessment was to "develop a restoration and protection strategy based on a sound scientific assessment of channel processes." The overall goals of the restoration actions are to:

- · increase the complexity of the main channel,
- increase availability and quality of off-channel areas, and
- increase the amount of accessible floodplain.

The second of the three reaches, corresponding to a rest area, was determined to have low restoration opportunity, so specific actions were not recommended.

Actions for the other two reaches (Table 21) are identical in type, although at the project level the scales and specific habitat element improvement targets are different.

Table 21. Summary of proposed restoration types for each reach of the Nason Creek study area based on findings of geomorphic assessment.

Reach	Riparian Restoration within HCMZ	Riparian Restoration within Floodplain	Side-channel Reconnection	Obstruction Reconnection	Road Maintenance	Floodplain Restoration	LWD Restoration
1 (RM 4.6 – 8.9) Coles Corner to Rest Area	Х	Х	Х	Х	Х	Х	х
3 (RM 9.4 – 14.3) Rest Area to White Pine Railroad Bridge	х	Х	Х	Х	Х	Х	Х

Source: Table excerpted and modified from USBR 2008.

In 2006, Chelan County commissioned a riparian assessment of private and County-owned riparian lands in the Wenatchee subbasin along streams that contained priority fish species and lands that were identified in the Wenatchee Salmon Recovery Implementation Schedule (UCSRB 2005; EcoA.I.M. 2006). After analysis of aerial photos, 588 individual sites were determined to need some level of riparian enhancement, either full revegetation or just addition of conifers. Riparian restoration efforts may be particularly valuable in the channel migration zone, where vegetation serves to both limit excessive bank erosion and supply large woody debris to the river during channel migration occurrences. Because of the significant role of channel migration in habitat forming processes, efforts to restore or maintain channel migration zone processes should also be pursued.

A number of government organizations have or are developing plans to raise salmon and steelhead in the Wenatchee River watershed. While this may enhance salmon recovery efforts, care needs to be taken in implementation of hatchery projects that riparian habitat and water quality are not adversely affected.

4.3 City of Cashmere

Within the City of Cashmere and its UGA are two shoreline waterbodies: Mission Creek and the Wenatchee River. The shoreline acres in the City and UGA equal 238, and the shoreline length equals 12,159 feet. Shoreline vegetation is generally limited to a thin strip of shrubs and trees along the Wenatchee River.

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Scattered trees occur on single-family residential parcels. The City's Riverside Park includes a large mowed lawn and large paved and gravel parking lots, which provide parking and river access for recreational boaters and the general public. In the southeast portion of the City and UGA, orchards, stormwater treatment ponds, the railroad and industrial areas with extensive impervious surfaces are separated from the River by a relatively narrow band of trees. The railroad and commercial areas are situated close to the River in the City's northwestern UGA, and shoreline vegetation is sparse.

Similar to the Wenatchee River shoreline, a narrow riparian corridor exists along Mission Creek. Impervious surface coverage is particularly high in the City's industrial areas, including the area at the mouth of Mission Creek. Roads intersect and run parallel to the Creek, and developed areas ranging from single family houses to public facilities adjoin the Creek's course along most of its length within the City. Due to the Creek's proximity to development, much of the shoreline is armored. The extent of development along the Creek tends to limit the potential for natural channel processes.

4.3.1 Potential Restoration Opportunities

<u>Wenatchee Watershed Management Plan:</u> The Wenatchee Watershed Management Plan includes four specific habitat actions for the Lower Wenatchee Watershed, which includes the City of Cashmere:

- LowWenH-1: Use practical and feasible means to increase stream flows (within the natural hydrologic regime and existing water rights) in the Wenatchee River (UCSRB, 2005).
- LowWenH-2: Reduce water temperatures by restoring riparian vegetation along the river (UCSRB, 2005).
- LowWenH-3: Increase habitat diversity and quantity by restoring riparian
 habitat along the Wenatchee River, reconnecting side channels and the
 floodplain with the river, and increasing large woody debris in the side
 channels (UCSRB, 2005).
- LowWenH-4: Protect existing riparian habitat and channel migration floodplain function (UCRTT, 2002).

Five separate habitat actions, as follows, are included for the Mission subwatershed:

- MissionH-1: Re-establish connectivity throughout the assessment unit by removing, replacing, or fixing artificial barriers (culverts and diversions) (UCSRB, 2005).
- MissionH-2: Use practical and feasible means to increase stream flows (within the natural hydrologic regime and existing water rights) in Mission Creek (UCSRB, 2005).

- MissionH-3: Decrease water temperatures and improve water quality by restoring riparian vegetation along the stream (UCSRB, 2005).
- MissionH-4: Reduce unnatural sediment recruitment to the stream by restoring riparian habitat and improving road maintenance (UCSRB, 2005).
- MissionH-5: Increase habitat diversity and quantity by restoring riparian habitat, reconnecting side channels and the floodplain with the channel, increasing large woody debris within the channel, and by adding instream structures (UCSRB, 2005).

Several of the water-quality actions for the Lower Wenatchee Watershed address inputs of nutrients, particularly phosphorus to the Wenatchee River. Many parks and other intensively maintained lawns or landscape areas are potential sources of nutrient run-off. The Plan specifically mentions a need to reduce phosphorus inputs from wastewater treatment plants, including the City of Cashmere's facility. The Plan also includes 19 water-quality actions in the Lower Wenatchee Watershed and 33 water-quality actions for the Mission subwatershed.

Riverside Park: Wenatchee River spring and fall discharges of 20,000 cfs or greater threaten the existing streamside canopy cover, vegetation and dike stability. Left and right bank reduction of shoreline armoring, addition of LWD, river meandering and revegetation could stabilize the stream bank and create off-channel salmonid spawning and juvenile rearing areas. Nature interpretive signs can be posted to entice the birding and naturalist communities to utilize this park. Special restoration attention to the left bank could decrease noise from U.S. Highway 2, improving the overall park and City aesthetic.

<u>Chelan County Historical Museum and Pioneer Village</u>: Similar Wenatchee River armor reduction, stream bank stabilization and revegetation, as mentioned above, can continue downstream of the Riverside Park to the end of Riverfront Drive (right bank) and the Chelan County Historical Museum and Pioneer Village (left bank). The Chelan County Historical Museum and Pioneer Village has wonderful restoration potential providing opportunities for public involvement and education.

Mission Creek: Seasonal floods cause considerable property damage, bank erosion and sediment loss throughout the creek. Reduce armoring and improve native vegetative cover to add habitat complexity and contribute to large woody debris recruitment. Creation of off-channel areas may minimize flooding and provide salmonid spawning and juvenile rearing areas. A combination of native revegetation and bioengineering techniques could be provided to secure the bank from excessive erosion.

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<u>General</u>: At an October 2008 public meeting, a number of attendees commented that several sections of the Wenatchee River and Mission Creek contain debris (old tractors, large metal pieces, household appliances etc...) that could be removed to improve stream and fish habitat, and City aesthetics.

4.4 City of Leavenworth

Within the City of Leavenworth and its UGA are two shoreline waterbodies: Chumstick Creek and the Wenatchee River. In the City and its UGA, total shoreland area is approximately 148 acres and runs 5,071 linear feet.

Shoreline characteristics vary within the City, and functions are generally related to shoreline use. Shoreline vegetation along the golf course on the western side of the City is characterized by mown grass with scattered trees along the water's edge. In contrast, the City's parks offer significant forested areas along the river with low intensity public access. Among areas of residential development, shoreline vegetation varies, but is generally less dense, with fewer trees compared to the City parks. The mouth of Chumstick Creek is well vegetated with trees and shrubs, but the vegetated buffer decreases just upstream of the mouth, where it runs adjacent to the Chelan County Public Works Facility.

4.4.1 Potential Restoration Opportunities

The City of Leavenworth is already engaged in a number of cooperative restoration efforts with Trout Unlimited and U.S. Fish and Wildlife Service. The City is working with Trout Unlimited to enhance ponds in public recreation areas, including Enchantment Park and Blackbird Island. The north channel of the Wenatchee River around Blackbird Island is the subject of a study by USFWS for inclusion of large woody debris to provide habitat and control bank erosion.

<u>Wenatchee Watershed Management Plan</u>: The same four habitat projects listed above in Section 4.5.4 for the City of Cashmere are relevant to City of Leavenworth's Wenatchee River and Chumstick Creek shorelines. Five separate habitat actions, as follows, are included for the Chumstick sub-watershed, which is located for a small area at its downstream end in the City of Leavenworth:

- ChumH-1: Re-establish connectivity throughout the assessment unit by removing, replacing, or fixing artificial barriers (culverts and diversions) (UCSRB, 2005).
- ChumH-2: Use practical and feasible means to increase stream flows (within the natural hydrologic regime and existing water rights) in Chumstick Creek (UCSRB, 2005).
- ChumH-3: Decrease water temperatures and improve water quality by restoring riparian vegetation along the stream (UCSRB, 2005).
- ChumH-4: Increase habitat diversity and quantity by restoring riparian habitat, reconnecting side channels and the floodplain with the channel,

increasing large woody debris within the channel, and by adding instream structures (UCSRB, 2005).

 ChumH-5: Protect remaining floodplain and riparian habitat (UCRTT, 2002).

Several of the water-quality actions for the Lower Wenatchee Watershed address inputs of nutrients, particularly phosphorus to the Wenatchee River. The Plan specifically mentions a need to reduce phosphorus inputs from wastewater treatment plants, including the City of Leavenworth's plant. To date, the cities and townsites within the Wenatchee Upper Valley area are working to determine all sources of phosphorus contamination, as there appears to be a large amount of "naturally occurring" phosphorus in the area. The Plan also includes 20 water-quality actions in the Chumstick sub-watershed.

Blackbird Island: The City should continue to remain involved stream bank stabilization and native vegetation establishment efforts. According to the City, the southwest tip of Blackbird Island has eroded 40 feet in 10 years. This site may be a good candidate for shoreline stabilization using bioengineering techniques. A combination of native revegetation and bioengineering techniques could be provided to secure the streambank from excessive erosion, such as was caused by the November 2006 high water event. Design of any stabilization would need to consider the high velocities in the mainstem Wenatchee River and safety issues related to high use of this section of river by non-motorized boaters and recreationists. The interpretive signs could also be updated to provide relevant information about the Wenatchee River, its biological value, and its potential.

4.9 City of Wenatchee

Within the City of Wenatchee and its UGA are two shoreline waterbodies: the Columbia River and the Wenatchee River. In the City and its UGA, shoreline jurisdiction contains 282 acres and 51,484 linear feet.

In an effort to document current conditions, the City of Wenatchee photographed the entire Columbia River Shoreline. These photos contain GPS locations along with date stamp. This information is attached to this document as Appendix A.

In the Wenatchee UGA north of the City, the Columbia River is closely bordered by industrial development, Highway 97, and railroads. Vegetation in this area is patchy, generally consisting of a narrow strip of shrubs. Shoreline vegetation becomes more consistent south of Highway 2, where it is composed of a mix of shrubs and deciduous trees. West of the confluence, the Wenatchee River is closely bordered by the railroad on the south side of the river, which limits vegetated area and channel processes.

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Shoreline vegetation and habitat functions are variable among the many shoreline parks. Wetlands at Confluence State Park provide some of the best shoreline habitat in the City for birds, amphibians and small mammals. These shoreline habitats are also significant for fish as they occur at an ecologically significant position at the confluence of two major rivers. South of the confluence, along the Columbia River, Walla Walla Point Park has the potential to provide off-channel habitat for small fish during high river flows; however, the lack of vegetative complexity in the off-channel area minimizes the likely value of such functions. Other parks, such as Riverfront Park include moderately well vegetated shoreline areas. South In commercial and industrial areas toward the southern end of the City development, roads, and the railroad are located adjacent to the River, and shoreline vegetation is sparse.

Table 22 summarizes the characteristics of each shoreline waterbody within the City and its UGA.

Table 22. Summary Table of Basic Characteristics of Each Shoreline Waterbody in the City of Wenatchee and its Urban Growth Area.

Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Area of Upland Shoreline Jurisdiction (acres) Major Existing Land Uses ¹		Vegetation Profile³	Critical Area/Priority Habitat or Species (PHS) ⁴ Presence
Columbia River	177.78	Open Space	Private 60% Public (PUD, Municipal) 40%	Low-intensity development 28%; medium- intensity development 16%; evergreen forest 14%	PHS bald eagle PHS bighorn sheep PHS mule deer PHS riparian zone FEMA floodplain 19% wetland
Wenatchee River	104.27	Open Space	Private 69% Public (PUD) 31%	Woody wetlands 30%; developed open space 27%; medium- intensity development 12%	Heritage Point osprey PHS mule deer PHS riparian zone FEMA floodplain CMZ 70% wetland

¹ Major existing land use is reported by acres located in the shoreline jurisdiction rather than full parcels. "Government/Utility" includes governmental services, utilities, and other transportation and communication utilities.

4.9.1 Land Use Patterns

Existing and Planned Land Uses

The City of Wenatchee and its UGA are located along the banks of the Columbia River at the confluence of the Wenatchee River. Wenatchee is the largest city in Chelan County and is the primary center for jobs. Table 23 presents information about existing and planned use by waterbody. Along the two shorelines in the Wenatchee community – the Columbia and Wenatchee Rivers – the current land uses are dominated by Government/Utility and open space, as follows:

- Agriculture 4%
- Commercial 6%
- Government/Utility 24%
- Manufacturing/Industrial 6%
- Other Residential 3%
- Open Space 37%
- Single Family Residential 4%
- Transportation 4%
- Undeveloped Land 4%
- No Category 7%

Table 23. City of Wenatchee Shorelines: Land Use, Comprehensive Plan Designation, and Shoreline Environment Designation

Jurisdictional Streams/Lakes (Existing/ Future Acres)	Existing Land Use	Comprehensive Plan Designation		Current Shoreline Environment Designation
Columbia River (149.67/ 187.95)	Open Space (30%), Government/Utility (26%), Manufacturing/ Industrial (9%), No Category (9%), Commercial (8%), Transportation (5%), Single Family Residential (4%), Other Residential (4%), Agriculture (4%), Undeveloped Land (1%)	Industrial Waterfront Mixed Use Residential High	• 110.35 acres/59% • 63.82 acres/ 34% • 13.78 acres/ 7%	Urban Natural Rural
Wenatchee River (36.58/ 99.20)	Open Space (59%), Government/Utility (20%), Undeveloped	Waterfront Mixed UseResidential	• 69.61 acres/ 70% • 16.97 acres/	ConservancyNaturalRural

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² Acres of shoreline owned by public or private entities. Public includes municipal, County, PUD, State, and federal lands.

³ Three dominant types listed. Consult maps for distribution and other types.

⁴ PHS = Priority habitat or species as identified by WDFW

FINAL City of Wenatchee Shoreline Inventory and Analysis

Jurisdictional Streams/Lakes (Existing/ Future Acres)	Existing Land Use	Comprehensive Plan Designation		Current Shoreline Environment Designation
	(14%), Single Family (5%), Agriculture (3%), Commercial (1%), No Category (<1%)	Single Family Industrial Residential Moderate North Wenatchee Business District	17% • 6.79 acres/ 7% • 5.30 acres/ 5% • 0.52 acres/ 1%	

Through its Comprehensive Plan the City envisions that "increased riverfront development and recreation, combined with regional partnerships," will "inspire a unique identity for the City." The City has adopted a Waterfront Subarea Plan for the Columbia River shoreline creating a series of mixed-use activity nodes.

Development along the total of both shorelines would occur consistent with the following categories:

- Industrial 41%
- North Wenatchee Business District -< 1%
- Residential High 5%
- Residential Moderate 2%
- Residential Single Family 6%
- Waterfront Mixed Use 46%

Current SMP shoreline environments include Conservancy, Rural, Urban, and Natural.

Sunnyslope Subarea Plan

Sunnyslope is part of unincorporated Chelan County, within the Urban Growth Boundary for the City of Wenatchee, on the north side of the Wenatchee River and its confluence with the Columbia River.

The area is forecast to have an additional 6,000 new residents by 2025. The Sunnyslope Long Range Plan and Supplemental Environmental Impact Statement (SEIS) includes goals and policies and a proposed land use scenario to guide growth in the Sunnyslope subarea, and was intended to support Chelan County and the City of Wenatchee's comprehensive planning efforts.

The plan includes modification to future land use designations that are designed to achieve:

• Builds on the existing land use mix

- Increase residential density in Central Sunnyslope including creation of a new town center at School Road and Easy Street, introducing a mixed-use commercial/residential concept intended to become the hub of a safe and walkable community.
- · Retain Olds Station as a regional employment center

Planned Land Uses along the waterfront of the Columbia River include Industrial, High Density Residential, and Parks. Planned Land Uses along the Wenatchee River include Single Family Residential, Industrial, and Parks.

Water-Oriented Uses

Water-oriented uses include approximately 80 acres of parks and open space, and 6 acres of agriculture, with 50 combined acres on the Columbia River and 30 combined acres on the Wenatchee River. There are also parks and recreation uses. See Parks and Public Access below.

Developing or Redeveloping Waterfronts

The City has experienced little shoreline permit activity as much of the Columbia River shoreline is owned by the PUD (see Section 2.8). The waterfront is flanked by public properties such as PUD recreation facilities and the railroad. The Sunnyslope area along the Wenatchee and Columbia Rivers is generally developed with homes and industrial uses, and is unlikely to see a significant change in the land use pattern (pers. com, Brian Frampton, City of Wenatchee, April 2008).

Although the Wenatchee area has not seen a high level of permit activity in the recent past, future development could occur on vacant parcels and on parcels subject to the City's *Waterfront Subarea Plan* which promotes redevelopment.

Parcels with No Structures: There are several public and private parcels with no structures on them (these sites may be committed to particular activities such as recreation).¹³ Seventy-seven of 125 parcels on the Columbia River do not have buildings, and represent 66% of the shoreline acres. Twenty of the 31 parcels on the Wenatchee River representing 94% of the shoreline acres do not contain buildings.

Waterfront Subarea Plan: The Columbia River in Wenatchee has had an urban character for some time and historically developed with industrial uses. The City's *Waterfront Subarea Plan* proposes instead a mix of residential, commercial, and recreation uses. The *Waterfront Subarea Plan* intends that the growth be focused in north, central and south nodes as illustrated by the following policy:

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¹³ Selected parcels have a BLDGAV of \$0. All parcels with the following Assessor Use Codes have been excluded from this analysis: 'agriculture-not in open space'; 'agric in open space RCW 84.34'; 'desig. forest land RCW 84.33'; or 'mining activities'.

- Create a series of development nodes or focal points along the waterfront

 each with a different type of setting, different mix of land uses, design
 emphasis, and park improvements. Specifically:
- Encourage a concentration of pedestrian-oriented retail uses near the boat basin.
- Encourage mixed-use development between the pedestrian bridge and Thurston Street.
- Foster the development of a pedestrian-oriented mixed-use focus area in the area between 5th and 9th streets.
- Encourage the development of a permanent Farmers Market facility in the Central Node.
- Encourage the development of private/public recreational uses in the North End, including indoor sports complex, water-park, and/or an aquatic center, that complement existing park uses and add vitality to the waterfront.
- Encourage the development of a variety of housing types in the North End.
- Allow for a variety of uses west of Walla Walla Avenue, including general commercial, recreational, offices, industrial, and residential.
- Promote agri-tourism uses and activities in the North End that build on the area's rich agricultural history.

The most intense development/redevelopment is planned/zoned for the area between Orondo Avenue and Walla Walla Avenue. Most of this activity will take place outside of shoreline jurisdiction as a large percentage of the Columbia River frontage in the *Waterfront Subarea Plan* is already developed with PUD parks and the railroad corridor.

The City of Wenatchee has prepared a Height Analysis to support the above proposed development/redevelopment. This analysis will propose allowing taller heights in limited areas of the City's shorelines consistent with the proposed planning. The Height Analysis is found as Appendix E.

4.9.2 Existing and Potential Public Access

Open space and park acres within the shoreline jurisdiction include about 120 acres total on the Wenatchee and Columbia Rivers. Several park areas offer water access via boat launches, piers, or trails.

Waterfront parks and trails in the City and UGA of Wenatchee include the following (acres below show total property within and outside of the 200-foot shoreline jurisdictional area):

- Washington Confluence State Park at the "confluence" of the Columbia and Wenatchee Rivers: The facility was built and is owned by the Chelan County PUD, but is operated and maintained by Washington State Parks and includes overnight RV and tent campsites, a boat launch, swimming beach, restrooms, showers, picnic shelter, volleyball, tennis courts, playground, pedestrian bridge across the river, 4.5 miles of trail, wildlife habitat, and interpretive graphics.
- **Riverfront Park:** This 31-acre park is effectively owned by the Chelan County PUD through a 99-year lease with the City, and contains restrooms, a boat launch, short-term moorage and boat trailer parking, 1.1 miles of shoreline trail, and a "special event" mini-railroad.
- Walla Walla Point Park: This 70-acre park adjoins the Riverfront Park, and contains restrooms, picnic shelters, ballfields, swimming area, 1.2 miles of trail, tennis and volley ball courts, horseshoe pits, a playground, and fishing pier platform. It also contains a nonmotorized boat launch. At 9th Street is found the Wenatchee Row and Paddle Club.
- Apple Capital Loop Trail: This trail fronts the Columbia River along
 Wenatchee in Chelan County and "loops" through East Wenatchee in
 Douglas County. The portion in Wenatchee is a multi-use trail
 approximately 5 miles long. It was established in 1990. According to the
 Chelan County PUD, "the trail has become a major transportation
 corridor that serves thousands of commuter and recreational trail users
 each year" (http://www.chelanpud.org/apple-capital-loop-trail.html).

Planned parks and recreation improvements through 2012 in or near the shoreline include a waterfront trail upland access and boathouse (City of Wenatchee 2006). Waterfront moorage and parking in Riverfront Park have already been added as a part of the planned parks and recreation improvements.

While the City is well served with shoreline public access, due to historic development patterns (e.g. produce packing, industrial, railroads) in the Sunnyslope area, there is less public access in that location. The County is serving as the lead planning agency in that location.

4.9.3 Critical Areas

Shorelines in the City of Wenatchee and its UGA contain 253 acres of priority habitats, consisting of bald eagle, bighorn sheep, mule deer, and priority riparian zones concentrations (see Table 22 above). All of the City's shorelines contain priority fish species. According to the NWI and hydric soils information, as much as 38% of the total shoreline area may be wetlands. However, this figure is high because of the inclusion of some of the mainstem Columbia River as a wetland.

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4.9.4 Potential Restoration Opportunities

<u>Wenatchee Watershed Management Plan</u>: The same four habitat projects listed above in Section 4.5.4 for the City of Cashmere are relevant to the City of Wenatchee's Wenatchee River shoreline.

<u>Wenatchee Parks (Riverfront and Confluence State Parks)</u>: Reduction of shoreline armoring, removal of non-native vegetation, native re-vegetation, shoreline stabilization, and the addition of interpretive nature and/or historical signs. Enhance and maintain the habitat along the south Confluence State Park wetland area.

<u>General</u>: Reduce shoreline armoring, improve shoreline stabilization, and remove non-native plantings. These projects should take into account ongoing PUD operations and maintenance within the shoreline. A combination of native re-vegetation and bioengineering techniques could be provided to secure the shoreline from excessive erosion.

5. ANALYSIS OF ECOLOGICAL FUNCTIONS AND ECOSYSTEM-WIDE PROCESSES

A simple semi-quantitative method was developed to characterize the relative performance of each relevant watershed ecological process and function by shoreline reach (delineated based on function and land use), as outlined in WAC 173-26-201(3)(d)(i). The developed assessment tool utilizes the available information gathered as part of the Shoreline Inventory and applies a standardized ranking criterion for each independent shoreline reach to provide a consistent methodological treatment among reaches for comparison purposes. These numerical results will ensure consistent and well-documented treatment of all reaches when assigning existing ecological function and hopefully reduce observer bias associated with the arbitrary assignment of ecological value. The numerical results are intended to complement the inventory information in Chapters 3 and 4, the brief narrative discussions were developed using available data and watershed plans, and should not be viewed as a quantitative measure of existing ecological function.

5.1 Assessment Methodology, Rationale and Limitations

5.1.1 Methodology and Rationale

Chelan County and/or its partners have produced a number of watershed and/or sub-basin plans that were used extensively to place the waterbody in its WRIA context, particularly with regards to basic geography, geology, climate, and major land uses (see Section 1.4). Discussion of the land use changes by WRIA focuses on those that have had particularly significant impacts on shoreline

functions/processes, such as dams, transportation corridors, highly developed urban areas, forestry, and agriculture.

The 134 stream, river and lake shorelines contained within the county were broken into appropriate reaches. The first reach breaks isolated the Cities and their UGAs from the rest of the County. Additional breaks were made within the Cities/UGAs as needed to delineate differences in sections of shoreline based on ecological conditions (e.g., vegetation, wetlands, channel migration zones), current/planned land use, and presence in City limits or the UGA. The shorelines in the remainder of the County were broken into reaches using either reach break precedence from previous scientifically based assessments¹⁴ or were located based on major changes in ecological conditions, current land use, and ownership.

Current/planned land use breaks and ownership breaks (except federal vs. non-federal) are secondary to ecological condition. Current land use, in particular, is part of the function assessment method because many land uses may have direct, discrete impacts on ecological function and processes. Planned land use and ownership breaks are intended to facilitate use of this data to assign environment designations. Several environment designations have designation criteria that specifically relate to current and planned land use. Current and planned land uses are particularly significant to consider when developing environment designations within cities and urban growth areas. In these areas, existing and planned development will be weighed heavily, in conjunction with ecological functions, in order to develop appropriate environment designations and allowed uses.

Four major function categories are identified in the Department of Ecology's guidelines: hydrologic, shoreline vegetation, habitat, and hyporheic.¹⁵ The available information gathered County-wide in the Shoreline Inventory was used as a proxy for determining the performance and relative rank score of these functions. Assessment of each function using this categorical assessment ranking tool is based upon quantitative data results derived from the GIS inventory information described in Chapters 3 and 4.

Each of the four major functions were divided into related processes and numerically scored based on the available data for each reach. The mean of each major function was calculated to provide a simple standardized tool useful for inter-reach functional comparison. While the functional score is derived from a standardized numerical process that formalizes and enables a basis for

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¹⁴ While several studies did assess various reaches of a number of waterbodies, the reach breaks were generally not sufficient for purposes of this shoreline assessment. See additional discussion in Section 5.3.

¹⁵ Department of Ecology Hydrogeologist Patricia Olson has confirmed that "hyporheic function" is a non sequitur for lakes, which do not have true hyporheic zones as by definition a hyporheic zone can only be found along flowing waters. The remaining three functions identified for lakes are valid.

comparison of ecological functions among reaches, it is important to emphasize that the initial rankings were often derived from categorical information. ¹⁶ Thus, differences in numerical rankings among reaches should be viewed as a relative scale difference in ecological function and not as a quantified difference among areas. A list detailing each functional breakdown and tables identifying how each data layer contributed to each process score for lakes and rivers/streams can be found in Appendix B. Because the Columbia River in Chelan County is composed of a series of highly regulated reservoirs it is evaluated using the functional characteristics of a reservoir/lake rather than as a river.

Functional categories varied slightly to account for the inherent differences between streams/rivers and reservoir/lake functions. For each of the final selected parameters used in the function assessment, the quantitative data was sorted into four categories, with H being the most desired end of the range and L the least desired (e.g., impervious 0-5% = H, >5-15% = MH, >15-45% = M, and >45% = L). The sorting scheme for each variable used in the assessment tool is described in Appendix B. The exact sorting of quantitative data into categories was based on the actual range of numbers for the parameter for each WRIA and for each City. The Cities are separately categorized as it was expected that their high level of development and alteration compared to the rest of the County would obscure differences in level of function among reaches within each City.

For multi-parameter data, such as vegetation type, the categorization varies depending on the particular function for which that vegetation parameter is being considered. For example, for large woody debris recruitment, the various forested types may be grouped and classified as H or value '4' if percent forested is greater than 75%, MH or '3' if between 50-75%, etc. Any other vegetation type would have no value for LWD recruitment. However, for sediment removal functions, forested types may be classified as an L or '1' and emergent/herbaceous wetland may be the high-rating vegetation type.

Scoring was completed on a scale from 1 to 4, with 1 representing "low" function and 4 representing "high" function. Values were assigned to each function, and then averaged for each of the four major processes. Finally, the process average scores were averaged, so as not to weight one process more than another, to reach a final function score that is identified in Table 23 (equation 1). The scores were mapped into four "buckets" based on the actual spread of the scores in each jurisdiction. Data were roughly divided into quartiles with divisions between "buckets" occurring at natural breaks in the data. Intuitively, the Low (L)-scoring reaches are mapped in green, and the Moderate (M)- and Medium High (MH)-scoring reaches are

¹⁶ The data generated by this ranking tool is used it in its simplest form –categorical – so that it is all comparable. These categorical data do not need to be distributed normally as statistical analyses are not being developed. The results stand alone.

intermediate colors of orange and yellow, respectively. The raw data and scoring scheme are provided in Appendix B.

Equation 1:

Functional score = Mean (mean Hydrologic score, mean Vegetation score, mean Habitat score, mean Hyporheic score)

Each reach has an average score for each of the function/process parameters and can be compared to other reaches within the same waterbody and to reaches in other waterbodies within the same WRIA or City. The scores will not be independently meaningful, but will provide a way to evaluate relative differences between reaches. Separately rating each City and its UGA will help identify relative differences in ecological functions among developed areas. Functional scores may have greater weight in distinguishing between appropriate environment designations in unincorporated areas compared to cities and UGAs, where existing and planned land use will be particularly significant factors influencing environment designations.

5.1.2 Limitations

This simple ranking approach cannot take into account that some areas naturally may function "lower" than others, not because of any anthropogenic alteration or natural disaster, but simply because of the combined effects of a particular locale's geology, aspect, or topography. This ranking approach, for instance, considers forest to be the ideal condition, but some areas are naturally not suited for forest. Many functions operate "better" when there is a floodplain to capture sediments or store water, but there are a number of drainages in steep areas that do not have floodplains. However, when the results for a particular stream are averaged, the general finding matches the intuitive hypothesis that the lower elevation areas which are typically more altered score lower than the higher elevation areas which are typically less altered and often protected through Northwest Forest Plan or Wenatchee National Forest Land and Resource Management Plan land use allocations.

5.2 Ranking Tool Results

5.2.1 Stemilt/Squilchuck - Colockum (WRIA 40a/b)

Results

The Stemilt/Squilchuck – Colockum shoreline was broken into 23 unique segments containing separate characteristics and functions that were used to produce ecological function scores (Table 24). Functional scores within WRIA 40a/b ranged from 1.9 in the Cortez Lake 1 reach to 3.3 in the Columbia River 02 reach. Despite the relatively low score of the Cortez Lake 1 segment compared with the other segments in this WRIA, the ecological function of Cortez Lake 1 is considered at a moderate level. The lower score of Cortez Lake 1 resulted

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primarily from the relatively high amount of impervious surfaces, presence of geologic hazards, and the impaired waterbody status of the lake. Conversely, the Columbia River 02 reach with its high amount of shrub/scrub wildlife habitat, low amount of developed land, and lack of impervious surfaces rated as an area containing relatively high ecological function.

Table 24. Function Scores by Reach in WRIA 40a/b (outside of Cities and their UGAs).

Reach Name	Function Score / Category ²
Columbia River 01	2.8 / MH
Columbia River 02	3.3 / H
Columbia River 03	3.0 / H
Columbia River 04	2.6 / MH
Columbia River 05	2.5 / MH
Columbia River 06	2.6 / MH
Columbia River 07	2.2 / M
Columbia River 08	2.7 / MH
Columbia River 09	2.6 / MH
Columbia River 10	2.0 / M
Columbia River 11	2.2 / M

Average for waterbody weighted by area of segment.

Implications for Protection or Restoration

The assessment results suggest that the ecological function of Cortez Lake would benefit from restoration efforts primarily aimed at improving water quality in the lake. Similarly, the Columbia River reaches contained in WRIA 40 had relatively high levels of ecological function, suggesting these areas would be ideal for protection. Assessment results suggested that Columbia River reaches would benefit most from efforts to protect and restore native vegetation, and from improvements in land use practices that facilitated water infiltration, storage, and filtration.

5.2.2 Wenatchee (WRIA 45)

Results

Because of the large number of segments in this watershed (457) and in order to correspond with the *Wenatchee Watershed Management Plan* sub-watershed analysis, Table 25 is organized by the 12 sub-watersheds rather than by segment. Segment-specific scores can be found in Appendix B. Ecological function scores for WRIA 45 ranged from 1.7 in Peshastin Creek 23 R reach to 3.5 in the White River 07 R reach. The Peshastin Creek sub-watershed reaches consistently scored moderate to below moderate functional marks across all categories of the functional assessment. Conversely, all of the 34 segments on the White River consistently scored high for ecological function with 74 percent of reaches averaging above 3.0. Similarly, reaches located in the broader White sub-

 $^{^2}$ H = High (functional scores >3), MH = Medium High (functional scores 2.5 < x < 3), M = Moderate (functional scores 2 < x < 2.5), L = Low (functional scores < 2)

watershed scored moderately high to high scores across the majority of the functional categories assessed.

Table 25. Function Scores by Waterbody and Sub-Watershed in WRIA 45 (outside of Cities and their UGAs).

Waterbody	Function Score ¹ / Category ²	Sub-Watershed Category ³
Columbia River	2.3 / M	Not included
Wenatchee River (Wenatchee River 1L/1R-19L/19R)	2.5 / MH	Category 2
		Category 3
Wenatchee River (Wenatchee River 20L/20R-21L/23R)	2.7 / MH	Category 5
Icicle Sub-Watershed	2.6 / MH	<u> </u>
Eightmile Creek	2.5 / MH	
French Creek	2.3 / M	
Icicle Creek	2.7 / MH	<u> </u>
Jack Creek	2.4 / M	<u> </u>
Leland Creek	2.6 / MH	
Meadow Creek	2.4 / M	
Mountaineer Creek	2.5 / MH	
Prospect Creek	2.3 / M	
Snowall Creek	2.2 / M	
Trapper Creek	2.8 / MH	
Trout Creek	2.6 / MH	
Colchuck Lake	2.0 / M	Catagonia
Eightmile Lake	2.3 / M	Category 2
Josephine Lake	2.3 / M	7
Klonagua Lakes Lower	2.9 / MH	1
Klonaqua Lakes Upper	2.8 / MH	7
Lake Leland	2.9 / MH	1
Lake Victoria	2.7 / MH	
Nada Lake	2.7 / MH	7
Perfection Lake	2.7 / MH	
Shield Lake	2.9 / MH	1
Snow Lake Lower	2.3 / M	1
Snow Lake Upper	3.0 / H	7
Square Lake	2.7 / MH	1
Stuart Lake	2.4 / M	7
Upper Wenatchee Sub-Watershed	2.7 / MH	
Wenatchee River (Wenatchee River 22L/24R - 37L/40R)	2.7 / MH	Category 1
Lake Augusta	2.4 / M	1
Chiwaukum Sub-Watershed	2.6 / MH	
Chiwaukum Creek	2.5 / MH	1
South Fork Chiwaukum Creek	2.6 / MH	Category 1
Chiwaukum Lake	2.8 / MH	7
Larch Lake	2.6 / MH	1
Chiwawa Sub-Watershed	2.9 / MH	
Chiwawa River	3.0 / H	1
Big Meadow Creek	2.6 / MH	Category 1
Pole Creek	2.8 / MH	†

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Waterbody	Function Score ¹ / Category ²	Sub-Watershed Category ³
Chikamin Creek	2.7 / MH	
Rock Creek	2.4 / M	1
Phelps Creek	2.6 / MH	
Buck Creek	2.5 / MH	
Schaefer Lake	2.4 / M	
Nason Sub-Watershed	2.8 / MH	
Nason Creek	2.9 / MH	
Roaring Creek	3.3 / H	
Whitepine Creek	2.6 / MH	
Wildhorse Creek	3.0 / H	Category 2
Mill Creek	2.4 / M	1
Lake Valhalla	2.8 / MH	1
Lichtenwasser Lake	2.9 / MH	
Loch Eileen Lake	2.8 / MH	
White Sub-Watershed	3.0 / H	
White River	3.1 / H	1
Napeequa River	2.9 / MH	7
Panther Creek	2.5 / MH	1
Ibex Creek	2.5 / MH	
Cougar Creek	2.4 / M	0-4
Indian Creek	2.6 / MH	Category 1
Boulder Creek 2	2.4 / M	
Thunder Creek	2.5 / MH	7
Lightning Creek	2.4 / M	
Twin Lakes (1)	2.5 / MH	7
Twin Lakes (2)	3.3 / H	1
Little Wenatchee Sub-Watershed	2.7 / MH	
Little Wenatchee River	2.9 / MH	
Rainy Creek	2.3 / M	
Lake Creek 2	2.2 / M	
Fish Creek 2	2.3 / M	Coto com 1
Cady Creek	2.3 / M	Category 1
Lost Lake	2.6 / MH	1
Heather Lake	2.6 / MH	7
Glasses Lake	2.7 / MH	1
Theseus Lake	2.6 / MH	1
Lake Wenatchee Sub-Watershed	2.7 / MH	
Lake Wenatchee	2.4 / M	Category 1
Fish Lake	3.0 / H	1

Implications for Protection or Restoration

Assessment results suggest that a variety of restoration and protection efforts would benefit the broad ecological function of WRIA 45. Lower-scoring

Average for waterbody weighted by area of segment.

H = High (functional scores >3), MH = Medium High (functional scores 2.5<x<3), M = Moderate (functional "In Ingrithment accords 2, Mill — Moderate scores 2<x<2.5, L = Low (functional scores <2)

3 Source: Wenatchee Watershed Management Plan, Wenatchee Watershed Planning Unit 2006. Category 1 – "closely resembles natural, fully functional aquatic ecosystems"

Category 2 – "higher level of fragmentation resulting from habitat disturbance or loss"

Category 3 – "substantial degradation and are strongly fragmented by habitat loss"

shoreline segments similar to the Peshastin Creek sub-watershed would benefit from a broad range of restoration efforts often associated with shoreline vegetation and improvements to wildlife habitat. Similarly, shoreline segments containing relatively high ecological function scores offer some of the more appropriate areas for protection efforts. The *Wenatchee Watershed Management Plan* and Detailed Implementation Plan classifications suggest that the Category 1 sub-watersheds should be protected, Category 2 sub-watersheds should be restored (e.g., improving ecosystem function and connectivity), and Category 3 sub-watersheds should receive restoration actions designed to "rectify the primary factors that cause habitat degradation."

5.2.3 City of Cashmere

Results

Shorelines in the City of Cashmere were broken into 29 separate segments, with 10 unique segments located in Mission Creek and 19 in the Wenatchee River. Assessment results for Mission Creek segments produced low to moderate scores for ecological function, with a low score of 2.0, and high of 2.5 (Table 26). Whereas, the Wenatchee River results produced moderate to moderate-high scores, with a low of 1.8 and a high of 2.9. The majority of functional scores in Cashmere were negatively impacted by poor wildlife habitat scores and areas of impaired water quality. Areas containing high amounts of impervious surfaces were also a significant detriment to function scores in many shoreline segments.

Table 26. Function Scores by Reach for the City of Cashmere and its Urban Growth Area.

Reach Name	Hydrologic Function	Shoreline Vegetation	Hyporheic Function	Habitat	Average Score ¹ / Category ²
Mission Creek					
CCA Mission Creek 1L	2.8	2.5	2.3	2.4	2.5 / H
CCA Mission Creek 1R	2.6	2.3	2.3	2.0	2.3 / MH
CCA Mission Creek 2L	2.8	2.5	2.2	2.1	2.4 / MH
CCA Mission Creek 2R	2.7	2.3	2.3	1.9	2.3 / MH
CCA Mission Creek 3L	2.6	2.2	2.1	1.6	2.1 / M
CCA Mission Creek 3R	2.5	2.1	2.0	1.5	2.0 / M
CCA Mission Creek 4L	2.5	2.1	2.0	1.6	2.1 / M
CCA Mission Creek 4R	2.6	2.2	2.2	1.8	2.2 / MH
CCA Mission Creek 5R	2.7	2.3	2.3	1.8	2.3 / MH
CCA Mission Creek 6R	2.5	2.1	2.0	1.5	2.0 / M
CCA Mission Creek 7	2.7	2.2	2.1	1.5	2.1 / M
Wenatchee River					
CCA Wenatchee River 1L	2.6	2.3	2.3	2.1	2.3 / MH
CCA Wenatchee River 1R	3.2	2.9	2.8	2.8	2.9 / H
CCA Wenatchee River 2L	2.5	2.2	2.1	2.0	2.2 / M
CCA Wenatchee River 2R	2.4	2.0	1.9	1.6	2.0 / L

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Reach Name	Hydrologic Function	Shoreline Vegetation	Hyporheic Function	Habitat	Average Score ¹ / Category ²
CCA Wenatchee River 3L	2.3	2.2	2.2	1.9	2.1 / M
CCA Wenatchee River 3R	2.2	2.1	2.1	1.6	2.0 / L
CCA Wenatchee River 4L	2.2	2.0	2.1	1.8	2.0 / M
CCA Wenatchee River 4R	2.7	2.3	2.2	1.7	2.2 / MH
CCA Wenatchee River 5R	2.4	2.3	2.4	1.9	2.3 / MH
CCA Wenatchee River 6R	2.6	2.6	2.7	2.1	2.5 / H
CCA Wenatchee River 7R	2.1	2.0	2.0	1.4	1.9 / L
CCA Wenatchee River 8R	2.6	2.1	2.2	1.8	2.2 / MH
CCA Wenatchee River 9R	2.6	2.2	2.2	1.8	2.2 / MH
CCA Wenatchee River 10R	2.5	2.1	2.0	1.5	2.1 / M
CCA Wenatchee River 11R	2.4	2.3	2.3	2.1	2.3 / MH
CCA Wenatchee River 12R	2.1	1.9	1.9	1.4	1.8 / L
CCA Wenatchee River 13R	2.7	2.5	2.4	2.6	2.5 / H

Average scoring rounded for display purposes. Category ranking based on actual average number (example average score of 1.97= Low category ranking, displayed as 2.0).

H = High (functional scores >2.4), MH = Medium High (functional scores 2.2<x<2.4), M = Moderate

Implications for Protection or Restoration

Assessment results suggest that restoration and protection of wildlife habitat and efforts to limit and reduce impervious surfaces would provide the most benefit to the ecological function of shorelines in the City of Cashmere. Mission Creek reaches were estimated to be the most heavily impacted and in need of restoration efforts, while the Wenatchee River segments offer areas that could benefit from protective measures.

5.2.4 City of Leavenworth

Results

The City of Leavenworth shorelines were broken into 18 unique segments contained in the Chumstick Creek and Wenatchee River drainages. The two segments making up the Chumstick Creek shorelines scored moderate to moderate-high levels of ecological function. Chumstick Creek scores differed slightly primarily due to the differing levels of road density and other impervious surfaces between the segments (Table 27). Conversely, assessment results for the Wenatchee River segments were highly variable with the highest and lowest ecological function scores produced in adjacent segments. The Wenatchee River 1L segment provided the poorest ecological function score of 2.2 due to high impervious surfaces and impaired water quality conditions, while the Wenatchee River 1R segment produced the highest score of 3.2 due to its relatively undeveloped landscape.

 $^{^2}$ H = High (functional scores >2.4), MH = Medium High (functional scores $\underline{2.2 < x < 2.4}$, M = Moderate (functional scores $\underline{2 < x < 2.2}$, L = Low (functional scores $\underline{< 2}$)

Table 27. Function Scores by Reach for the City of Leavenworth and its Urban Growth Area.

Reach Name	Hydrologic Function	Shoreline Vegetation	Hyporheic Function	Habitat	Average Score ¹ / Category ²			
Chumstick Creek								
CLV Chumstick Creek 1	2.8	2.4	2.4	2.6	2.6 / MH			
CLV Chumstick Creek 2	2.8	2.2	2.3	2.1	2.4 / M			
Wenatchee River								
CLV Wenatchee River 1L	2.5	2.0	2.0	1.8	2.1 / L			
CLV Wenatchee River 1R	3.1	2.8	2.9	3.1	3.0 /MH			
CLV Wenatchee River 2L	2.1	1.8	2.0	1.7	1.9 / L			
CLV Wenatchee River 2R	2.6	2.1	2.3	2.1	2.3 / M			
CLV Wenatchee River 3L	2.7	2.1	2.2	1.9	2.2 / M			
CLV Wenatchee River 3R	2.0	1.6	1.9	1.6	1.7 / L			
CLV Wenatchee River 4L	2.7	2.3	2.2	2.2	2.4 / M			
CLV Wenatchee River 4R	2.6	2.2	2.3	2.0	2.3 / M			
CLV Wenatchee River 5L	2.9	2.9	3.0	3.3	3.0 / H			
CLV Wenatchee River 5R	3.3	3.1	3.2	3.5	3.3 / H			
CLV Wenatchee River 6L	2.9	2.6	2.7	2.5	2.7 / MH			
CLV Wenatchee River 7L	2.7	2.3	2.5	2.0	2.4 / M			
CLV Wenatchee River 8L	3.0	3.2	3.4	3.7	3.3 / H			
CLV Wenatchee River 9L	3.0	2.7	2.6	2.8	2.8 / MH			
CLV Wenatchee River 10L	2.7	2.3	2.4	2.2	2.4 / MH			
CLV Wenatchee River 11L	2.7	2.3	2.4	2.6	2.5 / MH			
CLV Wenatchee River BI	3.0	2.8	2.7	3.1	2.9 / MH			

Average scoring rounded for display purposes. Category ranking based on actual average number

Implications for Protection or Restoration

Similar to other City jurisdictions in Chelan County, assessment results for Leavenworth indicate that ecological function is primarily being impacted by the high amounts of impervious surfaces found in the shoreline boundary. Restoration of ecological function through the reduction of impervious surfaces would be costly and time consuming. Efforts to protect the Wenatchee River and Chumstick Creek from further degradation of ecological function would benefit from Low Impact Development standards and efforts to reduce the overall amount of impervious surfaces placed within the watershed.

5.2.5 City of Wenatchee

Results

Shorelines in the City of Wenatchee were separated into 20 distinct segments: 7 segments in the Wenatchee River drainage and 14 segments contained in the Columbia River (Table 28). Columbia River shorelines average slightly lower

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⁽example average score of 1.97= Low category ranking, displayed as 2.0). 2 H = High (functional scores >2.7), MH = Medium High (functional scores $\frac{2.3 < x}{2.7}$, M = Moderate (functional scores 2 < x < 2.3), L = Low (functional scores < 2)

than Wenatchee River segments with functional scores of 2.6 and 2.8 respectively. Similarly, the lowest scoring shoreline segment is found in the Columbia River, whereas the highest is located in the Wenatchee River system. Low-ranking shorelines in the Columbia River consistently ranked low across all aspects of the functional analysis, while lower-ranking segments in the Wenatchee often had lower vegetation scores.

Table 28. Function Scores by Reach for the City of Wenatchee and its Urban Growth

Reach Name	Hydrologic Function	Shoreline Vegetation	Hyporheic Function	Habitat	Average Score ¹ / Category ²
Wenatchee River					
CWN Wenatchee River 1L	2.9	2.9	3.0	3.2	3.0 / H
CWN Wenatchee River 1R	2.6	2.5	2.6	2.9	2.7 / MH
CWN Wenatchee River 2L	2.1	1.9	2.0	1.9	2.0 / L
CWN Wenatchee River 2R	1.9	1.8	1.9	2.0	1.9 / L
CWN Wenatchee River 3L	3.0	3.0	3.2	3.5	3.2 / H
CWN Wenatchee River 4L	3.1	3.2	3.3	3.7	3.3 / H
CWN Wenatchee River 5L	2.9	2.8	2.6	2.8	2.8 / MH
Columbia River					
CWN Columbia River 1	2.6	2.4	NA	2.5	2.5 / MH
CWN Columbia River 2	2.6	2.2	NA	2.2	2.3 / M
CWN Columbia River 3	2.7	2.4	NA	2.5	2.6 / MH
CWN Columbia River 4	2.2	2.3	NA	2.4	2.3 / M
CWN Columbia River 5	1.9	2.0	NA	1.9	2.0 / L
CWN Columbia River 6	2.0	1.8	NA	1.7	1.8 / L
CWN Columbia River 7	2.3	2.2	NA	2.3	2.3 / M
CWN Columbia River 8	3.1	3.0	NA	3.3	3.1 / H
CWN Columbia River 9	2.7	2.4	NA	2.5	2.6 / MH
CWN Columbia River 10	2.7	2.3	NA	2.2	2.4 / M
CWN Columbia River 11	2.8	2.6	NA	2.6	2.7 / MH
CWN Columbia River 12	2.3	1.9	NA	1.6	1.9 / L
CWN Columbia River 13	2.5	2.0	NA	1.8	2.1 / M
CWN Columbia River 14	2.3	1.8	NA	1.8	2.0 / L

¹ Average scoring rounded for display purposes. Category ranking based on actual average number (example average score of 1.97= Low category ranking, displayed as 2.0).

H = High (functional scores >2.7), MH = Medium High (functional scores 2.3<x<2.7), M = Moderate

Implications for Protection or Restoration

Assessment results suggest that shoreline segments associated with lower ecological function scores often contained limited amounts of shoreline vegetation. Restoration of shoreline vegetative areas offers a relatively costefficient and tractable opportunity for the restoration of ecological function in the shorelines of the City of Wenatchee. Similarly, protection of the existing

⁽functional scores 2<x<2.3), L = Low (functional scores <2)

vegetated areas should be a high priority in both the Wenatchee and Columbia River jurisdictions of the City of Wenatchee.

5.3 Function Assessments from Other Studies

The following discussions present some narrative descriptions of function for major waterbodies within the WRIAs for which information is readily available. There is certainly more information available about a number of these waterbodies and others not discussed, but that information is not considered necessary to craft the updated SMP.

5.3.1 Stemilt/Squilchuck - Colockum (WRIA 40a/b)

Colockum Creek

According to USGS, the lower approximately 3.7 miles of Colockum Creek has a mean annual flow of 20 cubic feet per second and is therefore in shoreline jurisdiction. According to WDFW (2006), "Stream flow is primarily from snowmelt and fluctuates from year to year" and "Water use and permeable soils reduce the amount of surface flow reaching the mouth of Colockum Creek during the summer low flow period."

In spite of flow issues, portions of the mainstem Colockum Creek and its tributaries are utilized by ESA-listed Chinook and summer steelhead. The first complete passage barrier on the mainstem Colockum Creek is located approximately 2 miles upstream of the mouth, and consists of a poured concrete dam (see Section 4.1.4 for additional barrier information). Resident rainbow/cutthroat trout and planted brook trout are also present in Colockum Creek (WDFW 2006). The lower 4.3 miles of Colockum Creek have been rated "good to excellent" for Chinook rearing and spawning potential. Riparian vegetation condition is generally good, except through a 150-foot-long canyon and in a few riparian areas impacted by clearing and livestock use. Substrates are almost uniformly gravels and cobbles, large woody debris and undercut banks are abundant, and beaver dams and debris jams create abundant pools and ponds (WDFW 2006).

Cortez Lake

According to Ecology (1997), Cortez Lake is "an irrigation reservoir fed by diversions from Stemilt Creek and drainage from Meadow Lake." Based on measurements taken in 1994, the lake is eutrophic (high productivity) based on phosphorus and chlorophyll a findings. These measurements generally indicate that water quality overall may be poor, as excessive productivity can result in depressed dissolved oxygen and mortality of some organisms. A survey of aquatic vegetation in 1994 noted a number of native species, as well as milfoil, possibly the invasive, non-native Eurasian variety.

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5.3.2 Wenatchee (WRIA 45)

The following are brief summaries of ecological functions as derived primarily from the *Final Wenatchee Watershed Management Plan* (WRIA 45 Planning Unit 2006), unless referenced otherwise. Other sources included the *Nason Creek Tributary Assessment* (USBR 2008) and various Ecology water quality studies. These reports can be consulted for more detailed information.

The Final Wenatchee Watershed Management Plan (WRIA 45 Planning Unit 2006) has classified each of the sub-watersheds into three categories based on current condition and expected effectiveness of restoration efforts. The categories are defined as follows:

"Category 1 – These sub-watersheds represent systems that most closely resemble natural, fully functional aquatic ecosystems. In general, they support large, often continuous blocks of high-quality habitat and smaller drainages supporting multiple populations. Connectivity among smaller drainages and through the main sub-watershed stream corridor is good, and more than two species of federally listed fish are known to occur. Exotic species may be present but are not dominant. *Protecting functioning ecosystems in these sub-watersheds is a priority.*

Category 2 – These sub-watersheds support important aquatic resources, often with smaller drainages classified as strongholds for one or more populations. The most important difference between Category 1 and Category 2 is an increased level of fragmentation that has resulted from habitat disturbance or loss. These sub-watersheds have a substantial number of smaller drainages where native populations have been lost or are at risk for a variety of reasons. At least one federally listed fish species can be found within each of these sub-watersheds. Connectivity among smaller drainages may still exist or could be restored within the watershed so that it is possible to maintain or rehabilitate life history patterns and dispersal. *Restoring ecosystem functions and connectivity within these sub-watersheds are priorities.*

Category 3 – These sub-watersheds may still contain smaller drainages that support salmonids. In general, however, these smaller drainages have experienced substantial degradation and are strongly fragmented by extensive habitat loss, most notably through loss of connectivity with the mainstem corridor. At this time, the opportunities for restoring full expression of life histories for multiple populations found within the sub-watershed are limited. The priority for funding in these subwatersheds should be to rectify the primary factor that is causing the habitat degradation."

Lower Wenatchee Sub-Watershed

The Lower Wenatchee Sub-Watershed is classified as Category 2, and extends from the confluence with the Columbia River upstream to Tumwater Canyon. As a result of land use alterations related to agriculture, residential development, and transportation corridors, the lower Wenatchee River shoreline has experienced the following impacts to ecological functions and processes:

- Hydrology: Major roadways (including U.S. 2), bridge crossings, and railroad lines paralleling the river have reduced channel migration, floodplain connectivity, recruitment of large woody debris and substrate materials, and riparian vegetation (both width and composition). Water withdrawals and alteration of base flow support have reduced late summer stream flows, and development with associated stormwater runoff has increased spring peak flows. Reduced summer stream flows and loss of riparian vegetation contribute to high water temperatures. The Wenatchee Subbasin Plan also reports possible increased sedimentation related to increased peak flows and loss of soil-stabilizing vegetation. Sedimentation would have direct impacts on suitability of substrates for salmon spawning.
- Vegetation: Loss and alteration of riparian vegetation has reduced future large woody debris for instream use; downed wood and snags for terrestrial wildlife; and cover, nesting, foraging, and perching sites for terrestrial wildlife. The ability of riparian vegetation to moderate the microclimate and instream temperatures is limited. Vegetation is also not able to provide full water quality improvement and overland flow moderation. Inadvertent introductions of noxious weeds are also threatening native plant communities. According to the Wenatchee Subbasin Plan, "Riparian and floodplain conditions have been substantially altered (70% measured)..."
- Habitat: The hydrologic and vegetation impacts described above have reduced the quality and quantity of instream and riparian habitat.
 Background high levels of phosphorus are aggravated by possible nutrient inputs from wastewater treatment plant discharges and septic failures.

Upper Wenatchee Sub-Watershed including Chiwaukum Creek

The Upper Wenatchee Sub-Watershed is classified as Category 1, extends from Tumwater Canyon upstream to the mouth of Lake Wenatchee, including Chiwaukum Creek. This sub-watershed is dominated by "commercial forest" zoning, which would be more accurately characterized as "forest management," including activities ranging from commercial harvest to wilderness protection. As a result, the Upper Wenatchee Sub-Watershed is functioning at a much higher level than the Lower Wenatchee Sub-Watershed. However, railways and private

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developments are present to a lesser degree and have similar impacts as those described above, but at a much smaller scale. U.S. 2and SR 207 are still highly impacting constructed elements that interfere with channel migration, large woody debris and gravel recruitment, and the width and composition of riparian vegetation, and has isolated an oxbow near the mouth of Nason Creek.

The Upper Wenatchee Sub-Watershed has also been affected by past harvest practices, which have reduced the availability of wood suitable for recruitment. Fires in the sub-watershed have also reduced soil stability, resulting in sedimentation impacts to the Wenatchee River, particularly near Tumwater Canyon.

Mission Sub-Watershed

The Mission Sub-Watershed is classified as Category 3. The Mission Creek shoreline has experienced the following impacts to ecological functions and processes:

- Hydrology: Reduced channel migration, and loss of sinuosity and floodplain connectivity have resulted from roadways, urban development in Cashmere, and agriculture. Reduced summer stream flows and loss of riparian vegetation contribute to high water temperatures.
- Vegetation: Loss and alteration of riparian vegetation has reduced future large woody debris for instream use; downed wood and snags for terrestrial wildlife; and cover, nesting, foraging, and perching sites for terrestrial wildlife. The ability of riparian vegetation to stabilize banks and moderate the microclimate and instream temperatures is limited.
 Vegetation is also not able to provide full water quality improvement and overland flow moderation.
- Habitat: The Mission Sub-Watershed contains several culvert fish passage barriers, likely not on the mainstem of Mission Creek however. Water quality (septic systems and livestock effects) and riparian habitat degradation and reduced summer stream flows have substantially reduced upland and aquatic habitat conditions. The Wenatchee Basin Plan also notes that "Mission Creek does not meet State water quality standards for DDT; 4, 4-DDT; 4, 4-DDE and Gunthion, as well as dissolved oxygen, [and] fecal coliform. Currently, only Mission Creek in the Wenatchee River subbasin is listed as impaired due to pesticides in fish tissues."

Peshastin Sub-Watershed

The Peshastin Sub-Watershed is classified as Category 2. The Peshastin Sub-Watershed has experienced the following impacts to ecological functions and processes:

- Hydrology: US 97 has had substantial effects on Peshastin Creek through
 direct channel re-routing, reduced channel migration (affects recruitment
 of large woody debris and substrate material), and loss of sinuosity and
 floodplain connectivity. Reduced summer stream flows from irrigation
 and other withdrawals and loss of riparian vegetation contribute to high
 water temperatures, and affect migration and rearing of salmonids.
- Vegetation: Loss and alteration of riparian vegetation related to US 97
 and other land uses has reduced future large woody debris for instream
 use; downed wood and snags for terrestrial wildlife; and cover, nesting,
 foraging, and perching sites for terrestrial wildlife. The riparian corridor
 has been fragmented. Vegetation is also not able to provide full water
 quality improvement and overland flow moderation. Ponderosa pine
 community habitat has been reduced in the lower watershed as a result of
 fire suppression, timber harvest and other development. Much of the
 upper sub-watershed is protected as part of the Alpine Lakes Wilderness.
- Habitat: "This sub-watershed provides important bull trout and steelhead spawning and rearing habitat, both in the main stem Peshastin and in Peshastin tributaries." However, ongoing modifications described above as well as historic mining are limiting the distribution and quality of instream habitat.

Chumstick Sub-Watershed

The Chumstick Sub-Watershed is classified as Category 3. This highly altered watershed "has been substantially degraded and is strongly fragmented." The Chumstick Sub-Watershed has experienced the following impacts to ecological functions and processes:

- Hydrology: SR 209 (Chumstick Highway), rail line, multiple creek crossings by the highway, and other developments have had substantial effects on Chumstick Creek through reduced channel migration (affects recruitment of large woody debris and substrate material), and loss of sinuosity and floodplain connectivity.
- Vegetation: Forest management, including a series of harvests and fire suppression, has altered the community composition, distribution, and density. A number of noxious weeds have been introduced and are spreading, possibly permanently displacing native species.
- Habitat: Alteration and fragmentation of forest communities has
 degraded habitat for fish and wildlife. In spite of this, the sub-watershed
 does contain a wide range of special-status species. However, non-native
 brook trout are distributed through much of the sub-watershed, and the
 only native anadromous species is the steelhead trout. Partial barriers to
 fish passage exist through culverts in lower Chumstick Creek and farther

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upstream. Loss of vegetation has had impacts on water temperature, and fecal coliform levels from livestock and septic systems are also elevated. Land development and road runoff have also increased sediment delivery to the system, which can adversely affect substrate suitability for spawning and invertebrate production.

Icicle Sub-Watershed

The Icicle Sub-Watershed is classified as Category 2, and is the largest of the Wenatchee sub-watersheds. The Icicle Sub-Watershed has experienced the following impacts to ecological functions and processes:

- Hydrology: Several locations of Icicle Road and development downstream of the Leavenworth National Fish Hatchery (LNFH) reduce channel migration (affects recruitment of large woody debris and substrate material), sinuosity and floodplain connectivity, and formation of and access to off-channel habitat. Instream flows are low to nonexistent during the summer downstream of the hatchery intake in general and in particular between the intake and the outflow, although this is substantially attributable to irrigation withdrawals. Recent models prepared by the University of Washington Climate Impacts Group indicates that rain-on-snow events will become more frequent; this is expected to increase peak flows in the winter, leading to decreased spring flows as a result of reduced snowpack.
- Vegetation: Loss of vegetation resulting from the 1994 Rat Creek fire has destabilized soils and resulted in increased water temperatures and sedimentation of lower and middle Icicle Creek.
- Habitat: "This sub-watershed contains high quality aquatic and terrestrial
 habitat in the upper watershed above RM 5.7, and is designated as a Key
 Watershed¹⁷ by the Northwest Forest Plan." The LNFH has been a major
 barrier to fish passage as a deliberate management decision to protect
 hatchery-reared spring Chinook from disease. Summer low flows have
 also affected water temperature.

Nason Sub-Watershed

The Nason Sub-Watershed is classified as Category 2. The Nason Sub-Watershed has experienced the following impacts to ecological functions and processes:

• Hydrology: US 2 and SR 207, rail line, and other developments have had substantial effects on Nason Creek through reduced channel migration

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¹⁷ Key Watersheds "provide habitat critical for the maintenance and recovery of anadromous salmonids and resident fish species" as part of the Northwest Forest Plan's Aquatic Conservation Strategy (Entiat Planning Unit 2004).

(affects recruitment of large woody debris and substrate material), and loss of sinuosity and floodplain connectivity.

 Habitat: Nason Creek is on Ecology's 303(d) list for water temperature standard exceedances.

The U.S. Bureau of Reclamation (2008) evaluated three reaches of Nason Creek, between RM 4.6 (Coles Corner) and RM 14.3 (White Pine Railroad Bridge). These three reaches correspond to segments Nason Creek 5 to Nason Creek 7 in this analysis (see Section 5.2 above). The general conclusions drawn from the USBR study supplementary to the *Final Wenatchee Watershed Management Plan* (WRIA 45 Planning Unit 2006) follow:

- Vegetation: Although much of the Nason Creek watershed had been heavily impacted by timber harvest, "within the valley floor of the assessment area, the forest appears to be recovering back to the historical grand fir forest." This is true only where permanent loss or maintenance of vegetation has not occurred due to US 2, other roads, rail lines, or power/transmission line corridors. LWD recruitment potential is relatively high, considering past and current impacts, as well as the percent shading of Nason Creek.
- Hydrology: While the recruitment potential may be relatively high, the
 ability of the stream to retain the wood is low because of channel
 straightening that tends to facilitate passage of wood (and sediment)
 through the assessment area. Existing large woody debris in the channel
 is still fairly low in areas, and results in reduced complexity of pools and
 reduced pool formation. Bank hardening associated with roads, rail lines,
 and other developments has also altered sediment/gravel recruitment.
 Within the assessment area alone, anthropogenic alterations have
 disconnected 386 acres of floodplain, 59% of that was accomplished by
 the railroad.
- Habitat: The hydrologic and vegetation impacts described above have reduced the quality and quantity of instream habitat.

Chiwawa Sub-Watershed

The Chiwawa Sub-Watershed is classified as Category 1, and is the second largest of the Wenatchee sub-watersheds. "Chiwawa is designated as a Key Watershed by the Northwest Forest Plan. "Significant resource extraction (timber, mineral, and grazing), heavy recreational use, and excellent fish, wildlife, and rare plant values co-exist in this [sub-]watershed," (USFS, 1997)." The Chiwawa Sub-Watershed has experienced the following relatively limited impacts to ecological functions and processes:

• Hydrology: "Water withdrawals in the lower Chiwawa River could potentially affect the amount of juvenile rearing habitat available in low

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flow years." According to the *Wenatchee Subbasin Plan* (Chelan County and Yakama Nation 2004), "The Chiwawa River valley floor has an extensive high quality network of ponds, beaver canals, side channels, abandoned oxbows and other wetlands. Abundance, diversity, connectivity and quality of these wetlands are extremely high."

- Vegetation: The lower Chiwawa River has a few residential housing developments that may have reduced riparian vegetation.
- Habitat: "Overall, the Chiwawa sub-watershed supports moderate to high-quality terrestrial habitat." Riparian vegetation that may be lost due to a few residential developments could increase water temperatures and reduce cover.

Upper Watershed (Lake Wenatchee, White, and Little Wenatchee Sub-Watersheds)

The three sub-watersheds comprising the Upper Watershed are classified as Category 1. The Upper Watershed has experienced the following relatively limited impacts to ecological functions and processes:

- Hydrology: No major impacts to hydrologic functions/processes were noted in the *Final Wenatchee Watershed Management Plan* for the White and Little Wenatchee Sub-Watersheds. However, the *Wenatchee Subbasin Plan* noted that localized sections of the White River have been armored in conjunction with roads, bridges, and residential or recreational developments. Shoreline armoring on Lake Wenatchee has the potential to affect wave processes ability to recruit and distribute substrates, which in turn affects invertebrate production and habitat condition.
- Vegetation: Past riparian harvests and log drives in the White and Little
 Wenatchee Sub-Watersheds has affected large woody debris presence
 and potential, which in turn has affects on channel form and function.
 According to the Wenatchee Subbasin Plan, those activities coupled with
 the accompanying sediment pulse have reduced pool frequency in the
 White River. Some minor alterations in riparian vegetation were also
 noted along the lower Little Wenatchee River.
- Habitat: "The watershed is located at an important point along the Cascade Range and provides connectivity for terrestrial wildlife for species moving north-south and east-west. 'From a landscape scale/range-wide status of many species, it is important to maintain the integrity of the White River and Little Wenatchee watershed,' (USFS, 1998)." "Important terrestrial habitat contributions of these subwatersheds include habitat for 'rare plant species, disjunct plant species, and species endemic to the Wenatchee Mountains [which] occur within these watersheds,' (USFS, 1998)." The three watersheds provide

important rearing and/or spawning habitat for a variety of salmonids, as well as a number of federally listed wildlife species.

5.3.3 Entiat (WRIA 46)

The Entiat watershed consists of the Entiat and Mad River sub-basins. The Entiat River has two major tributaries that include the North Fork Entiat and the Mad River. The following are brief summaries of ecological functions for the Entiat watershed as derived primarily from the *Entiat WRIA 46 Management Plan* (Chelan County Conservation District 2004), unless referenced otherwise.

- Hydrology: Water quality temperature standard exceedances occur in both the Entiat and Mad Rivers during the late summer/fall period.
 Wintertime low temperatures and the formation of anchor ice in the lower mainstem Entiat and Mad Rivers may be a greater limiting factor than summertime highs (Berg 2004a). Soils in the Entiat basin are generally very erodible, and most land types have high sediment delivery rates. Additional sediment pulses have occurred as a result of fire/flood scenarios in 1976-1977 (Crum Canyon Fire), 1988-1989 (Dinkelman Fire), and 1994 (Tyee Fire).
- Habitat: Many priority species use the wildlife habitats within the Entiat WRIA for at least part of the year. Priority habitats that occur in the Entiat WRIA include: aspen stands, caves, cliffs, old-growth/mature forests, prairies and steppe, instream, riparian, shrub-steppe (both large and small blocks), snag habitat, talus, rural and urban natural open space, freshwater wetlands and fresh deepwater habitats.

Entiat Sub-Watershed

A range of elevations, from the Entiat headwaters to the mouth, results in a wide variety of ecosystems, from alpine to shrub-steppe. As a result of land use alterations related to wildfire, animal grazing, residential development and transportation corridors, the Entiat watershed has experienced the following minimal impacts to ecological functions and processes:

• Hydrology: The Entiat headwaters are fed by a rim of snow-covered peaks, resulting in rapid runoff with relatively frequent flood events in the mainstem. It is unregulated and sustained largely by groundwater (vs. precipitation) during the late summer to late winter (August through February) period. The stream channel shape of the lower 10 miles of the Entiat River, between the town of Ardenvoir and the mouth of the Entiat, has been influenced by past human activities, such as channel straightening/widening and diking, and streamside vegetation disturbance. The lack of aquatic habitat diversity, high width:depth ratio, and stream downcutting are also concerns. Typical flood and bank protection activities include dikes, rock riprap, and log revetments.

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Bankfull discharge is primarily responsible for the maintenance of current channel geometry in the Entiat River. These flows move and redistribute streambed and bank material, sediment, and incoming debris, and these processes are most responsible for forming or removing channel bars, bends and meanders. Current system dynamics are working to develop channel features that create a balance between stream flow and sediment loads.

- Vegetation: Wildfire is noted as one of the primary disturbance factors affecting riparian vegetation and function throughout the Entiat subwatershed, whereas human influences cause most of the disturbance in the lower 10 miles of shoreline. This lower section of the Entiat River experiences the highest water temperatures, decreased riparian vegetation (primarily deciduous species), and poor to good shade and recruitment of large woody debris. In general, the upper sub-watershed (from the headwaters to RM 25) is reported as having fair to excellent shade levels and recruitment of large woody debris. In the upper subwatershed, there is only minimal impact to riparian areas at localized developed campgrounds (such as Cottonwood Campground). Throughout the sub-watershed, in areas where there is a loss of vigorous shrubs, the riparian zone has reduced instream organic input and shade, which contributes to unstable stream banks and associated erosion.
- Habitat: The Entiat sub-watershed is listed as having a lack of and/or an improperly functioning riparian zone in the lower 10 river miles that acts as a major limiting factor for fish habitat (Andonaegui 1999). The WRIA 46 Limiting Factors Analysis reported that a lack of overwintering juvenile rearing habitat is perhaps the most limiting factor of the aquatic habitat in the Entiat watershed to fully sustain salmon populations (Andonaegui 1999). Data indicates that the benthic macroinvertebrate community condition is generally healthy; however, specific characteristics of the community condition indicate slight degradation. Macroinvertebrate studies on the lower Entiat River may indicate environmental stress or an altered site. Studies conducted on the lower Entiat River have recorded exceedances in both temperature and pH, suggesting some degree of eutrophication.

Mad River Sub-Watershed

The Mad River flows into the lower Entiat River near the town of Ardenvoir, at RM 10.5. From limited available sources, the section below describes the Mad River shoreline as experiencing very few impacts to ecological function and process.

 Hydrology: As mentioned earlier, the Mad River experiences water quality temperature standard exceedences during the late summer/fall

period and wintertime low temperatures with the formation of anchor ice in the lower portion of the stream.

 Habitat: The Mad River has good macroinvertebrate species richness and diversity. It currently supports steelhead, bull trout, and spring and laterun Chinook salmon.

5.3.4 Chelan (WRIA 47)

The Chelan basin is primarily made up of a 50-mile lake that consists of two subbasins. The Lucerne basin is deep (max. depth of 1,486 feet) and fjord-like, and extends for 38 miles containing over 92% of the total lake volume. The Wapato basin is relatively wide and shallow in comparison (max. depth of 400 feet), and extends for 12 miles. With the exception of the Stehekin and Lucerne areas, there is very little development in the Lucerne basin, resulting in natural and healthy habitat function and processes. The majority of inflow to Lake Chelan is from two major tributaries: the Stehekin River, which feeds into the lake from the west, provides 65%, and Railroad Creek provides 10%. Approximately 50 small streams provide the remaining 25% of the inflow. Due to the shape of the valley, most tributaries are relatively steep and short.

The following information on the ecological function and processes of WRIA 47 shorelines were summarized primarily from the *Lake Chelan Subbasin Plan* (Berg 2004c) and the *Stehekin River Corridor Implementation Plan* (National Park Service 2008).

Stehekin River Sub-Watershed

The Stehekin River provides most of the inflow to Lake Chelan. It has a fairly low gradient; a wide, broad floodplain; and has a mostly gravel substrate. In the broadest sense, the Stehekin is typical of a glacial-fluvial river, with gravel bed and riffle-pool morphology.

- Hydrology: The Stehekin watershed is flood prone due to its climate, steep topography, and other watershed factors. Many of these floods come on very quickly, causing substantial erosion. Most of the erosion sites have rip-rap banks or rock barb protection. Massive accumulation of gravel and large wood in the river channel has revived interest in returning to the practice of large-scale removal of woody debris and channel dredging.
- Vegetation: The growth of native riparian vegetation at the mouth of the Stehekin River is greatly affected by changes in the lake's seasonal elevation due to the Lake Chelan Hydroelectric Project (Project). These riparian areas are inundated for an extended period of time during the growing season (April through October). There has been residential development near the mouth of the Stehekin River, where high quality riparian and wetland habitat has been removed and low areas filled.

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Habitat: The Stehekin River meanders through floodplain, providing
excellent fish and rearing habitat, good spawning gravels, and plenty of
instream large woody debris. Overall, there is very little unnatural
impact to the aquatic and terrestrial habitat function and processes
throughout the Stehekin sub-watershed.

Lake Chelan

Lake Chelan is considered to be one of the most pristine water bodies in North America. It is a natural lake, but its levels are affected and controlled by the Project, a dam and powerhouse which are located at the mouth of the lake on the Chelan River. The 40-foot-high concrete gravity dam raised the elevation of the lake by 21 feet above normal high water levels. The Project reservoir, Lake Chelan, is operated between elevations of 1,079 feet and 1,100 feet to ensure optimum use of the reservoir for power generation, fish and wildlife conservation, recreation, water supply, and flood control.

Lake Chelan is characterized by deep, cold, clear water, with little organic material in the sediments, high dissolved oxygen levels, and relatively low nutrient levels. It therefore has low biological productivity. The lake's productivity is also hindered by elevated bacterial levels near water supply intakes and elevated pesticide residues (DDT and PCBs) in lake sediments and fish populations.

- Hydrology: Seasonal changes in the lake level lead to shoreline erosion, causing slope instability, including some slumping, rockslides and debris flows, along portions of the relatively steep shoreline. Fecal coliform found throughout the lake (primarily in the Wapato sub-basin) is likely caused by seasonal differences in waterfowl abundance, recreation use, and irrigation return flow that coincide with lake level fluctuations. The highest lake levels are maintained during the summer by Project operations. As a result, the highest lake levels also coincide with the highest seasonal population in the area, peak irrigation operations and waterfowl activity. Waterfowl activities appear to be the most likely source of the observed bacterial inputs. Nevertheless, fecal coliform levels in the Wapato sub-basin have not exceeded applicable State water quality standards.
- Vegetation: Riparian areas along the shoreline of Lake Chelan are small, distinctly linear, and concentrated in the few areas of relatively flat terrain on tributary alluvial fans, and in a few scattered pockets near Manson. The basin is mostly steep-sided due to its formation by glacial activity, and consists of coarse substrates, including cobbles, boulders and bedrock. These coarse substrates are generally unsuitable for plant colonization and limit the extent of riparian and emergent vegetation on most areas along the lake shoreline. The long and narrow basin results in

heavy wave action during the frequently windy conditions, which limits the establishment of riparian vegetation along most of the shoreline. Human activities also influence the extent and condition of riparian zones.

Habitat: Both the aquatic and shoreline habitats are functioning well.
 Competition between native fish species and introduced game fish has
 reduced and possibly eliminated certain native fish populations. Levels
 of nitrates, phosphorous, chlorophyll a, zooplankton, and benthic
 organisms are low, especially in the Lucerne basin, preventing the lake
 from supporting high densities of fish. There also have been releases of
 pesticides, especially DDT, and polychlorinated biphenyls (PCBs) into
 Lake Chelan. Large woody debris is considered a navigational hazard so
 much of it is removed, limiting cover and reducing habitat complexity for
 fish.

Railroad Creek Sub-Watershed

Railroad Creek flows past the village of Holden into Lake Chelan at Lucerne. The creek has elevated levels of metals (iron, zinc and arsenic) due to runoff from abandoned contaminated tailings at the Holden Mine.

Chelan River Sub-Watershed

Nearly the entire Lake Chelan outflow, averaging approximately 2,000 cfs, is diverted through a 2.2-mile-long power tunnel that passes the water through the powerhouse for hydroelectric generation and into the tailrace, which empties into the Columbia River. The remaining Lake Chelan outflow passes through the 3.9-mile Chelan River channel. The Chelan River has been without flow during most of the year since the Project's completion, with flow only in the spring and early summer when snow melt raises the lake to levels requiring spill for flood control. The 76-year-old Project was relicensed for 50 years by FERC in November 2006. Provisions of the implementation agreement include "year-round minimum flow in the Chelan River, maintaining existing parks, regulating lake levels, fish habitat enhancements in the Chelan River, adding a trail that improves access to the Chelan River, and a variety of other actions" (http://www.chelanpud.org/282.html).

Hydrology: The flows in the river are controlled by the Project. The
water temperature leaving Lake Chelan is potentially high enough to
exceed Washington State's numeric standard for riverine water
temperatures. Water quality parameters (nutrients, hardness, pH,
conductivity, and fecal coliform levels) are expected to be similar to those
in Lake Chelan. Shoreline erosion along the rivers banks may affect
turbidity under high flow conditions, during spill events, but most of the
highly unstable bank areas have been armored. A small amount of

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- ground water enters in the steep areas within the gorge, but the cooling effect of this flow is negligible except at low flow.
- Vegetation: The Chelan River descends through a steep-walled gorge to a
 broad floodplain and is bordered by shrub-steppe, open coniferous forest,
 cliffs, and urban areas. Vegetation is sparse, mostly restricted to upper
 and lower sections of the stream, and consists primarily of deciduous
 trees and shrubs.
- Habitat: The Chelan River has not functioned properly since the Project's installation. It may provide poor habitat for terrestrial species, but aquatic and riparian habitat has been nearly nonexistent. Most of the Chelan River is currently unsuitable habitat for fish, given that it has been dewatered for most of the year until recently. With flows returning and stream enhancement projects by the Chelan PUD, there should be improvement to the biological function of the Chelan River habitat in years to come.

5.3.5 Mid-Columbia Mainstem

The Columbia River has been classified by the Washington Department of Ecology as a "Class A" water. On a scale ranging from Class AA (extraordinary) to Class C (fair), Class A waters are considered "excellent." State and federal regulations require that Class A waters meet or exceed certain requirements for all uses. The following section summarizes impacts to ecological function and process as related in the *Upper Middle Mainstem Subbasin Plan* (Berg 2004d).

- Hydrology: Columbia River hydrology has been greatly altered with the construction of 14 hydroelectric dams throughout the basin (United States and Canada). Smoothing of the hydrograph and lack of significant reservoir fluctuation has increased the amount of fine sediment present in the Columbia River. Flows average more than 180,000 cfs in the mid-Columbia, mostly coming from upriver areas in the Columbia basin and from the Kettle and Spokane Rivers. While water quality is good, compared to other rivers in the United States, there is still cause for concern. Primary concerns include levels of dissolved gases, changes in stream temperatures, turbidity levels, and exposure to environmental contaminates above biological thresholds for fish species utilizing the river. These concerns are generally related to hydropower production.
- Vegetation: Vegetation along the upper mid-Columbia mainstem consists
 mainly of steppe and shrub-steppe vegetation. Forest vegetation is
 generally confined to mountain slopes with sufficient precipitation.
 Present vegetative communities vary widely from historic conditions, as
 much of it was cultivated or grazed by livestock. Low-bank riparian
 habitat is extremely rare along the river and some areas that were once
 dominated by cottonwood have been lost. Some of this habitat was lost
 because of the development of hydropower on the river that altered the

- natural flood regime. As a result, some of the upper mid-Columbia now exhibits steep shorelines and sparse riparian vegetation providing limited fish and wildlife habitat.
- Habitat: Embayments connected to the river via culverts or small channels provide special wildlife habitat. The reduced water fluctuation and protection from wave action is beneficial to wildlife. Columbia River anadromous salmonid spawning is concentrated at the upstream portions of reservoirs, where it is generally assumed that river hydraulics are sufficient to maintain well-sorted substrates that are relatively free of fine sediment. Water velocity in the upstream reservoir areas is also sufficient for adult anadromous salmonids to move cobble substrate for redd construction. Terrestrial and aquatic habitat functions and processes have dramatically been impacted with the damming of the river. Many avian and terrestrial species utilize the modified shoreline throughout the mid-Columbia.

6. LAND USE ANALYSIS

This section presents a use analysis, identifying current and projected shoreline use patterns, as well as estimating future demand for shoreline space, consistent with SMP guidelines.

This section is broken into two subsections: a land capacity analysis of parcels that are partially or fully included in the shoreline jurisdiction and a discussion of economic analyses prepared for shoreline areas in the County, where available.

6.1 Shoreline Land Capacity Analysis

The purpose of the shoreline land capacity analysis is to gauge the potential level of development that may occur in the future along shorelines given adopted future land use designations. The information is intended to provide an understanding of the future level of intensity that may occur given current plans and regulations.

The County's and cities' future land use plans contained in their Comprehensive Plans give a more specific picture of likely future activities on shorelines than the present SMP's which allow many uses/activities in each of the shoreline environments. For example, in the Urban shoreline environment, residential, commercial, and industrial activities are allowed by the SMP whereas County or city Comprehensive Plans and zoning regulations may have designated a particular area for residential uses only.

The method to determine shoreline land capacity is summarized below. A more detailed matrix of assumptions is included in Appendix C.

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- **Determine shoreline use boundaries.** The analysis includes all parcels that intersect with the shoreline jurisdiction (generally 200 feet of the ordinary high water mark, associated wetlands, and the floodway) whether the parcels are wholly contained in the shoreline jurisdiction or not
- Compile County and City land capacity analyses. Based on adopted Comprehensive Plans and County and City planner input, assumptions about vacant, partially used, and under-utilized properties have been compiled.
- Determine development potential. The analysis estimates developable acres by future land use category. Developable acres include: 1) vacant (no building value); 2) partially used (e.g. single family properties containing one home but the land can be further subdivided); or 3) underutilized (land value exceeds building value on multifamily, commercial or industrial properties). Constraints such as critical areas, rights of way, and infrastructure are deducted from gross acres. Market factor reductions, which account for land that may not be available (e.g. owner does not wish to develop), are also included. Densities or floor area ratios are applied to the net buildable acres to estimate total future dwellings or commercial/industrial square feet.

Public lands, government owned forest lands, and mineral lands were coded as vacant, partially utilized, or underutilized where Assessor information was available. Due to the different purposes for these lands, typical assumptions regarding dwelling and commercial/industrial density were not applied to public lands, government owned forest lands, and mineral lands. However, because these shoreline lands could be altered due to a variety of public purposes such as recreation, utilities, or resource extraction, the discussion of these types of lands is included in each WRIA and City/UGA, including the total number of acres. More discussion about the approach to these lands is identified below:

• Lands specifically identified as "public" on comprehensive plans.

Lands identified as "public" on future land use maps were mapped if they met the developable parcel attributes (e.g. vacant, etc.), but excluded from statistical analysis of additional residences and commercial/industrial square footages. However, since public uses may result in shoreline development of structures or facilities, designated public acres are described in each subsection where applicable. In contrast, statistics do include lands that are designated on future land use maps for resource, residential, commercial or industrial activities – whether they are publicly or privately owned. Though this may overestimate land capacity currently, the market factor discount reduces the potential that these lands skew results. Further, public ownership may change overtime, though rare.

- Government owned forest lands. The County's Assessor database includes little information on these lands, and thus they were not always coded as vacant, partially utilized, or underutilized. It should be noted that some leasing of lands may be possible on federal government forest lands, and could be subject to the SMP, though rare in general.
- Lands specifically designated for mineral extraction were mapped if
 they met the developable parcel attributes (e.g. vacant, etc.), but excluded
 from statistical analysis of additional residences and commercial/
 industrial square footages. These activities have few structures, but may
 alter shorelines. However, designated mineral lands acres are described
 in each subsection where applicable.

Maps are also provided of parcels that meet the initial screening criteria. Through a review of statistics, some parcels are removed, though they remain present on the maps, e.g. public lands.

It is important to note that this analysis is intended to give an overall picture of the potential for development along shorelines, but is not an exact predictor of which parcels may develop or redevelop. In addition, the analysis does not provide a "rate" of development; review of past shoreline permits in Section 2.3 may help provide a gauge of activity levels over time.

Results are shown by WRIA and jurisdiction below.

6.1.1 Stemilt/Squilchuck - Colockum (WRIA 40a/b)

The Stemilt/Squilchuck – Colockum watershed is unincorporated and designated for predominantly rural land uses. Comprehensive Plan future land use designations along shorelines include Rural Industrial, Rural Residential, and Commercial Forestry Lands among others. Based on these designations, the most intense use of property appears to be with Rural Industrial designated lands along the Columbia River at a potential for 10 million square feet on vacant shoreline lands. Single-family dwellings would be spread along the remaining waterbodies. Single-family dwellings are estimated at between 90 to 172 additional dwellings, dependent on whether vacant non-resource lands are considered or whether all lands meeting the land capacity criteria are considered. The resulting capacity for development along shorelines in the watershed is shown in Table 29.

Table 29. WRIA 40a/b Shoreline Land Capacity Estimates

Waterbody	Net Acres- Vacant	Net Acres- Partially Used/ Underused	Single Family Units	Multi- Family Units	Commercial Sq Ft	Industrial Sq Ft
Colockum Creek	573	202	81	-	-	ı
Columbia River	856	423	56	-	-	10,307,790
Cortez Lake	2	2	12	-	-	ı
Meadow Lake *	-	19	3	-	-	-

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Waterbody	Net Acres- Vacant	Net Acres- Partially Used/ Underused	Single Family Units	Multi- Family Units	Commercial Sq Ft	Industrial Sq Ft
Spring Hill Reservoir *	-	221	11	-	=	-
Stemilt Project Reservoir	32	-	3	-	-	-
Upper Wheeler Reservoir	-	576	29	-	=	-
Total	1,463	1,442	195	-	-	10,307,790
Partially Used Reduction (Existing Units)			23			
Adjusted Total	1,463	1,442	172	-	-	10,307,790
Vacant Only**	1,463	809	131	-	-	10,307,790
Adjusted Total Minus Resource Lands	1,463	633	131	-	-	10,307,790
Vacant Only Minus Resource Lands	1,463	-	90	-	-	10,307,790

Note: * Majority of acres in Commercial Agricultural or Commercial Forest Lands designations.

6.1.2 Wenatchee (WRIA 45)

The Wenatchee watershed is likely to see growth in single-family dwellings along the shorelines, ranging from 355 to 1,132 new dwellings depending on whether resource lands are considered. Nason and Peshastin Creeks, and the Wenatchee River have some commercial capacity based on Comprehensive Plan future land use designations, and Peshastin Creek and the Wenatchee River have potential for additional industrial development. Shoreline designation recommendations will be based on ecological functions, current land use, and planned land use.

In addition to the results in Table 30, shoreline development may occur on vacant parcels designated for public uses at about 86 acres, and on vacant commercial mineral lands equaling about 41 acres (excluding critical areas). These acres exclude critical areas, but no further deductions for rights of way/infrastructure or market factors are taken. Intensive activities are not typically allowed in critical areas; low intensity uses such as passive recreation may be allowed, though usually in the buffers and not in the critical area itself.

Table 30. WRIA 45 Shoreline Land Capacity Estimates

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multi- Family Units	Commercial Sq Ft	Industrial Sq Ft
Chikamin Creek*	-	967	48	-	-	-
Chiwaukum Creek*	-	321	16	-	ı	=
Chiwaukum Creek	-	258	13	-	-	-

^{**}The "partially used/underused acres" in this row represent vacant commercial agriculture or forest lands. The reason these acres are treated as "partially used/underutilized" is that they have an activity on them presently and because the analysis applied a higher market factor reduction since these lands are less likely to develop with residential uses than non-resource lands.

FINAL Chelan County Shoreline Inventory and Analysis

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multi- Family Units	Commercial Sq Ft	Industrial Sq Ft
South Fork*						
Chiwaukum Lake*	-	208	10	-	-	-
Chiwawa River*	156	2.611	198	-	-	-
Chumstick Creek	59	30	17	_	_	_
Colchuck Lake*	-	27	1	_	_	_
Columbia River**	_		0	_	_	_
Eightmile Creek*	_	151	8	_	_	_
Eightmile Lake*	128	131	6	_	_	_
Fish Lake*	2	488	29			_
Icicle Creek*	104				-	
	104	918	15	-	-	-
Ingalls Creek*	-	647	32	-	-	-
Klonaqua Lakes (2) Upper *	-	27	1	ı	-	-
Lake Augusta*	-	65	3	-	-	-
Lake Victoria*	-	110	5	-	-	-
Little Wenatchee River*	-	482	24	-	-	-
Loch Eileen Lake*	-	221	11	-	-	-
Mill Creek	_	91	5	-	-	-
Mission Creek	120	248	36	_	_	_
Mountaineer Creek*	-	279	14	_	_	_
Nada Lake*	_	135	7	_	_	_
Napeequa River*	2	199	10	_	_	_
Nason Creek*	154	1,803	116	-	1,437	-
Perfection Lake	154	1,803	9	-	1,437	
	- 40				- 0.000	=
Peshastin Creek*	43	468	64	-	2,868	-
Phelps Creek*	-	369	18	-	-	-
Pole Creek*	-	163	8	-	-	-
Shield Lake	-	198	10	-	-	-
Snow Lake - Lower*	-	83	4	-	-	-
Snow Lake - Upper*	-	85	4	-	-	-
Stuart Lake*	-	59	3	-	-	-
Trout Creek*	-	285	14	-	-	-
Twin Lakes (2)*	-	284	14	-	-	-
Wenatchee Lake*	16	461	93	-	-	-
Wenatchee River*	668	2,153	468	-	83,868	112,118
White River*	402	1,087	81	-	-	-
Whitepine Creek*	-	143	7	-	-	-
Peshastin UGA:	10					179,034
Peshastin Creek	10					179,034
Peshastin UGA: Wenatchee River	36	16	63	-	59,896	536,263
Total	1,900	16,312	1,487	_	148,069	827,416
Partially Used	1,300	10,312	1,407	-	140,009	021,410
Reduction (Existing	_	_	355	_	_	_
Units)			333			<u> </u>
Adjusted Total	1,900	16,312	1,132	_	148,069	827,416
Vacant Only***	1,891	14,820	1,128	-	97,529	827,416
Adjusted Total Minus	1,538	554	700	-	148,069	861,095
Resource Lands			'		·	
Vacant Only Minus	1,527	-	355	-	97,529	827,416

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FINAL City of Wenatchee Shoreline Inventory and Analysis

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multi- Family Units	Commercial Sq Ft	Industrial Sq Ft
Resource Lands						

Notes:

6.1.3 Entiat (WRIA 46)

The Entiat watershed is largely unincorporated, with rural and commercial forestry uses. As shown in Table 31, depending on whether resource lands are included, between 103 and 230 dwellings may be added to shoreline areas. Small amounts of rural commercial square footage may occur along the Entiat or Mad Rivers on vacant properties designated for these uses. In addition, about 20 acres of designated Commercial Mineral lands may be altered on vacant shoreline properties, as may approximately 7 acres of public designated property (excluding critical areas).

Table 31. WRIA 46 Shoreline Land Capacity Estimates

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multi- Family Units	Commercial Sq Ft	Industrial Sq Ft
Columbia River	274	58	85	ı	ı	-
Entiat River*	220	1,438	127	-	14,029	-
Mad River*	5	1,456	75	=	12,455	-
Total	498	2,952	287	-	26,484	-
Partially Used Reduction (Existing Units)	-	-	57	-	-	-
Adjusted Total	498	2,952	230	-	26,484	-
Vacant Only	498	2,479	230	=	26,484	-
Adjusted Total Minus Resource Lands	498	122	134	-	26,484	-
Vacant Only Minus Resource Lands	498	-	103	-	26,484	-

Note:

^{*} Majority of acres in Commercial Agricultural or Commercial Forest Lands designations.

^{**}Analysis excludes public acres. On the Columbia River, public acres equal approximately 40.

^{***} The "partially used/underused acres" in this row represent vacant commercial agriculture or forest lands. The reason these acres are treated as "partially used/underutilized" is that they have an activity on them presently and because the analysis applied a higher market factor reduction since these lands are less likely to develop with residential uses than non-resource lands.

^{*} Majority of acres in Commercial Agricultural or Commercial Forest Lands designations.

^{**}The "partially used/underused acres" in this row represent vacant commercial agriculture or forest lands. The reason these acres are treated as "partially used/underutilized" is that they have an activity on them presently and because the analysis applied a higher market factor reduction since these lands are less likely to develop with residential uses than non-resource lands.

6.1.4 Chelan (WRIA 47)

The Chelan watershed is largely rural, with commercial forest and agricultural lands. With the attractiveness of Lake Chelan and other lakes and streams, additional residential dwellings are likely. The land capacity analysis estimates a range of 697 to 806 dwellings, depending on whether resource lands are included (Table 32). A small amount of additional rural commercial and pedestrian commercial (Manson) uses may occur along Lake Chelan or the Columbia River on vacant properties. In addition, about 342 acres of public lands (excluding critical areas) are vacant and may be modified along the shorelines in the future.

Table 32. WRIA 47 Shoreline Land Capacity Estimates

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multi- family Units	Commercial Sq Ft	Industrial Sq Ft
Antilon Lake*	5	56	3	-	•	-
Boulder Creek 1	140	-	14	-	-	-
Chelan River	144	-	9	-	-	110,609
Columbia River*	183	598	123	-	974	210
Company Creek*	59	67	6	-	-	-
Dry Lake*	-	33	3	-	-	-
Fish Creek 1	-	10	1	-	-	
Lake Chelan	707	481	646	-	6,435	-
Manson UGA: Lake Chelan	19	14	176	-	3,236	-
Railroad Creek*	-	8	-	-	-	-
Rainbow Creek	-	-	-	-	-	-
Roses Lake	33	15	16	-	-	-
Stehekin River	829	240	85	-	-	-
Twentyfive Mile Creek*	3	184	9	-	-	-
Unnamed Lake 1*	13	143	8	-	ı	ı
Wapato Lake	7	109	26	-	-	1
Total	2,108	1,943	1,109	-	10,645	110,820
Partially Used Reduction (Existing Units)	-	-	303	-	-	-
Adjusted Total	2,108	1,943	806	-	10,645	110,820
Vacant Only**	2,121	1,321	769	-	10,645	110,820
Adjusted Total Minus Resource Lands	2,141	129	1,002	•	10,645	110,820
Vacant Only Minus Resource Lands	2,121	-	697	-	10,645	110,820

Note

6.1.5 City of Cashmere

The City of Cashmere is largely developed along its shoreline, but may see additional development in the form of residential dwellings: 8 to 58 single-family

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^{*} Majority of acres in Commercial Agricultural or Commercial Forest Lands designations.

^{**}The "partially used/underused acres" in this row represent vacant commercial agriculture or forest lands. The reason these acres are treated as "partially used/underutilized" is that they have an activity on them presently and because the analysis applied a higher market factor reduction since these lands are less likely to develop with residential uses than non-resource lands.

and 57 to 103 multi-family units. The lower range represents vacant land development and the upper range represents subdivision of lots that already have a home, or addition of multi-family dwellings on multi-family properties where the land value exceeds the building value. Commercial and industrial uses may be expanded on existing underutilized properties or added to vacant properties (Table 33). Also, there are about 7 acres (excluding critical areas) of vacant properties designated for public uses which may be modified along the shoreline.

Table 33. City of Cashmere Shoreline Land Capacity Estimates

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multi- family Units	Commercial Sq Ft	Industrial Sq Ft
Mission Creek	1	18	76	28	3,310	17,396
Wenatchee River	6	7	25	75	27,282	22,452
Total	7	26	101	103	30,591	39,848
Partially Used Adjustment	-	-	43	-	-	-
Adjusted Total	7	26	58	103	30,591	39,848
Total - Vacant Only	7	0	8	57	8,027	21,391

6.1.6 City of Chelan

Future development along Lake Chelan and the Chelan River may add 208 to 466 new dwellings, most of which are single-family. More commercial development is also possible on those same shorelines in the commercial and tourist-oriented districts. There is also capacity for industrial development along the Columbia River (Table 34). In addition to the land capacity estimates, there are approximately 41 acres (excluding critical areas) of public lands which may see modification along the shoreline in the future.

Table 34. City of Chelan Shoreline Land Capacity Estimates

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multifamily Units	Commercial Sq Ft	Industrial Sq Ft
Chelan River	22	4	67	4	86,835	0
Columbia River	9	0	0	0	0	160,301
Lake Chelan	47	105	560	24	107,106	0
Total	78	109	626	29	193,942	160,301
Partially Used Adjustment	•	1	160	-	-	1
Adjusted Total	78	109	466	29	193,942	160,301
Vacant Only	78	0	208	29	148,641	160,301

6.1.7 City of Entiat

The City of Entiat is expected to see additional growth of all types: single-family, multi-family, commercial, and industrial. The land capacity analysis was modified to ensure that the parcels that are part of the waterfront redevelopment plan were accounted for, whether or not they met the initial land capacity analysis screening requirements. Though the City does not designate "public" properties in their zoning districts, some PUD properties shown on the land capacity mapping are excluded in the statistics; there are about 9 acres of PUD property that maybe modified along the shoreline in the future.

The range of potential single-family dwellings is 44 to 49, though the configuration of current lots, location of dwellings, and availability of utilities may make additional subdivision difficult (Table 35). Multi-family equals about 40 dwelling units (assumed as part of mixed use on waterfront). Commercial square footage is possible both along the waterfront plan area and in areas designated for Commercial/Light Industrial on vacant properties. Also, some industrial square footage is estimated on Commercial/Light Industrial designated properties that are vacant.

Additional information can be found in Appendix A which characterized land use patterns, biologically critical areas, other areas of interest, and shoreline opportunity areas.

Table 33.	City Oi	1	Net Acres		Simales
Table 35.	City of Entiat Shoreline Land Capacity Estimates				

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multifamily Units	Commercial Sq Ft	Industrial Sq Ft
Columbia River	22	9	79	40	133,974	91,406
Entiat River	1	4	17	0	0	0
Total	22	13	96	40	133,974	91,406
Partially Used Adjustment	-	-	47	-	-	-
Adjusted Total	22	13	49	40	133,974	91,406
Total Vacant Only	22	0	44	40	133,974	91,406

6.1.8 City of Leavenworth

Land capacity results show additional single-family, multi-family, commercial and industrial is possible along Leavenworth shorelines. In particular, commercial uses are possible along the Wenatchee River. The statistics in Table 36 do not show development on public recreation properties, which total about 116 acres (excluding critical areas). These 116 acres may see modification of parks and recreation facilities, but are not likely to see commercial or residential uses.

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Table 36. City of Leavenworth Shoreline Land Capacity Estimates

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multi- family Units	Commercial Sq Ft	Industrial Sq Ft
Chumstick Creek	3	2	3	-	-	79,427
Alternative Assumptions	3	2	2	-	-	79,427
Wenatchee River	14	11	14	41	142,795	0
Alternative Assumptions	14	10	8	41	140,452	0
Total - All	17	13	18	41	142,795	79,427
Partially Used Adjustment	-	-	31	-	-	-
Adjusted Total	17	13	-13	41	142,795	79,427
Total - Minus parcel screen	17	12	10	41	140,452	79,427
Partially Used Adjustment			31			
Adjusted Total - Minus Parcel Screen	17	12	-21	41	140,452	79,427
Total - Vacant Only	17	0	5	15	102,846	48,755

About five additional single-family residential dwellings may be added along Leavenworth shorelines, as well as 41 multi-family dwellings. The City of Leavenworth requested a higher parcel screen to exclude residential parcels less than 10,000 square feet from the analysis. A comparison is made, similar to other jurisdictions, to the standard approach of excluding lots less than 2,500 square feet.

Since the single-family parcels that are considered partially developed have very little area left for second dwellings given various discount factors, there are a negative number of single-family dwellings shown. It is unlikely that the City will see a reduction in housing. Rather, it is more likely that owners of properties that theoretically could subdivide would not add a second dwelling, and rather that the City would see five additional dwellings on the vacant acres only.

6.1.9 City of Wenatchee

The City of Wenatchee and its UGA contain potential for additional mixed use, multi-family/commercial, and residential and industrial uses. Uses near the waterfront are likely to be the most intense in the County due to greater density and height allowed compared to other communities. However, most new development will occur beyond the 200-foot shoreline jurisdiction.

Though the City's plans do not separately designate public lands, and rather include them in the Waterfront Mixed Use district, much of the land in the shoreline jurisdiction consists of PUD and State parkland, as well as BNSF railroad property, and thus the development will be based on the primary function of those properties as recreation and transportation. Table 37 identifies land capacity with and without Waterfront Mixed Use lands. For reference, it also includes an estimate with only a portion of Waterfront Mixed Use lands

removed (those removed are public properties per the Ownership map). Estimates partially excluding the Waterfront Mixed Use lands are more likely given that the majority of Waterfront Mixed Use lands in shoreline jurisdiction consist of public or infrastructure uses.

Table 37. City of Wenatchee Shoreline Land Capacity Estimates

Waterbody	Net Acres - Vacant	Net Acres - Partially Used/ Underused	Single Family Units	Multifamily Units	Commercial Sq Ft	Industrial Sq Ft
Columbia River	82	26	-	1,200	85,926	910,551
Minus Waterfront Mixed Use	42	14	-	82	-	910,551
Wenatchee River	62	68	25	1,844	123,417	639,870
Minus Waterfront Mixed Use	31	23	25	238	-	639,870
Total - All	144	94	25	3,044	209,344	1,550,421
Partially Used Adjustment	-	-	7	-	-	-
Adjusted Total	144	94	18	3,044	209,344	1,550,421
Total - Minus Waterfront Mixed Use	72	37	25	320	-	1,550,421
Partially Used Adjustment	-	-	7	-	-	
Adjusted Total - Minus Partial Waterfront Mixed Use	74	46	25	530	16,098	155,0421
Adjusted Total - Minus All Waterfront Mixed Use	72	37	18	320	-	1,550,421
Total - All Zones - Vacant Only	144	-	21	1,753	116,800	1,020,270
Total - Minus Waterfront Mixed Use - Vacant Only	72	-	21	233	-	1,020,270

6.2 Available Economic Studies

This section describes economic or market studies to give context to the land capacity analysis results. Two communities with recent waterfront plans have prepared such studies: Entiat and Wenatchee.

6.2.1 City of Entiat

Entiat intends to transform a portion of its Columbia River waterfront currently used for mining activity to a mixed use tourist-oriented center. The area available for development is approximately 19.3 acres. Entiat's "Waterfront Visioning

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Process 2008/2009" provides a summary of citizen input, conceptual plans, and environmental and economic information. The visioning report notes

"Currently, Entiat has a very small retail base that does not generate enough tax revenue to balance the cost of growth. The community has identified a desire for a tourist-commercial waterfront area within the city limits as a means of generating sales and lodging tax revenue while providing both visitors and residents better opportunities for water access."

Conceptual waterfront plans identify the following potential uses: marina, business and commercial, mixed use condominiums and retail, open space, riparian restoration, multi-use trail, a new waterfront road, and parking, among other features. The development may be phased over 20 years as a current gravel operation completes extraction and reclamation.

In terms of economic impact, the visioning report identifies the following basis for considering a tourist-based economic strategy and the potential local economic impact:

- Chelan County is listed as one of six Counties in the State in which more than 10% of jobs are travel generated.
- In 2006, visitors to public campgrounds in Chelan County spent a total of \$10.7 million, while visitors that stayed in hotels and motels spent \$202.3 million, almost 19 times the amount spent by campers.
- Visitor spending on Food & Beverage Services in Chelan County amounted to \$98.3 million in 2006
- A 50 unit hotel and restaurant could provide \$56,430.90 tax revenue to Entiat in its first year and \$93,783.60 revenue in its second year of operation.
- Based on a comparison of marinas in the City of Lake Chelan, Port of the
 Dalles, and Port of Hood River, a 60 to 70 slip marina could have slightly
 better than break-even potential. Because the goal of offering a marina
 facility on Lake Entiat is to bring in tourists who will spend money on
 hotels, restaurants, and shops rather than to be profitable in itself, a 60 to
 70 slip size could be effective for the City of Entiat.
- It is likely that the City would enter into a public/private partnership with
 developers who would lease the land designated for marina and take on
 the costs of permitting, design, land construction in return for a long-term
 operational lease of the facility.

Land capacity analysis results for the subject waterfront plan area show the following: 77,000 square feet of additional commercial space and 40 multifamily units. This assumes a 75% commercial and 25% residential split, with residential

at 17 dwelling units per acre. This also assumes a shoreline setback of 50 feet for purposes of a conservative estimate.

6.2.2 City of Wenatchee

The City has adopted the Wenatchee Waterfront Sub-area Plan for an area bounded by the Wenatchee River confluence on the north, the Columbia River on the east, pedestrian bridge to the south, and the BNSF Railroad tracks on the west. This plan intends to transform this area from an industrial intensive area to a mixed use district with residential, commercial, and recreation uses. Three major nodes are planned, each with a different emphasis:

- North node: commercial, recreation and residential
- Central node: recreation, retail, mixed use
- South node: mixed use development building or boating and recreation activity
 An economic analysis (Berk & Associates 2003) projected the following levels of
 development:
- 1,440 Waterfront dwelling units developed incrementally and geographically spread over the south, central and north ends of the Waterfront;
- 96,000 square feet of new retail development likely consisting of convenience and boutique shopping;
- 155,000 square feet of office space spread between the south and central portions of the Waterfront;
- Other uses that are considered: A family-oriented restaurant located on the Waterfront at the foot of Orondo; long-term development of two Waterfront hotel concepts, one catering to conference attendees and the other to tournament-goers; and indoor sports complex and a water park.

 Because the Wenatchee Waterfront Sub-area Plan is much larger in area than the 200-foot shoreline jurisdiction area, these development projections are far greater than projected in the shoreline land capacity analysis for shoreline jurisdiction. Additionally, the shoreline jurisdiction largely falls on the PUD and State parkland, as well as BNSF railroad property, and thus the development there will be based on the primary function of those properties as recreation and transportation.

7. Public Access Analysis

Discussions in Chapters 3 and 4 describe existing and planned public access sites. This chapter describes additional opportunities for future public access sites.

7.1 Parks and Recreation Easements

This section describes lands and easements that are dedicated for public use, but which have not been fully improved. The focus is upon fishing easements along the Wenatchee River; however, Public Access maps provided with this report

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generally identify fishing and recreation areas and constraints throughout the County.

The Trust for Public Land "Wenatchee Watershed Vision: Ideas for Sustaining and Enhancing a Balanced Landscape" describes the current status of fishing easements as follows:

In the 1970s, the Chelan PUD purchased over 30 fishing easements along the Wenatchee River as part of mitigation efforts for Rocky Reach Dam. The fishing easements were transferred to the Washington Department of Fish and Game, now WDFW. The easements are an incredible public asset but have not been adequately mapped in decades and are not currently maintained. Opportunities exist to accurately map the fishing easements, contact relevant landowners, pursue "low-hanging fruit" easements, and embark on educating the public about fishing-access opportunities along the Wenatchee River. Several challenges will need to be overcome to make progress on the fishing easement issue. (The Trust for Public Land 2007)

Discussions with WDFW and PUD staff are recommended to sort out the status of the easements, and to collect legal descriptions. Easements likely need to be reviewed and surveyed prior to determining appropriate actions. Actions may include improving access on unused sites, consolidating access points for maintenance purposes, or land surplus, exchanges or purchases, etc. Scattered, small access points with low levels of alteration are preferred by some recreators for certain uses (e.g., fishing), but not others (e.g., RV camping, swim beaches, picnicking, event facilities).

The Wenatchee River fishing easements are identified generally on Public Access maps provided with this report. For purposes of the Shoreline Analysis, additional information has been added to the Public Access maps, showing the areas within shoreline jurisdiction that exceed 15% slope and areas that contain wetlands. These may be constraints to future use of unmaintained fishing easements. Opportunities for additional fishing easements may include the vacant lands that lie along the shoreline, and these are also mapped on the Public Access maps.

A summary of active Wenatchee River fishing access locations and concerns are shown in Table 37. Some of these sites encompass WDFW easements and others do not. The WDFW easements are identified generally on the Public Access maps.

Table 37. Wenatchee River fishing access locations.

Name	General Location	Comments
Braeburn Road	Near Lake outletDownstream of first bridge across	Do not block access to Braeburn Road residents.
	Wenatchee River	This can also be takeout for Nason Creek.

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Name	General Location	Comments
Cashmere	Downstream of Cotlets Bridge Downstream of Cotlets Bridge	No facilities Short trail to river
	Cross bridge, then immediately turn left onto Riverfront Drive	Short trail to river
	Park on road right-of-way, after Parkhill Street	
Cashmere Riverfront Park	Follow signs to Riverside Park located downstream of river, right side of bridge	Parking, restrooms, changing roomsLanding on river right, below bridge
Confluence State Park	Highway 2 exit at Wenatchee interchange; follow State park signs	Requires short paddle up Columbia River Use dock or beach
Dryden	Access located on State Fish & Wildlife property Below Gorilla Falls, across from irrigation flume	Parking and toilet
Glacier View Campground	Access located in Wenatchee National Forest 5.5 miles from south State Park entrance	Can be takeout for White River, but shuttle is longer Boat launch and picnic fees
	Located on opposite side of lake from other sites	
Goodwin Bridge	Road right-of-way above Snow Blind rapid Opposite Camino Real Café	Lift boats over guard rail
Lake Wenatchee State Park	Use south park entrance	Parking and boat launch fees
Lake Wenatchee – University Beach	Parking located between YMCA camp and first houses on N Shore Road	Path leads to N Shore Road, but no signage exists
Lake Wenatchee – Wenatchee National Forest	Access located along Forest Service road to lake, after 1211 N Shore Drive	Problems with this Lake Wenatchee Landing Area Access Access point is on list of land that Forest Service might sell in future Gated dirt road is approximately one-quarter of a mile long and goes down hill Lack of parking space
Leavenworth	Access located on City property East Leavenworth Road, between the bridge and Safeway shopping center Continue approximately one-half mile and when road bends left, follow dirt road to right	No fees for non-commercial use Large parking area
Peshastin Dryden Dam	Access located on Department of Transportation and Chelan Public Utility District properties	Gate was locked in spring 2006 due to neighbor complaints, excessive littering, and damage to WSDOT equipment. Reasons for unlocking gate: emergency vehicle access; Ability to put in and run some challenging water

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Name	General Location	Comments
		Future plans: WSDOT says site will be declared surplus in few years
Peshastin State Fish & Wildlife	River Road	Portable toilet State Fish and Wildlife parking permit required Easy carry to river
Plain	Highway right-of-way at bridge Bridge on Highway 209, near Plain	Room to park approximately 4 vehicles Upstream, river right Carry boats to river
Rodeo Hole / Fox Access	Access located on State Fish & Wildlife property	Popular access pointParking and toiletWatch out for poison oak
Schugart Flat Gravel Pit	Schugart Flat Road	Caution – check suitability of eddy, especially when cfs is high
Sleepy Hollow Bridge	Access located on Chelan County property River access is left of power pole	 After unloading, return to Lower Sunnyslope Road and park This site was only recently made available. During summer, toilet available on other side of road
Monitor #1	Access located on State Fish & Wildlife property Cross bridge at town of Monitor, then turn right	
Monitor #2	Access located on State Fish & Wildlife property. Old Monitor Road to dirt road. Located just above fish trap	
Tumwater Campground	Located along Highway 2 in the Wenatchee National Forest Located at bridge just south of campground entrance	 Large parking area near bridge Access upstream of bridge Access trail to river is steep Check out eddy before shuttle and launch
Turkey Shoot Road	Access located on State Fish & Wildlife property Turkey Shoot Road. Continue 0.7 miles to access point at end of road	Toilet Easy carry to river

Source: Pers. com., Spencer, 2008

7.2 Opportunities for Future Public Access

This section describes opportunities for future public access along shorelines in Chelan County beyond those identified in County and City plans. Opportunities include road/street ends, potential acquisitions based on vacant parcels, and "no owner" parcels, land trust activities, and areas where informal access is occurring now.

7.2.1 Road/Street Ends

Road or street ends consist of street segments that are not required for vehicular access and that can potentially provide the public with visual or physical access to a body of water and its shoreline. Table 38 provides a summary of the number and acres of such road/street ends that have been identified along 12 waterbodies. The most are identified along Lake Chelan and along the Wenatchee River. The potential road/street ends are mapped on the series "ROW Analysis." The maps and data require verification by City public works staffs and citizens.

Table 38. Street Ends

				med by y or City	Unconfirmed but highly probable	
Waterbody/ Jurisdiction	Parcels	Acres	Parcels	Acres	Parcels	Acres
Chiwawa River	1	0.68	1	0.68		
Columbia River ¹	18	3.89	7	1.73	11	2.15
Entiat River	7	1.18	7	1.18		
Fish Lake	1	0.63	1	0.63		
Icicle Creek	12	2.09	8	1.86	4	0.23
Lake Chelan	45	8.55	16	5.59	6	0.60
Lake Chelan: City of Chelan Analysis			23	2.36		
Lake Wenatchee	11	2.44	11	2.44		
Mad River	10	2.44	10	2.44		
Nason Creek	1	0.18	1	0.18		
Peshastin Creek	2	5.50	2	5.50		
Wenatchee River	40	5.15	33	4.35	7	0.79
TOTAL	148	32.71	120	28.94	28	3.77

¹ Two street ends along the Columbia River appear to lie in the Entiat City limits and are under review for confirmation.

The following examples of street end programs in other jurisdictions may provide management ideas for Chelan County. The City of Seattle, Washington has a "street ends" program applicable to 149 street ends. The program includes a process for improving a shoreline street end for public access and permitting of private uses. Neighbors that petition for development of a street end for public access may assume maintenance. A City resolution includes criteria to be employed in "evaluating the suitability of a street end for public use improvements, and providing that new private use permits will be granted only when there is no active proposal for a public street improvement." A City ordinance further clarified the intent and process to: "a) keep adjacent property owners from encroaching on the public's shoreline street-ends; b) encourage people with permitted encroachments to remove them; c) require unpermitted encroachments to be permitted and removed; and d) discourage private use permit applications" (City of Seattle 2008).

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The City of Lakewood, Washington is currently addressing street ends around a lake. Initial staff and parks board recommendations identify particular street ends that should be retained as is, improved, leased, or vacated. The process involved two years of efforts by staff and the parks board, including consultation with citizens (City of Lakewood 2008).

An implementation strategy for the SMP could be to further study street ends for purposes of public visual or physical access.

7.2.2 Vacant and "No Owner" Parcels

Opportunities for public access and recreation properties may be found by reviewing the location of vacant parcels and parcels with "no owners" according to the Assessor records.

Vacant properties have been layered along with parks and public and protected lands inventories on "Public Access" maps. There are numerous properties without structures along shorelines in all basins and communities. Statistics regarding parcels without buildings are provided in Section 4 for each basin and City/UGA under the heading "Developing or Redeveloping Waterfronts."

"No owner" parcels are identified on inventory maps titled "ROW Analysis." These are properties for which the Assessor has not identified an owner. Some parcels may be associated with a condominium development (e.g. common open space) and are "under review," but others appear to be separate full parcels unassociated with other properties. Table 39 summarizes the number of "no owner" parcels along 17 shorelines. The full set of identified parcels requires review and conformation by the County, Cities, and citizens.

Table 39. "No Owner" Parcels

Waterbady	Total	Total Acres	No O	wner	No Owner,	in Review
Waterbody	Parcels	Total Acres	Count	Acres	Count	Acres
Chiwawa River	2	3.73	1	3.05		
Columbia River	23	26.22	18	25.57	2	0.21
Dry Lake	1	0.13	1	0.13		
Eightmile Creek	2	2.20	2	2.20		
Entiat	1	0.52				
Entiat River	4	10.48	4	10.48		
Fish Lake	1	0.63	0.63 1			
Icicle Creek	16	6.21	2	5.00		
Lake Chelan	25	11.12	21	4.19	3	6.71
Lake Chelan: City Data	23	10.41				
Mad River	5	1.92	2	0.87		
Mission Creek	11	1.40	2	0.65	9	0.76
Nason Creek	3	5.93	2	5.75		
Peshastin Creek	4	10.76	4	10.76		
Roses Lake	2	0.49	1	0.26		
Stehekin River	1	1.14	1	1.14		
Wenatchee Lake	11	2.47	1	0.63		
Wenatchee River	46	30.68	17	26.35	4	1.08

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Waterbody	Total	Total Acres	No Owner		No Owner, in Review	
Waterbody	Parcels	Total Acres	Count	Acres	Count	Acres
Total	181	126.43	80	98	18	9

7.2.3 Land Trusts

Two land trusts are particularly active in Chelan County: The Chelan-Douglas Land Trust and The Trust for Public Land. Both trusts have active programs for land stewardship and open space acquisition in and around Chelan County. Trust planning, stewardship and land acquisitions may help local governments and citizens to further public access goals and prioritize efforts. Recent programs are described below.

Chelan-Douglas Land Trust

The Chelan-Douglas Land Trust has a mission: "Conserving our land, our water, and our way of life through voluntary land agreements, education, partnerships, stewardship, and well planned growth." The Trust's projects along shorelines include, but are not limited to:

- White River: Working with private landowners, federal and State agencies and Chelan County to permanently protect the natural functions and scenic qualities of the White River watershed.
- Entiat River Valley: Actively involved in efforts to protect fish habitat, wildlife habitat, and floodplain function along the "Stillwaters" reach of the Entiat River.
- Icicle Valley: Acquisitions near Mountain Home Road.
- Wenatchee Valley Trail: Active planning with grant funding. (Chelan-Douglas Land Trust 2008 a, b)

The Trust for Public Land

The Trust for Public Land is a national non-profit organization, with a mission to conserve "land for people to enjoy as parks, community gardens, historic sites, rural lands, and other natural places, ensuring livable communities for generations to come." The Trust has been actively involved in land management strategies including the "Stemilt-Squilchuck Community Vision and Conceptual Plan" and "Wenatchee Watershed Vision: Ideas for Sustaining and Enhancing a Balanced Landscape."

The "Stemilt-Squilchuck Community Vision" includes a conceptual plan identifying areas in use for agricultural activities as well as areas that are suitable or should be managed as snow retention areas, primary wildlife and habitat areas, secondary wildlife and habitat areas, recreational resources, and water storage priority. The areas identified as suitable for recreation may be opportunity areas to purchase or conserve for public access.

The "Wenatchee Watershed Vision" provides a plan for "critical mass of orchards, compact urban development, biodiversity conservation, migration

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corridor protection, and safe recreational corridors and connections." Biodiversity conservation and migration corridor protection is shown along the major shorelines in the basin. Recreation corridors are designated along Icicle Creek, Peshastin Creek, Mission Creek, and the Wenatchee River. Additionally, the plan identifies areas with significant mass for agriculture running along the Wenatchee River valley, and compact development in current urban areas and towns. This plan is likewise useful as a guide to potential priorities for parks and recreation plans and acquisition.

7.2.4 Public Utility District No. 1 of Chelan County

Section 3.7 describes parks and recreation facilities across the County. One key provider along shorelines in Chelan County is the Public Utility District (PUD). The PUD maintains 10 facilities and 467 acres, including, but not limited to, Entiat Park, Chelan Falls Park, Chelan Riverwalk Park, Manson Bay Park, Walla Walla Point Park, Washington Confluence State Park, and others.

The PUD has also worked with local communities in the Wenatchee River valley to plan for parks and recreation areas. In March 2003, the Upper Valley Plan for the Wenatchee River was completed to develop an interpretive program focusing on sites exhibiting the natural and cultural resources of the Wenatchee River Upper Valley. The sites are located in Leavenworth, Peshastin, Dryden, Cashmere, and Monitor. The plan was not formally adopted, but serves as a guide to identify interpretive sites, river access points, and habitat enhancement, as well as promoting tourism. The PUD worked with property owners, stakeholders, government agencies, and others. The process involved identifying opportunity sites, and analyzing and ranking them for further concept development. The five sites selected for concept development included:

- Leavenworth Fish Hatchery Owned by the U.S. Fish and Wildlife Service, the site is described as suitable for passive recreation, interpretation, and habitat enhancement.
- Peshastin Log Deck Owned by the Port Authority of Chelan County, the
 opportunities included relationship to the Port's development plans,
 passive recreation, interpretation, with a potential trail link to
 Leavenworth on an old rail bed.
- Dryden Beaver Pond Habitat enhancement, environmental education, passive recreation, site protection, and local community use are proposed features on the Washington Department of Fish and Wildlife property.
- Cashmere Museum Key features for the Chelan County Historical Museum-owned property include reinforcing existing and proposed interpretive displays, adding signs, trails, and an interpretive orchard at the entry.
- Monitor Eagle Overlook This private property is described as a suitable
 passive recreation site with an interpretive kiosk, viewpoint, and
 interpretive signs, as well as bird, river, and valley viewing opportunities.

Concept plans are included in the Upper Valley Plan for the Wenatchee River and provide more detail (J.T. Atkins & Company PC and J.A. Brennan and Associates PLLC, March 2003).

7.2.5 Informal Public Access

At shoreline visioning workshops, several citizens identified informal or private access points, such as: KOA campground at Leavenworth, an informal boat launch down river of Cashmere, the mouth of the Entiat River, and "Three Fingers" in Lake Chelan. There are likely many more informal access points. Planning for more public access points in high use areas can reduce pressure at other crowded public access points and avoid trespass of private properties.

7.3 Shoreline Public Access Planning

Each jurisdiction is developing a shoreline public access plan as part of their Shoreline Master Program which identifies additional opportunities for future public access along shorelines.

8. DATA GAPS

Information was not located for the following parameters:

- Geohazard mapping for Cities of Cashmere, Entiat, and Leavenworth
 - Sewer system mapping for City of Entiat
 - Mapping of aquifer recharge areas
- Mapping of groundwater movement patterns this is not a required element, but may be useful in future analysis and development siting efforts.
- Shoreline armoring mapping.

Although information about each of the above items might help develop a fuller picture of shoreline conditions and processes, it is not expected that the absence of these items would have significant impacts on the selection of environment designations or the development of the SMP. The presence/absence in shoreline jurisdiction of other environmental conditions for which data is available is expected to be more relevant to decision making.

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9. REPORT REFERENCES AND BIBLIOGRAPHY

(Note: Many of the references listed below may not be directly utilized in the preceding chapters, but may be sources for the map folio)

Aerial Photography

Washington Department of Ecology. 36" and 18" orthophotos.

Multi-Topic General Reference Materials/GIS Sources

- Andonaegui, C. 2001. Trout Habitat Limiting Factors for the Wenatchee Subbasin (Water Resource Inventory Area 45) and Portions of WRIA 40 within Chelan County (Squilchuck, Stemilt and Colockum drainages). Final Report. November 2001. http://www.scc.wa.gov/index.php/265-WRIA-45-40-partial-Wenatchee-Subbasin/View-category.html
- Chelan County. 1975. Shoreline Master Program. Prepared for Chelan County Regional Planning Council. April 22, 1975.
- Chelan County Conservation District. 1998. Entiat River Inventory and Analysis. Prepared for the Entiat WRIA Planning Unit. January 1998.
- Chelan County Conservation District. 2004. Entiat Water Resource Inventory Area (WRIA 46) Management Plan. Prepared for the Entiat WRIA Planning Unit. October 2004. http://www.cascadiacd.org/index.php?page_id=255
- Chelan County Conservation District. 2006. Detailed Implementation Plan, Entiat Water Resource Inventory Area (WRIA 46). Prepared for the Entiat WRIA Planning Unit. February 2006.
- Chelan County PUD. 2000. Shoreline Erosion Control Study Plan. Final Report.

 January 15, 2000. http://www.chelanpud.org/rr relicense/study/plans/1764 2.pdf
- Chelan County and City of Chelan. 2008. Preliminary Draft Lake Chelan Strategic Plan. Prepared for the Lower Lake Chelan Basin. October 2008.
- City of Leavenworth Community Development Department. 2007. Draft Leavenworth Downtown Master Plan. September 2007.
- GeoEngineers, Inc. 2007. Habitat Farming Enterprise Program: Conceptual Riparian and Aquatic Habitat Restoration Plan Sanray Orchards, Entiat River Valley, Chelan County, WA. Prepared for Initiative for Rural Innovation and Stewardship (IRIS). June 2007.

- Healthy Lands Initiative. Institute for Rural Innovation and Stewardship (IRIS). 2007.
- Laura Berg Consulting, et al. 2004a. Entiat Subbasin Plan. Prepared for the Northwest Power and Conservation Council. May 2004. http://www.nwppc.org/fw/subbasinplanning/entiat/plan/EntirePlan.pdf
- Laura Berg Consulting, et al. 2004b. Wenatchee Subbasin Plan. Prepared for the Northwest Power and Conservation Council. May 2004. http://www.nwppc.org/fw/subbasinplanning/wenatchee/plan/WenatcheePlan_screen.pdf
- Laura Berg Consulting. 2004c. Lake Chelan Subbasin Plan. Prepared for the Northwest Power and Conservation Council. May 2004. http://www.nwppc.org/fw/subbasinplanning/lakechelan/plan/EntirePlan.pdf
- Laura Berg Consulting, et al. 2004d. Upper Middle Mainstem Subbasin Plan. Prepared for the Northwest Power and Conservation Council. May 2004. http://www.nwcouncil.org/fw/subbasinplanning/uppermidcolumbia/plan/
- RH2 Engineering, Inc. 2007. WRIA 40A Watershed Plan. Prepared for WRIA 40A Squilchuck/Stemilt Planning Unit. May 2007.
- The Trust for Public Land. 2007. Wenatchee Watershed Vision: Ideas for Sustaining and Enhancing a Balanced Landscape. September 2007. http://www.tpl.org/content_documents/wa_WenatcheeWatershedVision_FullReport.pdf
- UCRTT [Upper Columbia Regional Technical Team]. 2007. A Biological Strategy to Protect and Restore Salmon Habitat in the Upper Columbia Region, A Report to the Upper Columbia River Salmon Recovery Board. Available from the Upper Columbia Salmon Recovery Board, Chelan, Washington.
- USDA Forest Service. 1990. Land and Resource Management Plan Wenatchee National Forest.
- USDA Forest Service. Mt. Baker-Snoqualmie National Forest GIS data. http://www.fs.fed.us/r6/mbs/maps/gis.shtml
- USDA Forest Service. Wenatchee National Forest GIS data. http://www.fs.fed.us/r6/data-library/gis/wenatchee/index.shtml
- USDI Bureau of Land Management. GIS data. http://www.blm.gov/or/gis/data.php
- USDI Bureau of Land Management. 2008. Nason Creek Tributary Assessment, Chelan County, Washington. 123 pp.

Page 132 June 2013

Wenatchee Watershed Planning Unit and Chelan County Natural Resources. 2003. Wenatchee River Basin Watershed Assessment. August 2003. http://www.co.chelan.wa.us/nr/data/watershed_assessment/chaps_1_2_3_jan.pdf

Wenatchee Watershed Planning Unit. 2006. Wenatchee Watershed Management Plan. April 2006. http://www.co.chelan.wa.us/nr/nr_watershed_plan.htm

Critical Areas

Chelan County GIS.

Wetlands

National Wetlands Inventory.

Washington Department of Fish and Wildlife.

Natural Resources Conservation Service's Soil Survey Geographic (SSURGO) Database (hydric soils)

Geologically Hazardous Areas

Chelan County GIS.

Chelan County Emergency Management Council. 2006. Chelan County Multi-Jurisdiction Natural Hazard Mitigation Plan. Breaking the Disaster Cycle: Planning for a Disaster-Resistant Chelan County. http://www.chelandem.org/documents/Chelan%20County%20Hazard%20Plan%20_ Final%20Draft_%200630041.pdf

Washington Department of Natural Resources. GIS data.

Critical Aquifer Recharge Areas

No mapping available.

Fish and Wildlife Habitat/Priority Species

Hillman, T.W. and A.E. Giorgi. 2000. Historical occurrence of anadromous salmonids in Lake Chelan, Washington. Prepared for Chelan County Public Utility District.

Washington State Conservation Commission. 2001. Salmon, Steelhead, and Bull Trout Habitat Limiting Factors for the Wenatchee Subbasin (Water Resource Inventory Area 45) and Portions of WRIA 40 within Chelan County (Squilchuck, Stemilt and Colockum drainages. Final Report. November 2001. http://salmon.scc.wa.gov/reports/wria40_45.pdf

Washington Department of Fish and Wildlife. 2008. Priority Habitats and Species database.

Toxic or Hazardous Material Clean-Up Sites

Washington Department of Ecology. Toxics Cleanup website. http://www.ecy.wa.gov/programs/tcp/sites/sites_information.html

Washington Department of Ecology. Hazardous Sites List. February 2008. http://www.ecy.wa.gov/pubs/0809043.pdf

Land Use

Chelan County GIS.

Chelan County. 2000. Chelan County Comprehensive Plan. Last amended 12 April 2007

Chelan County. 2007. Comprehensive Parks and Recreation Plan. October.

Chelan County. 2008. Peshastin Urban Growth Area Comprehensive Plan. October.

City of Cashmere. GIS data.

City of Cashmere. January 14, 2008. Comprehensive Land Use Plan. Ordinance 1117.

City of Cashmere. 2008. Draft Parks and Recreation Comprehensive Plan 2009-15. October.

City of Chelan Zoning Code.

City of Chelan. 2007. City of Chelan Comprehensive Plan 2007

City of Chelan. GIS data.

City of Entiat. GIS data.

City of Entiat. 2007. City of Entiat Comprehensive Plan.

City of Entiat. 2008. City of Entiat Waterfront Visioning Process 2008/2009. October.

City of Leavenworth Critical Areas Code. Chapter 16.08.

City of Leavenworth. 2007. Leavenworth Downtown Master Plan.

City of Leavenworth. GIS data.

Page 134 June 2013

City of Leavenworth. 2003. City of Leavenworth Comprehensive Plan. August 12, 2003.

City of Wenatchee and Chelan County Public Utility District. 2003. Wenatchee Waterfront Sub-Area Plan.

City of Wenatchee. 2007. Planning to Blossom 2025: Wenatchee Urban Area Comprehensive Plan.

City of Wenatchee. GIS data.

Malaga Community Council. 2006. Malaga Vision Plan.

Maul Foster Alongi. 2008. Preliminary Draft, Lake Chelan Strategic Action Plan.

National Park Service. GIS data.

Pacific Appraisal Associates, PLLC. 2007. Summary Appraisal of Cedarbrook Property, 5455 Sunset Highway, Cashmere, WA. April 5, 2007.

SMD Solutions. 2009. Lord Acres Subarea Plan. Prepared for City of Chelan. January 2009.

Studio Cascade. 2008. Draft Manson Subarea Plan. March.

The Trust for Public Land, The Stemilt Partnership, and Core GIS. 2008. Stemilt-Squilchuck Community Vision. September.

U.S. Forest Service. GIS data.

United States Department of Agriculture. GIS data.

Washington State Community Economic Revitalization Board and Port of Chelan County. 2008. Final Contract, Economic Feasibility Study Grant/Site Pre-Development Planning Grant. June 4, 2008.

Washington State Department of Transportation GeoData Distribution Catalog. http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm

Stormwater/Wastewater Utilities

Chelan County GIS.

Chelan County. 2000. Chelan County Comprehensive Plan.

Chelan County PUD. GIS data.

- City of Wenatchee. Wenatchee Valley Stormwater Technical Advisory Committee. City of Wenatchee website. http://www.wenatcheewa.gov/Index.aspx?page=319
- City of Wenatchee. Stormwater Utility. City of Wenatchee website. http://www.wenatcheewa.gov/Index.aspx?page=318
- Maul Foster Alongi. 2008. Lake Chelan Strategic Action Plan Preliminary Draft.
- Washington State Department of Health, Division of Environmental Health. List of LOSS (Large On-site Sewage Systems) with approximate locations
- Wenatchee Valley Stormwater Technical Advisory Committee. 2008. Wenatchee Valley Stormwater Management Program. May 2008.

Floodplains and Channel Migration Zones

Bureau of Reclamation. 2009a. *Entiat Tributary Assessment*. January 2009. Prepared by Technical Service Center, Sedimentation and River Hydraulics Group (M/S 86-68240), Denver, CO in cooperation with Pacific Northwest Regional Office, Boise, ID and Wenatchee-Entiat Field Station, Wenatchee, WA.

Chelan County GIS.

- Chelan County Emergency Management Council. 2006. Chelan County Multi-Jurisdiction Natural Hazard Mitigation Plan. Breaking the Disaster Cycle: Planning for a Disaster-Resistant Chelan County. http://www.chelandem.org/documents/Chelan%20County%20Hazard%20Plan%20_ Final%20Draft_%200630041.pdf
- Federal Emergency Management Agency (FEMA). 1978. Flood Insurance Rate Map (FIRM).
- Jones & Stokes. 2004. Chelan County Natural Resource Program, Final Wenatchee River Channel Migration Zone Study Phase II. April 16. (J&S 01243.01) Bellevue, WA. Prepared for the Chelan County Natural Resource Program, Wenatchee, WA.
- nhc (Northwest Hydraulic Consultants). 2003. Wenatchee River Channel Migration Zone Study. Draft Technical Memorandum. Tukwila, WA.
- Riedel, J. 2008. Stehekin River Information Base, Lake Chelan National Recreation Area, White Paper #1 Stehekin River Corridor Implementation Plan. National Park Service.

Historical or Archaeological Sites

Washington Department of Archaeology & Historic Preservation. http://www.dahp.wa.gov/pages/wisaardIntro.htm

Page 136 June 2013

Website of the Confederated Tribes of the Colville Reservation http://www.colvilletribes.com/

Website of the Confederated Tribes and Bands of the Yakama Nation. http://www.critfc.org/text/yakama.html

Transportation

Chelan County GIS.

Chelan County. 2000. Chelan County Comprehensive Plan.

Chelan County. Six-Year Transportation Improvement Program 2007-2012.

Washington State Department of Transportation GeoData Distribution Catalog. http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm

Wenatchee Valley Transportation Council and North Central Regional Transportation Planning Organization. 2007. 2008-2013 North Central Washington Regional Transportation Improvement Program

Wenatchee Valley Transportation Council. 2011. SR 285 North Wenatchee Transportation Master Plan. March 24, 2011.

Impervious Surfaces

Chelan County GIS.

Shoreline Modifications

Riedel, J. 2008. Stehekin River Information Base, Lake Chelan National Recreation Area, White Paper #1 – Stehekin River Corridor Implementation Plan. National Park Service.

Washington Department of Natural Resources GIS data (overwater structures). 2007 interpretation of 2002-2006 aerial photographs.

Soils

Web Soil Survey, United States Department of Agriculture, Natural Resources Conservation Service.

Vegetation

Johnson, D.H. and T. O'Neil, eds. 2001. Wildlife-Habitat Relationships in Oregon and Washington. Oregon State University Press, Corvallis, OR. 768 pp.

Franklin, J. F. and C.T. Dyrness. 1988. Natural vegetation of Oregon and Washington. Corvallis, OR: Oregon State University Press.

Parks/Existing and Potential Public Access Sites

Chelan County GIS.

Chelan County PUD. Website. http://www.chelanpud.org/parks.html

Chelan Douglas Land Trust GIS data.

Chelan-Douglas Land Trust. 2008a. Personal Communication, Sharon Lunz, Communications & Outreach Director, regarding trust active projects. December 20.

Chelan-Douglas Land Trust. 2008b. http://www.cdlandtrust.org/index.html. Accessed December 20, 2008

City of Cashmere. GIS data.

City of Chelan Parks and Recreation Department. 2007. City of Chelan Parks and Recreation Comprehensive Plan. July 26, 2007.

City of Chelan. GIS data.

City of Entiat. GIS data.

City of Entiat. March 25, 2008. Working Draft Parks, Recreation, and Open Space Plan 2008/2009

City of Lakewood. 2008. http://www.cityoflakewood.us/news-and-events/466-lakefront-street-ends-update.html. Accessed December 20, 2008.

City of Leavenworth. April 1997. Park and Recreation Comprehensive Plan.

City of Leavenworth. GIS data.

City of Seattle. 2008. http://www.seattle.gov/Transportation/stuse_stends.htm. Accessed December 20, 2008.

City of Wenatchee. GIS data.

City of Wenatchee. 2006. Parks, Recreation & Open Space Plan.

JAO Planning & Project Management. Chelan Valley Comprehensive Trails Plan. Prepared for the Lake Chelan Recreation Association. East Wenatchee, WA. http://www.parks.wa.gov/plans/lkchelan25milecrk/Chelan%20Valley%20Comprehensive%20Trails%20Plan.pdf

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- JAO Planning and Project Management. 1996. Lake Chelan Valley Public Trails Comprehensive Plan. Prepared for Lake Chelan Recreation Association. March 13, 1996.
- J.T. Atkins & Company and J.A. Brennan and Associates PLLC. 2003. Upper Valley Plan. Prepared for Public Utility District No. 1 of Chelan County. March.
- Landerman-Moore Associates and Robert W. Droll. 1997. City of Leavenworth Park & Recreation Comprehensive Plan. Leavenworth, WA. April 1997.
- Silverline Projects, Inc. 2000. Lakeside Trail Feasibility Study. Prepared for City of Chelan. September 28, 2000.
- Spencer, Dick and Kathy. 2008. Personal communication to Mike Kaputa, Director, Department of Natural Resources, Chelan County, regarding Wenatchee River fishing access, July 18, 2008.
- Washington State Parks. Lake Chelan and Twenty-Five Mile Creek State Parks planning projects: http://www.parks.wa.gov/plans/lkchelan25milecrk/ (Multiple documents, current project)
- Washington State Parks. Lake Wenatchee planning projects: http://www.parks.wa.gov/plans/lkwen/ (Multiple documents, current project)
- Washington State Parks. Wenatchee Area State Parks planning projects, including Wenatchee Confluence State Park: http://www.parks.wa.gov/plans/wenatchee/ (Multiple documents, current project)

Opportunity Areas

See watershed and sub-basin plans.

- EcoA.I.M. 2006. Wenatchee Subbasin Riparian Assessment Draft. Prepared for Chelan County Department of Natural Resources.
- Washington Department of Fish and Wildlife. 2006. Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek. http://wdfw.wa.gov/hab/tapps/reports/wria40paper.pdf

Water Quality

- Washington Department of Ecology. 2004. 303(d) list. http://www.ecy.wa.gov/programs/wq/303d/2002/2002-index.html
- Washington Department of Ecology. 1997. Water quality assessments of selected lakes within Washington State 1994. Publication No. 97-307.

Washington Department of Ecology. 2002. Water Quality Assessments of Volunteer-Monitored Lakes Within Washington State, 1998-1999. Publication No. 02-03-019.

Washington Department of Ecology. TMDL activity website. http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html

See watershed and sub-basin plans.

See numerous other water quality references at:
http://www.ecy.wa.gov/biblio/wria45.html
http://www.ecy.wa.gov/biblio/wria46.html
http://www.ecy.wa.gov/apps/watersheds/wriapages/47.html
http://www.ecy.wa.gov/biblio/wria40.html

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10. LIST OF ACRONYMS AND ABBREVIATIONS

CAO	Critical Areas Ordinance
	cubic feet per second
	channel migration zone
	U.S. Army Corps of Engineers
	Distinct Population Segment
	Washington Department of Ecology
	Endangered Species Act
	Evolutionarily Significant Unit
	Federal Emergency Management Agency
	Federal Energy Regulatory Commission
	Flood Insurance Rate Map
	Fish and Wildlife Habitat Conservation Area
	Geographic information systems
	Growth Management Act
	Habitat Farming Enterprise Program
	Hydraulic Project Approval
	Interior Columbia Basin Ecosystem Management Project
	Initiative for Rural Innovation and Stewardship
	Lake Chelan Reclamation District
	large on-site sewage systems
	large woody debris
	Metropolitan Planning Organization
	Small Municipal Separate Storm Sewers
	North Central Regional Transportation Planning Organization
	North Central Washington Regional Transportation Improvement
	Program
NOAA Fisheries	National Marine Fisheries Service
NLCD	National Land Cover Data
NPDES	National Pollutant Discharge Elimination System
	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OHW/M	ordinary high water/mark
	Polychlorinated biphenyls
PHS	Priority Habitats and Species
PUD	Public Utility District
	Revised Code of Washington
	Regional General Permit
	Shoreline Substantial Development Permit
SEPA	State Environmental Policy Act
SCUP	Shoreline Conditional Use Permit

SMA	. Shoreline Management Act
SMP	Shoreline Master Program
SSURGO	. Soil Survey Geographic Database
SWS	. Shoreline Works and Structures
TMDL	total maximum daily load
UGA	. Urban Growth Area
USFS	. United States Forest Service
USFWS	. U.S. Fish and Wildlife Service
USGS	. United States Geological Survey
WAC	. Washington Administrative Code
WCC	. Wenatchee City Code
WDFW	. Washington Department of Fish and Wildlife
WDNR	. Washington Department of Natural Resources
WRIA	. Watershed Resource Inventory Area
WVSTAC	. Wenatchee Valley Stormwater Technical Advisory Committee
WVTC	. Wenatchee Valley Transportation Council

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Appendix A: Columbia River Shoreline Photo Record

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РНОТО								
NUM	TIMESTAMP	ORIGINAL	EAST	NORTH	ALTITUDE	DATUM	LOCALTIME	PICTURE
	22-Sep-2011	Picture	1769630.	155858.		US State Plane NAD 83	22-Sep-2011	Picture
1	21:08:06	001.jpg	91	24	544.619	Washington North ft (4601)	14:08:06	001_tag.jpg
	22-Sep-2011	Picture	1769635.	155869.		US State Plane NAD 83	22-Sep-2011	Picture
2	21:08:16	002.jpg	65	42	544.619	Washington North ft (4601)	14:08:16	002_tag.jpg
	22-Sep-2011	Picture	1769615.	155869.		US State Plane NAD 83	22-Sep-2011	Picture
3	21:08:32	003.jpg	02	28	544.619	Washington North ft (4601)	14:08:32	003_tag.jpg
	22-Sep-2011	Picture	1769552.	155861.		US State Plane NAD 83	22-Sep-2011	Picture
4	21:08:56	004.jpg	50	76	541.339	Washington North ft (4601)	14:08:56	004_tag.jpg
	23-Sep-2011	Picture	1767616.	163888.		US State Plane NAD 83	23-Sep-2011	Picture
5	13:46:08	005.jpg	15	95	656.168	Washington North ft (4601)	06:46:08	005_tag.jpg
	23-Sep-2011	Picture	1767615.	163891.		US State Plane NAD 83	23-Sep-2011	Picture
6	13:46:14	006.jpg	45	99	656.168	Washington North ft (4601)	06:46:14	006_tag.jpg
	23-Sep-2011	Picture	1767603.	163754.		US State Plane NAD 83	23-Sep-2011	Picture
7	13:47:06	007.jpg	31	10	593.832	Washington North ft (4601)	06:47:06	007_tag.jpg
	23-Sep-2011	Picture	1767640.	163612.		US State Plane NAD 83	23-Sep-2011	Picture
8	13:47:43	008.jpg	00	49	577.428	Washington North ft (4601)	06:47:43	008_tag.jpg
	23-Sep-2011	Picture	1767802.	163571.		US State Plane NAD 83	23-Sep-2011	Picture
9	13:49:12	009.jpg	49	02	616.798	Washington North ft (4601)	06:49:12	009_tag.jpg
	23-Sep-2011	Picture	1767929.	163500.		US State Plane NAD 83	23-Sep-2011	Picture
10	13:49:59	010.jpg	43	94	636.483	Washington North ft (4601)	06:49:59	010_tag.jpg
	23-Sep-2011	Picture	1768001.	163466.		US State Plane NAD 83	23-Sep-2011	Picture
11	13:50:33	011.jpg	83	98	643.045	Washington North ft (4601)	06:50:33	011_tag.jpg
	23-Sep-2011	Picture	1768088.	163425.		US State Plane NAD 83	23-Sep-2011	Picture
12	13:51:00	012.jpg	72	00	649.606	Washington North ft (4601)	06:51:00	012_tag.jpg
	23-Sep-2011	Picture	1768125.	163411.		US State Plane NAD 83	23-Sep-2011	Picture
13	13:51:12	013.jpg	93	07	646.325	Washington North ft (4601)	06:51:12	013_tag.jpg
	23-Sep-2011	Picture	1768172.	163396.		US State Plane NAD 83	23-Sep-2011	Picture
14	13:51:27	014.jpg	77	18	643.045	Washington North ft (4601)	06:51:27	014_tag.jpg

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	23-Sep-2011	Picture	1768223.	163373.		US State Plane NAD 83	23-Sep-2011	Picture
15	13:51:43	015.jpg	10	21	646.325	Washington North ft (4601)	06:51:43	015_tag.jpg
	23-Sep-2011	Picture	1768266.	163364.		US State Plane NAD 83	23-Sep-2011	Picture
16	13:51:56	016.jpg	46	39	649.606	Washington North ft (4601)	06:51:56	016_tag.jpg
	23-Sep-2011	Picture	1768347.	163335.		US State Plane NAD 83	23-Sep-2011	Picture
17	13:52:18	017.jpg	07	54	652.887	Washington North ft (4601)	06:52:18	017_tag.jpg
	23-Sep-2011	Picture	1768396.	163307.		US State Plane NAD 83	23-Sep-2011	Picture
18	13:52:34	018.jpg	75	50	656.168	Washington North ft (4601)	06:52:34	018_tag.jpg
	23-Sep-2011	Picture	1768459.	163248.		US State Plane NAD 83	23-Sep-2011	Picture
19	13:52:52	019.jpg	01	14	652.887	Washington North ft (4601)	06:52:52	019_tag.jpg
	23-Sep-2011	Picture	1768496.	163193.		US State Plane NAD 83	23-Sep-2011	Picture
20	13:53:04	020.jpg	50	68	652.887	Washington North ft (4601)	06:53:04	020_tag.jpg
	23-Sep-2011	Picture	1768606.	163064.		US State Plane NAD 83	23-Sep-2011	Picture
21	13:53:32	021.jpg	66	72	659.449	Washington North ft (4601)	06:53:32	021_tag.jpg
	23-Sep-2011	Picture	1768669.	162958.		US State Plane NAD 83	23-Sep-2011	Picture
22	13:53:54	022.jpg	92	75	659.449	Washington North ft (4601)	06:53:54	022_tag.jpg
	23-Sep-2011	Picture	1768753.	162832.		US State Plane NAD 83	23-Sep-2011	Picture
23	13:54:19	023.jpg	94	66	666.011	Washington North ft (4601)	06:54:19	023_tag.jpg
	23-Sep-2011	Picture	1768848.	162689.		US State Plane NAD 83	23-Sep-2011	Picture
24	13:54:49	024.jpg	39	42	649.606	Washington North ft (4601)	06:54:49	024_tag.jpg
	23-Sep-2011	Picture	1768857.	162535.		US State Plane NAD 83	23-Sep-2011	Picture
25	13:55:19	025.jpg	68	46	656.168	Washington North ft (4601)	06:55:19	025_tag.jpg
	23-Sep-2011	Picture	1768849.	162414.		US State Plane NAD 83	23-Sep-2011	Picture
26	13:55:55	026.jpg	55	83	633.202	Washington North ft (4601)	06:55:55	026_tag.jpg
	23-Sep-2011	Picture	1768907.	162341.		US State Plane NAD 83	23-Sep-2011	Picture
27	13:56:21	027.jpg	79	26	626.640	Washington North ft (4601)	06:56:21	027_tag.jpg
	23-Sep-2011	Picture	1768935.	162172.		US State Plane NAD 83	23-Sep-2011	Picture
28	13:56:54	028.jpg	05	23	610.236	Washington North ft (4601)	06:56:54	028_tag.jpg
	23-Sep-2011	Picture	1768966.	162067.		US State Plane NAD 83	23-Sep-2011	Picture
29	13:57:13	029.jpg	01	06	606.955	Washington North ft (4601)	06:57:13	029_tag.jpg
30	23-Sep-2011	Picture	1768969.	161925.	603.675	US State Plane NAD 83	23-Sep-2011	Picture
-	-					•		

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31	13:57:38 23-Sep-2011 13:57:44 23-Sep-2011	030.jpg Picture 031.jpg	72 1768969.	22		Washington North ft (4601)	06:57:38	030_tag.jpg
	13:57:44		1768969.	1 (1 0 0 1				
		031.jpg	i l	161891.		US State Plane NAD 83	23-Sep-2011	Picture
32	23-Sep-2011		25	78	606.955	Washington North ft (4601)	06:57:44	031_tag.jpg
32		Picture	1768969.	161818.		US State Plane NAD 83	23-Sep-2011	Picture
	13:57:57	032.jpg	75	83	610.236	Washington North ft (4601)	06:57:57	032_tag.jpg
	23-Sep-2011	Picture	1768960.	161739.		US State Plane NAD 83	23-Sep-2011	Picture
33	13:58:10	033.jpg	66	74	610.236	Washington North ft (4601)	06:58:10	033_tag.jpg
	23-Sep-2011	Picture	1768960.	161662.		US State Plane NAD 83	23-Sep-2011	Picture
34	13:58:22	034.jpg	49	73	610.236	Washington North ft (4601)	06:58:22	034_tag.jpg
	23-Sep-2011	Picture	1768956.	161432.		US State Plane NAD 83	23-Sep-2011	Picture
35	13:58:52	035.jpg	54	69	620.079	Washington North ft (4601)	06:58:52	035_tag.jpg
	23-Sep-2011	Picture	1768984.	161271.		US State Plane NAD 83	23-Sep-2011	Picture
36	13:59:12	036.jpg	44	77	636.483	Washington North ft (4601)	06:59:12	036_tag.jpg
	23-Sep-2011	Picture	1769002.	161079.		US State Plane NAD 83	23-Sep-2011	Picture
37	13:59:36	037.jpg	24	37	629.921	Washington North ft (4601)	06:59:36	037_tag.jpg
	23-Sep-2011	Picture	1769009.	160974.		US State Plane NAD 83	23-Sep-2011	Picture
38	13:59:50	038.jpg	13	04	623.360	Washington North ft (4601)	06:59:50	038_tag.jpg
	23-Sep-2011	Picture	1769028.	160768.		US State Plane NAD 83	23-Sep-2011	Picture
39	14:00:14	039.jpg	40	48	639.764	Washington North ft (4601)	07:00:14	039_tag.jpg
	23-Sep-2011	Picture	1769053.	160436.		US State Plane NAD 83	23-Sep-2011	Picture
40	14:00:55	040.jpg	33	30	636.483	Washington North ft (4601)	07:00:55	040_tag.jpg
	23-Sep-2011	Picture	1769040.	160306.		US State Plane NAD 83	23-Sep-2011	Picture
41	14:01:12	041.jpg	45	51	623.360	Washington North ft (4601)	07:01:12	041_tag.jpg
	23-Sep-2011	Picture	1769036.	160268.		US State Plane NAD 83	23-Sep-2011	Picture
42	14:01:17	042.jpg	58	99	623.360	Washington North ft (4601)	07:01:17	042_tag.jpg
	23-Sep-2011	Picture	1769032.	160199.		US State Plane NAD 83	23-Sep-2011	Picture
43	14:01:26	043.jpg	24	05	620.079	Washington North ft (4601)	07:01:26	043_tag.jpg
	23-Sep-2011	Picture	1769037.	160134.		US State Plane NAD 83	23-Sep-2011	Picture
44	14:01:34	044.jpg	49	24	626.640	Washington North ft (4601)	07:01:34	044_tag.jpg
	23-Sep-2011	Picture	1769029.	160045.		US State Plane NAD 83	23-Sep-2011	Picture
45	14:01:45	045.jpg	16	01	626.640	Washington North ft (4601)	07:01:45	045_tag.jpg

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	23-Sep-2011	Picture	1769027.	160002.		US State Plane NAD 83	23-Sep-2011	Picture
46	14:01:50	046.jpg	38	45	623.360	Washington North ft (4601)	07:01:50	046_tag.jpg
	23-Sep-2011	Picture	1769031.	159968.		US State Plane NAD 83	23-Sep-2011	Picture
47	14:01:55	047.jpg	74	02	623.360	Washington North ft (4601)	07:01:55	047_tag.jpg
	23-Sep-2011	Picture	1769050.	159877.		US State Plane NAD 83	23-Sep-2011	Picture
48	14:02:09	048.jpg	22	97	643.045	Washington North ft (4601)	07:02:09	048_tag.jpg
	23-Sep-2011	Picture	1769058.	159836.		US State Plane NAD 83	23-Sep-2011	Picture
49	14:02:15	049.jpg	06	48	656.168	Washington North ft (4601)	07:02:15	049_tag.jpg
	23-Sep-2011	Picture	1769080.	159714.		US State Plane NAD 83	23-Sep-2011	Picture
50	14:02:30	050.jpg	89	03	662.730	Washington North ft (4601)	07:02:30	050_tag.jpg
	23-Sep-2011	Picture	1769106.	159641.		US State Plane NAD 83	23-Sep-2011	Picture
51	14:02:40	051.jpg	82	25	659.449	Washington North ft (4601)	07:02:40	051_tag.jpg
	23-Sep-2011	Picture	1769115.	159546.		US State Plane NAD 83	23-Sep-2011	Picture
52	14:02:51	052.jpg	03	06	649.606	Washington North ft (4601)	07:02:51	052_tag.jpg
	23-Sep-2011	Picture	1769134.	159453.		US State Plane NAD 83	23-Sep-2011	Picture
53	14:03:03	053.jpg	21	98	652.887	Washington North ft (4601)	07:03:03	053_tag.jpg
	23-Sep-2011	Picture	1769164.	159379.		US State Plane NAD 83	23-Sep-2011	Picture
54	14:03:12	054.jpg	28	20	646.325	Washington North ft (4601)	07:03:12	054_tag.jpg
	23-Sep-2011	Picture	1769239.	159204.		US State Plane NAD 83	23-Sep-2011	Picture
55	14:03:37	055.jpg	71	42	649.606	Washington North ft (4601)	07:03:37	055_tag.jpg
	23-Sep-2011	Picture	1769264.	159110.		US State Plane NAD 83	23-Sep-2011	Picture
56	14:03:51	056.jpg	41	35	646.325	Washington North ft (4601)	07:03:51	056_tag.jpg
	23-Sep-2011	Picture	1769286.	159026.		US State Plane NAD 83	23-Sep-2011	Picture
57	14:04:02	057.jpg	29	40	652.887	Washington North ft (4601)	07:04:02	057_tag.jpg
	23-Sep-2011	Picture	1769324.	158939.		US State Plane NAD 83	23-Sep-2011	Picture
58	14:04:18	058.jpg	00	51	652.887	Washington North ft (4601)	07:04:18	058_tag.jpg
	23-Sep-2011	Picture	1769357.	158805.		US State Plane NAD 83	23-Sep-2011	Picture
59	14:04:44	059.jpg	22	99	652.887	Washington North ft (4601)	07:04:44	059_tag.jpg
	23-Sep-2011	Picture	1769445.	158681.		US State Plane NAD 83	23-Sep-2011	Picture
60	14:05:13	060.jpg	38	95	646.325	Washington North ft (4601)	07:05:13	060_tag.jpg
61	23-Sep-2011	Picture	1769487.	158587.	636.483	US State Plane NAD 83	23-Sep-2011	Picture
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	14:05:35	061.jpg	96	00		Washington North ft (4601)	07:05:35	061_tag.jpg
	23-Sep-2011	Picture	1769462.	158451.		US State Plane NAD 83	23-Sep-2011	Picture
62	14:06:00	062.jpg	75	05	639.764	Washington North ft (4601)	07:06:00	062_tag.jpg
	23-Sep-2011	Picture	1769501.	158353.		US State Plane NAD 83	23-Sep-2011	Picture
63	14:06:24	063.jpg	92	03	623.360	Washington North ft (4601)	07:06:24	063_tag.jpg
	23-Sep-2011	Picture	1769565.	158299.		US State Plane NAD 83	23-Sep-2011	Picture
64	14:06:39	064.jpg	54	76	616.798	Washington North ft (4601)	07:06:39	064_tag.jpg
	23-Sep-2011	Picture	1769590.	158265.		US State Plane NAD 83	23-Sep-2011	Picture
65	14:06:46	065.jpg	52	47	620.079	Washington North ft (4601)	07:06:46	065_tag.jpg
	23-Sep-2011	Picture	1769662.	158143.		US State Plane NAD 83	23-Sep-2011	Picture
66	14:07:10	066.jpg	85	36	610.236	Washington North ft (4601)	07:07:10	066_tag.jpg
	23-Sep-2011	Picture	1769684.	158097.		US State Plane NAD 83	23-Sep-2011	Picture
67	14:07:16	067.jpg	47	91	606.955	Washington North ft (4601)	07:07:16	067_tag.jpg
	23-Sep-2011	Picture	1769706.	158065.		US State Plane NAD 83	23-Sep-2011	Picture
68	14:07:22	068.jpg	01	63	610.236	Washington North ft (4601)	07:07:22	068_tag.jpg
	23-Sep-2011	Picture	1769776.	157998.		US State Plane NAD 83	23-Sep-2011	Picture
69	14:07:36	069.jpg	59	22	606.955	Washington North ft (4601)	07:07:36	069_tag.jpg
	23-Sep-2011	Picture	1769825.	157961.		US State Plane NAD 83	23-Sep-2011	Picture
70	14:07:45	070.jpg	66	07	597.113	Washington North ft (4601)	07:07:45	070_tag.jpg
	23-Sep-2011	Picture	1769870.	157884.		US State Plane NAD 83	23-Sep-2011	Picture
71	14:07:58	071.jpg	88	37	600.394	Washington North ft (4601)	07:07:58	071_tag.jpg
	23-Sep-2011	Picture	1769901.	157800.		US State Plane NAD 83	23-Sep-2011	Picture
72	14:08:11	072.jpg	70	47	606.955	Washington North ft (4601)	07:08:11	072_tag.jpg
	23-Sep-2011	Picture	1769935.	157718.		US State Plane NAD 83	23-Sep-2011	Picture
73	14:08:25	073.jpg	26	63	606.955	Washington North ft (4601)	07:08:25	073_tag.jpg
	23-Sep-2011	Picture	1769961.	157640.		US State Plane NAD 83	23-Sep-2011	Picture
74	14:08:35	074.jpg	23	78	616.798	Washington North ft (4601)	07:08:35	074_tag.jpg
	23-Sep-2011	Picture	1769997.	157581.		US State Plane NAD 83	23-Sep-2011	Picture
75	14:08:46	075.jpg	38	25	620.079	Washington North ft (4601)	07:08:46	075_tag.jpg
	23-Sep-2011	Picture	1770042.	157512.		US State Plane NAD 83	23-Sep-2011	Picture
76	14:08:57	076.jpg	54	65	616.798	Washington North ft (4601)	07:08:57	076_tag.jpg

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	23-Sep-2011	Picture	1770073.	157454.		US State Plane NAD 83	23-Sep-2011	Picture
77	14:09:05	077.jpg	19	09	626.640	Washington North ft (4601)	07:09:05	077_tag.jpg
	23-Sep-2011	Picture	1770108.	157388.		US State Plane NAD 83	23-Sep-2011	Picture
78	14:09:14	078.jpg	71	47	626.640	Washington North ft (4601)	07:09:14	078_tag.jpg
	23-Sep-2011	Picture	1770135.	157343.		US State Plane NAD 83	23-Sep-2011	Picture
79	14:09:21	079.jpg	14	06	613.517	Washington North ft (4601)	07:09:21	079_tag.jpg
	23-Sep-2011	Picture	1770170.	157270.		US State Plane NAD 83	23-Sep-2011	Picture
80	14:09:30	080.jpg	71	34	623.360	Washington North ft (4601)	07:09:30	080_tag.jpg
	23-Sep-2011	Picture	1770201.	157208.		US State Plane NAD 83	23-Sep-2011	Picture
81	14:09:38	081.jpg	38	74	613.517	Washington North ft (4601)	07:09:38	081_tag.jpg
	23-Sep-2011	Picture	1770269.	157072.		US State Plane NAD 83	23-Sep-2011	Picture
82	14:09:55	082.jpg	00	41	606.955	Washington North ft (4601)	07:09:55	082_tag.jpg
	23-Sep-2011	Picture	1770292.	157008.		US State Plane NAD 83	23-Sep-2011	Picture
83	14:10:03	083.jpg	82	74	616.798	Washington North ft (4601)	07:10:03	083_tag.jpg
	23-Sep-2011	Picture	1770335.	156941.		US State Plane NAD 83	23-Sep-2011	Picture
84	14:10:13	084.jpg	22	14	610.236	Washington North ft (4601)	07:10:13	084_tag.jpg
	23-Sep-2011	Picture	1770374.	156878.		US State Plane NAD 83	23-Sep-2011	Picture
85	14:10:22	085.jpg	84	59	610.236	Washington North ft (4601)	07:10:22	085_tag.jpg
	23-Sep-2011	Picture	1770401.	156836.		US State Plane NAD 83	23-Sep-2011	Picture
86	14:10:28	086.jpg	94	22	597.113	Washington North ft (4601)	07:10:28	086_tag.jpg
	23-Sep-2011	Picture	1770429.	156778.		US State Plane NAD 83	23-Sep-2011	Picture
87	14:10:36	087.jpg	15	65	603.675	Washington North ft (4601)	07:10:36	087_tag.jpg
	23-Sep-2011	Picture	1770470.	156691.		US State Plane NAD 83	23-Sep-2011	Picture
88	14:10:47	088.jpg	31	79	603.675	Washington North ft (4601)	07:10:47	088_tag.jpg
	23-Sep-2011	Picture	1770491.	156648.		US State Plane NAD 83	23-Sep-2011	Picture
89	14:10:53	089.jpg	93	36	600.394	Washington North ft (4601)	07:10:53	089_tag.jpg
	23-Sep-2011	Picture	1770534.	156566.		US State Plane NAD 83	23-Sep-2011	Picture
90	14:11:04	090.jpg	43	58	590.551	Washington North ft (4601)	07:11:04	090_tag.jpg
	23-Sep-2011	Picture	1770619.	156457.		US State Plane NAD 83	23-Sep-2011	Picture
91	14:11:19	091.jpg	75	73	606.955	Washington North ft (4601)	07:11:19	091_tag.jpg
92	23-Sep-2011	Picture	1770660.	156396.	613.517	US State Plane NAD 83	23-Sep-2011	Picture
1			+					

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	14:11:28	092.jpg	74	20		Washington North ft (4601)	07:11:28	092_tag.jpg
	23-Sep-2011	Picture	1770705.	156335.		US State Plane NAD 83	23-Sep-2011	Picture
93	14:11:37	093.jpg	16	71	620.079	Washington North ft (4601)	07:11:37	093_tag.jpg
	23-Sep-2011	Picture	1770751.	156266.		US State Plane NAD 83	23-Sep-2011	Picture
94	14:11:47	094.jpg	02	11	626.640	Washington North ft (4601)	07:11:47	094_tag.jpg
	23-Sep-2011	Picture	1770778.	156223.		US State Plane NAD 83	23-Sep-2011	Picture
95	14:11:53	095.jpg	12	74	626.640	Washington North ft (4601)	07:11:53	095_tag.jpg
	23-Sep-2011	Picture	1770851.	156092.		US State Plane NAD 83	23-Sep-2011	Picture
96	14:12:10	096.jpg	22	51	613.517	Washington North ft (4601)	07:12:10	096_tag.jpg
	23-Sep-2011	Picture	1770875.	156050.		US State Plane NAD 83	23-Sep-2011	Picture
97	14:12:16	097.jpg	58	12	613.517	Washington North ft (4601)	07:12:16	097_tag.jpg
	23-Sep-2011	Picture	1770920.	155967.		US State Plane NAD 83	23-Sep-2011	Picture
98	14:12:27	098.jpg	84	35	616.798	Washington North ft (4601)	07:12:27	098_tag.jpg
	23-Sep-2011	Picture	1770940.	155932.		US State Plane NAD 83	23-Sep-2011	Picture
99	14:12:32	099.jpg	34	02	613.517	Washington North ft (4601)	07:12:32	099_tag.jpg
	23-Sep-2011	Picture	1770966.	155895.		US State Plane NAD 83	23-Sep-2011	Picture
100	14:12:37	100.jpg	71	72	610.236	Washington North ft (4601)	07:12:37	100_tag.jpg
	23-Sep-2011	Picture	1770995.	155854.		US State Plane NAD 83	23-Sep-2011	Picture
101	14:12:43	101.jpg	88	38	610.236	Washington North ft (4601)	07:12:43	101_tag.jpg
	23-Sep-2011	Picture	1771030.	155776.		US State Plane NAD 83	23-Sep-2011	Picture
102	14:12:53	102.jpg	79	59	613.517	Washington North ft (4601)	07:12:53	102_tag.jpg
	23-Sep-2011	Picture	1771094.	155647.		US State Plane NAD 83	23-Sep-2011	Picture
103	14:13:11	103.jpg	94	34	613.517	Washington North ft (4601)	07:13:11	103_tag.jpg
	23-Sep-2011	Picture	1771112.	155618.		US State Plane NAD 83	23-Sep-2011	Picture
104	14:13:15	104.jpg	33	07	613.517	Washington North ft (4601)	07:13:15	104_tag.jpg
	23-Sep-2011	Picture	1771131.	155581.		US State Plane NAD 83	23-Sep-2011	Picture
105	14:13:20	105.jpg	15	72	610.236	Washington North ft (4601)	07:13:20	105_tag.jpg
	23-Sep-2011	Picture	1771181.	155413.		US State Plane NAD 83	23-Sep-2011	Picture
106	14:13:43	106.jpg	12	86	613.517	Washington North ft (4601)	07:13:43	106_tag.jpg
	23-Sep-2011	Picture	1771213.	155334.		US State Plane NAD 83	23-Sep-2011	Picture
107	14:13:55	107.jpg	30	04	616.798	Washington North ft (4601)	07:13:55	107_tag.jpg

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	23-Sep-2011	Picture	1771235.	155250.		US State Plane NAD 83	23-Sep-2011	Picture
108	14:14:06	108.jpg	20	09	620.079	Washington North ft (4601)	07:14:06	108_tag.jpg
	23-Sep-2011	Picture	1771240.	155182.		US State Plane NAD 83	23-Sep-2011	Picture
109	14:14:15	109.jpg	48	23	616.798	Washington North ft (4601)	07:14:15	109_tag.jpg
	23-Sep-2011	Picture	1771249.	155126.		US State Plane NAD 83	23-Sep-2011	Picture
110	14:14:23	110.jpg	80	57	620.079	Washington North ft (4601)	07:14:23	110_tag.jpg
	23-Sep-2011	Picture	1771279.	155036.		US State Plane NAD 83	23-Sep-2011	Picture
111	14:14:37	111.jpg	30	59	613.517	Washington North ft (4601)	07:14:37	111_tag.jpg
	23-Sep-2011	Picture	1771294.	154943.		US State Plane NAD 83	23-Sep-2011	Picture
112	14:14:50	112.jpg	38	48	603.675	Washington North ft (4601)	07:14:50	112_tag.jpg
	23-Sep-2011	Picture	1771311.	154825.		US State Plane NAD 83	23-Sep-2011	Picture
113	14:15:06	113.jpg	01	04	606.955	Washington North ft (4601)	07:15:06	113_tag.jpg
	23-Sep-2011	Picture	1771334.	154748.		US State Plane NAD 83	23-Sep-2011	Picture
114	14:15:17	114.jpg	92	19	603.675	Washington North ft (4601)	07:15:17	114_tag.jpg
	23-Sep-2011	Picture	1771367.	154665.		US State Plane NAD 83	23-Sep-2011	Picture
115	14:15:29	115.jpg	81	33	610.236	Washington North ft (4601)	07:15:29	115_tag.jpg
	23-Sep-2011	Picture	1771408.	154546.		US State Plane NAD 83	23-Sep-2011	Picture
116	14:15:45	116.jpg	51	05	606.955	Washington North ft (4601)	07:15:45	116_tag.jpg
	23-Sep-2011	Picture	1771446.	154320.		US State Plane NAD 83	23-Sep-2011	Picture
117	14:16:13	117.jpg	51	35	597.113	Washington North ft (4601)	07:16:13	117_tag.jpg
	23-Sep-2011	Picture	1771450.	154283.		US State Plane NAD 83	23-Sep-2011	Picture
118	14:16:18	118.jpg	89	90	600.394	Washington North ft (4601)	07:16:18	118_tag.jpg
	23-Sep-2011	Picture	1771506.	154135.		US State Plane NAD 83	23-Sep-2011	Picture
119	14:16:37	119.jpg	93	34	606.955	Washington North ft (4601)	07:16:37	119_tag.jpg
	23-Sep-2011	Picture	1771529.	154064.		US State Plane NAD 83	23-Sep-2011	Picture
120	14:16:47	120.jpg	42	57	606.955	Washington North ft (4601)	07:16:47	120_tag.jpg
	23-Sep-2011	Picture	1771578.	153930.		US State Plane NAD 83	23-Sep-2011	Picture
121	14:17:05	121.jpg	48	14	603.675	Washington North ft (4601)	07:17:05	121_tag.jpg
	23-Sep-2011	Picture	1771625.	153777.		US State Plane NAD 83	23-Sep-2011	Picture
122	14:17:26	122.jpg	61	46	600.394	Washington North ft (4601)	07:17:26	122_tag.jpg
123	23-Sep-2011	Picture	1771727.	153630.	606.955	US State Plane NAD 83	23-Sep-2011	Picture
				-				

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	14:17:47	123.jpg	03	23		Washington North ft (4601)	07:17:47	123_tag.jpg
	23-Sep-2011	Picture	1771757.	153545.		US State Plane NAD 83	23-Sep-2011	Picture
124	14:17:59	124.jpg	87	32	623.360	Washington North ft (4601)	07:17:59	124_tag.jpg
	23-Sep-2011	Picture	1771775.	153454.		US State Plane NAD 83	23-Sep-2011	Picture
125	14:18:12	125.jpg	01	25	629.921	Washington North ft (4601)	07:18:12	125_tag.jpg
	23-Sep-2011	Picture	1771812.	153353.		US State Plane NAD 83	23-Sep-2011	Picture
126	14:18:25	126.jpg	15	18	623.360	Washington North ft (4601)	07:18:25	126_tag.jpg
	23-Sep-2011	Picture	1771878.	153270.		US State Plane NAD 83	23-Sep-2011	Picture
127	14:18:39	127.jpg	74	55	633.202	Washington North ft (4601)	07:18:39	127_tag.jpg
	23-Sep-2011	Picture	1771932.	153130.		US State Plane NAD 83	23-Sep-2011	Picture
128	14:18:58	128.jpg	67	08	623.360	Washington North ft (4601)	07:18:58	128_tag.jpg
	23-Sep-2011	Picture	1771968.	153062.		US State Plane NAD 83	23-Sep-2011	Picture
129	14:19:08	129.jpg	90	44	626.640	Washington North ft (4601)	07:19:08	129_tag.jpg
	23-Sep-2011	Picture	1772028.	152967.		US State Plane NAD 83	23-Sep-2011	Picture
130	14:19:22	130.jpg	01	60	629.921	Washington North ft (4601)	07:19:22	130_tag.jpg
	23-Sep-2011	Picture	1772057.	152908.		US State Plane NAD 83	23-Sep-2011	Picture
131	14:19:31	131.jpg	99	03	639.764	Washington North ft (4601)	07:19:31	131_tag.jpg
	23-Sep-2011	Picture	1772079.	152834.		US State Plane NAD 83	23-Sep-2011	Picture
132	14:19:40	132.jpg	82	21	639.764	Washington North ft (4601)	07:19:40	132_tag.jpg
	23-Sep-2011	Picture	1772132.	152724.		US State Plane NAD 83	23-Sep-2011	Picture
133	14:19:54	133.jpg	85	13	639.764	Washington North ft (4601)	07:19:54	133_tag.jpg
	23-Sep-2011	Picture	1772203.	152593.		US State Plane NAD 83	23-Sep-2011	Picture
134	14:20:12	134.jpg	21	91	620.079	Washington North ft (4601)	07:20:12	134_tag.jpg
	23-Sep-2011	Picture	1772272.	152456.		US State Plane NAD 83	23-Sep-2011	Picture
135	14:20:31	135.jpg	25	58	606.955	Washington North ft (4601)	07:20:31	135_tag.jpg
	23-Sep-2011	Picture	1772354.	152287.		US State Plane NAD 83	23-Sep-2011	Picture
136	14:20:55	136.jpg	57	94	616.798	Washington North ft (4601)	07:20:55	136_tag.jpg
	23-Sep-2011	Picture	1772409.	152171.		US State Plane NAD 83	23-Sep-2011	Picture
137	14:21:10	137.jpg	02	79	620.079	Washington North ft (4601)	07:21:10	137_tag.jpg
	23-Sep-2011	Picture	1772436.	152117.		US State Plane NAD 83	23-Sep-2011	Picture
138	14:21:17	138.jpg	91	26	620.079	Washington North ft (4601)	07:21:17	138_tag.jpg

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	23-Sep-2011	Picture	1772479.	152059.		US State Plane NAD 83	23-Sep-2011	Picture
139	14:21:25	139.jpg	26	80	613.517	Washington North ft (4601)	07:21:25	139_tag.jpg
	23-Sep-2011	Picture	1772539.	151965.		US State Plane NAD 83	23-Sep-2011	Picture
140	14:21:39	140.jpg	75	99	613.517	Washington North ft (4601)	07:21:39	140_tag.jpg
	23-Sep-2011	Picture	1772623.	151824.		US State Plane NAD 83	23-Sep-2011	Picture
141	14:21:57	141.jpg	26	71	613.517	Washington North ft (4601)	07:21:57	141_tag.jpg
	23-Sep-2011	Picture	1772665.	151754.		US State Plane NAD 83	23-Sep-2011	Picture
142	14:22:06	142.jpg	71	08	616.798	Washington North ft (4601)	07:22:06	142_tag.jpg
	23-Sep-2011	Picture	1772732.	151623.		US State Plane NAD 83	23-Sep-2011	Picture
143	14:22:24	143.jpg	64	83	623.360	Washington North ft (4601)	07:22:24	143_tag.jpg
	23-Sep-2011	Picture	1772765.	151557.		US State Plane NAD 83	23-Sep-2011	Picture
144	14:22:35	144.jpg	43	18	629.921	Washington North ft (4601)	07:22:35	144_tag.jpg
	23-Sep-2011	Picture	1772826.	151441.		US State Plane NAD 83	23-Sep-2011	Picture
145	14:22:52	145.jpg	07	08	633.202	Washington North ft (4601)	07:22:52	145_tag.jpg
	23-Sep-2011	Picture	1772875.	151311.		US State Plane NAD 83	23-Sep-2011	Picture
146	14:23:09	146.jpg	12	72	636.483	Washington North ft (4601)	07:23:09	146_tag.jpg
	23-Sep-2011	Picture	1772945.	151182.		US State Plane NAD 83	23-Sep-2011	Picture
147	14:23:28	147.jpg	48	51	626.640	Washington North ft (4601)	07:23:28	147_tag.jpg
	23-Sep-2011	Picture	1772991.	151093.		US State Plane NAD 83	23-Sep-2011	Picture
148	14:23:41	148.jpg	49	67	626.640	Washington North ft (4601)	07:23:41	148_tag.jpg
	23-Sep-2011	Picture	1773031.	150969.		US State Plane NAD 83	23-Sep-2011	Picture
149	14:23:56	149.jpg	56	31	636.483	Washington North ft (4601)	07:23:56	149_tag.jpg
	23-Sep-2011	Picture	1773047.	150875.		US State Plane NAD 83	23-Sep-2011	Picture
150	14:24:07	150.jpg	35	19	626.640	Washington North ft (4601)	07:24:07	150_tag.jpg
	23-Sep-2011	Picture	1773045.	150791.		US State Plane NAD 83	23-Sep-2011	Picture
151	14:24:18	151.jpg	87	08	626.640	Washington North ft (4601)	07:24:18	151_tag.jpg
	23-Sep-2011	Picture	1773069.	150696.		US State Plane NAD 83	23-Sep-2011	Picture
152	14:24:31	152.jpg	23	00	623.360	Washington North ft (4601)	07:24:31	152_tag.jpg
	23-Sep-2011	Picture	1773100.	150612.		US State Plane NAD 83	23-Sep-2011	Picture
153	14:24:43	153.jpg	08	11	636.483	Washington North ft (4601)	07:24:43	153_tag.jpg
154	23-Sep-2011	Picture	1773123.	150495.	633.202	US State Plane NAD 83	23-Sep-2011	Picture
								

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	14:24:58	154.jpg	59	75		Washington North ft (4601)	07:24:58	154_tag.jpg
	23-Sep-2011	Picture	1773132.	150362.		US State Plane NAD 83	23-Sep-2011	Picture
155	14:25:17	155.jpg	09	06	629.921	Washington North ft (4601)	07:25:17	155_tag.jpg
	23-Sep-2011	Picture	1773137.	150299.		US State Plane NAD 83	23-Sep-2011	Picture
156	14:25:25	156.jpg	34	27	633.202	Washington North ft (4601)	07:25:25	156_tag.jpg
	23-Sep-2011	Picture	1773140.	150257.		US State Plane NAD 83	23-Sep-2011	Picture
157	14:25:30	157.jpg	38	75	629.921	Washington North ft (4601)	07:25:30	157_tag.jpg
	23-Sep-2011	Picture	1773170.	150111.		US State Plane NAD 83	23-Sep-2011	Picture
158	14:25:49	158.jpg	29	03	626.640	Washington North ft (4601)	07:25:49	158_tag.jpg
	23-Sep-2011	Picture	1773186.	149995.		US State Plane NAD 83	23-Sep-2011	Picture
159	14:26:03	159.jpg	23	63	600.394	Washington North ft (4601)	07:26:03	159_tag.jpg
	23-Sep-2011	Picture	1773182.	149902.		US State Plane NAD 83	23-Sep-2011	Picture
160	14:26:17	160.jpg	75	39	590.551	Washington North ft (4601)	07:26:17	160_tag.jpg
	23-Sep-2011	Picture	1773205.	149761.		US State Plane NAD 83	23-Sep-2011	Picture
161	14:26:32	161.jpg	74	70	603.675	Washington North ft (4601)	07:26:32	161_tag.jpg
	23-Sep-2011	Picture	1773205.	149663.		US State Plane NAD 83	23-Sep-2011	Picture
162	14:26:45	162.jpg	05	41	626.640	Washington North ft (4601)	07:26:45	162_tag.jpg
	23-Sep-2011	Picture	1773211.	149589.		US State Plane NAD 83	23-Sep-2011	Picture
163	14:26:54	163.jpg	07	49	636.483	Washington North ft (4601)	07:26:54	163_tag.jpg
	23-Sep-2011	Picture	1773208.	149529.		US State Plane NAD 83	23-Sep-2011	Picture
164	14:27:02	164.jpg	05	68	643.045	Washington North ft (4601)	07:27:02	164_tag.jpg
	23-Sep-2011	Picture	1773214.	149490.		US State Plane NAD 83	23-Sep-2011	Picture
165	14:27:08	165.jpg	51	21	636.483	Washington North ft (4601)	07:27:08	165_tag.jpg
	23-Sep-2011	Picture	1773216.	149468.		US State Plane NAD 83	23-Sep-2011	Picture
166	14:27:12	166.jpg	03	94	629.921	Washington North ft (4601)	07:27:12	166_tag.jpg
	23-Sep-2011	Picture	1773217.	149429.		US State Plane NAD 83	23-Sep-2011	Picture
167	14:27:18	167.jpg	00	43	629.921	Washington North ft (4601)	07:27:18	167_tag.jpg
	23-Sep-2011	Picture	1773212.	149332.		US State Plane NAD 83	23-Sep-2011	Picture
168	14:27:32	168.jpg	17	13	616.798	Washington North ft (4601)	07:27:32	168_tag.jpg
	23-Sep-2011	Picture	1773210.	149237.		US State Plane NAD 83	23-Sep-2011	Picture
169	14:27:45	169.jpg	77	88	620.079	Washington North ft (4601)	07:27:45	169_tag.jpg

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	23-Sep-2011	Picture	1773220.	149165.		US State Plane NAD 83	23-Sep-2011	Picture
170	14:27:54	170.jpg	90	00	626.640	Washington North ft (4601)	07:27:54	170_tag.jpg
	23-Sep-2011	Picture	1773230.	149070.		US State Plane NAD 83	23-Sep-2011	Picture
171	14:28:08	171.jpg	50	83	626.640	Washington North ft (4601)	07:28:08	171_tag.jpg
	23-Sep-2011	Picture	1773253.	148966.		US State Plane NAD 83	23-Sep-2011	Picture
172	14:28:22	172.jpg	93	63	620.079	Washington North ft (4601)	07:28:22	172_tag.jpg
	23-Sep-2011	Picture	1773262.	148878.		US State Plane NAD 83	23-Sep-2011	Picture
173	14:28:35	173.jpg	11	53	626.640	Washington North ft (4601)	07:28:35	173_tag.jpg
	23-Sep-2011	Picture	1773253.	148850.		US State Plane NAD 83	23-Sep-2011	Picture
174	14:28:39	174.jpg	37	10	629.921	Washington North ft (4601)	07:28:39	174_tag.jpg
	23-Sep-2011	Picture	1773256.	148754.		US State Plane NAD 83	23-Sep-2011	Picture
175	14:28:53	175.jpg	09	87	626.640	Washington North ft (4601)	07:28:53	175_tag.jpg
	23-Sep-2011	Picture	1773284.	148576.		US State Plane NAD 83	23-Sep-2011	Picture
176	14:29:17	176.jpg	16	73	623.360	Washington North ft (4601)	07:29:17	176_tag.jpg
	23-Sep-2011	Picture	1773284.	148394.		US State Plane NAD 83	23-Sep-2011	Picture
177	14:29:38	177.jpg	75	35	616.798	Washington North ft (4601)	07:29:38	177_tag.jpg
	23-Sep-2011	Picture	1773288.	148241.		US State Plane NAD 83	23-Sep-2011	Picture
178	14:29:56	178.jpg	56	37	629.921	Washington North ft (4601)	07:29:56	178_tag.jpg
	23-Sep-2011	Picture	1773322.	148129.		US State Plane NAD 83	23-Sep-2011	Picture
179	14:30:10	179.jpg	37	14	672.572	Washington North ft (4601)	07:30:10	179_tag.jpg
	23-Sep-2011	Picture	1773347.	148021.		US State Plane NAD 83	23-Sep-2011	Picture
180	14:30:27	180.jpg	19	90	656.168	Washington North ft (4601)	07:30:27	180_tag.jpg
	23-Sep-2011	Picture	1773370.	147849.		US State Plane NAD 83	23-Sep-2011	Picture
181	14:30:48	181.jpg	41	81	626.640	Washington North ft (4601)	07:30:48	181_tag.jpg
	23-Sep-2011	Picture	1773466.	147692.		US State Plane NAD 83	23-Sep-2011	Picture
182	14:31:09	182.jpg	44	41	613.517	Washington North ft (4601)	07:31:09	182_tag.jpg
	23-Sep-2011	Picture	1773500.	147457.		US State Plane NAD 83	23-Sep-2011	Picture
183	14:31:38	183.jpg	41	57	616.798	Washington North ft (4601)	07:31:38	183_tag.jpg
	23-Sep-2011	Picture	1773496.	147428.		US State Plane NAD 83	23-Sep-2011	Picture
184	14:31:42	184.jpg	49	16	616.798	Washington North ft (4601)	07:31:42	184_tag.jpg
185	23-Sep-2011	Picture	1773493.	147402.	610.236	US State Plane NAD 83	23-Sep-2011	Picture
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	14:31:45	185.jpg	22	81		Washington North ft (4601)	07:31:45	185_tag.jpg
	23-Sep-2011	Picture	1773496.	147367.		US State Plane NAD 83	23-Sep-2011	Picture
186	14:31:50	186.jpg	91	37	610.236	Washington North ft (4601)	07:31:50	186_tag.jpg
	23-Sep-2011	Picture	1773549.	147255.		US State Plane NAD 83	23-Sep-2011	Picture
187	14:32:08	187.jpg	29	26	603.675	Washington North ft (4601)	07:32:08	187_tag.jpg
	23-Sep-2011	Picture	1773617.	147107.		US State Plane NAD 83	23-Sep-2011	Picture
188	14:32:29	188.jpg	05	80	613.517	Washington North ft (4601)	07:32:29	188_tag.jpg
	23-Sep-2011	Picture	1773640.	147066.		US State Plane NAD 83	23-Sep-2011	Picture
189	14:32:35	189.jpg	73	42	610.236	Washington North ft (4601)	07:32:35	189_tag.jpg
	23-Sep-2011	Picture	1773644.	146977.		US State Plane NAD 83	23-Sep-2011	Picture
190	14:32:48	190.jpg	11	28	610.236	Washington North ft (4601)	07:32:48	190_tag.jpg
	23-Sep-2011	Picture	1773632.	146806.		US State Plane NAD 83	23-Sep-2011	Picture
191	14:33:12	191.jpg	22	97	603.675	Washington North ft (4601)	07:33:12	191_tag.jpg
	23-Sep-2011	Picture	1773626.	146773.		US State Plane NAD 83	23-Sep-2011	Picture
192	14:33:16	192.jpg	95	49	603.675	Washington North ft (4601)	07:33:16	192_tag.jpg
	23-Sep-2011	Picture	1773696.	146541.		US State Plane NAD 83	23-Sep-2011	Picture
193	14:33:47	193.jpg	68	94	606.955	Washington North ft (4601)	07:33:47	193_tag.jpg
	23-Sep-2011	Picture	1773709.	146511.		US State Plane NAD 83	23-Sep-2011	Picture
194	14:33:52	194.jpg	28	63	603.675	Washington North ft (4601)	07:33:52	194_tag.jpg
	23-Sep-2011	Picture	1773729.	146448.		US State Plane NAD 83	23-Sep-2011	Picture
195	14:34:00	195.jpg	67	95	603.675	Washington North ft (4601)	07:34:00	195_tag.jpg
	23-Sep-2011	Picture	1773740.	146421.		US State Plane NAD 83	23-Sep-2011	Picture
196	14:34:04	196.jpg	87	67	597.113	Washington North ft (4601)	07:34:04	196_tag.jpg
	23-Sep-2011	Picture	1773772.	146376.		US State Plane NAD 83	23-Sep-2011	Picture
197	14:34:11	197.jpg	14	29	603.675	Washington North ft (4601)	07:34:11	197_tag.jpg
	23-Sep-2011	Picture	1773893.	146283.		US State Plane NAD 83	23-Sep-2011	Picture
198	14:34:30	198.jpg	18	92	613.517	Washington North ft (4601)	07:34:30	198_tag.jpg
	23-Sep-2011	Picture	1774005.	146212.		US State Plane NAD 83	23-Sep-2011	Picture
199	14:34:46	199.jpg	82	77	620.079	Washington North ft (4601)	07:34:46	199_tag.jpg
	23-Sep-2011	Picture	1774200.	146065.		US State Plane NAD 83	23-Sep-2011	Picture
200	14:35:14	200.jpg	18	18	620.079	Washington North ft (4601)	07:35:14	200_tag.jpg

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	23-Sep-2011	Picture	1774288.	145977.		US State Plane NAD 83	23-Sep-2011	Picture
201	14:35:28	201.jpg	86	65	626.640	Washington North ft (4601)	07:35:28	201_tag.jpg
	23-Sep-2011	Picture	1774401.	145830.		US State Plane NAD 83	23-Sep-2011	Picture
202	14:35:48	202.jpg	34	50	626.640	Washington North ft (4601)	07:35:48	202_tag.jpg
	23-Sep-2011	Picture	1774482.	145693.		US State Plane NAD 83	23-Sep-2011	Picture
203	14:36:05	203.jpg	80	27	633.202	Washington North ft (4601)	07:36:05	203_tag.jpg
	23-Sep-2011	Picture	1774574.	145537.		US State Plane NAD 83	23-Sep-2011	Picture
204	14:36:25	204.jpg	71	88	623.360	Washington North ft (4601)	07:36:25	204_tag.jpg
	23-Sep-2011	Picture	1774692.	145362.		US State Plane NAD 83	23-Sep-2011	Picture
205	14:36:48	205.jpg	22	40	629.921	Washington North ft (4601)	07:36:48	205_tag.jpg
	23-Sep-2011	Picture	1774839.	145194.		US State Plane NAD 83	23-Sep-2011	Picture
206	14:37:13	206.jpg	27	22	633.202	Washington North ft (4601)	07:37:13	206_tag.jpg
	23-Sep-2011	Picture	1774928.	145090.		US State Plane NAD 83	23-Sep-2011	Picture
207	14:37:27	207.jpg	06	48	633.202	Washington North ft (4601)	07:37:27	207_tag.jpg
	23-Sep-2011	Picture	1774955.	145041.		US State Plane NAD 83	23-Sep-2011	Picture
208	14:37:33	208.jpg	93	03	633.202	Washington North ft (4601)	07:37:33	208_tag.jpg
	23-Sep-2011	Picture	1775000.	144907.		US State Plane NAD 83	23-Sep-2011	Picture
209	14:37:49	209.jpg	91	59	636.483	Washington North ft (4601)	07:37:49	209_tag.jpg
	23-Sep-2011	Picture	1775031.	144815.		US State Plane NAD 83	23-Sep-2011	Picture
210	14:38:00	210.jpg	83	60	633.202	Washington North ft (4601)	07:38:00	210_tag.jpg
	23-Sep-2011	Picture	1775099.	144722.		US State Plane NAD 83	23-Sep-2011	Picture
211	14:38:12	211.jpg	23	86	636.483	Washington North ft (4601)	07:38:12	211_tag.jpg
	23-Sep-2011	Picture	1775175.	144619.		US State Plane NAD 83	23-Sep-2011	Picture
212	14:38:28	212.jpg	64	03	633.202	Washington North ft (4601)	07:38:28	212_tag.jpg
	23-Sep-2011	Picture	1775193.	144589.		US State Plane NAD 83	23-Sep-2011	Picture
213	14:38:33	213.jpg	74	78	629.921	Washington North ft (4601)	07:38:33	213_tag.jpg
	23-Sep-2011	Picture	1775216.	144532.		US State Plane NAD 83	23-Sep-2011	Picture
214	14:38:42	214.jpg	16	18	620.079	Washington North ft (4601)	07:38:42	214_tag.jpg
	23-Sep-2011	Picture	1775291.	144338.		US State Plane NAD 83	23-Sep-2011	Picture
215	14:39:09	215.jpg	16	16	620.079	Washington North ft (4601)	07:39:09	215_tag.jpg
216	23-Sep-2011	Picture	1775301.	144307.	620.079	US State Plane NAD 83	23-Sep-2011	Picture

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				,		T		
	14:39:13	216.jpg	00	83		Washington North ft (4601)	07:39:13	216_tag.jpg
	23-Sep-2011	Picture	1775308.	144267.		US State Plane NAD 83	23-Sep-2011	Picture
217	14:39:18	217.jpg	17	36	623.360	Washington North ft (4601)	07:39:18	217_tag.jpg
	23-Sep-2011	Picture	1775310.	144215.		US State Plane NAD 83	23-Sep-2011	Picture
218	14:39:25	218.jpg	60	70	620.079	Washington North ft (4601)	07:39:25	218_tag.jpg
	23-Sep-2011	Picture	1775270.	144012.		US State Plane NAD 83	23-Sep-2011	Picture
219	14:39:52	219.jpg	07	76	613.517	Washington North ft (4601)	07:39:52	219_tag.jpg
	23-Sep-2011	Picture	1775334.	143786.		US State Plane NAD 83	23-Sep-2011	Picture
220	14:40:25	220.jpg	97	24	633.202	Washington North ft (4601)	07:40:25	220_tag.jpg
	23-Sep-2011	Picture	1775417.	143563.		US State Plane NAD 83	23-Sep-2011	Picture
221	14:40:58	221.jpg	05	91	603.675	Washington North ft (4601)	07:40:58	221_tag.jpg
	23-Sep-2011	Picture	1775442.	143525.		US State Plane NAD 83	23-Sep-2011	Picture
222	14:41:04	222.jpg	78	59	603.675	Washington North ft (4601)	07:41:04	222_tag.jpg
	23-Sep-2011	Picture	1775456.	143503.		US State Plane NAD 83	23-Sep-2011	Picture
223	14:41:08	223.jpg	01	39	610.236	Washington North ft (4601)	07:41:08	223_tag.jpg
	23-Sep-2011	Picture	1775464.	143491.		US State Plane NAD 83	23-Sep-2011	Picture
224	14:41:11	224.jpg	35	29	613.517	Washington North ft (4601)	07:41:11	224_tag.jpg
	23-Sep-2011	Picture	1775733.	144403.		US State Plane NAD 83	23-Sep-2011	Picture
225	14:50:03	225.jpg	11	10	574.147	Washington North ft (4601)	07:50:03	225_tag.jpg
	23-Sep-2011	Picture	1775404.	144858.		US State Plane NAD 83	23-Sep-2011	Picture
226	14:50:17	226.jpg	44	77	587.270	Washington North ft (4601)	07:50:17	226_tag.jpg
	23-Sep-2011	Picture	1775176.	145245.		US State Plane NAD 83	23-Sep-2011	Picture
227	14:50:28	227.jpg	03	23	600.394	Washington North ft (4601)	07:50:28	227_tag.jpg
	23-Sep-2011	Picture	1774857.	145820.		US State Plane NAD 83	23-Sep-2011	Picture
228	14:50:44	228.jpg	55	55	610.236	Washington North ft (4601)	07:50:44	228_tag.jpg
	23-Sep-2011	Picture	1774389.	146592.		US State Plane NAD 83	23-Sep-2011	Picture
229	14:51:06	229.jpg	11	39	616.798	Washington North ft (4601)	07:51:06	229_tag.jpg
	23-Sep-2011	Picture	1774292.	146777.		US State Plane NAD 83	23-Sep-2011	Picture
230	14:51:11	230.jpg	87	14	610.236	Washington North ft (4601)	07:51:11	230_tag.jpg
_	23-Sep-2011	Picture	1774219.	146968.		US State Plane NAD 83	23-Sep-2011	Picture
231	14:51:16	231.jpg	30	13	606.955	Washington North ft (4601)	07:51:16	231_tag.jpg

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	23-Sep-2011	Picture	1774036.	147513.		US State Plane NAD 83	23-Sep-2011	Picture
232	14:51:30	232.jpg	61	00	600.394	Washington North ft (4601)	07:51:30	232_tag.jpg
	23-Sep-2011	Picture	1773892.	148075.		US State Plane NAD 83	23-Sep-2011	Picture
233	14:51:44	233.jpg	33	37	606.955	Washington North ft (4601)	07:51:44	233_tag.jpg
	23-Sep-2011	Picture	1773849.	148314.		US State Plane NAD 83	23-Sep-2011	Picture
234	14:51:50	234.jpg	38	19	613.517	Washington North ft (4601)	07:51:50	234_tag.jpg
	23-Sep-2011	Picture	1773778.	148771.		US State Plane NAD 83	23-Sep-2011	Picture
235	14:52:01	235.jpg	77	70	597.113	Washington North ft (4601)	07:52:01	235_tag.jpg
	23-Sep-2011	Picture	1773744.	149016.		US State Plane NAD 83	23-Sep-2011	Picture
236	14:52:07	236.jpg	72	67	606.955	Washington North ft (4601)	07:52:07	236_tag.jpg
	23-Sep-2011	Picture	1773609.	149875.		US State Plane NAD 83	23-Sep-2011	Picture
237	14:52:28	237.jpg	40	98	613.517	Washington North ft (4601)	07:52:28	237_tag.jpg
	23-Sep-2011	Picture	1773512.	150185.		US State Plane NAD 83	23-Sep-2011	Picture
238	14:52:36	238.jpg	31	36	613.517	Washington North ft (4601)	07:52:36	238_tag.jpg
	23-Sep-2011	Picture	1773453.	150595.		US State Plane NAD 83	23-Sep-2011	Picture
239	14:52:46	239.jpg	05	32	603.675	Washington North ft (4601)	07:52:46	239_tag.jpg
	23-Sep-2011	Picture	1773423.	150754.		US State Plane NAD 83	23-Sep-2011	Picture
240	14:52:50	240.jpg	74	20	606.955	Washington North ft (4601)	07:52:50	240_tag.jpg
	23-Sep-2011	Picture	1773386.	150912.		US State Plane NAD 83	23-Sep-2011	Picture
241	14:52:54	241.jpg	87	01	603.675	Washington North ft (4601)	07:52:54	241_tag.jpg
	23-Sep-2011	Picture	1773334.	151065.		US State Plane NAD 83	23-Sep-2011	Picture
242	14:52:58	242.jpg	90	66	603.675	Washington North ft (4601)	07:52:58	242_tag.jpg
	23-Sep-2011	Picture	1773205.	151539.		US State Plane NAD 83	23-Sep-2011	Picture
243	14:53:10	243.jpg	04	98	603.675	Washington North ft (4601)	07:53:10	243_tag.jpg
	23-Sep-2011	Picture	1773141.	151736.		US State Plane NAD 83	23-Sep-2011	Picture
244	14:53:15	244.jpg	77	11	606.955	Washington North ft (4601)	07:53:15	244_tag.jpg
	23-Sep-2011	Picture	1773020.	151999.		US State Plane NAD 83	23-Sep-2011	Picture
245	14:53:22	245.jpg	27	72	613.517	Washington North ft (4601)	07:53:22	245_tag.jpg
	23-Sep-2011	Picture	1772808.	152494.		US State Plane NAD 83	23-Sep-2011	Picture
246	14:53:35	246.jpg	43	75	616.798	Washington North ft (4601)	07:53:35	246_tag.jpg
247	23-Sep-2011	Picture	1772743.	152695.	620.079	US State Plane NAD 83	23-Sep-2011	Picture
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	14:53:40	247.jpg	07	93		Washington North ft (4601)	07:53:40	247_tag.jpg
	23-Sep-2011	Picture	1772670.	152945.		US State Plane NAD 83	23-Sep-2011	Picture
248	14:53:46	248.jpg	50	71	613.517	Washington North ft (4601)	07:53:46	248_tag.jpg
	23-Sep-2011	Picture	1772597.	153195.		US State Plane NAD 83	23-Sep-2011	Picture
249	14:53:52	249.jpg	93	48	613.517	Washington North ft (4601)	07:53:52	249_tag.jpg
	23-Sep-2011	Picture	1772524.	153405.		US State Plane NAD 83	23-Sep-2011	Picture
250	14:53:57	250.jpg	26	73	610.236	Washington North ft (4601)	07:53:57	250_tag.jpg
	23-Sep-2011	Picture	1772375.	153765.		US State Plane NAD 83	23-Sep-2011	Picture
251	14:54:06	251.jpg	29	42	613.517	Washington North ft (4601)	07:54:06	251_tag.jpg
	23-Sep-2011	Picture	1772232.	154076.		US State Plane NAD 83	23-Sep-2011	Picture
252	14:54:14	252.jpg	16	51	620.079	Washington North ft (4601)	07:54:14	252_tag.jpg
	23-Sep-2011	Picture	1772100.	154391.		US State Plane NAD 83	23-Sep-2011	Picture
253	14:54:22	253.jpg	01	73	626.640	Washington North ft (4601)	07:54:22	253_tag.jpg
	23-Sep-2011	Picture	1771984.	154716.		US State Plane NAD 83	23-Sep-2011	Picture
254	14:54:30	254.jpg	30	19	633.202	Washington North ft (4601)	07:54:30	254_tag.jpg
	23-Sep-2011	Picture	1771875.	155047.		US State Plane NAD 83	23-Sep-2011	Picture
255	14:54:38	255.jpg	42	79	639.764	Washington North ft (4601)	07:54:38	255_tag.jpg
	23-Sep-2011	Picture	1771791.	155295.		US State Plane NAD 83	23-Sep-2011	Picture
256	14:54:44	256.jpg	19	46	636.483	Washington North ft (4601)	07:54:44	256_tag.jpg
	23-Sep-2011	Picture	1771689.	155575.		US State Plane NAD 83	23-Sep-2011	Picture
257	14:54:51	257.jpg	55	43	636.483	Washington North ft (4601)	07:54:51	257_tag.jpg
	23-Sep-2011	Picture	1771630.	155739.		US State Plane NAD 83	23-Sep-2011	Picture
258	14:54:55	258.jpg	67	17	639.764	Washington North ft (4601)	07:54:55	258_tag.jpg
	23-Sep-2011	Picture	1771573.	155901.		US State Plane NAD 83	23-Sep-2011	Picture
259	14:54:59	259.jpg	85	92	639.764	Washington North ft (4601)	07:54:59	259_tag.jpg
	23-Sep-2011	Picture	1771515.	156060.		US State Plane NAD 83	23-Sep-2011	Picture
260	14:55:03	260.jpg	68	60	633.202	Washington North ft (4601)	07:55:03	260_tag.jpg
	23-Sep-2011	Picture	1771444.	156266.		US State Plane NAD 83	23-Sep-2011	Picture
261	14:55:08	261.jpg	13	81	629.921	Washington North ft (4601)	07:55:08	261_tag.jpg
	23-Sep-2011	Picture	1771366.	156471.		US State Plane NAD 83	23-Sep-2011	Picture
262	14:55:13	262.jpg	39	97	629.921	Washington North ft (4601)	07:55:13	262_tag.jpg

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	23-Sep-2011	Picture	1771298.	156621.		US State Plane NAD 83	23-Sep-2011	Picture
263	14:55:17	263.jpg	67	47	626.640	Washington North ft (4601)	07:55:17	263_tag.jpg
	23-Sep-2011	Picture	1771150.	156935.		US State Plane NAD 83	23-Sep-2011	Picture
264	14:55:25	264.jpg	74	57	626.640	Washington North ft (4601)	07:55:25	264_tag.jpg
	23-Sep-2011	Picture	1771005.	157193.		US State Plane NAD 83	23-Sep-2011	Picture
265	14:55:32	265.jpg	95	98	626.640	Washington North ft (4601)	07:55:32	265_tag.jpg
	23-Sep-2011	Picture	1770782.	157553.		US State Plane NAD 83	23-Sep-2011	Picture
266	14:55:42	266.jpg	78	17	633.202	Washington North ft (4601)	07:55:42	266_tag.jpg
	23-Sep-2011	Picture	1770660.	157775.		US State Plane NAD 83		Picture
267	14:55:48	267.jpg	93	25	636.483	Washington North ft (4601)	07:55:48	267_tag.jpg
	23-Sep-2011	Picture	1770556.	158008.		US State Plane NAD 83	23-Sep-2011	Picture
268	14:55:54	268.jpg	21	60	639.764	Washington North ft (4601)	07:55:54	268_tag.jpg
	23-Sep-2011	Picture	1770472.	158213.		US State Plane NAD 83	23-Sep-2011	Picture
269	14:55:59	269.jpg	99	72	649.606	Washington North ft (4601)	07:55:59	269_tag.jpg
	23-Sep-2011	Picture	1770392.	158407.		US State Plane NAD 83	23-Sep-2011	Picture
270	14:56:04	270.jpg	60	72	646.325	Washington North ft (4601)	07:56:04	270_tag.jpg
	23-Sep-2011	Picture	1770350.	158530.		US State Plane NAD 83	23-Sep-2011	Picture
271	14:56:07	271.jpg	51	04	649.606	Washington North ft (4601)	07:56:07	271_tag.jpg
	23-Sep-2011	Picture	1770228.	158908.		US State Plane NAD 83	23-Sep-2011	Picture
272	14:56:16	272.jpg	99	17	656.168	Washington North ft (4601)	07:56:16	272_tag.jpg
	23-Sep-2011	Picture	1770096.	159327.		US State Plane NAD 83	23-Sep-2011	Picture
273	14:56:26	273.jpg	88	77	652.887	Washington North ft (4601)	07:56:26	273_tag.jpg
	23-Sep-2011	Picture	1769962.	159731.		US State Plane NAD 83	23-Sep-2011	Picture
274	14:56:36	274.jpg	13	15	643.045	Washington North ft (4601)	07:56:36	274_tag.jpg
	23-Sep-2011	Picture	1769924.	159898.		US State Plane NAD 83	23-Sep-2011	Picture
275	14:56:40	275.jpg	56	08	643.045	Washington North ft (4601)	07:56:40	275_tag.jpg
	23-Sep-2011	Picture	1769841.	160227.		US State Plane NAD 83	23-Sep-2011	Picture
276	14:56:48	276.jpg	20	84	643.045	Washington North ft (4601)	07:56:48	276_tag.jpg
	23-Sep-2011	Picture	1769777.	160516.		US State Plane NAD 83	23-Sep-2011	Picture
277	14:56:55	277.jpg	37	18	643.045	Washington North ft (4601)	07:56:55	277_tag.jpg
278	23-Sep-2011	Picture	1769725.	160820.	636.483	US State Plane NAD 83	23-Sep-2011	Picture
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				,		T		
	14:57:02	278.jpg	12	82		Washington North ft (4601)	07:57:02	278_tag.jpg
	23-Sep-2011	Picture	1769684.	161172.		US State Plane NAD 83	23-Sep-2011	Picture
279	14:57:10	279.jpg	23	14	633.202	Washington North ft (4601)	07:57:10	279_tag.jpg
	23-Sep-2011	Picture	1769653.	161457.		US State Plane NAD 83	23-Sep-2011	Picture
280	14:57:17	280.jpg	42	67	629.921	Washington North ft (4601)	07:57:17	280_tag.jpg
	23-Sep-2011	Picture	1769596.	161868.		US State Plane NAD 83	23-Sep-2011	Picture
281	14:57:27	281.jpg	33	67	623.360	Washington North ft (4601)	07:57:27	281_tag.jpg
	23-Sep-2011	Picture	1769521.	162203.		US State Plane NAD 83	23-Sep-2011	Picture
282	14:57:35	282.jpg	88	55	620.079	Washington North ft (4601)	07:57:35	282_tag.jpg
	23-Sep-2011	Picture	1769490.	162330.		US State Plane NAD 83	23-Sep-2011	Picture
283	14:57:38	283.jpg	78	00	620.079	Washington North ft (4601)	07:57:38	283_tag.jpg
	23-Sep-2011	Picture	1769441.	162529.		US State Plane NAD 83	23-Sep-2011	Picture
284	14:57:43	284.jpg	31	28	616.798	Washington North ft (4601)	07:57:43	284_tag.jpg
	23-Sep-2011	Picture	1769347.	162847.		US State Plane NAD 83	23-Sep-2011	Picture
285	14:57:51	285.jpg	04	82	600.394	Washington North ft (4601)	07:57:51	285_tag.jpg
	23-Sep-2011	Picture	1769176.	163197.		US State Plane NAD 83	23-Sep-2011	Picture
286	14:58:00	286.jpg	96	25	603.675	Washington North ft (4601)	07:58:00	286_tag.jpg
	23-Sep-2011	Picture	1769091.	163341.		US State Plane NAD 83	23-Sep-2011	Picture
287	14:58:04	287.jpg	44	57	610.236	Washington North ft (4601)	07:58:04	287_tag.jpg
	23-Sep-2011	Picture	1769004.	163480.		US State Plane NAD 83	23-Sep-2011	Picture
288	14:58:08	288.jpg	58	81	616.798	Washington North ft (4601)	07:58:08	288_tag.jpg
	23-Sep-2011	Picture	1769004.	163480.		US State Plane NAD 83	23-Sep-2011	Picture
289	14:58:08	289.jpg	58	81	616.798	Washington North ft (4601)	07:58:08	289_tag.jpg
	23-Sep-2011	Picture	1768842.	163731.		US State Plane NAD 83	23-Sep-2011	Picture
290	14:58:15	290.jpg	05	01	616.798	Washington North ft (4601)	07:58:15	290_tag.jpg
	23-Sep-2011	Picture	1768657.	164018.		US State Plane NAD 83	23-Sep-2011	Picture
291	14:58:23	291.jpg	97	54	613.517	Washington North ft (4601)	07:58:23	291_tag.jpg
	23-Sep-2011	Picture	1768496.	164479.		US State Plane NAD 83	23-Sep-2011	Picture
292	14:58:34	292.jpg	10	50	606.955	Washington North ft (4601)	07:58:34	292_tag.jpg
	23-Sep-2011	Picture	1768453.	164823.		US State Plane NAD 83	23-Sep-2011	Picture
293	14:58:42	293.jpg	23	72	603.675	Washington North ft (4601)	07:58:42	293_tag.jpg

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	23-Sep-2011	Picture	1768433.	165077.		US State Plane NAD 83	23-Sep-2011	Picture
294	14:58:48	294.jpg	65	92	597.113	Washington North ft (4601)	07:58:48	294_tag.jpg
	23-Sep-2011	Picture	1768418.	165255.		US State Plane NAD 83	23-Sep-2011	Picture
295	14:58:52	295.jpg	71	14	593.832	Washington North ft (4601)	07:58:52	295_tag.jpg
	23-Sep-2011	Picture	1768401.	165427.		US State Plane NAD 83	23-Sep-2011	Picture
296	14:58:56	296.jpg	06	27	587.270	Washington North ft (4601)	07:58:56	296_tag.jpg
	23-Sep-2011	Picture	1768368.	165668.		US State Plane NAD 83	23-Sep-2011	Picture
297	14:59:02	297.jpg	51	21	580.709	Washington North ft (4601)	07:59:02	297_tag.jpg
	23-Sep-2011	Picture	1768285.	166176.		US State Plane NAD 83	23-Sep-2011	Picture
298	14:59:14	298.jpg	38	31	577.428	Washington North ft (4601)	07:59:14	298_tag.jpg
	23-Sep-2011	Picture	1768228.	166635.		US State Plane NAD 83	23-Sep-2011	Picture
299	14:59:25	299.jpg	00	94	587.270	Washington North ft (4601)	07:59:25	299_tag.jpg
	23-Sep-2011	Picture	1768196.	167046.		US State Plane NAD 83	23-Sep-2011	Picture
300	14:59:35	300.jpg	38	10	600.394	Washington North ft (4601)	07:59:35	300_tag.jpg
	23-Sep-2011	Picture	1768159.	167335.		US State Plane NAD 83	23-Sep-2011	Picture
301	14:59:42	301.jpg	39	65	613.517	Washington North ft (4601)	07:59:42	301_tag.jpg
	23-Sep-2011	Picture	1768114.	167622.		US State Plane NAD 83	23-Sep-2011	Picture
302	14:59:49	302.jpg	86	10	606.955	Washington North ft (4601)	07:59:49	302_tag.jpg
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303	14:59:57	303.jpg	74	04	603.675	Washington North ft (4601)	07:59:57	303_tag.jpg
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306	15:00:10	306.jpg	44	55	600.394	Washington North ft (4601)	08:00:10	306_tag.jpg
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_	23-Sep-2011	Picture	1767942.	169281.		US State Plane NAD 83	23-Sep-2011	Picture
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309	23-Sep-2011	Picture	1767951.	169419.	590.551	US State Plane NAD 83	23-Sep-2011	Picture
-	-			-		•		

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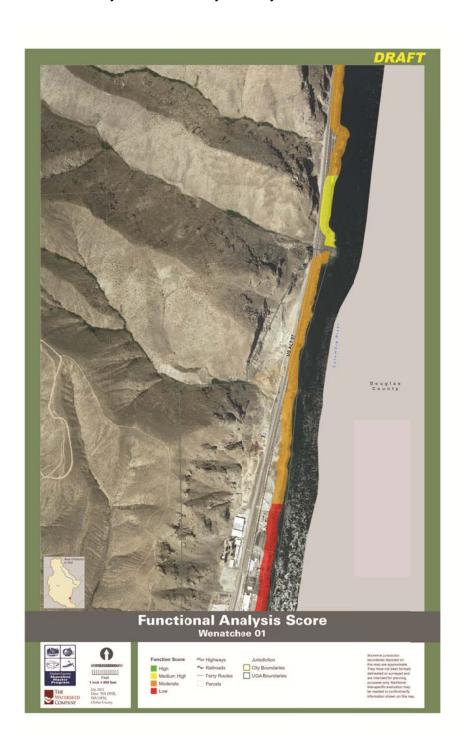
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310	15:00:33	310.jpg	64	54	590.551	Washington North ft (4601)	08:00:33	310_tag.jpg
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Appendix B: Complete Ecological Function Score Results

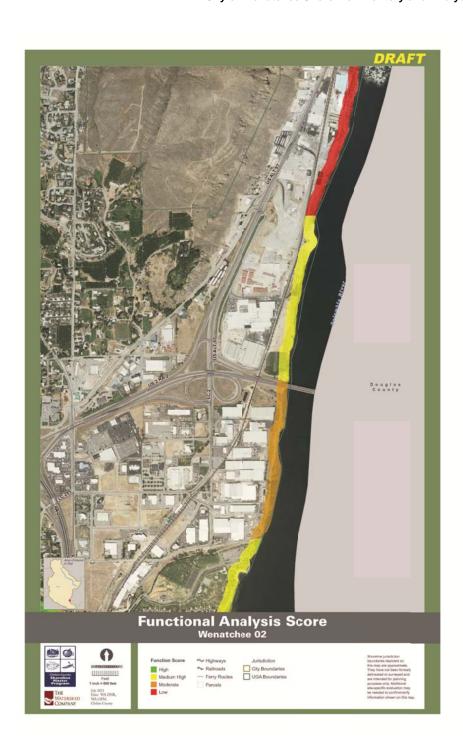
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FINAL Chelan County Shoreline Inventory and Analysis



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FINAL City of Wenatchee Shoreline Inventory and Analysis



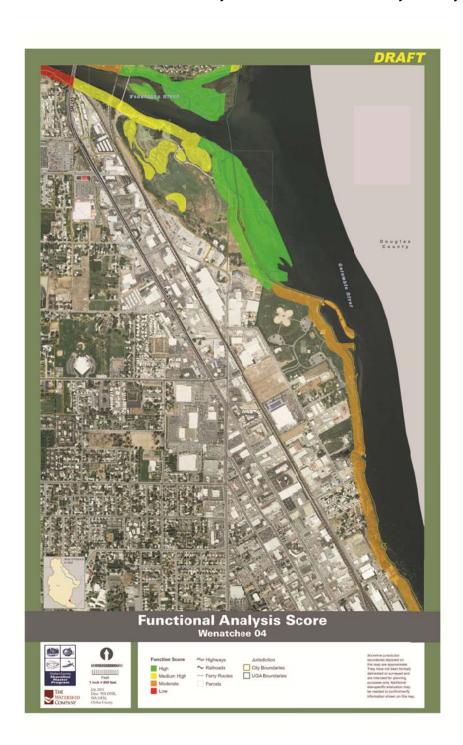
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FINAL Chelan County Shoreline Inventory and Analysis



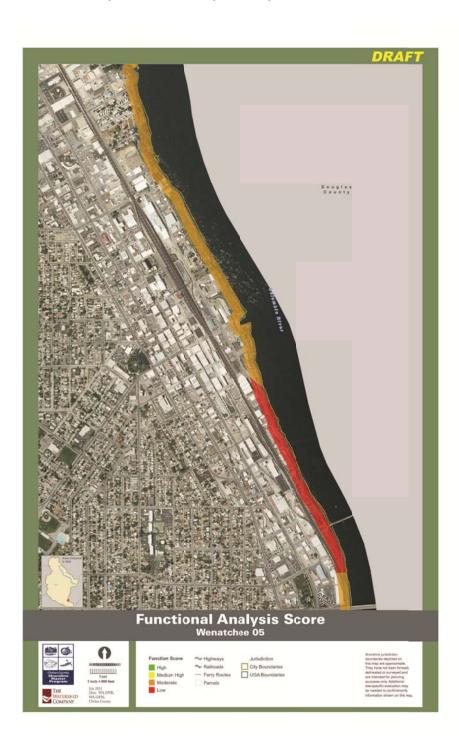
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FINAL City of Wenatchee Shoreline Inventory and Analysis

Appendix C: Land Capacity Analysis Assumptions

June 2013 Appendix C

No.	Step	Proposed Assumption	Chelan County Residential LCA	City of Cashmere Comp Plan LUE	City of Chelan Residential LCA	City of Entiat Residential LCA	City of Leavenworth Residential LCA	City of Wenatchee Comp Plan LUE
Geogr	aphy/ Time Period							
1.	Base point in time	2008 (Use SMP Inventory Assessor data date as baseline)	Undated. Included in 2007 plan. New analysis in 2008 for Peshastin UGA.	2008	2007	2007	2003	2007 plan (2005 UGA boundaries)
2.	Study area boundaries	Parcels fully within or intersecting shoreline jurisdiction. Look at whole parcel – not just 200 foot jurisdictional area by water body (determined by WRIA, and cities).	Unincorporated UGAs (Sunnyslope, Manson, Peshastin)	City and UGA	City and UGA	City and UGA	City and UGA	City and UGA
Gross Invent		Include public and private lands that meet criteria since all lands may have shoreline uses. Can discount or remove public/reserved lands after Step 11 as needed.						
3.	Developable Land: Vacant	Assessor Building Value = \$0; Remove lots less than 2,499 s.f.	Vacant land and orchards Recommend: 2,499 instead of 2,500 to capture 25 x 100 cabin lots	Available land (not defined)	Vacant land and orchards	Vacant land and orchards	Vacant, non- governmental land Recommend: 10,000 or 20,000 s.f. (Note: for conservative estimate kept smaller screen. Can alter market factor if needed in Leavenworth.)	Vacant land and orchards identified by aerial photo, further distinguished by determining degree of development limitations
4.	Developable Land: Partially Used	Single Family. Parcel is 2 times the minimum allowed by zoning. (Note: more conservative; may capture some ADU trend.)	Not addressed Recommend: method to account for ADUs	Available land (not defined)	Not addressed	Not addressed	Residentially used parcels greater than 1 acres Recommend: 2 times instead of 3.	Residential parcels with infill opportunities, visual assessment using aerial photo
5.	Developable Land: Under- Utilized	Multifamily, commercial, industrial designated parcels occupied by single family uses. Also, multifamily, commercial, industrial parcels where the ratio of improvement value to land value is <1.0.	Not addressed	Available land (not defined)	Not addressed in supply (see below in deductions)	Not addressed in supply (see below in deductions)	Not addressed Recommend: removing small CC zone lots with 60% lot coverage. (Note: can remove CC zone property after #11 if needed)	Waterfront area
Deduc	t Critical Areas						,	
6.	Wetlands	Deduct actual wetlands acres using SMP inventory maps.	Comp. Plan: Not deducted. Peshastin: Flat 5%.	Not deducted	Not deducted	Not deducted	Part of 15% flat deduction Recommend: deduct actual wetland acres	Not applicable
7.	Streams/lakes	Deduct streams and lakes based on ordinary high water mark.	rivers deducted Peshastin: Flat 5%.	Part of 12% flat deduction	Not deducted	Not deducted	Part of 15% flat deduction. Recommend: deduct based on OHW mark.	Not applicable
8.	Steep Slopes/Soils	Deduct geo-hazards using SMP inventory maps. (If slope information is complete use 40% slopes or greater.)	Comp. Plan: 40% slopes or greater deducted Peshastin: Flat 5%.	Part of 12% flat deduction	40% slopes or greater deducted	40% slopes or greater deducted (3% acres assumed to be steep slope in residential designations, and except 10% in the Mixed Tourist	Part of 15% flat deduction Recommend: Deduct using SMP inventory maps	Steep slopes (percent not identified)

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Comment [ML1]: City performed a residential vacant land inventory and capacity analysis in 2004, which was updated in the Supplemental EIS completed in conjunction with the Comp Plan update in 2007.

No.	Step	Proposed Assumption	Chelan County Residential LCA	City of Cashmere Comp Plan LUE	City of Chelan Residential LCA	City of Entiat Residential LCA	City of Leavenworth Residential LCA	City of Wenatchee Comp Plan LUE
9.	Floodplains	Deduct floodways.	Comp. Plan: Deduct floodways Peshastin: Flat 5%.	Part of 12% flat deduction	Not deducted	Recreational district) Not deducted	Part of 15% flat deduction Recommend: Deduct floodways	Deducted
10.	Critical Area Buffers	Rural: Assume an average buffer of 125 feet for wetlands and 150 feet for Type S or F streams/lakes. UGAs: Assume average 75 feet for wetlands; 100 feet for Type F streams/lakes, and 50 feet for Type S.	Not deducted Consider: Distinguishing larger wetlands. (Note: Due to limits of wetlands inventory data and variations in actual quality recommend continuing with average.)	Not deducted	Not deducted	Not deducted	Not deducted Recommend: Riparian buffers are 25' in current regulations. Assumed: Average buffers at left. Critical areas regulations likely to change in 2009.	Not applicable
11.	Determine developable acres by planned land use category	Sum developable acres (vacant, partially used, and underutilized with critical area deductions) by planned land use category. Use each jurisdiction's planned land use categories.	Adopted land use categori	ies in Comprehensive Plan				
	ct Future Infrastructure ublic Uses							
12.	Rights of Way and Other Development Requirements	Percentage reduction; vary by community.	Comp. Plan: 15% Peshastin: 30% Recommend: 20%	20% for future roads and utilities	15%	25% for future roads and utilities	20% for future roads and utilities Recommend: 5%	25% reduction for non- residential factors including ROW & other public usesAssumed: 5% based on city input to recognize waterfront plan
13.	Schools, police/fire stations, water, sewer, recreation/ open space, and similar.	Percentage reduction based on lands for public purposes. Vary by community.	Comp. Plan: 7% Peshastin: 0% (see above) Recommend: 0% (combine with above)	Part of roads/utilities	7%	10%	Part of roads/utilities Recommend: 0% if deducting public lands (Note: can remove from consideration after Step 11 if needed)	25% reduction for non- residential factors including ROW & other public usesAssumed: 0% based on city input to recognize waterfront plan
	t Factor Deduction							
14.	Vacant lands	Vary by community.	Comp. Plan: 25% market factor and 15% for lands unavailable. Peshastin Sub-area: 20% flat market factor. Also assumed 40% of vacant would not develop. Recommend 20-25% Assumed: 20%	Comp. Plan: 15% Recommend: 25% due to water supply	25% (market/safety factor)	25% Recommend: reduced market factor MDR and HDR lands due to marina development.	15% Use GIS data	25% market factor and 15% for lands unavailable Recommended: 5 or 10% Assumed: 5% based on city input to recognize waterfront plan
15.	Partially Used and Under- Utilized	UGAs: Use Plan assumption for each community, or where not included, 25% for land not likely to develop in next 20 years. Rural: 50%	Comp. Plan: Not addressed Peshastin: Agricultural lands 25%	Comp. Plan: Not addressed Recommend: 25% due to water supply	30% - single family 20% multifamily 50% Tourist Accommodations and Special Use District	Orchards - 40% remain in production. 50% of multifamily land will convert to highest density, (rest currently	Not addressed 25%	25% market factor and 15% for lands unavailable Assumed: 10% - based on city input to recognize

Comment [ML1]: City performed a residential vacant land inventory and capacity analysis in 2004, which was updated in the Supplemental EIS completed in conjunction with the Comp Plan update in 2007.

FINAL City of Wenatchee Shoreline Inventory and Analysis

No.	Step	Proposed Assumption	Chelan County Residential LCA	City of Cashmere Comp Plan LUE	City of Chelan Residential LCA	City of Entiat Residential LCA	City of Leavenworth Residential LCA	City of Wenatchee Comp Plan LUE
		Agriculture and forestry lands treated as partially used/under-utilized			(Unavailable/ Underutilized Land factor – percent not used for residential purposes)	subdivided at single- family densities) Tourist Recreational Development, 25% e in an open space use		waterfront plan
	nine Population Capacity							
16.	Mixed Use Development Share	Vary by local plan. If not addressed, assume 50/50 share of development will be residential or commercial.	Comp. Plan: Not addressed Peshastin: Assume 10% of commercial or mixed use will include residential dwellings.	Not addressed	See underutilized/ unavailable factor	See underutilized/ unavailable factor	Not addressed 50/50	Comp. Plan: Not addressed Waterfront Plan: Use economic study. Assumed 85%/15% residential/ commercial split based on report.
17.	Determine Total Dwelling Units Capacity By Zone	Multiply net acres of developable land in each zone by assumed density of each zone to determine total dwelling units of capacity. Subtract existing dwelling units.	Comp. Plan: Unincorporated UGAs 4 units per acre Peshastin: LDR 4, MDR 8; HDR 16 Proposed: Urban per above. Rural areas – base on zoning.	Single Family 6 units/acre Suburban Residential Average 3/acre Multi Family 15 units/acre	Single Family 3 du/ac Multi-family 9 du/ac Tourist Accommodations 3 du/ac Special Use District 3 du/ac	Single Family: Up to 4 units per acre Multi Family: Up to 10 units per acre Mixed Tourist Recreational: Up to 4 units per acre Current analysis: Assuming 25% unbuildable and 17 du/ac for High Density	Goal is average 4.6 du/ac and average lot size of 9,400 s.f.	Comp Plan: 6.22 housing units (h.u.) per net acre for vacant and underutilized land Waterfront Plan: 1440 housing units Proposed: Waterfront Plan and Comprehensive Plan.
	mine Employment					3		
<u>Capac</u> 18.		Vanchu community if the are in	No omployee and lained	No amplayer and land	No omployee set less d	No employee and lained	No omployees at least	Comp. Plant No.
16.	Determine Total Square Footage Capacity By Zone	Vary by community if there is information. Otherwise, multiply net acres of commercial and industrial developable land by the assumed floor area ratio. Commercial = FAR of 0.25 Industrial = FAR of 0.4 Subtract existing building square footage on partially used and underutilized land.	No employment land capacity conducted Recommended: Review Transportation Plan assumptions for commercial and industrial growth	No employment land capacity conducted	No employment land capacity conducted	No employment land capacity conducted	No employment land capacity conducted	Comp. Plan: No employment land capacity conducted Waterfront Plan: Market demand prepared. Used proposed assumption due to lack of FAR information.

vacant land inventory and capacity analysis in 2004, which was updated in the Supplemental EIS completed in conjunction with the Comp Plan update in 2007.

Comment [ML1]: City performed a residential

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Appendix D: Zoning Standards Summary

June 2011 Appendix D

Chelan County: Zoning Standards Summary.

Zone	Primary Land Uses	Minimum Lot Size (acres or sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Commercial Agricultural Lands	Agriculture Single Family Residential	10 acres. Cluster subdivisions may have reduced minimum lot sizes.	35 ft., except for barns and similar agricultural buildings shall not exceed 50 ft. in height.	Front: 25 ft. from front property line or 55 ft. from the street centerline, whichever is greater. Side: 10 ft. Street side yard same as front. Rear: 20 ft. Dwelling Setbacks from agriculture: 100 ft. from property line including road width, with minimum 80 ft. from centerline or 50 ft. from front property line, whichever is greater.	35%
Commercial Forest Lands	Forestry Agriculture Single Family Residential	20 acres. Cluster subdivisions may have reduced minimum lot sizes.	35 ft.	Required except when abutting commercial agricultural lands (AC), commercial forest lands (FC), riparian and shoreline areas. Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 10 ft. Street side yard same as front. Rear: 20 ft.	35%
Commercial Mineral	Sand, gravel extraction Agriculture Forestry	5 acres	None specified	Required except when abutting commercial agricultural lands (AC), commercial forest lands (FC), riparian and shoreline areas. Structures: 50 ft. setback from all property lines. Offices: 25 ft. setback from all property lines.	35%
Rural Public Lands and Facilities	Public and Government Agriculture Forestry	Lot size in accordance with the Chelan-Douglas health district standards for public or community water and sewage disposal.	50 ft.	Front: 15 ft. from the front property line or 45 ft. from the street centerline, whichever is greater. Side: 10 ft. Street Side: not specified Rear: 10 ft.	No maximum.
Rural Commercial	Commercial Lodging Wholesale Storage Repair Agriculture Forestry	Lot size in accordance with the Chelan-Douglas health district standards for public or community water and sewage disposal.	35 ft.	Required except when abutting commercial agricultural lands (AC), commercial forest lands (FC), riparian or shoreline areas. Front: 10 ft. from the front property line or 40 ft. from the street centerline, whichever is greater. Side: Zero ft., except 30 ft. from the side property line when the lot abuts any zone other than a commercial or industrial district. Street Side: not specified Rear: Zero ft., except 30 ft. from the rear property when the lot abuts any district other than a commercial or industrial district.	No maximum.
Rural Industrial	Industrial Agriculture Forestry	Lot size in accordance with the Chelan-Douglas health district standards for public or community water and sewage disposal.	60 ft.	Required except when abutting commercial agricultural lands (AC), commercial forest lands (FC), riparian and shoreline areas. Front: 10 ft. from the front property line or 40 ft. from the street centerline, whichever is greater. Side: Zero ft., except 30 ft. from the side property line when the lot abuts any district other than an industrial district. Street Side: not specified Rear: Zero ft., except 30 ft. from the rear property line when the lot abuts any zone other than an industrial district.	70%
Rural Recreational / Residential	Single Family Residential Agriculture Forestry	Lot size in accordance with the Chelan-Douglas health district standards for public or community water and sewage disposal; however, in no case shall lot size be less than 12,000 sq ft., except for cluster subdivisions or planned development districts.	35 ft.	Required except when abutting commercial agricultural lands (AC), commercial forest lands (FC), riparian or shoreline areas. Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. Street side yard same as front. Rear: 20 ft.	35%
Rural Residential 1_2.5	Single Family Residential	2.5 acres. Cluster subdivisions or planned development districts may have reduced minimum lot sizes.	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater.	35%

June 2013

Zone	Primary Land Uses	Minimum Lot Size (acres or sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
	Agriculture Forestry			Side: 5 ft. from the side property line. Street side yard same as front. Rear: 20 ft.	
Rural Residential 1_5	Single Family Residential Agriculture Forestry	5 acres. Cluster subdivisions or planned development districts may have reduced minimum lot sizes.	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. Street side same as front. Rear: 20 ft. from the rear property line.	35%
Rural Residential 1_10	Single Family Residential Agriculture Forestry	10 acres. Cluster subdivisions or planned development districts may have reduced minimum lot sizes.	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. from the side property line. Street side same as front. Rear: 20 ft.	35%
Rural Residential 1_20	Single Family Residential Agriculture Forestry	20 acres. Cluster subdivisions or planned development districts may have reduced minimum lot sizes.	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. from the side property line. Street side yard same as front. Rear: 20 ft.	35%
Rural Village	Single Family Residential Agriculture Forestry	Lot size, which measures to include 10% of the adjoining public rights-of-way, shall be in accordance with the Chelan-Douglas health district standards for public or community water and sewage disposal. Single family minimum 12,000 sq ft.; duplex minimum 15,050 sq ft.; and 3,050 additional sq ft. for each additional multifamily dwelling unit, except for cluster subdivisions or planned development districts	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. from the side property line. Street side yard same as front. Rear: 20 ft.	35%
Rural Waterfront	Single Family Residential Agriculture Forestry	Lot sizes, which measures to include 10% of the adjoining public rights-of-way, shall be in accordance with the Chelan-Douglas health district standards for public or community water and sewage disposal; however, in no case shall lot size be less than 12,000 sq ft. except for cluster subdivisions or planned development districts.	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. Street side yard same as front. Rear: 20 ft.	35%
Urban Residential 2	Residential, detached & attached	7,000 sq ft. for single-family, 10,000 sq ft. for duplex, 7,000 sq ft. plus 3,050 sq ft. per unit for multifamily.	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. Street Side: not specified Rear: 25 ft.	35%
Urban Residential 3	Residential, detached & attached	5,000 sq ft. for single-family, 7,000 sq ft. for duplexes, 4,000 sq ft. plus 1,650 sq ft. per multifamily unit, except for cluster subdivisions or planned development districts.	50 ft.	Front: 10 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. Street Side: not specified Rear: 20 ft.	Buildings and structures up to 2 stories shall not occupy more than 50% of the lot area, less 5% for each additional story up to 4.
Urban Waterfront Residential	Residential, detached & attached	5,000 sq ft. for a single-family dwelling unit, 7,000 sq ft. for a duplex dwelling unit, and 4,000 sq ft. plus 1,650 sq ft. per unit for multifamily dwelling units; except for cluster subdivisions or planned development districts.	35 ft.	Front: 25 ft. from the front property line or 55 ft. from the street centerline, whichever is greater. Side: 5 ft. Street Side: not specified Rear: 15 ft.	35%
Low Density Residential (R-1)	Single Family Duplex	7,500 sq ft. – single family 9,000 sq ft. – duplex	25 ft.	Front: 25 ft. Side: 5 ft. Street Side: 25 ft. Rear: 20 ft.	50%
Medium Density Residential (R-2)	Single Family Duplex Multifamily Condominium	7,000 sq ft. – single family 9,000 sq ft. – duplex plus 1,000 sq ft. for each additional unit	25 ft.	Front: 20 ft. Side: 5 ft. Street Side: 20 ft. Rear: 15 ft.	65%
High Density	Single Family	6,000 sq ft. – single family	35 ft.	Front: 20 ft.	65%

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Zone	Primary Land Uses	Minimum Lot Size (acres or sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Residential (R-3)	Duplex	9,000 sq ft. – duplex		Side: 5 ft.	
	Multifamily	plus 1,000 sq ft. for each additional unit		Street Side: 20 ft.	
	Condominium			Rear: 15 ft.	
Downtown	Commercial	0 sq. ft.	35 ft.	0 ft. all sides	None
Commercial	Residential				
Highway	Large scale	0 sq. ft.	45 ft.	Front: 40 ft.	75%
Commercial	commercial,			Side: 20 ft.	
	multifamily			Street Side: 40 ft.	
				Rear: 20 ft.	
Industrial	Heavy Industrial	0 sq. ft.	45 ft.	Front: 25 ft.	75%
				Side: 25 ft.	
				Street Side: 25 ft.	
				Rear: 25 ft.	
Campus	Light Industrial,	0 sq. ft.	45 ft.	Front: 20 ft.	80%
Industrial	Technology			Side: 20 ft.	
				Street Side: 20 ft.	
				Rear: 20 ft.	
Public Use	Public facilities and services	0 sq. ft.	35%	0 ft. all sides	30%

City of Cashmere: Zoning Standards Summary.

Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Downtown Business District	Commercial	That area necessary to comply with all applicable provisions, including without limitation requirements for off-street parking, ingress/egress, lot coverage, landscaping, etc.	3 stories, not greater than 40 ft. including all signs and decorations	Front: Same as adjacent buildings or zero. Side: Zero ft. common wall, or 5 ft. from side property line. Adjacent to residential 15 ft. Street Side: Not specified Rear: Zero ft. Adjacent to residential 15 ft. Alley 8 ft. from rear lot line.	80%
Mixed Commercial / Light Industrial	Commercial Industrial	That area necessary to comply with all applicable provisions, including without limitation requirements for off-street parking, ingress/egress, lot coverage, landscaping, etc.	3 stories, not greater than 40 ft., including all signs or decorations. Where development occurs adjacent to a residential or public district, maximum building height for all structures and storage of materials shall be 30 ft.	Front: Arterial 55 ft. from centerline or 25 ft. from front lot line, whichever is greater. Non-arterial, 50 ft. from centerline or 20 ft. from front lot line, whichever is greater. Side & Rear: 10 ft. Adjacent to residential 15 ft. Street Side: Not specified	80%

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Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Multi Family Residential	Multifamily Duplex Single Family	SF: 7,000 sq ft. Duplex: 8,500 sq ft. MF: 8,500 sq ft.	3 stories; not greater than 40 ft.; cornices, eaves, gutters, sunshades and other similar architectural features may not project more than 2 ft. into required yard setback	Front: 20 ft. Side: 5 ft. for one-story structure, or 8 ft. for two-story structure, or 11 ft. for three-story structure. Street Side: Not specified Rear: 10 ft. Accessory buildings 5 ft. to the rear lot line. Setback from alley 8 ft.	50%
Public	Public/ Semi- Public Recreation	That area necessary to comply with all applicable provisions, including without limitation requirements for off-street parking, ingress/ egress, lot coverage, landscaping, etc.	30 stories, not greater than 40 ft., including all signs or decorations. Where development is adjacent to a residential district, maximum building height shall be two stories or greater than 30 ft.	Front: Zero Side: Zero except adjacent to residential, 30 ft. Street Side: Not specified Rear: Zero ft. Adjacent to residential, 30 ft. and adjacent to alley 8 ft.	80%
Single Family Residential	Single Family Dwellings	7,000 sq ft.	2 stories; not greater than 30 ft.; cornices, eaves, gutters, sunshades and other similar architectural features may not project more than 2 ft. into a required yard setback	Front: 25 ft. from front property line or 50 ft. from centerline of the street ROW, whichever is greater. Side: 5 ft. Street Side: Not specified Rear: 10 ft. Accessory buildings 5 ft. Alley setback 8 ft.	35%
Suburban Residential	Single Family Dwellings Duplexes Multifamily Agriculture	10,000 sq ft. (Duplexes allowed 15,000 sq ft.)	2 stories; not greater than 30 ft.; cornices, eaves, gutters, sunshades and other similar architectural features may not project more than 2 ft. into required yard setback	Front: 25 ft. from front property line or 50 ft. from centerline of the street ROW, whichever is greater. Side: 5 ft. Street Side: Not specified Rear: 10 ft. Accessory buildings 5 ft. Alley setback 8 ft.	35%

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Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Warehouse Industrial	Industrial Commercial	That area necessary to comply with all applicable provisions, including without limitation requirements for off-street parking, ingress/egress, lot coverage, landscaping, etc.	3 stories, not greater than 40 ft. (existing allows 80 ft.), including all signs or decorations. Where development occurs adjacent to a residential or public district, maximum building height for all structures and storage of materials shall be 30 ft.	Front, Side & Rear: None. Where necessary for roof snow sloughing, 8 ft. Street Side: Not specified	80%

City of Chelan: Zoning Standards Summary.

Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
High Density Commercial	Commercial Lodging	No minimum	50 ft.	Front: Zero ft. Side: Zero ft. Street Side: Not specified Rear: 5 ft.	No maximum
Highway Service Commercial	Highway and convenience commercial Trailer courts Boat building/sales	5,000 sq ft.	50 ft.	Front: Zero ft. Side: Zero ft. Street Side: Not specified Rear: 5 ft.	65%
Multi Family Residential	Single family Dwellings Townhomes Multifamily	5,000 sq ft. or 1,000 sq ft. per dwelling unit, whichever is greater	Townhouses 30 ft.; all other uses 50 ft. with the following exception: where the building site abuts an existing single-family residence, side step backs or an alternative design approved by City shall be required for any building taller than 30 ft.	Front: 20 ft. Side: 5 ft., plus one additional foot for each 2 ft. by which the building height exceeds 30 ft. Street Side: Not specified Rear: 20 ft. plus one additional foot for each 2 ft. by which the building height exceeds 30 ft.	40%
Public Lands & Facilities	Public and Semi-Public Uses Recreation Marinas Commercial Leases	Not specified	35 ft.	Abutting residential: Front: 25 ft. Side: 5 ft. Street Side: Not specified Rear: 20 ft. Abutting non-residential: Front: Zero ft.	35%

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Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
				Side: Zero ft. Street Side: Not specified Rear: 5 ft.	
Single Family Residential	Single Family Dwellings Agriculture	6,000 sq ft.	30 ft.	Front: 25 ft. Side: 5 ft. Street Side: 15 ft., except garage 20 ft. Rear: 20 ft.	30%
Special Use District	Single Family Agriculture Commercial PUD Marinas	5,000 sq ft.	50 ft.	Front: 25 ft. The setback for commercial structures may be reduced based on criteria. Side: 5 ft. Street Side: Not specified Rear: 20 ft.	75%
Tourist Accommo- dations	Residential Lodging Restaurants Personal services Travel services Small scale retail Boat launches Marinas Offices	5,000 sq ft.	50 ft.	Front: 25 ft. The setback for commercial structures may be reduced based on criteria. Side: 5 ft. Street Side: Not specified Rear: 20 ft.	75%
Warehousing and Industrial	Retail Sales Wholesaling Manufacturing Assembling,	10,000 sq ft.	Not specified	Front: Not specified Side: Not specified Street Side: Not specified Rear: Not specified	Not specified
Waterfront Commercial	Boat transportation, boat building and sales, marinas, docks Residential Commercial	5,000 sq ft.	35 ft.	Front: 25 ft. Side: 5 ft. Street Side: 25 ft. Rear: Zero ft.	65%

City of Entiat: Zoning Standards Summary.

Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Commercial / Light Industrial	Commercial Industrial Agricultural	No minimum lot area or dimensions	3 stories or 50 ft.	Front: City streets, 45 ft. from the centerline or 15 ft. from the front property line, whichever is greater. State highway, 40 ft. from the front property line when front yard parking, or 20 ft. no front yard parking. Side: Zero ft. Street Side: not specified Rear: Zero ft.	60%

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Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Highway Commercial	Commercial Limited Industrial	No minimum lot area or dimensions	3 stories or 40 ft.	Front: City streets, 45 ft. from the centerline or 15 ft. from the front property line, whichever is greater. State highway, 40 ft. from the front property line when front yard parking, or 20 ft. no front yard parking. Side: Zero ft. unless adjacent to residential, then 15 ft. Street Side: not specified Rear: Zero ft. from the rear property line, improved access (alley, street) 5 ft. without established access. Adjacent to residential, then 20 ft.	50%
Residential Low Density	Residential Agriculture	8,500 sq ft. for a single-family dwelling 12,500 sq ft. for a duplex dwelling	2 stories or 35 ft.	Front: 25 ft. from the front property line or 55 ft. from the centerline of the street, whichever is greater. Side: 5 ft. from side property line Street Side: Same as front Rear: 20 ft. from rear property line	35%
Waterfront Business	Commercial	No minimum lot area or dimensions	2 stories or 35 ft.	Front: City streets, 55 ft. from the centerline of city streets or 25 ft. from the front property line, whichever is greater. State highway, 40 ft. when front yard parking is provided, or 20 ft. not front yard parking Side: 5 ft. Street Side: not specified Rear: 20 ft.	50%

City of Leavenworth: Zoning Standards Summary.

Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Central Commercial	Commercial Office Lodging Condominiums	No minimum lot size	50 ft.	Front: 25 ft. for parcels which have direct frontage on or along Highway 2 in the city or which are located across the street from residential or recreational zones. Side: 10 ft. when side yard abuts, touches or adjoins any residential or recreational zones. Street Side: not specified Rear: 15 ft. when rear yard abuts, touches or adjoins residential or recreational zones.	Not specified
General Commercial	Commercial Multifamily Lodging	No minimum lot size	35 ft.	Front: 25 ft. for parcels which have frontage on or along Highway 2 in the city, or which are located across the street from any residential or recreational zone. Side: 10 ft. when side yard abuts, touches or adjoins any residential or recreational zone. Street Side: not specified Rear: 15 ft. when rear yard abuts, touches or adjoins any residential or recreational zone.	75%
Light Industrial	Light manufacturing Warehousing Wholesale commercial	No minimum lot size	50 ft.	Front: 25 ft. Side: 5 ft.; when abutting, touching or located across street or alley from residential or recreational zone, increased to 20 ft. Street side: Same as front. Rear: 10 ft., increased to 20 ft. when abutting, touching or located across street or alley from residential or recreational zone	Not specified

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Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Low Density Residential 6,000 (RL6)	Single Family Dwellings	6,000 sq ft. for single-family; 12,000 sq ft. for duplex	35 ft.	Front: 25 ft. Side: 5 ft. Street Side: 10 ft. Rear: No less than 15 ft. for lots without adjacent alley to rear yard; no less than 8 ft. for lots with alley adjacent to rear yard	35%
Low Density Residential 12,000 (RL12)	Single Family Dwellings	12,000 sq ft. for single-family and duplex	35 ft.	Front: 25 ft. Side: 10 ft. Street Side: 15 ft. Rear: 15 ft. for lots without alley adjacent to rear yard; 8 ft. for lots with alley adjacent to rear yard	35%
Multi Family Residential	Duplex and multifamily dwellings	6,000 sq ft. for new land divisions of up to 3 units; 2,000 for each additional dwelling unit.	35 ft.	Front: 25 ft. Side: 5 ft. Street Side: 10 ft. Rear: 15 ft. for lots without alley adjacent to rear yard; 8 ft. for lots with alley adjacent to rear yard	40%
Recreation	Parks, golf course, cultural facilities, education	Area dedicated as park or open space must be equal to the total area begin developed, including supporting infrastructure	35 ft.	Front: 25 ft. Side: 5 ft. Street Side: not specified Rear: 20 ft.	35%
Recreation Public	Parks, golf course, play areas, swimming pool, ballfields, commercial leases, wildlife refuge	Designated public open space must equal or exceed total gross floor area of all structures and parking	35 ft.	Front: 25 ft. Side: 5 ft. Street Side: not specified Rear: 20 ft.	35%
Tourist Commercial	Commercial Office Lodging Multifamily	3,500 sq ft.	35 ft.	Front: 25 ft. Side: 10 ft. Street Side: Rear: 10 ft., except yard area shall be increased to 20 ft. when abutting, touching or adjoining residential or recreational zone	50%

City of Wenatchee: Zoning Standards Summary.

Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
Industrial	Industrial Storage including Boat Storage Commercial Recreation including boat clubs, marinas, boat launch	5,000 sq ft.	6 stories above grade and 90 ft.	Front: Zero ft. from the front property line or 35 ft. from the street centerline, whichever is greater. Side: Zero ft. Street Side: Not specified Rear: Zero ft.	70%
North Wenatchee Business	Commercial Mixed Use Residential Office	None	6 stories above grade and 90 ft.	Front: Zero ft. from the front property line or 35 ft. from the street centerline, whichever is greater. Wenatchee Avenue 45 ft. from the centerline. Side: Zero ft. If adjacent to a residential zone 15 ft.	65%

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Zone	Primary Land Uses	Minimum Lot Size (sq ft.)	Maximum Building Height (ft.)	Standard Minimum Setbacks (ft.)	Maximum Building Coverage (%)
	Boating and Mini-Storage			Street Side: Not specified Rear: Zero ft. If adjacent to a residential zone 20 ft.	
Residential High	Single and Multifamily Residential	4,000 sq ft.	4 stories above grade and 60 ft.	Front: 10 ft. Minimum distance from the centerline of the road equal to one-half of the required right-of-way. Side: 6 ft. Plus one-half foot for each foot by which the building height exceeds 30 ft. if the lot adjoins an RS, RL, or RM district. Street Side: Not specified Rear: 10 ft.	55%
Residential Moderate	Single Family Dwellings Duplex	6,000 sq ft.	30 ft.	Front: 25 ft. Minimum distance from the centerline of the road equal to one-half of the required right-of-way. Side: 5 ft. Street Side: Not specified Rear: 15 ft.	45%
Residential Single Family	Single Family Dwellings	10,000 sq ft.; minimum lot size shall be increased 1,500 sq ft. for accessory dwelling units.	30 ft.	Front: 25 ft. Minimum distance from the centerline of the road equal to one-half of the required right-of-way. Side: 5 ft. Street Side: Not specified Rear: 20 ft.	35%
Waterfront Mixed Use	Commercial Office Recreation including boat clubs, marinas, boat launch	None	Residential: 30 ft. Commercial/mixed use: 50 ft.	Front: None except for any required additional public right-of-way. Minimum distance from the centerline of the right-of-way equal to one-half of the required right-of-way. Side: None Street Side: Not specified Rear: None	100%

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Appendix E: Height Analysis

City of Wenatchee Shoreline Height Analysis

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INTRODUCTION

This height analysis is in reality a view analysis to promote continuity with the City of Wenatchee's adopted Waterfront Subarea Plan and Wenatchee Urban Area Comprehensive Plan for increased heights in a limited area for a limited number of properties (see attached map) that lie within the shoreline jurisdiction of the Columbia River. The City's Shoreline Master Program is being updated under grants from Department of Ecology.

The City of Wenatchee is physically constrained by geography; steep sloped foothills and two rivers (Columbia and Wenatchee). The Columbia River and Wenatchee River are shorelines of statewide significance.

The shoreline area identified for the height analysis (see Figure 1) is along the Columbia River and is owned or leased by the Chelan County PUD for operation as a public riverfront park (Figure 2). In large part, the riverfront park is over 200 feet wide and adjoining properties to the riverfront park are outside of shoreline jurisdiction.

PURPOSE

The purpose of the view analysis is to consider impacts to residential areas within the City of Wenatchee, protect the vision of the City's planning efforts, and meet the requirements of the Shoreline Management Act, RCW 90.58; more specifically:

RCW 90.58.020

This is a policy provision in the Shoreline Management Act (SMA) that states: "The public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally."

RCW 90.58.320

This provision states: "No permit shall be issued pursuant to this chapter for any new or expanded building or structure of more than thirty-five feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where a master program does not prohibit the same and then only when overriding considerations of the public interest will be served."

HEIGHT ANALYSIS AREA

The area for this analysis is limited to properties within the High Intensity environment of the SMP that are landward of the Waterfront Park environment designation. A map (see Figure 1) identifies the area. **Note:** The zoning for these properties must allow for increased heights and in most cases does, prior to any application for additional height.

CITY OF WENATCHEE'S WATERFRONT PLANNING HISTORY.

One can look through the historic photos within the City of Wenatchee and you will see continued Industrial and Commercial development along the Columbia River, but rarely see Residential development. One of the overriding factors before the installation of Dams on the Columbia River was that the Columbia River could flood quickly and severely. It wasn't until after the construction of dams on the Columbia River that you can begin to see residential development within the City of Wenatchee along the Columbia River. However, the residential development occurred in limited areas as the Public Utility District, Burlington Northern Santa Fe Railroad, and the commercial and industrial businesses didn't want to part with their riverfront property. Past land use maps for the city, indicate that single family zoning was limited along the Columbia River.

On October 25, 1994, the city of Wenatchee adopted ordinance #3070, which was a new zoning code in compliance with the Growth Management Act. The city, in this adoption, designated the waterfront area as commercial general and industrial zoning and a small residential area; thereby making a single family residences as non-conforming uses for the majority of the shoreline area. The 1998 zoning maps (the only ones available at this time) identify the limitation of single family development within the waterfront area. The attached 1998 map only shows one small area in the northern node of the waterfront to be residential with the remaining being industrial and commercial. In addition, the city adopted non-conforming use regulations (" Within the districts established by this ordinance or subsequent amendments thereto, there exists uses, structures and lots which were lawfully established or created, but which would be prohibited, regulated, or restricted under the terms of this ordinance or future amendments. The intent of this ordinance is to permit these non-conformities to continue, but not to encourage their perpetual survival."), that further ensure single-family residences are removed from the waterfront area. As it pertains to non-conformities be it uses or structures, the language crafted for Ordinance #3070 still exists in the current adopted Wenatchee City Code (WCC) Title 10 Zoning.

The City's adopted 2004 Wenatchee Waterfront Sub Area Plan focuses on the redevelopment and enhancement of the city through urban infill and mixed uses. The plan was developed through a public process with the assistance of the Wenatchee Downtown Association and looks to bring new energy and activity to the city's core through the development of our waterfront. As part of this subarea plan, a shoreline inventory, economic analysis, and traffic analysis were completed. The Waterfront Subarea Plan established a waterfront area vision by creating nodes of development. In all of these nodes, a mix of commercial, retail, recreational, and residential uses is proposed. With the adoption of the Waterfront Subarea Plan, single family residential development became a non-conforming use for the entirety of the City of Wenatchee's Columbia River shoreline.

In 2007, the City of Wenatchee adopted the Wenatchee Urban Area Comprehensive Plan as a required update under RCW36.70A. This plan used the previous work of the Waterfront Subarea Plan and Zoning changes to plan for the City's twenty-five (25) year population projections. The Comprehensive Plan eliminated the density restrictions in the zoning regulations for the areas along the Columbia River; more specifically, within the identified waterfront area (see Waterfront Subarea Plan). Additionally, the residential zoning districts were given increased densities to accommodate the population allocations as required by RCW58.70A. The subsequent zoning code adopted by Ordinance 2007-34 followed up on the guidance of the Comprehensive Plan and furthered the ban on single-family residences in the Waterfront Mixed Use zone, which is the zoning district for a majority of the Columbia River shoreline within the City of Wenatchee. The Waterfront Mixed Use zone would serve the City of Wenatchee as a mixed use area by providing residential densities and provide an accommodating area for business development.

With the commercial zoning districts being applied to the waterfront area since 1994, the only height restriction for development has been the 1975 Shoreline Master Program. Because the PUD waterfront park lies along the Columbia River shoreline and is over 200 feet in width, a majority of properties have already developed and exceed the thirty-five foot height requirement for shoreline areas of statewide significance.

Furthermore, in all zoning ordinances adopted and amended since Ordinance #3070, height restrictions have been unregulated. In the 2004 Waterfront Subarea Plan, you begin to see defined building heights based upon guidelines for mixed use development and articulation/modulation standards that encourage a pedestrian feel to development.

COMPLIANCE WITH RCW 90.58.020

RCW90.58.020 - "The public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally."

A majority of the City of Wenatchee's waterfront is under Chelan County PUD ownership/lease and operated as public parks that provide both visual and public access to the Columbia River. The PUD Riverfront Park and Walla Walla Park are exactly the intent of RCW90.58.020.

In addition, the City's current adopted code guides development to enhance the physical and aesthetic qualities of the waterfront by requiring all development to meet aesthetic architectural standards that are pedestrian friendly and are orientated to the riverfront park, by limiting the types of development, and by requiring development to provide pedestrian amenities that encourage a vibrant waterfront area.

Another significant portion of the Columbia River is separated from private ownership by the Burlington Northern Santa Fe Railroad right-of-way. In these sections, the shoreline area is protected from further development.

COMPLIANCE WITH RCW 90.58.320

This provision states: "No permit shall be issued pursuant to this chapter for any new or expanded building or structure of more than thirty-five feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where a master program does not prohibit the same and then only when overriding considerations of the public interest will be served."

The City of Wenatchee has a few overriding considerations that serve the public interest as it relates to the visibility of the shoreline area. These are:

- The City is a sloped community with the Ordinary High Water Mark (OHWM) at approximately the 620 feet above sea level and land rising to the foothills between 1020 and 1225 feet above sea level.
- 2) A separation exists between private property ownership and the shoreline area with approximately 95 percent of the City of Wenatchee's Columbia River shoreline area having an intervening right-of-way or public ownership through the combination of BNSF railroad right-ofway, PUD park system and property ownership, Wenatchee Loop Trail, Reclamation District rightof-way, and public streets.
 - a. The majority of the shoreline area is separated from private property by Chelan County Public Utility District ownership in the form of the riverfront park. The PUD riverfront park (Figure 2) encompasses a large percentage of the City's shoreline. The PUD riverfront park provides direct visual and public access to the shoreline for the City of Wenatchee and surrounding areas with vehicular access in several locations by public rights-of-way (see attached city road map and PUD park map).
 - b. A small section exists where the southern portion of Worthen Street and the Wenatchee Loop Trail are between properties and the shoreline.
 - c. Another significant segment of the Columbia River is occupied by the Burlington Northern Santa Fe (BNSF) mainline (Figure 3) with a switching station and several side tracks that separate Wenatchee from both the Columbia and Wenatchee rivers.

- 3) There are but a limited number of properties partially within the shoreline jurisdiction that the allowance for taller structures can affect. More specifically, these limited properties are adversely impacted by adjoining properties that have the outright ability to construct taller buildings without the Shoreline Management Act provisions applied to them. This is solely caused by a twenty to thirty foot difference in distance that the subject properties are from the OHWM. In most cases, the average distance from the OHWM is at or greater than 200-feet with intervening ownership of the PUD riverfront park, a public road, Wenatchee Loop Trail, or a BNSF railroad line.
- 4) For sixteen plus years, the city of Wenatchee has planned for taller buildings in the waterfront area beginning in 1994 with Zoning Ordinance #0370 (Appendix A). In 2004 a detailed Waterfront subarea plan (Appendix B) was created to help identify how the city desired waterfront development to occur. In 2007, the City updated the Urban Area Comprehensive Plan (Appendix C) and Zoning Ordinance 2007-34 (Appendix D) to match the previous work completed.
- 5) Since the adoption of Ordinance #3070 (Appendix A), single family residences have been prohibited from development as the City's plan for a mixed use waterfront area had begun. Slowly over the past seventeen (17) years, single family residences have been slowly removed with the exception of two remaining residential areas. The Island View and River Park Drive streets (Figure 3). There are approximately twenty-four single family residences. However, not one is within shoreline jurisdiction. All properties have their shoreline and river views obscured by mature vegetation either by that which is on their property or that established on the PUD riverfront park (see photos in Appendix E).
- 6) The City of Wenatchee has been awarded several grants (both state and federal) for the extension and upgrade of infrastructure in the waterfront area in support of furthering the Waterfront Subarea Plan and the planned for a mixed use waterfront development. These grants have provided for the construction of Riverside Drive (including water, sewer, stormwater, and irrigation upgrades), improvements to Walla Walla Street (including water, sewer, stormwater, and irrigation updrages), the painting of the pedestrian/pipeline bridge (providing public access (pedestrian/bicycle) across the Columbia River to and from Wenatchee and East Wenatchee), the construction of a public moorage dock, and odor/visual improvements to the City of Wenatchee Wastewater treatment facility.
- 7) The City of Wenatchee downtown core and existing buildings near the shoreline have been built between the residential areas of the City, as was planned. The City's residential area for the most part is landward of the downtown and shoreline areas; where the heights of the existing building obscure a large portion of the direct shoreline view with the city limits. However, Columbia River shoreline views do exist from the residential areas within the city. These views are more scenic as they are to the North and South and include a better landscape view of the shoreline.

FINAL Chelan County Shoreline Inventory and Analysis

VIEW ANALYSIS

As part of any plan or proposal, other than those specified in the Wenatchee Shoreline Master Program standards, for structures over 35 feet in height, an applicant shall be required to submit a view analysis and cumulative impacts analysis that reviews residential obstruction(s) to allow the City to determine whether development under the master plan or proposal obstructs a substantial number of residences (RCW 90.58.320). Structures over 35 feet, other than those specified in the Wenatchee Shoreline Master Program standards, shall be approved only through a Conditional Use Permit process according to Section 5.2 of the Wenatchee Shoreline Master Program and WAC 173-27-160. Designs shall protect visual access to the water from onshore. Shoreline view corridors shall be protected through incorporation of appropriate design (e.g., modulation of building heights and massing) and location of new development. Potential impacts to views shall be minimized through location and orientation of development on the subject property. The applicant shall:

- (1) Incorporate a view analysis using photographs, videos, photo-based simulations, or computer-generated simulations. The view analysis shall assess and portray visual access from mainland residences adjoining the shoreline. In all cases photographs, videos, land use, land cover, or other sources of information shall be no older than 12 months prior to submittal of the application. All photographic, video or simulated view representations will employ equipment that produces imagery with an angle of view equivalent to that achievable with a35 mm "normal" camera lens, i.e., an angle of view of about 50°. To document any possible obstruction of existing or potential residential views by proposed development in the Urban Conservancy Environment designation, a minimum of three pictures shall be taken from residences or potential residential lots at a radius of 400 feet from the proposed development at equal distances from each other and toward the shoreline.
- (2) Ensure that the view analysis is cumulative in nature by including vacant existing parcels of record as well as existing structures. Vacant parcels of record shall be assumed to be developed and, as such, their structures to be in compliance with the 35-foot height limitation as established through photographs, videos, photo-based simulations, or computer generated simulations.
- (3) If demonstrated through photographs, videos, photo-based simulations, or computer-generated simulations that the proposed development will obstruct less than 30% of the view of the shoreline enjoyed by a substantial number of residences on areas adjoining such shorelines, then the development may be considered through the conditional use process.
- (4) In consideration of the potential view obstruction resulting from the proposed structure, side yard setbacks may need to be increased. No side yard setbacks shall be reduced to accommodate the proposed structure.

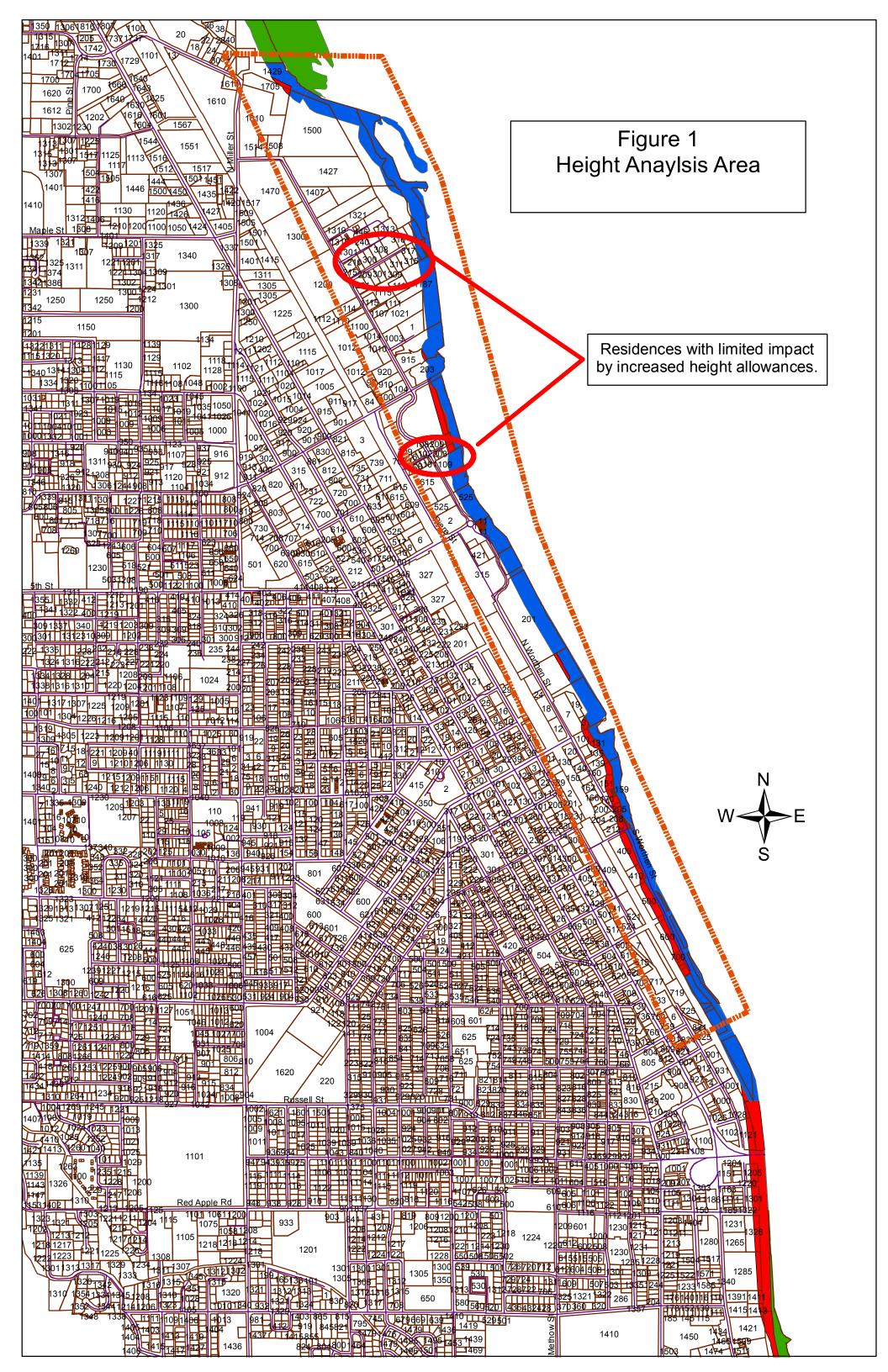
FINAL Chelan County Shoreline Inventory and Analysis

(5) To address "overriding considerations of the public interest" the applicant shall provide a cumulative impact analysis that documents the public benefits served by issuance of a Conditional Use Permit. The analysis shall address such considerations as cumulative view obstruction results of height adjustments (within a 1,000-foot radius) of the proposed development combined with those of other developments that exceed the 35-foot height limitation, environmental benefits (enhancement or restoration), public access/open space benefits, and economic benefits. The cumulative impact analysis shall address overall views that are lost, compromised, and/or retained; available view corridors; and surface water views lost, compromised, and/or retained.

CONCLUSION

The above analysis demonstrates the City's compliance with RCW 90.58.020 and 90.58.320; demonstrates a twenty year plus history for permitting and proposing development adjacent to the shoreline areas that will have increased heights; demonstrates the topographical features that allow views over taller structures from the city; demonstrates aged vegetation that precludes the few residents along in the immediate vicinity of the shoreline to have views of the shoreline; and demonstrates that existing structures in the downtown and vicinity of the shoreline block a portion of the shoreline view.

In the end, allowing increased heights on a few properties that lie partially within shoreline jurisdiction will not have an increased cumulative impact on shoreline views that already do not exist. In addition, those properties that may eventually desire increased heights outside of the identified area (Figure 1) will have to go through a conditional use permit process to address cumulative impacts and reduction of shoreline views.



Appendix H

Cumulative Impacts
Analysis



FINAL DRAFT

CUMULATIVE IMPACTS ANALYSIS

For City Of Wenatchee Shorelines



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CUMULATIVE IMPACTS ANALYSIS

CITY OF WENATCHEE

1 Introduction

1.1 Shoreline Management Act Requirements

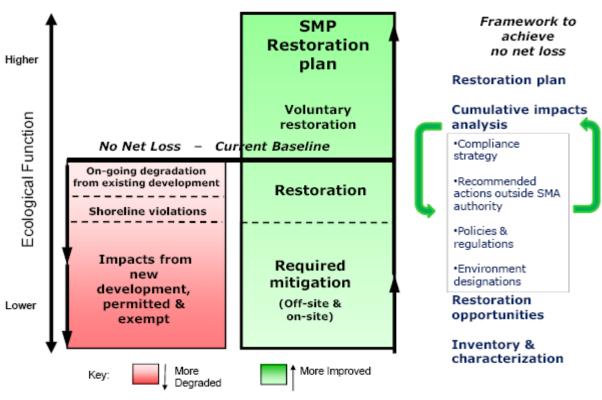
The Shoreline Management Act guidelines require local shoreline master programs to regulate new development to "achieve no net loss of ecological function." The guidelines (WAC 173-26-186(8)(d)) state that, "To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts."

The Guidelines further elaborate on the concept of net loss as follows:

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

In short, updated SMPs shall contain goals, policies and regulations that prevent degradation of ecological functions relative to the existing conditions as documented in that jurisdiction's characterization and analysis report. For those projects that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the baseline. This is illustrated in the figure below. The jurisdiction must be able to demonstrate that it has accomplished that goal through an analysis of cumulative impacts that might occur through implementation of the updated SMP. Evaluation of such cumulative impacts should consider:

- (i) current circumstances affecting the shorelines and relevant natural processes [Chapter 2 below and Shoreline Analysis Report];
- (ii) reasonably foreseeable future development and use of the shoreline [Chapter 3 below and Shoreline Analysis Report]; and
- (iii) beneficial effects of any established regulatory programs under other local, state, and federal laws." [Chapter 5 below]



Source: Department of Ecology

As outlined in the *Shoreline Restoration Plan* prepared as part of this SMP update, the SMA also seeks to restore ecological functions in degraded shorelines. This cannot be required by the SMP at a project level, but Section 173-26-201(2)(f) of the Guidelines says: "master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions." See the Shoreline Restoration Plan for additional discussion of SMP policies and other programs and activities in Chelan County and its Cities that contribute to the long-term restoration of ecological functions relative to the baseline condition.

1.2 Methodology

Using the information, textual and graphic, developed and presented in the *Shoreline Analysis Report*, this cumulative impacts analysis was prepared consistent with direction provided in the Shoreline Master Program Guidelines as described above. To the extent that existing information was sufficiently detailed and assumptions about possible new or re-development could be made with reasonable certainty, the following analysis is quantitative. However, in many cases information about existing conditions and/or redevelopment potential was not available at a level that could be assessed quantitatively or the analysis would be unnecessarily complex to reach a conclusion that could be derived more simply. Further, ecological function does not have an easy metric. For these reasons, much of the following analysis is more qualitative.

Analysis of cumulative impacts is generally limited to areas that fall within the proposed shoreline jurisdiction; however, because floodplains, channel migration zones, and rivers are closely interconnected and may not be captured within shoreline jurisdiction, the area outside of the immediate shoreline jurisdiction was considered in determining effects for areas with mapped channel migration zones and for Shorelines of Statewide Significance.

The Aquatic shoreline environment is not evaluated individually in this CIA. Most development activities do not occur below the ordinary high water mark (OHWM), more typically occurring in the adjacent upland shoreland environments. However, shoreline modifications below the OHWM, such as docks and bank armoring, usually occur in conjunction with adjacent upland development and were evaluated in this analysis.

To estimate potential changes in land use along the shoreline, a land capacity analysis was conducted projecting growth over a 20-year timeframe. The land capacity analysis estimates development that may occur in the future along shorelines given draft shoreline use environments and development standards. The method to determine shoreline land capacity is summarized below.

- Determine shoreline use boundaries. The land capacity analysis includes all lands within shoreline jurisdiction, generally 200 feet upland of the ordinary high water mark, associated wetlands, the floodway, and up to 200 feet of floodwaycontiguous floodplain where present. Additionally, in two cases parcels partially included in jurisdiction and extending beyond are included:
 - Channel migration zone areas, since rivers may move over time; and
 - Shorelines of Statewide Significance, due to the importance of these waterbodies and the ecosystem-wide processes emphasized in WAC 173-26-251.

- 2. Compile City land capacity analyses. Based on adopted Comprehensive Plan and City planner input, assumptions about vacant, partially used, and under-utilized properties have been compiled.
- 3. Determine land status. The analysis estimates developable acres by City, Urban Growth Area (UGA), and Watershed Inventory Analysis Area (WRIA). The developable acres are also sorted by waterbody, shoreline environment designation, and future land use/zoning category. Developable acres include:

 1) vacant (no building value); 2) partially used (e.g. single-family properties containing one home, but the land can be further subdivided); or 3) under-utilized (land value exceeds building value on multifamily, commercial or industrial properties).
- 4. Deductions. Constraints such as critical areas, shoreline buffers, rights of way, and infrastructure are deducted from gross acres. Market factor reductions, which account for land that may not be available (e.g. owner does not wish to develop), are also included.
- 5. Densities or floor area ratios are applied to the net buildable acres to estimate total future dwellings or commercial/industrial square feet.
- 6. Public and mineral lands. Due to the different purposes for public lands/land trusts and mineral lands, typical assumptions regarding dwelling and commercial/industrial density were not applied. However, because these shoreline properties could be altered due to a variety of public purposes such as recreation, utilities, or resource extraction, acres estimates are provided for each WRIA and City/UGA, as appropriate.

Appendix B provides a detailed matrix of assumptions and maps illustrating the categories of land status, including the three buildable categories as well as public and land trust properties.

Based on the results of the quantitative analysis of anticipated development, a qualitative analysis was performed to determine how foreseeable growth patterns might result in impacts to shoreline functions. A qualitative evaluation of potential impacts associated with possible future development, including upland development, overwater structures, shoreline armoring, mining, and aquaculture, was conducted at a Countywide level. For each waterbody with anticipated development within shoreline jurisdiction, effects were evaluated in terms of hydrologic, shoreline vegetation, hyporheic, and habitat functions. A qualitative analysis was performed to determine how applicable regulations related to each of the impacts identified, and what, if any regulations should be added or expanded to create more protection.

2 SUMMARY OF EXISTING CONDITIONS

The Shoreline Analysis Report included an evaluation of existing conditions in the City of Wenatchee. The sources and limitations of the data are listed in Table 9 of the Shoreline Analysis Report. Several types of data, including geology, soils, vegetation, impervious surface coverage, provide a regional characterization of existing conditions, but are not appropriate for a local or parcel based quantitative evaluation of existing conditions. Other data, including critical areas, may require a site-specific study to confirm the presence or absence of mapped features. Data gaps in the inventory data include aquifer recharge areas and shoreline stabilization. For a complete assessment of data limitations, assumptions, and data gaps, see Section 3 of the SMP. The following tables (Tables 1-9) provide a summary of existing conditions by waterbody.

2.1 Stemilt/Squilchuck - Colockum (WRIA 40a/b)

WRIA 40a/b is dominated by resource lands, including commercial agriculture and commercial forestry. Residential and industrial uses tend to be congregated closer to the Columbia River and other waterbodies in the eastern portion of the WRIA (RH2 Engineering, Inc. 2007). According to the U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) information, as much as 17% of the total shoreline area may be wetlands. Geologically hazardous areas as mapped by Washington Department of Natural Resources (DNR) are common, particularly around the three reservoirs, which are considered to have 100% geohazard coverage. A summary table (Table 1) provides further details on each waterbody's shoreline characteristics.

 Table 1.
 Summary Table of Basic Characteristics of Each Shoreline Waterbody in WRIA 40a/b

Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Area of Upland Shoreline Jurisdicti (acres) Major Existing Land Uses¹		Vegetation Profile ³	Critical Area/Priority Habitat or Species (PHS) ⁴ Presence	Presence of Impaired Waterbodies (303d list)? Yes/No Category 4 and 5 listed	Area (square feet) and Percent Coverage of Overwater structures
Streams/River	S					·	
Columbia	413.66	Government/Utility	Private 64%	Scrub/shrub 55%;	PHS mule deer	No	18,852

Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Major Existing Land Uses¹	Ownership Profile ²	Vegetation Profile ³	Critical Area/Priority Habitat or Species (PHS) ⁴ Presence	Presence of Impaired Waterbodies (303d list)? Yes/No Category 4 and 5 listed	Area (square feet) and Percent Coverage of Overwater structures
River		32%, Undeveloped 24%, Natural Resources 14%, Single Family Residential 11%, Agriculture 11%, Manufacturing/ Industrial 6%, Transportation 2%, No Category <1%	Public (Federal, County, PUD) 36%	evergreen forest 11%; deciduous forest 7%	PHS elk PHS riparian zone PHS cliffs/bluffs PHS fish FEMA floodplain 21% wetland 8.5% geohazard		sf <1%

¹ Major existing land use is reported by acres located in shoreline jurisdiction rather than full parcels. "Government/Utility" includes governmental services, utilities, and other transportation and communication utilities.

2.2 Wenatchee (WRIA 45)

Government/utility uses and resource lands (forestry, agriculture, other natural resources) dominate along a majority of the 75 shorelines under review. Shorelines with a wider mix of uses, such as residential, commercial, industrial, recreation, or other uses, include:

- Chiwaukum Creek
- Chiwawa River

- Chumstick Creek
- Colchuck Lake

- Columbia River
- Fish Lake

² Acres of shoreline owned by public or private entities. Public includes municipal, County, PUD, state, and federal lands.

³ Three dominant types listed. Consult Shoreline Analysis Report maps for distribution and other types. See Table 9 of the Shoreline Analysis Report for data limitations.

⁴ PHS = Priority Habitat or Species as identified by WDFW ⁵ Owned by the Stemilt Project irrigation purveyor.

- Icicle Creek
- Lake Wenatchee
- Mission Creek

- Nason Creek
- Peshastin Creek
- Wenatchee River

• White River

According to the NWI information, as much as 39% of the total shoreline area may be wetlands. Floodplains and a few geohazard areas are also documented in the WRIA. Channel migration zone mapping identified broad areas of potential channel migration along the Wenatchee River at the outlet from Lake Wenatchee, at the confluence with Icicle Creek, just south of the City of Leavenworth, and at the confluence with the Columbia River. Broad channel migration zones were also identified at the mouth of the White River and the Little Wenatchee River.

A summary table (Table 2) provides further details on each waterbody's shoreline characteristics.

Table 2. Summary Table of Basic Characteristics of Each Shoreline Waterbody in WRIA 45, Outside of Cities and their Urban Growth Areas.

Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Major Existing Land Uses ⁴	Ownership Profile ²	Vegetation Profile ³	Critical Area/Priority Habitat or Species (PHS) ⁵ Presence	Presence of Impaired Waterbodies (303d list)? Yes/No Category 4 and 5 listed	Area (square feet) and Percent Coverage of Overwater structures
Wenatchee River	4,070.47	Government/ Utility (51%), Forestry (18%), Open Space (17%), Other Residential (5%), Undeveloped (4%), Natural Resources (2%), Single Family Residential (2%), Cultural/Recreation/	Private 64% Public (Federal, State, County) 36%	Evergreen forest 28%; scrub/shrub and low-intensity development 12% each	Heritage Point bald eagle (4) Heritage Point great blue heron (2) Heritage Point great Columbia spire snail (3) Heritage Point mountain sucker (1)	Yes: 4A- Temperature; 4C Instream flow; 5: pH	22,444 sf <1%

Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Major Existing Land Uses ⁴	Ownership Profile ²	Vegetation Profile ³	Critical Area/Priority Habitat or Species (PHS) ⁵ Presence	Presence of Impaired Waterbodies (303d Iist)? Yes/No Category 4 and 5 Iisted	Area (square feet) and Percent Coverage of Overwater structures
4. The area is a second		Assembly (1%)			Heritage Point osprey (16) Heritage Point Umatilla dace (2) PHS mule deer PHS aspen stand PHS riparian zone PHS wetlands PHS cliffs/bluffs PHS fish 49% wetland FEMA floodplain Floodway Channel migration zone Flood zone 0.2% geohazard		

¹ There is no parcel-based current land use data for numerous waterbodies that are 100% in Federal ownership.

² Acres of shoreline owned by public or private entities. Public includes municipal, County, PUD, state, and federal lands.

³ Three dominant types listed. Consult Shoreline Analysis Report maps for distribution and other types. See Table 9 of the Shoreline Analysis Report for data limitations.

⁴ Major existing land use is reported by acres located in shoreline jurisdiction rather than full parcels. "Government/Utility" includes governmental services, utilities, and other transportation and communication utilities.

⁵ PHS = Priority habitats and species as identified by WDFW

2.3 City of Wenatchee

The City of Wenatchee and its UGA are located along the banks of the Columbia River at the confluence of the Wenatchee River. Wenatchee is the largest city in Chelan County and is the primary center for jobs. Along the shorelines of the two rivers, current land uses are dominated by government/utility and open space. In the Wenatchee UGA north of the City, the Columbia River is closely bordered by industrial development, Highway 97, and railroads. Vegetation in this area is patchy, generally consisting of a narrow strip of shrubs. Shoreline vegetation becomes more consistent south of Highway 2, where it is composed of a mix of shrubs and deciduous trees. West of the confluence, the Wenatchee River is closely bordered by the railroad on the south side of the river, which limits vegetated area and channel processes.

Open space and park area within shoreline jurisdiction include about 120 acres. Shoreline vegetation and habitat functions are variable among the many shoreline parks. Several park areas include overwater and in-water structures, including boat launches and piers. Wetlands at Confluence State Park provide some of the best shoreline habitat in the City for birds, amphibians and small mammals. These shoreline habitats are also significant for fish as they occur at an ecologically significant position at the confluence of two major rivers. South of the confluence along the Columbia River, Walla Walla Point Park has the potential to provide off-channel habitat for small fish during high river flows; however, the lack of vegetative complexity in the off-channel area minimizes the likely value of such functions. Other parks, such as Riverfront Park, include moderately well vegetated shoreline areas. In commercial and industrial areas toward the southern end of the City, development, roads and the railroad are located adjacent to the River, and shoreline vegetation is sparse.

Shorelines in the City of Wenatchee and its UGA contain 253 acres of priority habitats, consisting of bald eagle, bighorn sheep, mule deer, and priority riparian zones concentrations. All of the City's shorelines contain priority fish species. According to the NWI information, as much as 38% of the total shoreline area may be wetlands. However, this figure is high because of the inclusion of some of the mainstem Columbia River as wetland. No information was available regarding presence of geologically hazardous areas in the City of Wenatchee.

A summary table (Table 9) provides further details on each waterbody's shoreline characteristics.

Table 3. Summary Table of Basic Characteristics of Each Shoreline Waterbody in the City of Wenatchee and its Urban Growth Area.

Jurisdictional Streams/Lakes	Area of Upland Shoreline Jurisdiction (acres)	Major Existing Land Uses ¹	Ownership Profile ²	Critical Area/Priority Habitat or Species (PHS) ³ Presence	Presence of Impaired Waterbodies (303d list)? Yes/No Category 4 and 5 listed	Area (square feet) and Percent Coverage of Overwater Structures
Columbia River	177.78	Open Space (30%), Government/Utility (26%), Manufacturing/ Industrial (9%), No Category (9%), Commercial (8%), Transportation (5%), Single Family Residential (4%), Other Residential (4%), Agriculture (4%), Undeveloped Land (1%)	Private 60% Public (PUD, Municipal) 40%	PHS bald eagle PHS bighorn sheep PHS mule deer PHS riparian zone FEMA floodplain 19% wetland	No (Cat 2)	10,432 sf, <1%
Wenatchee River	Chee Land (1%) Open Space (59%), Government/Utility (20%), Undeveloped (14%), Single Eamily (5%) Agriculture (3%)		Private 69% Public (PUD) 31%	Heritage Point osprey PHS mule deer PHS riparian zone FEMA floodplain CMZ 70% wetland	Yes: 4A- Temperature; 5-pH	4,746 sf, 1%

¹ Major existing land use is reported by acres located in shoreline jurisdiction rather than full parcels. "Government/Utility" includes governmental services, utilities, and other transportation and communication utilities.

² Acres of shoreline owned by public or private entities. Public includes municipal, County, PUD, State, and federal lands.

³ PHS = Priority habitat or species as identified by WDFW

3 ANTICIPATED DEVELOPMENT

The tables below (Tables) provide a summary of the likely development potential within the proposed environment designations for each shoreline waterbody within each WRIA, City, and Urban Growth Area. As explained in Section 1.2, the land capacity analysis includes all lands within shoreline jurisdiction, generally 200 feet upland of the ordinary high water mark, associated wetlands, the floodway, and up to 200 feet of floodway-contiguous floodplain where present. Additionally, in two cases parcels partially located in jurisdiction and extending beyond are included:

- Channel migration zone areas, since rivers may move over time; and
- Shorelines of Statewide Significance, due to the importance of these waterbodies and the ecosystem-wide processes emphasized in WAC 173-26-251.

For this reason, most of the cells in the following Tables contain two numbers. The first number represents acreage, square feet or units in the "study area," which includes the shoreline jurisdiction as well as the remainder of any parcels that extend outside of jurisdiction if they are located in CMZs or are on Shorelines of Statewide Significance. The second number (in parentheses) represents just the acreage, square feet or units in shoreline jurisdiction. In many cases, the numbers are identical where a waterbody is not a Shoreline of Statewide Significance and does not contain CMZs that extend outside` of shoreline jurisdiction.

It is important to note that this analysis is intended to give an overall picture of the potential for development along shorelines, but is not an exact predictor of which parcels may develop or redevelop. In addition, the analysis does not provide a "rate" of development.

3.1 Stemilt/Squilchuck - Colockum (WRIA 40a/b)

Based on the land capacity analysis, approximately 52 single-family dwellings and 7,779,530 square feet of industrial uses could occur in the WRIA shorelines, principally along the Columbia River, and typically outside shoreline jurisdiction. Within shoreline jurisdiction only, about half of the dwellings (26) could be developed and about a third of the industrial square feet (2,326,197). Industrial development would occur in Urban and Rural shoreline designations along the Columbia

River. Residential development would occur in Urban, Rural, and Conservancy designations along the Columbia River, Cortez Lake, and Colockum Creek. Agricultural-commercial land is found along several shorelines.

Table 4. Potential for Future Development in WRIA 40a/b.

Environment Designation / Waterbody (rivers followed by lakes)	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Jurisdiction)	Net Acres- Vacant in Study Area (Jurisdiction)	Net Acres- Partially Used/ Underused in Study Area (Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Multi-Family Units in Study Area (Jurisdiction)	Commercial Sq Ft in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)	Net Public Use Acres in Study Area (Jurisdiction)	Net Resource Acres in Study Area (Jurisdiction)
Urban	T	10=0.00				T	T			
Columbia River	183.65	1278.30 (81.50)	510.15 (25.15)	68.17 (14.68)	0	0	0	7,237,949 (5,427,707)	369.90 (12.43)	2.06 (0.18)
Rural										
Columbia River	102.17	174.48	42.58	59.10	6	0	0	466,077	4.26	32.06
Columbia Kivei	102.17	(25.10)	(5.22)	(4.54)	(6)	U	U	(466,077)	(3.55)	(1.69)
Conservancy					•	•	•	_		
Columbia River	124.86	1,274.73	88.32	526.65	33	0	0	0	656.63	5.05
Columbia Kivei	124.00	(5.93)	(0.05)	(0.02)	(7)	U	J	U	(5.86)	(0.04)

3.2 Wenatchee (WRIA 45)

Shorelines in Wenatchee WRIA 45 are largely in public use, at over 80% of the shoreline study area, and these public lands tend to be classified as resource uses such as forestry and to a lesser extent, agriculture and mineral. On developable lands in the study area, up to 451 dwellings could be developed, mostly in the Rural designation, though only 85are expected in shoreline jurisdiction. Commercial and industrial square footage of approximately 190,670 and 274,990 square feet, respectively, could be developed in the study area, with only 26,740 and 102,640 square feet, respectively estimated in shoreline jurisdiction. These non-residential uses are mostly planned along the Wenatchee and Columbia Rivers.

Table 5. Potential for Future Development in WRIA 45.

Environment Designation / Waterbody (rivers followed by lakes)	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Jurisdiction)	Net Acres- Vacant in Study Area (Jurisdiction)	Net Acres- Partially Used/ Underused in Study Area		Multi-Family Units in Study Area (Jurisdiction)	Commercial Sq Ft in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)	Net Public Use Acres in Study Area (Jurisdiction)	Net Resource Acres in Study Area (Jurisdiction)
Urban										_
Wenatchee River	74.94	97.34 (25.43)	5.67 (0.88)	1.63 (0.43)	3 (1)	0	0	0	54.10 (11.67)	47.8 (8.8)
Columbia River	27.49	16.96 (3.61)	3.07 (2.77)	0	0	0	0	32,096 (28,917)	13.89 (0.84)	0
Wenatchee River	512.23	655.54 (18.06)	169.28 (3.84)	166.16 (3.87)	27 (2)	0	63,603 (16)	0	84.32 (3.25)	239.5 (3.3)
Natural										
Wenatchee River	1,523.95	2,676.13 (12.76)	167.12 (8.57)	11.60 (0.00)	16 (0)	0	535 (0)	0	2,482.20 (2.99)	2,499.39 (2.97)

3.3 City of Wenatchee

The broader shoreline study area in Wenatchee could support up to 307 single- and multi-family dwellings, 23,190 commercial square feet, and 221,635 square feet of industrial space. Within shoreline jurisdiction alone, the development potential drops dramatically to about 59 multi-family dwellings and 4,565 square feet of commercial. The industrial development would remain the same in shoreline jurisdiction as for the whole study area at 221,635 square feet. Private development within shoreline jurisdiction is anticipated to be less due to a sizable number of acres in public use, though public properties could be modified to alter current or add new recreation facilities.

Table 6. Potential for Future Development in the City of Wenatchee.

Environment Designation / Waterbody	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Jurisdiction)	Net Acres- Vacant in Study Area (Jurisdiction)	Net Acres- Partially Used/ Underused in Study Area (Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Multi-Family Units in Study Area (Jurisdiction)	Commercial Sq Ft in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)	Net Public Use Acres in Study Area (Jurisdiction)
High Intensity									
Columbia River	38.49	86.68 (25.44)	20.60 (8.24)	9.74 (2.11)	0	302 (59)	23,193 (4,565)	221,636 (221,636)	19.62 (9.73)
Shoreline Residential									
Wenatchee River	1.28	1.71 (0.18)	0	0.45 (0)	5 (0)	0	0	0	
Waterfront Park									
Columbia River	48.36	25.36 (6.99)	0	0	0	0	0	0	25.36 (6.99)
Urban Conservancy									
Columbia River	11.80	19.84 (5.72)	0	1.36 (0.04)	0	0	0	0	18.47 (5.67)
Wenatchee River	8.55	6.01 (0.80)	0	0	0	0	0	0	6.01 (0.80)

3.3.1 Wenatchee UGA

Within the unincorporated Wenatchee UGA, minimal residential development is expected at 60 single-family units in the study area, but only 2 in shoreline jurisdiction. The shoreline area would see some industrial development of around 100,000 square feet in the study area, dropping to just over 50,000 square feet in shoreline jurisdiction. Much of the study area is devoted to public use acres, which may see some additional recreational uses over time.

 Table 7.
 Potential for Future Development in the Wenatchee City-Associated UGA.

Environment Designation / Waterbody	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Jurisdiction)	Net Acres- Vacant in Study Area (Jurisdiction)	Net Acres- Partially Used/ Underused in Study Area (Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Multi-Family Units in Study Area (Jurisdiction)	Commercial Sq Ft in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)	Net Public Use Acres in Study Area (Jurisdiction)
High Intensity									
Columbia River	78.94	83.48 (22.03)	2.21 (1.60)	1.63 (0.80)	0	0	0	59,020 (37,029)	13.26 (4.15)
Shoreline Residential									
Wenatchee River	3.95	3.77 (1.19)	1.67 (1.01)	0	4 (2)	0	0	0	0.66 (0.05)
Waterfront Park									
Columbia River	10.75	0	0	0	0	0	0	0	0
Urban Conservancy									
Columbia River	44.18	30.23 (8.53)	0	0	0	0	0	0	30.23 (8.53)
Wenatchee River	72.59	81.86 (13.44)	0	7.41 (0.91)	56 (0)	0	0	40,421 (13,543)	74.45 (12.52)

4 Proposed SMP Provisions

In its Shoreline Master Program Handbook, Ecology identified the following components of SMP provisions as potential means to help achieve no net loss of ecological functions.

- Establish appropriate shoreline environment designations. The environment designations must reflect the inventory and characterization. A shoreline landscape that is relatively unaltered should be designated Natural and protected from any use that would degrade the natural character of the shoreline.
- Prohibit uses that are not water-dependent or preferred shoreline uses. For example, office and multi-family housing buildings are not water-dependent or preferred uses.
- Require that all future shoreline development, including water-dependent and preferred uses, is carried out in a manner that limits further degradation of the shoreline environment.
- Require buffers and setbacks. Vegetated buffers and building setbacks from those buffers reduce the impacts of development on the shoreline environment.
- Establish strong policies and regulations. Policies and regulations will
 define what type of development can occur in each shoreline environment
 designation, determine the level of review required through the type of
 shoreline permit, and set up mitigation measures and restoration
 requirements.
- In all cases, require mitigation sequencing. The SMP must include regulations that require developers to follow mitigation sequencing: avoid impacts, minimize impacts, rectify impacts, reduce impacts over time, compensate for impacts, monitor impacts and take corrective measures.

The proposed SMP provisions described below implement the above guidance to the extent consistent with each community's local Comprehensive Plan and vision, facilitating the County and Cities' achievement of the no net loss standard.

4.1 Environment Designations

The first line of protection of the County and City's shorelines is the environment designation assignments. Appendix A of this Cumulative Impacts Analysis identifies the prohibited and allowed uses and modifications in each of the shoreline environments for each local jurisdiction.

Each table clearly shows a hierarchy of higher-impacting uses and modifications being allowed in the already highly altered shoreline environments, with uses more limited in the less developed areas either through prohibition or a requirement for a Conditional Use Permit. This strategy helps to minimize cumulative impacts by concentrating development activity in lower functioning areas that are not likely to experience significant function degradation with incremental increases in new development.

4.1.1 County

Consistent with WAC Shoreline Master Program Guidelines, the County's environment designation system was based on the existing use pattern, the biological and physical character of the shoreline, and community interests. In order to maintain consistency with the recently updated critical areas regulations, which include shoreline-specific buffers based on the current environment designation system, the County retained its original system of four upland environment designations in the proposed SMP. These include Natural, Conservancy, Rural, and Urban, listed in order by increasing level of use (See Figures 1-11). An Aquatic environment designation was added, consistent with Ecology's Guidelines.

In general, Natural was the recommended designation when impervious surface percentages were very low; when wetlands and floodplain percentages were high; when vegetation was primarily forest, scrub-shrub or various types of wetlands; and when the function score was 3.0 or greater.

Conservancy was the most common recommended environment designation in the County, and was applied to lands when impervious surface percentages were low (often less than 10); when wetlands and floodplain percentages were low to moderate (absence of these does not indicate alteration or poor function); when vegetation was primarily forest, scrub-shrub or various types of wetlands; and when function scores were typically in the mid- to high 2s.

Rural usually had higher impervious surface percentages and higher percentages of vegetation in the "developed" categories compared to the Conservancy environment. Land use is typically agricultural, low-density residential, or other more intense uses. Function scores were often in the low 2s or high 1s.

Urban was the least frequently recommended environment designation in the unincorporated County areas, and was limited to some "limited areas of more intensive rural development" (LAMIRD) and UGAs not associated with an incorporated city (e.g., most of Malaga, and parts of Peshastin and Manson).

Stemilt/Squilchuck- Colockum (WRIA 40 A/B)

Much of the area along the Malaga Alcoa Highway in the Malaga community is designated as a LAMIRD. The majority of the LAMIRD area was designated as Urban use. Other shorelines along the Columbia River and its tributaries were designated as either Conservancy or Rural environments. Most of the lakes in the Chelan County portion of WRIA 40 are operated as reservoirs, and accordingly, these reservoirs were assigned a Conservancy environment designation. Figure 1 illustrates the distribution of shoreline environment designations within the WRIA. High functioning shoreline areas are concentrated in the Conservancy environment; whereas, low functioning habitats occur in the Urban environment (Figure 2).

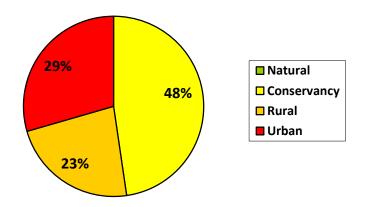


Figure 1. Distribution of Shoreline Environment Designations in WRIA 40

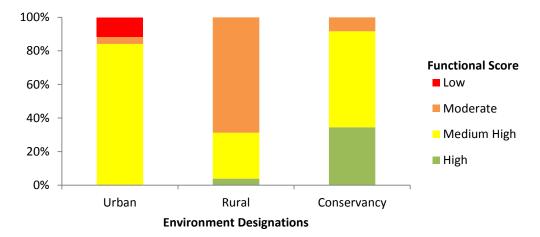


Figure 2. Distribution of Shoreline Functional Scores among Environment Designations in WRIA 40

Wenatchee (WRIA 45)

Environment designations are predominantly Natural, particularly in waterbodies upstream from the City of Leavenworth. Rural and Conservancy environments predominate in the waterbodies between the Cities of Leavenworth and Wenatchee. The Urban environment designation is limited to the Peshastin UGA. Figure 3 illustrates the distribution of shoreline environment designations within the WRIA. Figure 4 shows a clear pattern of more highly functioning shoreline areas in the more protective environment designations (Conservancy and Natural) and lower scoring shoreline areas in the more permissive environments (Rural and Urban).

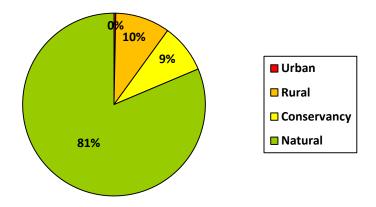


Figure 3. Distribution of Shoreline Environment Designations in WRIA 45

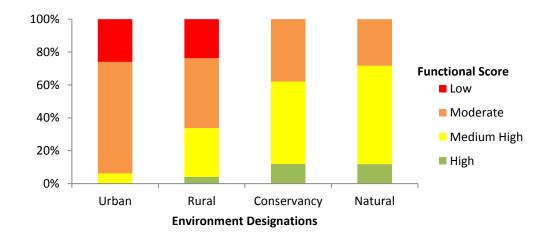


Figure 4. Distribution of Shoreline Functional Scores among Environment Designations in WRIA 45

4.1.2 City of Wenatchee

The City of Wenatchee's environment designations include Aquatic, Waterfront Park, Shoreline Residential, Urban Conservancy, and High Intensity (Figure 5). The Waterfront Park designation covers most of the northern Columbia River shorelines of the City, and the High Intensity environment covers most of the southern Columbia River City shoreline. The Urban Conservancy environment includes parkland with significant natural functions. Very little Shoreline Residential is present in the City, and is located upland of an intervening environment designation in all cases. The Urban Conservancy environment includes nearly all of the high functioning shorelines within the City (Figure 6). Lower functioning shorelines are concentrated in the High Intensity and Shoreline Residential environments.

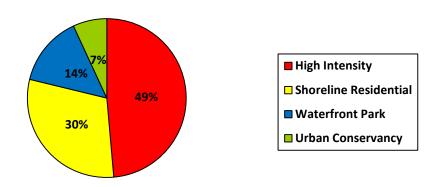


Figure 5. Distribution of Shoreline Environment Designations in the City of Wenatchee

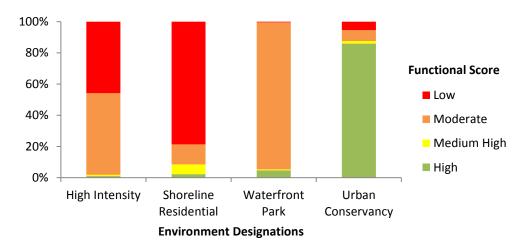


Figure 6. Distribution of Shoreline Functional Scores among Environment Designations in the City of Wenatchee

4.1.3 City-Associated Urban Growth Areas

Environment designations within the County's Urban Growth Areas were classified to be consistent with the City's designations with which they are associated. County environment designation classifications and use regulations apply in the UGAs of Manson and Peshastin, which are not associated with an incorporated City. A discussion of the Manson and Peshastin UGAs was included in the summary of County environment designations.

Wenatchee UGA

The Urban Conservancy environment occupies over 50% of the shoreline area within the Wenatchee UGA (Figure 7). This area is primarily composed of wetlands and natural shorelines that occur along and upstream of the mouth of the Wenatchee River, as well as portions of the Columbia River in the northern and southern UGA areas. Significant shoreland areas along the Columbia River at the northern and southern ends of the UGA were designated High Intensity and contain industrial development and railroad uses. Figure 8 shows how shoreline functions are distributed among the different shoreline environments. Low functioning shoreline areas are focused in the High Intensity environment and higher functioning areas occur in the Shoreline Residential and Urban Conservancy environments.

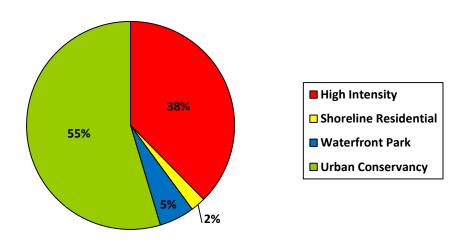


Figure 7. Distribution of Shoreline Environment Designations for Unincorporated Areas in the City of Wenatchee's UGA

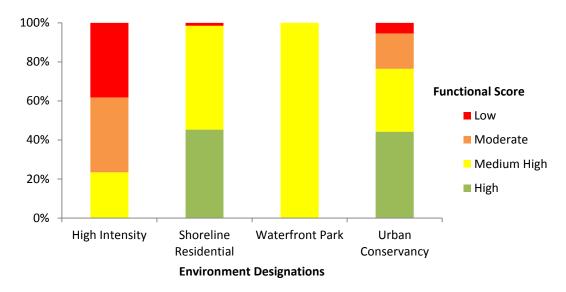


Figure 8. Distribution of Shoreline Functional Scores among Environment Designations in Unincorporated Areas of City of Wenatchee's UGA

4.2 General Policies and Regulations

The SMP contains numerous general policies, with supporting regulations (see SMP Chapter 4), intended to protect the ecological functions of the shoreline and prevent adverse cumulative impacts. The General Policies and Regulations chapters apply to all activities, uses and modifications. These regulations are summarized below in Table 21, including an indication of which function or functions the regulation helps to protect.

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 Table 8.
 Summary of Key SMP General Regulations that Protect Ecological Functions.

She	Shoreline Ecological Functions ¹		ical					
Hydrologic	Water Quality	Shoreline Vegetation	Habitat	SMP Regulations Providing Protection for Ecological Functions				
X	Х	Х	Х	4.2.2.A & C Mitigation sequencing is required				
X	Х	Х	Χ	4.2.2.B Mitigation is required for all projects that have adverse impacts on shoreline ecological functions				
Х	Х	Х	Х	4.2.2.D Local jurisdictions are responsible for weighing cumulative effects of all uses and development, including exempt development. Local jurisdictions shall prohibit projects that result in unmitigated, adverse cumulative impacts.				
X				 4.3.2.D Specific uses permitted in the floodplain and channel migration zone include: Actions that protect or restore the ecological processes or functions; Forest practices; Existing and ongoing agricultural practices; Public utility and transportation structures where no other feasible alternative exists; Repair and maintenance to an existing use or structure, provided that channel migration is not further limited, or flood hazards increased, and that such actions do not cause significant ecological impacts. Development in cities and UGAs where existing structures prevent active channel movement and flooding. Modification or addition to an existing nonagricultural legal use, provided that channel migration is not further limited, or flood hazards increased, and that such actions do not cause significant ecological impacts. Measures to reduce excessive shoreline erosion that is accompanied by mitigation of impacts. 				
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	X	X	4.5.2.C Tree removal required to be replaced at 1:1 ratio and 2:1 ratio for non-hazard significant tree				
X	Х	Х	Χ	4.5.2.E Unauthorized vegetation removal requires restoration plan.				
		Х	Х	4.5.2.F One view corridor, limited to 25 percent of the width of the lot frontage, or 25 feet, whichever distance is less, may be permitted per lot with the submittal of a restoration plan. Whenever possible, view corridors shall be located in areas dominated with non-native vegetation and invasive species.				
		Х	Χ	4.5.2.J.2 Standard buffer reduction requires mitigation plan for reductions up to 25 percent of the buffer.				
		Х	Х	4.5.2.K Maximum buffer reduction requires mitigation plan for reductions up to 50 percent of the buffer. Additional report requirements include no net loss of ecological functions, mitigation sequencing, and demonstration of development's spatial needs.				
X	Х			4.6.2.A Shoreline use and development shall incorporate measures to protect and maintain surface and groundwater quantity and quality in accordance with all applicable laws. (WAC 173-26-221(6)(b)(i))				
X	Х			4.6.2.B New development shall provide stormwater management facilities and implement low impact development in accordance with the current Stormwater Management Manual for Eastern Washington (WAC 173-26-221(6)(b)(ii)).				
X	Х		4.6.2.D Best management practices (BMPs) for control of erosion and sedimentation shall be implemented for all development in shoreline jurisdiction through an approved temporary erosion a sediment control (TESC) plan.					
X	Х			4.6.2.F All development shall connect to city sewer system.				
Х	Х			4.6.2.G All materials that may come in contact with water shall be constructed of materials, such as untreated or approved treated wood, concrete, approved plastic composites or steel, that will not adversely affect water quality or aquatic plants or animals.				
1 On	v nrima	ry offoct	te of oc	ological functions are identified. Many actions may have indirect effects on each ecological function category				

Only primary effects of ecological functions are identified. Many actions may have indirect effects on each ecological function category.

4.3 Shoreline Uses and Modifications

The SMP contains numerous shoreline modification and use policies and supporting regulations (see SMP Chapter 5) intended to protect the ecological functions of the shoreline and prevent adverse cumulative impacts. Key shoreline use and modification regulations that help protect ecological functions are summarized below in Table 9, including an indication of which function or functions the regulations helps to protect.

Table 9. Summary of Key SMP Shoreline Use and Modification Regulations that Protect Ecological Functions.

	Table 9. Summary of Key SMP Shoreline Use and Modification Regulations that Protect Ecological Functions.					
F			Specific Shoreline Use or Modification	Potential Direct and Indirect Impacts to Shoreline Function	SMP Regulations Providing Protection for Ecological Functions	Related Watershed Restoration Efforts Underway or Planned (See Section 4.5)
Χ	Χ	ХХ	All	See below	5.3.2.C; 5.6.2.A; 5.11.2.D; 5.13; 5.17.2.A; 5.18.2.A; 5.19.2.B; 5.20.2.I	Refer to section 4.5
	Х	Х	Aquatic		5.2.2.A Siting and design requirements that emphasize protecting and restoring priority habitat and species	•
					5.2.2.K Trash and unauthorized fill removal required.	
Х		х х	Aquaculture	Hydrologic alterations; Diversion of streamflow; Nutrient enrichment;	5.4.2.A.3 Aquaculture sites shall be selected to avoid and minimize the need for and degree of floodplain or floodway alteration, channel migration zone alteration, shoreline stabilization, native vegetation removal, and/or wetland alteration. Non-commercial aquaculture operations may be required to submit a site alternatives analysis.	Upper Columbia Salmon Recovery Plan - Conservation hatcheries
		X		Potential competition with native populations	5.4.2.B Aquaculture that involves substantial aquatic substrate modification or sedimentation through dredging, trenching, digging, or other similar mechanisms, shall not be permitted in areas where the proposal would have long-term adverse impacts on important fish or wildlife habitats.	
		X		Potential for fisheries	5.4.2.G No introduced species without state approval.	
	Х	Х		enhancement from conservation hatcheries managed to enhance native salmonid populations	5.4.2.J If uncertainty exists regarding potential impacts of a proposed aquaculture activity, and for all experimental aquaculture activities, baseline and periodic operational monitoring by a qualified professional may be required, at the applicant's expense, and shall continue until adequate information is available to determine the success of the project and/or the magnitude of any probable significant adverse environmental impacts.	
		Х	Boating Facilities	Alteration of submerged aquatic vegetation,	5.5.2.A.1 New boating facilities are not allowed over areas of aquatic or emergent vegetation unless not other options are available or the facility would result in a net improvement of shoreline ecological functions.	 Upper Columbia Salmon Recovery Plan- Reduce
х		X		nearshore habitat, predator /prey relationships, and	5.5.2.A.2 New boating facilities are not allowed in the channel migration zone, in areas that would require dredging, where a flood hazard will be created, or where impacts to shoreline ecological functions and processes cannot be mitigated. Expansions of existing boating facilities should be designed to minimize the need for new or maintenance dredging.	negative species interactions in Columbia River (focused on predator control)
	Χ	Х		benthic community	5.5.2.A.3 Moorage at new or expanded boating facilities must be located at depths to prevent prop scour.	,
X				assemblages; Reduction in shoreline	5.5.2.A.4 Boating facilities to be located and designed to avoid the need for shoreline stabilization. If stabilization is necessary, only the minimum needed is permitted.	
Х	х	х х		vegetative functions; Alteration of hydrologic processes; Alteration of	5.5.2.B.1 Dimensional standards for boating facilities are established to minimize effects on ecological function. Standards minimize the width of piers, establish acceptable moorage depth, establish decking standards (Columbia River and Lake Wenatchee only), and limit the number of slips that may be created per associated dwelling unit.	
Χ		x sediment transport			5.5.2.B.2 Launch ramps must be designed to minimize effects on hydrologic and sediment transport processes.	
X	processes; Water		processes; Water	5.5.2.B.3 New over-water residences, including floating homes, shall be prohibited.	l	
		X X		quality impacts from	5.5.2.C.3 Covered moorage, including watercraft lift canopies, is prohibited.	
	Х			facility construction, boat use and	5.5.2.E.1 and 2 Discharge of solid waste (including fish waste) or sewage into a waterbody is prohibited. Boating facilities are to provide garbage or litter receptacles. Marinas must provide restroom and sewage disposal facilities (pump out, holding, and/or treatment facilities).	
	Х			maintenance	5.5.2.E.4 New, expanded, and reconfigured marinas are required to provide fail-safe facilities and procedures for receiving, storing, dispensing, and disposing of oil or hazardous products, as well as a spill response plan for oil and other products.	
	Х				5.5.2.F.1 and 2 Applicants for new or expanded boating facilities must provide assessment of demand, identification and adverse impact evaluation, and a mitigation plan.	
Χ		ХХ			5.5.2.F.4 New boat launch facilities are allowed only if existing facilities do not meet public demand.	

	Shoreline Ecological Functions ¹		Specific Shorelin Use or	Indirect Impacts to	SMP Regulations Providing Protection for Ecological Functions	Related Watershed Restoration Efforts Underway
; o	er Qu	e €		ion Shoreline Function		or Planned (See Section 4.5)
Х			Breakwa Jetties, Groins, V	and sediment	5.6.2.B Groins are prohibited except as a component of a professionally designed community or public beach management program that encompasses an entire reach for which alternatives are infeasible, or where installed to protect or restore shoreline ecological functions or processes	Upper Columbia Salmon Recovery Plan: Channel reconfiguration through
Χ			Barbs an		5.6.2.C The size of breakwaters, jetties, groins weirs and barbs shall be limited to the minimum necessary.	installation of weirs, barbs,
Х			other in-v	Alteration of hydrologic processes; Alteration of	5.6.2.D Jetties and breakwaters are prohibited except as an integral component of a professionally designed marina. Where permitted, floating, portable or submerged breakwater structures, or smaller discontinuous structures, are preferred where physical conditions make such alternatives with less impact feasible.	and boulders to increase habitat diversity .
Χ	Χ			sediment transport processes; Alteration of	5.6.2.F Professional Design required	
X		Х	x	instream habitats; Erosion	5.6.2.I Natural in water features such as snags, uprooted trees, or stumps shall be left in place unless it can be demonstrated that they are actually causing bank erosion or higher flood stages or pose a hazard to navigation or human safety.	
X	X		X Dredging X	Disruption of sediment hydrologic, and	5.8.2.A Dredging is only allowed as part of environmental cleanup and restoration, for essential public services when no alternative is feasible, maintenance for agriculture purposes, and for utilities under specific circumstances.	Wenatchee River Channel Migration Zone Study- 24 sites
X	X		X X	floodplain processes; Water quality impairments- turbidity	5.8.2.B Disposal of dredged material within the channel migration zone is discouraged and requires a conditional use permit.	identified for preservation, enhancement, and restoration of off-channel habitats and
X	X		X	and heavy metals; Floodplain habitat	5.8.2.C Disposal of dredge material in open waters is only allowed when permitted by state and federal agencies and then only when land disposal is infeasible or near shore disposal part of a program to restore or enhance shoreline ecological functions and processes is not feasible.	riparian vegetation.
Х	х		x	disturbance; Disturbance of benthic substrate/ organisms; Disturbance of nearshore habitat	5.2.8.D A detailed analysis of purpose, existing conditions, potential impacts, proposed dredging methods, frequency, and duration, quantity of dredge material, and plans for disposal and maintenance.	
X		х	Fill and excavation	Disruption of sediment hydrologic, and floodplain processes; Water quality impairments- turbidity and heavy metals; Floodplain habitat disturbance;	 5.9.2.B Fill and excavation within wetlands, floodways, channel migration zones, or waterward of the OHWM are only permitted under the following conditions: 1. Water-dependent uses, public access, and cleanup and disposal of contaminated sediments; 2. Disposal of dredged material conducted in accordance with the Dredged Material Management Program of WA DNR and/or the Dredged Material Management Office of the Corps; 3. Expansion or alteration of transportation facilities of statewide significance where alternatives to fill are infeasible; or 4. Ecological restoration or enhancement. Except for an ecological restoration project, fills waterward of the OHWM require a conditional use permit. 	Upper Columbia Salmon Recovery Plan – Outreach on functions of wetlands; Update NWI based on known wetlands Wenatchee River Channel Migration Zone Study- 24 sites identified for preservation,
X				Disturbance of benthic	5.9.2.C Fills or excavation shall not to be located where shoreline stabilization will be necessary to protect materials placed or removed.	enhancement, and restoration
	Х			substrate/ organisms	5.9.2.F All fill and excavation proposals require temporary erosion and sediment control (TESC) plan, including BMPs.	of off-channel habitats and riparian vegetation.
	Х		Industrial	Uses Water contamination; Reduced vegetative functions	5.11.2.B Nonwater-oriented industrial uses are allowed only if the site is physically separated from the shoreline by another property or public right-of-way prior to adoption of this SMP. On properties fronting the shoreline, new nonwater-oriented industrial development is prohibited, unless it provides a significant public benefit and it is part of a mixed-use project that includes water-dependent uses or navigability is severely limited at the proposed site.	 Wenatchee TMDL- point and nonpoint source reductions; incentives for riparian restoration
	Х				5.11.2.C Accessory nonwater-dependent industrial development must be upland of the water-dependent or water-related portions of the development and comply with shoreline environment buffers for nonwater-oriented uses.	
	Χ		X		5.11.2.D Industrial development and redevelopment are encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated. Federal and state requirements for hazardous materials clean up or management shall be addressed.	

	Shoreline Ecological Functions ¹		Specific Shoreline	Potential Direct and Indirect Impacts to		Related Watershed Restoration Efforts Underway
; o	Qu Ve	bit	Modification Shoreline Function		or Planned (See Section 4.5)	
Х	x x	X	Mining	Disruption of sediment, hydrologic, and floodplain processes; Water quality impairments- turbidity and heavy metals; Floodplain habitat disturbance; Disturbance of benthic substrate/ organisms	5.13. Mining is prohibited.	Upper Columbia Salmon Recovery Plan- habitat acquisitions and conservation easements, projects to improve off-channel habitat (levee removal, side channel reconnection, and floodplain restoration)
X	x x	x	Private moorage facilities	Alteration of submerged aquatic vegetation, nearshore habitat, predator /prey relationships, and benthic community assemblages; Reduction in shoreline vegetative functions; Alteration of hydrologic processes; Alteration of sediment transport processes; Water quality impacts from boat use and maintenance	5.14. Private Moorage facilities are prohibited.	Upper Columbia Salmon Recovery Plan- Reduce negative species interactions in Columbia River (focused on predator control)
	Х		Recreational Uses	Water quality impacts from pesticides/ fertilizers and boat use and maintenance	5.15.2.E Best management practices must be employed to prevent chemical contamination from the use of pesticides, fertilizers, or other chemicals.	 Upper Columbia Salmon Recovery Plan –Riparian habitat planting; host workshops on pesticide use in Entiat watershed Wenatchee TMDL- point and nonpoint source reductions; incentives for riparian restoration
Χ		Χ	Residential	Reduced infiltration;	5.16.2.B.2 Design to prevent the need for new hard or soft shoreline stabilization or flood hazard reduction measures.	Upper Columbia Salmon
	X	X	Development	Reduced shoreline vegetative functions;	5.16.2.B.3 Cluster development to avoid critical areas and to preserve natural features and minimize physical impacts.	Recovery Plan – habitat acquisitions and conservation
	X	Х		Water quality impacts from fertilizers/ pesticides/ household wastes; Impacts from accessory uses	5.16.2.D Over-water residences, liveaboards, and floating homes are prohibited.	easements; host workshops on pesticide use and riparian vegetation benefits in Entiat watershed; landowner assistance in riparian planting • Wenatchee TMDL- point and nonpoint source reductions; incentives for riparian restoration

	Shoreline Ecological Functions ¹		Specific Shoreline Use or	noreline Indirect Impacts to	SMP Regulations Providing Protection for Ecological Functions	Related Watershed Restoration Efforts Underway	
; o	e G	Ve Ve	bit	Modification	Shoreline Function		or Planned (See Section 4.5)
X			X	Shoreline Stabilization	Hydrologic and sediment transport alterations; Simplification of	5.18.2.A, 5.18.2.E The SMP provisions establish a preference for soft structural shoreline stabilization over hard structural stabilization. 5.18.2.B.1 New and enlarged shoreline stabilization is not permitted unless a geotechnical analysis indicates that is needed to protect an existing structure from erosion caused by currents or waves.	Upper Columbia Salmon Recovery Plan – streambank protection through habitat acquisitions; conduct Nason
Χ			Χ		nearshore habitat;	5.18.2.B.4 Shoreline stabilization is allowed to protect ecological restoration projects or hazardous substance remediation.	watershed evaluation; projects
Х			Χ		Reduction in shoreline vegetative functions	5.18.2.C.3 Replacement of greater than 50 percent or 35 feet is not considered repair and maintenance and must be designed and reviewed as a replacement to meet the provisions of a new stabilization measure; see 5.18.2.D.	to improve off-channel habitat (levee removal, side channel
Х			х			5.18.2.D Replacement of shoreline stabilization measures must meet the same standards as new stabilization measures, except that a geotechnical analysis is not required for replacement with an "softer" stabilization approach. Replacement of hard stabilization structures may not occur further waterward than the existing structure. Some fill waterward of the OHWM is permitted to provide enhancement of shoreline ecological functions.	reconnection, and floodplain restoration) • Wenatchee River Channel Migration Zone Study- 24 sites
Х		Χ	Х			5.18.2.E Establishes standards for the minimization and mitigation of stabilization impacts. Mitigation measures include: improving substrate conditions waterward of the OHWM and planting native vegetation along the shoreline.	identified for preservation, enhancement, and restoration
X			x			5.18.2.F.3 Fill behind hard structural shoreline stabilization is limited to 1 cubic yard per linear foot.	of off-channel habitats and riparian vegetation. • Entiat Tributary Assessment-Identified opportunities to restore channel and floodplain complexity in the lower 26 miles of the Entiat River
	Χ	Χ	Х	Transportation and Parking	Water quality impacts (heavy metals and oils);	5.19.2.B.3 New roads and railroads must be setback from the OHWM the maximum feasible.	Upper Columbia Salmon Recovery Plan – Culvert
	X	Х		and Faiking	Fish passage barriers; Reduced infiltration; Reduced vegetative functions	5.19.2.I Parking facilities shall be outside shoreline jurisdiction unless no feasible location to support the planned primary use exists.	removals and upgrades, road reconstruction, removal, and drainage upgrades • WDFW Fish Passage Inventory for Colockum Creek, Stemilt Creek, and Squilchuck Creek- Assessment of fish passage barriers
1		Х	Х	Utilities	Reduced vegetative functions; Habitat disturbance	5.20.2 Provisions to minimize the ecological impact of utilities through location, design, and restoration of any disturbed areas.	Upper Columbia Salmon Recovery Plan –Riparian habitat planting

Only primary effects of ecological functions are identified. Many actions may have indirect effects on each ecological function category.

4.4 Critical Areas

The SMP contains policies and regulations governing critical areas found within shoreline jurisdiction (see SMP Appendix B) intended to protect the ecological functions of the shoreline and prevent adverse cumulative impacts. Buffer requirements included in these regulations are generally consistent with the jurisdictions' critical areas regulations that apply outside of shoreline jurisdiction. In the City-associated UGAs, the County will apply the Cities' SMP regulations except that the County's critical areas regulations will be applied to any critical areas. These regulations are summarized for the County and Cities in Table 10.

requirements.

Jurisdiction	Wetland Rating System	Stream Classification System		Buffer Wid	dth (feet)	
City of Wenatchee	Ecology E. WA- (2004/ 2007)	None	Wetlands	Low Impact Land Use	Moderate Impact Land Use	High Impact Land Use
			Cat 1	50-100	75-150	100-200
			Cat 2	50-100	75-150	100-200
			Cat 3	40-75	60-110	80-150
			Cat 4	25	40	50
			Streams	and wildlife h no dimensio Buffer requir	ection standan enabitat conser nal standards ements may b on a case by c	vation areas, for buffers. ee

4.4.1 City of Wenatchee

The City allows for a reduction of buffer width and buffer averaging, provided that the buffer is reduced by no more than 25%, and a special site analysis/report demonstrates that the adjacent land will remain extensively vegetated, is topographically remote from the wetland, and that no direct or indirect adverse impacts on the regulated wetlands are reasonably likely as a result of the buffer reduction (Appendix B, City of Wenatchee, 7.1.1.C.3). Buffer averaging may be allowed, provided that no other buffer reduction options are used, and 1) buffer averaging improves wetland protections functions or 2) buffer averaging is needed in order to accommodate otherwise permitted development, and the averaged buffer will not result in degradation of the wetland's function (Appendix B, City of Wenatchee, 7.1.1.C.5).

Critical areas regulations relating to Geologically Hazardous Areas (Appendix B, City of Wenatchee, 7.4) require a site analysis and establish specific development

standards to avoid and minimize the potential for future hazards that may require stabilization measures. Similarly, site analysis and development standards are identified for Fish and Wildlife Habitat Conservation Areas. No specific buffer widths have been established; rather buffer requirements may be established on a case by case basis (Appendix B, City of Wenatchee, 7.5).

4.5 Shoreline Restoration Plan

As discussed above, one of the key objectives that the SMP must address is "no net loss of ecological shoreline functions necessary to sustain shoreline natural resources" (Ecology 2004). However, SMP updates seek not only to maintain conditions, but to improve them:

"...[shoreline master programs] include planning elements that when implemented, serve to improve the overall condition of habitat and resources within the shoreline area of each city and county (WAC 173-26-201(c))."

The guidelines state that "master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program" (WAC 173-26-201(2)(f)). Pursuant to that direction, the City prepared a Shoreline Restoration Plan.

Practically, it is not always feasible for shoreline developments and redevelopments to achieve no net loss at the site scale, particularly for those developments on currently undeveloped properties or a new pier or bulkhead. The Restoration Plan, therefore, can be an important component in making up that difference in ecological function that may otherwise result just from implementation of the SMP. The Restoration Plan represents a long-term vision for restoration that will be implemented over time, resulting in incremental improvement over the existing conditions.

The Shoreline Restoration Plan identifies a number of project-specific opportunities for restoration on both public and private properties inside and outside of shoreline jurisdiction, and also identifies ongoing City programs and activities, non-governmental organization programs and activities, and other recommended actions consistent with a variety of watershed-level efforts.

Major shoreline restoration opportunities for the City that could contribute to achievement of no net loss of ecological functions or improvement in ecological functions are summarized below.

4.5.1 County

Many of the watershed planning and salmon recovery efforts in the County are administered by the Chelan County Natural Resources Department (CCNRD). Current activities include Wenatchee River Watershed (WRIA 45) planning and implementation, Squilchuck/Stemilt Watershed (WRIA 40a) planning and implementation, a County-wide salmon recovery grant program through Washington Salmon Recovery Funding Board, and habitat conservation plan development under the Federal Endangered Species Act (Chelan County website). CCNRD is also a partner with the Cascadia Conservation District (CCD) in the planning and implementation of the Entiat (WRIA 46) watershed plan, and the early planning stages of the Lake Chelan (WRIA 47) watershed plan. Each completed plan has established goals and objectives and includes a list of restoration opportunities. Funding is available to implement priority restoration opportunities through the watershed planning act, grant funding (e.g., Salmon Recovery Funding Board (SRFB), Aquatic Lands Enhancement Account (ALEA), Bullitt Foundation, Washington Wildlife and Recreation Program (WWRP), Bonneville Environmental Foundation Watershed Program) and funding commitments from various implementation entities (e.g., Ecology, Bonneville Power Administration (BPA)).

Upper Columbia Salmon Recovery Board

The CCNRD supports regional salmon recovery efforts and the Upper Columbia Salmon Recovery Board (UCSRB). The *Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan* (UCSRB 2007) provides a regionally and federally accepted framework for implementing coordinated recovery actions, while providing a "roadmap" towards implementation of priority habitat actions. The UCSRB has successfully completed single-project-focused actions that 1) reopen tributary habitat, 2) preserve key habitat areas, and 3) protect countless fry and smolt from entrainment in irrigation diversions. One recent project success story, sponsored by the CCNRD, includes the Nason Creek Oxbow Reconnection project in the upper Wenatchee valley (located between mile post 0.83 and 1.33 on Highway 207). This project reconnected a half-mile-long oxbow (secondary channel) by installing two 12-foot-wide fish-friendly culverts. The reconnection restored access to 21.7 acres of off-channel refuge, rearing and over-wintering habitat for juvenile salmonids.

While these single-project-focused actions contribute to recovery efforts, there is an increasing focus on implementing "large-scale, multi-year, multi-million dollar recovery activities" (UCSRB 2009). The UCSRB is currently updating their comprehensive, coordinated and strategic approach to reflect this new focus. The implementation plan that the CCNRD works from can be found online at http://www.ucsrb.com/theplan.asp. Implementation actions pertain to: water

quantity and quality, water temperature extremes, habitat diversity and quantity, obstructions, riparian/floodplain, sediment, diversions, species interactions, depleted nutrients, nutrient limitations, and ecosystem function. Examples of actions found in the implementation plan are included in Table 22, above.

WRIA 40 a/b

The Washington Department of Fish and Wildlife (WDFW) completed a *Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek* in 2006. The goal of the inventory was to 1) assess unscreened or inadequately screened surface water diversions and 2) identify fish passage barriers and to assess the potential available habitat gain for each feature. Data obtained from the diversion screening and fish passage inventory and concurrent habitat survey allowed for ranking and prioritization of projects. A recommended first step would be to complete a detailed implementation plan for fish passage barrier projects in the three creeks.

WRIA 45

Wenatchee River Channel Migration Zone Study

CCNRD conducted a *Wenatchee River Channel Migration Zone Study-Phase I and II* to provide the technical foundation and to quantify physical and biological mechanisms linked to the salmonid habitat limiting factors, and prioritize potential habitat restoration, enhancement, and preservation actions. Twenty-four restoration sites were selected for preservation, enhancement, or restoration. The sites included areas that could be preserved because of their existing high-quality habitat adjacent to the Wenatchee River, and their need for additional off-channel habitat and riparian vegetation. The CCNRD has made it a goal to restore and protect these 24 sites.

No timetable or implementation strategy specific to the 24 sites listed in the CMZ study exists. Rather, the sites will be considered as viable options for restoration and preservation activities discussions. Funding for restoration and preservation projects may differ, as some public funds and private entities may be available for funding.

Upper Valley Plan

A Steering Committee and the Chelan County PUD partnered to develop a vision plan with opportunities for the upper Wenatchee River valley, including the communities of Leavenworth, Peshastin, Dryden, Cashmere, and Monitor. They identified goals, objectives and a list of potential river access sites and fisheries enhancement opportunities along the Wenatchee River.

The plan identifies opportunity sites in:

- Leavenworth: at the Leavenworth National Fish Hatchery; Blackbird Island; Icicle Creek/Wenatchee River confluence; irrigation projects; Wenatchee River habitat work; Icicle Loop Trail; potential interpretive trail at an old railbed site east of Leavenworth; gateway for "back roads" scenic drive; and Trout Unlimited projects.
- Peshastin: at an old mill site; mill intake station; old railroad corridor; Kiwanis Park; Main Street; a historic log structure; Peshastin Creek/Wenatchee River confluence; and at railroad bridge and sandy beach.
- **Dryden:** at a beaver pond site; dam site; powerhouse site; old school site; downtown Dryden; old dump site and public access above railroad and between railroad and SR 2.
- Cashmere: at the Chelan Co. museum; a fishing hole on the north shore of the Wenatchee R.; Old Mill; Raft Park and CCPUD kiosk; a flood area below Bethlehem construction; Goodwin Bridge; and Devil's Gulch mountain bike area.
- Monitor: at Sleepy Hollow viewpoint; Green Bridge; gateway for "back roads" scenic drive; irrigation site; Monitor Bridge; riparian area; Chelan Co. Park; Wenatchee Foothills trail.

Implementation of the Upper Valley Plan includes establishing a non-profit, conducting community and agency coordination meetings and identifying and procuring funding. Potential funding sources may include teaming with organizations such as the Chelan-Douglas Land Trust, Washington State Department of Transportation, The Audubon Society, and CCNRD.

Washington Department of Ecology Total Maximum Daily Load (TMDL)

The U.S. Environmental Protection Agency (EPA) has approved a TMDL (the Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Plan (TMDL) (Ecology 2009). The TMDL identified three water bodies in the project area exceeding dissolved oxygen standards and six exceeding pH standards. The timeline for compliance with water quality standards is 10 years from TMDL approval, or 2019. Fifty specific activities and goals are identified in the TMDL. They include supporting and regional phosphorus reduction activities, addressing point and nonpoint source activities, facility planning and design, monitoring activities, and habitat improvements.

Timelines for the three phases of TMDL implementation are summarized in Table 11.

Table 11. TMDL implementation timeline

Phase/Target	Definition	Timeline
Phase 1	Point and nonpoint source reductions, data collection and model calibration	2009-2013
Target 1	50% nonpoint source loading reduction	2014
Phase 2	Modification of load and wasteload allocations (if needed); identification of additional nonpoint source reductions	2014-2015
Phase 3	Additional load reductions implemented	2015-2019
Target 2a	NPDES compliance	2019
Target 2b	Reduction in remaining nonpoint source loading	2019
Final Target	Water quality standards achieved	2019

Dissolved oxygen and pH data will be collected every five years to monitor progress toward the goals. Adaptive management will be employed to ensure that goals are achieved. Compliance monitoring will continue after compliance with water quality standards is achieved.

Funding sources include the CCD, which is a current recipient of a Centennial Clean Water Fund grant for TMDL activities; CCNRD, which provides incentive payments for implementation of riparian restoration activities; NRCS, which provides technical assistance to farmers and ranchers and may also be a funding source; and a number of jurisdictions and entities, including Chelan County, the Chelan County PUD, and the Cities of Wenatchee, Leavenworth, and Cashmere, have all shown interest in investigating sources of nonpoint source phosphorus loading.

4.5.2 City of Wenatchee

Wenatchee Parks (Riverfront and Confluence State Parks)

Reduction of shoreline armoring, removal of non-native vegetation, native revegetation, shoreline stabilization, and the addition of interpretive nature and/or historical signs. Enhance and maintain the habitat along the south Confluence State Park wetland area.

General

The City of Wenatchee continues to accomplish the goals established in the *Wenatchee Waterfront Sub-Area Plan* (2003). Restoration-related elements of the park/open space/recreation implementation opportunities include: Waterfront Park and shoreline enhancement and the development of an environmental education center/urban agricultural center. Shoreline ecological functions would benefit from reducing shoreline armoring, improving shoreline stabilization, and removing invasive vegetation. A combination of vegetation and bioengineering techniques could be provided to secure the shoreline from excessive erosion.

5 OTHER REGULATORY PROGRAMS

5.1 Effects of Current County and City Regulations

5.1.1 Critical Areas Regulations

Critical Areas Regulations prepared under the Growth Management Act and adopted through City ordinance apply to designated critical areas outside of shoreline jurisdiction. Wenatchee has a set of critical area regulations that dictate protection of environmentally sensitive areas, including wetlands, streams (fish and wildlife habitat conservation areas), geologically hazardous areas, frequently flooded areas, and aquifer recharge areas. All regulations use a version of the Department of Ecology's Eastern Washington Wetland Rating System.

Table 12 summarizes critical areas regulations for the City.

Table 12. Critical Areas Regulations Outside of Shoreline Jurisdiction.

Jurisdiction	Date of Last Update	Wetland Rating System	Stream Classification System		Buffer W	idth (feet)	
City of Wenatchee	2009	Ecology E. WA- (2004/	None	Wetlands	Low Impact Land Use	Moderate Impact Land Use	High Impact Land Use
		2007)		Cat 1	50-100	75-150	100-200
Title No.				Cat 2	50-100	75-150	100-200
Chapter 12.08.	130-170			Cat 3	40-75	60-110	80-150
Wetlands; Crit.	•			Cat 4	25	40	50
Recharge Area Flooded Areas; Haz Areas; Fis Wildlife Hab. C Areas	; Geo. h &			Streams	General protection standards only for fish and wildlife habitat conservation areas, no dimensional standards for buffers. Buffer requirements may be established on a case by case basis.		nservation Indards for Ints may be

5.1.2 City of Wenatchee

Comprehensive Plan: The Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan provides for urban land use designations in the City and UGA, and addresses other important elements such as capital facilities (e.g. parks and recreation). The Waterfront Subarea Plan is a part of the City's Comprehensive Plan and guides the development of the Columbia River waterfront. The Comprehensive Plan may be updated no more frequently than on an annual basis.

<u>Zoning Code</u>: Wenatchee City Code Title 10 (as amended) contains the City's zoning standards which regulate land in the city limits related to uses, building bulk, scale, and location, and other design considerations. Until land is annexed, the County is responsible for permitting in the UGA. However, the County has a

Memorandum of Understanding with all the Cities, including Wenatchee, regarding the adoption and use of the City zoning and zoning standards for review of proposals in the City's UGA.

Floodplain Regulations: Chapter 2.05 of the Wenatchee City Code (WCC) addresses flood hazard prevention. These regulations apply to lands identified as "special flood hazard areas" on the federal Flood Insurance Rate Maps (FIRM). Standards for preventing flood hazards are provided for all types of special flood hazard areas located in the City, including requirements for anchoring, construction methods and materials, utilities, design standards for residential and nonresidential construction, including manufactured homes, and recreational vehicles and crawlspaces. No "special flood hazard areas" occur within shoreline jurisdiction.

Additional specific standards are provided for "shallow flooding areas," which generally corresponds to those areas that experience sheet flow between depths of 1 to 3 feet outside of a defined channel. Despite being in the City code, presently, the City does not have any A1-30 zones. WCC 12.08.150 of the critical areas code contains complementary regulations for frequently flooded areas.

Stormwater Regulations: The City of Wenatchee has developed many control measures required for stormwater management programs, since the federal National Pollutant Discharge Elimination System (NPDES) requirements went into effect in 2003. All development within the City is required to control stormwater such that it doesn't damage adjoining properties, route to City system if capacity is available, extend City infrastructure in accordance with the *Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan* (2007), and will provide water quality treatment for all construction activities. All commercial development must address water quality on site and some must be capable of detaining stormwater in flood events. The City also routinely sweeps streets to help keep debris out of the storm drain system. Most of the City of Wenatchee is connected to the stormwater collection system that discharges directly into local waters. The City of Wenatchee presented a policy in the Comprehensive Plan to establish review requirements so that all development projects do not adversely impact the rate and amount of runoff into adjacent waters or lands.

5.2 State Agencies/Regulations

Aside from the Shoreline Management Act, State regulations most pertinent to development in the Cities' and County's shorelines include the State Hydraulic Code, the Growth Management Act, State Environmental Policy Act, tribal agreements and case law, Watershed Planning Act, Water Resources Act, and Salmon Recovery Act. A variety of agencies (e.g., Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department

of Natural Resources) are involved in implementing these regulations or otherwise own shoreline areas. The Department of Ecology reviews all shoreline projects that require a shoreline permit, but has specific regulatory authority over Shoreline Conditional Use Permits and Shoreline Variances. Other agency reviews of shoreline developments are typically triggered by in- or over-water work, discharges of fill or pollutants into the water, or substantial land clearing.

Depending on the nature of the proposed development, State regulations can play an important role in the design and implementation of a shoreline project, ensuring that impacts to shoreline functions and values are avoided, minimized, and/or mitigated. During the comprehensive SMP update, the City will consider other State regulations to ensure consistency as appropriate and feasible with the goal of streamlining the shoreline permitting process. A summary of some of the key State regulations and/or State agency responsibilities follows.

Washington Department of Natural Resources: Washington Department of Natural Resources (WDNR) is charged with protecting and managing use of State-owned aquatic lands. Toward that end, water-dependent uses waterward of the ordinary high water mark require review by WDNR to establish whether the project is on State-owned aquatic lands. In Lake Chelan, for example, WDNR has authority over aquatic lands waterward of the 1079-foot elevation. In the Columbia River, WDNR has authority over activities extending into the original (pre-dam) channel. If WDNR has jurisdiction, the project may be required to obtain an Aquatic Use Authorization from WDNR and enter into a lease agreement. Certain project activities, such as single-family or two-party joint-use residential piers, on State-owned aquatic lands are exempt from these requirements. WDNR recommends that all proponents of a project waterward of the ordinary high water mark contact WDNR to determine jurisdiction and requirements.

<u>Chelan County Public Utility District</u>: Although the Chelan County PUD is not a State agency, it does act like an agency in its review and denial or approval of certain projects on the Columbia River (Rocky Reach and Rock Island Reservoirs) and in Lake Chelan (Chelan Reservoir).

Rocky Reach Reservoir (Lake Entiat): Construction of Rocky Reach Dam began in 1956. The PUD's "jurisdiction" over reservoir shorelines originates with "right-to-flood" easements, sold to the PUD by the original property owners along the river. These easements extend to elevations that were projected to be reached by a catastrophic or extreme flood event of similar magnitude to an 1894 flood. These elevations will not likely be reached by flood waters with current management of the dams consistent with USACE and Federal Energy Regulatory Commission (FERC) requirements. Based on flood-water elevations of

the 1894 flood, the original easements were obtained by the PUD. They extend up to elevations significantly higher than the reservoir's standard operating levels. These elevations were illustrated on a set of maps labeled Exhibit K, and the maps' elevations are now generally known as the K line. As part of the hydroelectric project relicensing in the 1990s, the PUD resurveyed and recalculated anticipated flood elevations taking into consideration more recent upstream dams and their reservoirs' storage capacities, and illustrated newer anticipated flood elevations on a series of maps labeled Exhibit G. These newer maps show the "G line" is generally lower in elevation than the K line, except in areas near the dam, where the G and K lines both are 711 feet above sea level. (This is the lowest level for these lines, as rivers flow downhill.) Subsequent to the new designed G line some property owners (who signed a new easement agreement with the PUD) can build down to the new G line at their own risk, using the area above the G line, within the upper area of the original K line easement, for residential purposes. As part of federal requirements, portions of parcels lying below the K or G line may not be modified through grading, filling, excavating, clearing, or other activities, without written approval of the PUD and the federal agency which licenses hydroelectric projects. Exceptions are allowed for some docks or irrigation pumps, with the owner's understanding that construction of those structures is at the owner's risk.

Rock Island Reservoir: Rock Island Dam was originally constructed in 1933, and then modified in 1953 and 1979. The current project boundary for the Rock Island Hydroelectric Project, as licensed with the Federal Energy Regulatory Commission (FERC), is delineated on a set of maps labeled Exhibit G. The PUD owns the majority of land within the project boundary on the Rock Island reservoir. Similar to the restrictions on the Rocky Reach Reservoir, alteration of the land within the project boundary is restricted. The PUD maintains and operates a number of parks on its land along the Rock Island Reservoir. The 1976 Lake Chelan Project Exhibit R Recreation Plan identified seven sites on the Rocky Reach Project for recreational development. Three were completed by the Chelan PUD and opened to the public in the late 1970s, one in the 1980s and three in the 1990s. The parks include: Rocky Reach Dam Site, Orondo Park, Entiat Park, Lincoln Rock State Park (Eastbank), Daroga State Park, Chelan Falls/Powerhouse Parks, and Beebe Bridge Parks.

Chelan Reservoir: The Chelan dam was completed in 1927, and was recently relicensed in 2006. As part of dam management, Lake Chelan is flooded, by right and by obligation, to 1,100 feet above sea level during summer months to accommodate private and public recreational uses.

Washington Department of Ecology: The Washington Department of Ecology may review and condition a variety of project types, including any project that needs a permit from the U.S. Army Corps of Engineers (see below), any project that requires a shoreline Conditional Use Permit or Shoreline Variance, and any project that disturbs more than 1 acre of land. Project types that may trigger Ecology involvement include pier and shoreline modification proposals and wetland or stream modification proposals, among others. Ecology's three primary goals are to: 1) prevent pollution, 2) clean up pollution, and 3) support sustainable communities and natural resources

(http://www.ecy.wa.gov/about.html). Their authority comes from the State Shoreline Management Act, Section 401 of the Federal Clean Water Act, the Water Pollution Control Act, the Federal Coastal Zone Management Act of 1972, the State Environmental Policy Act, the Growth Management Act, and various RCWs and WACs of the State of Washington.

Washington Department of Fish and Wildlife: Chapter 77.55 RCW (the Hydraulic Code) gives the Washington Department of Fish and Wildlife (WDFW) the authority to review, condition, and approve or deny "any construction activity that will use, divert, obstruct, or change the bed or flow of State waters." Practically speaking, these activities include, but are not limited to, installation or modification of piers, shoreline stabilization measures, culverts, bridges and footbridges. These types of projects must obtain a Hydraulic Project Approval from WDFW, which will contain conditions intended to prevent damage to fish and other aquatic life, and their habitats. In some cases, the project may be denied if significant impacts would occur that could not be adequately mitigated.

Watershed Planning Act: The Watershed Planning Act of 1998 (Chapter 90.82 RCW) was passed to encourage local planning of local water resources, recognizing that there are citizens and entities in each watershed that "have the greatest knowledge of both the resources and the aspirations of those who live and work in the watershed; and who have the greatest stake in the proper, long-term management of the resources." Chelan County and partners in the County have taken advantage of the available funding for watershed planning to complete the watershed management plans for the Entiat watershed (WRIA 46) in 2004, the Wenatchee watershed (WRIA 45) in 2006, and the Stemilt/Squilchuck watershed (WRIA 40a) in 2007. The Chelan watershed does not yet have a watershed management plan; although, a draft Lake Chelan sub-basin plan was completed for the Northwest Power & Conservation Council in 2004. WRIA 40b (the Alkali Squilchuck, which includes Colockum Creek is located primarily in Kittitas County) also does not have a watershed management plan.

<u>State Forest Practices Act</u>: Activities related to growing, harvesting, or processing timber are regulated under Washington's State Forest Practices Act (WAC 222) administrated by Washington State DNR and are not regulated under

the SMA unless the land is being converted to another use besides growing trees or the commercial harvest is within 200 feet of a shoreline of statewide significance and exceeds the harvest limits established in the SMA. Conversions must comply with the provisions in the SMP for the new use.

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

- segmental or progressive reclamation;
- preservation of the topsoil;
- slope restoration such that highwalls are rounded in plan and section for all mines;
- stable slopes;
- final topography that generally comprises sinuous contours, chutes and buttresses, spurs, and rolling mounds and hills, all of which blend with adjacent topography to a reasonable extent;
- effective revegetation with native multi-species ground cover and trees depending on the municipality-approved subsequent use designated for the site.

5.3 Federal Agencies/Regulations

Federal regulations most pertinent to development in the City's shorelines include the Endangered Species Act, the Clean Water Act, and the Rivers and Harbors Appropriation Act. Other relevant federal laws include the National Environmental Policy Act, Anadromous Fish Conservation Act, Clean Air Act, and the Migratory Bird Treaty Act. A variety of agencies (e.g., U.S. Army Corps of Engineers [Corps], National Marine Fisheries Service, U.S. Fish and Wildlife Service) are involved in implementing these regulations, but review by these agencies of shoreline development in most cases would be triggered by in- or over-water work, or discharges of fill or pollutants into the water. Depending on the nature of the proposed development, federal regulations can play an important role in the design and implementation of a shoreline project, ensuring that impacts to shoreline functions and values are avoided, minimized, and/or mitigated. A summary of some of the key State regulations and/or State agency responsibilities follows.

<u>Section 404</u>: Section 404 of the federal Clean Water Act provides the Corps, under the oversight of the U.S. Environmental Protection Agency, with authority to regulate "discharge of dredged or fill material into waters of the United States, including wetlands" (http://www.epa.gov/owow/wetlands/pdf/

reg_authority_pr.pdf). The extent of the Corps' authority and the definition of fill have been the subject of considerable legal activity. However, it generally means that the Corps must review and approve many activities in shoreline waterbodies, and other streams and wetlands. These activities may include wetland fills, stream and wetland restoration, and culvert installation or replacement, among others. Similar to Washington State Environmental Policy Act (SEPA) requirements, the Corps is interested in avoidance, minimization, restoration, and compensation of impacts.

Section 10: Section 10 of the federal Rivers and Harbors Appropriation Act of 1899 provides the Corps with authority to regulate activities that may affect navigation of "navigable" waters. The Columbia River and Lake Chelan are designated navigable waters. Accordingly, proposals to construct new or modify existing in-water structures (including piers, marinas, bulkheads, breakwaters), to excavate or fill, or to "alter or modify the course, location, condition, or capacity of" these waterbodies must be reviewed and approved by the Corps.

Federal Endangered Species Act (ESA): Section 9 of the ESA prohibits "take" of listed species. Take has been defined in Section 3 as: "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The take prohibitions of the ESA apply to everyone, so any action of the City that results in a take of listed fish or wildlife would be a violation of the ESA and exposes the City to risk of lawsuit. Per Section 7 of the ESA, the Corps must consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service on any projects that fall within Corps jurisdiction (e.g., Section 404 or Section 10 permits) that could affect species listed under the Federal Endangered Species Act. These agencies ensure that the project includes impact minimization and compensation measures for protection of listed species and their habitats.

<u>Clean Water Act</u>: The federal Clean Water Act has a number of programs and regulatory components, but of particular relevance to the City is the National Pollutant Discharge Elimination System (NPDES) program. In Washington State, the Department of Ecology has been delegated the responsibility by the U.S. Environmental Protection Agency for managing implementation of this program. The City of Wenatchee is engaged in compliance with the NPDES Phase II Municipal Stormwater General Permit requirements that address stormwater system discharges to surface waters.

<u>Federal Power Act:</u> Under the Federal Power Act, the Federal Energy Regulatory Commission (FERC) is responsible for licensing nonfederal hydropower projects on navigable waterways and federal lands. The Commission's staff prepares an environmental analysis of every new and relicensed hydropower proposal to

ensure that environmental impacts are weighed in the location, design, and ongoing use of hydropower dams.

6 SUMMARY OF POTENTIAL IMPACTS OF LIKELY DEVELOPMENT AND EFFECTS OF SMP

WAC 173-26-186(8)(d) guides local master programs to evaluate and consider cumulative impacts of "reasonably foreseeable future development on shoreline ecological functions." The most commonly anticipated changes in shoreline development involve residential, commercial, and industrial development. These activities include upland development, and may also include the development of overwater structures and/or shoreline stabilization. As directed by the WAC, the policies and regulations in the proposed SMP are designed to ensure that cumulative impacts do not result in a net loss of ecosystem functions. A discussion of the general potential impacts of these anticipated developments and the countywide effects of the SMP are provided in Sections 6.1-6.3, below.

Potential development is not limited to residential, commercial and industrial uses; however, the location, timing, and impacts of less common uses and development projects are less predictable. WAC 173-26-201(3(d)(iii) provides guidance that "for those projects and uses with unanticipatable or uncommon impacts that cannot be reasonably identified at the time of master program development, the master program policies and regulations should use the permitting or conditional use permitting processes to ensure that all impacts are addressed and that there is not net loss of ecological function of the shoreline after mitigation." Potential uses and projects with less predictable implementation and impacts include such activities as aquaculture and mining. In addition to regulations that avoid, minimize, and mitigate for potential impacts from these less common developments, the proposed SMP includes specific regulations that require these types of developments to demonstrate on an individual basis that proposed projects will not result in a loss of ecological functions. Because these developments will be required to demonstrate no net loss on an individual basis, these types of projects will generally not be addressed in great detail in this cumulative impacts analysis.

6.1 Summary of Potential Impacts Associated with Upland Development and Effects of SMP

6.1.1 General

The most commonly anticipated changes in shoreline use involve residential, commercial, and industrial development. These developments and developments accessory to these uses, including utility and transportation infrastructure, generally involve impacts to shoreline functions, which typically result from the replacement of pervious, vegetated areas with impervious surfaces and/or a landscape management regime that includes chemical treatments of lawn and landscaping. These actions have multiple potential effects on shoreline ecological functions, including:

- Reduction in ability of site to improve quality of waters passing through the untreated vegetation and healthy soils.
- Potential contamination of surface water from chemical and nutrient applications.
- Increase in surface water runoff due to reduced infiltration area and increased impervious surfaces, which can lead to excessive soil erosion and subsequent in-water sediment deposition.
- Elimination of upland habitat occupied by wildlife that uses riparian areas.

The amount of space between the shoreline and a structure is an excellent quick evaluation of shoreline condition. The extent of native vegetation and the amount of impervious surfaces are often important indicators of shoreline function since these factors influence the quantity of stormwater runoff reaching shorelines. Changes in vegetation are a significant consideration when evaluating the net effects of development on shoreline ecological function. The conservation of riparian vegetation is critical to the ecological functions of the watercourses and waterbodies in the City of Wenatchee. Riparian vegetation provides filtration of upland contaminants, bank stability, shading of waterbodies, habitat complexity (both aquatic and terrestrial), a source of terrestrial insect prey for fish, and increased water storage potential.

Table 26 identifies the potential impacts of specific likely changes in development in the City of Wenatchee and the primary anticipated effects of the SMP.

Table 13. Summary of Potential Impacts Associated with Upland Development in Shoreline Jurisdiction.

Shoreline Function	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to Shoreline Function	Effects of SMP
River/Stream Hydrologic (includes hyporheic)	Additional residential development within existing pockets of residential uses Commercial and industrial development Improvement and expansion of transportation and utility infrastructure Creation of more parks/public access sites	Modification of flow regimes and channel migration with construction of buildings, roads, or recreational-use structures Increased runoff from added impervious surface and vegetation loss, increased potential for localized flooding, increased erosion and reduced groundwater recharge Reduced groundwater recharge combined with increased stormwater runoff rates means higher high flow volumes and lower seasonal low flow rates	Shoreline environment designations to concentrate development in least sensitive areas Development restrictions in floodplains and channel migration zones Shoreline crossings for utilities and transportation to be designed to minimize ecological impacts Mitigation standards for vegetation clearing
Water quality		Increase in runoff and associated water quality impacts Increase in runoff and associated water quality impacts with the creation of new impervious surfaces Vegetation loss reduces filtration of excess nutrients, sediments and pollutants during hyporheic exchange.	 Provisions to maintain surface and groundwater quality Standards for stormwater management and low impact development BMPs to minimize erosion Require connection to City Sewer Industrial development encouraged to locate where environmental cleanup and restoration can be incorporated. Vegetated buffer standards
Shoreline vegetation		 Decrease in shoreline/riparian vegetation Vegetation loss increases the potential for erosion, 	 Vegetated buffer standards Mitigation standards for vegetation clearing

Shoreline Function	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to Shoreline Function	Effects of SMP
		bank instability, turbidity, higher water temperatures Vegetation loss reduces refuge and foraging opportunities for fish and wildlife Vegetation loss produces less LWD for habitat forming processes	
Habitat		 Loss of or disturbance to riparian habitat Loss of instream habitat complexity, less LWD for habitat forming processes Vegetation loss reduces terrestrial insect subsidies 	 Provisions to locate and design utilities and transportation infrastructure to avoid sensitive areas and restore disturbed areas Vegetated buffer standards Mitigation standards for vegetation clearing

Provisions in the proposed SMP guide future development and redevelopment to avoid, minimize, and mitigate for shoreline impacts caused by upland development. As described in Section 4.2 and summarized in Table 13, provisions in the proposed SMP address potential impacts to vegetative, habitat, water quality, and hydraulic functions. The following specific use provisions also help to avoid a net loss of shoreline function from upland development:

- Limit conversion of forest lands to minimum necessary
- Design subdivisions of land so that newly developed lots will be able to comply with SMP requirements and not require a Shoreline Variance.
- Locate, design, and mitigate for roads and utilities servicing upland development.
- Locate industrial development where environmental cleanup and restoration of the shoreline area can be incorporated. Address federal and state requirements for hazardous materials clean up or management.

In addition to the above provisions, vegetation conservation and shoreline buffer regulations are critical to maintaining and/or improving the functions of existing riparian vegetation. It is important that impervious surfaces be separated from the waterbody to the extent that those surfaces replace vegetation. In the

proposed SMP, shoreline buffer standards were established specific to each local jurisdiction and environment designation. Specific shoreline buffers will be discussed below in Section 7. Wetland buffers found in each jurisdiction's shoreline critical areas regulations also limit the effects of development on shoreline-associated wetlands.

In general, new residential, commercial, and industrial development is expected within shoreline jurisdiction in the City of Wenatchee over the next 20 years. Standards for stormwater control, vegetation conservation, mitigation, buffers, and other measures in the SMP, will help maintain ecological functions of the shoreline over the long term.

6.1.2 Ongoing Agriculture

Ongoing agricultural activities are not regulated by the SMA and are therefore not subject to the provisions in the proposed SMP. New agricultural activities are largely exempt from shoreline substantial development permits but must comply with other provisions in the SMP, including implementing best management practices. Agricultural activities are expected to continue in the lower river valleys throughout the unincorporated County.

6.1.3 Forestry

Forestry and timber management on non-federal and non-tribal lands are regulated under the State Forest Practices Act (Chapter 76.09 RCW) and are not regulated under the SMA unless the land is being converted to another use besides growing trees or the commercial harvest is within 200 feet of a Shoreline of Statewide Significance and exceeds the harvest limits established in the SMA. Conversions must comply with the provisions in the SMP for the new use. Along Shorelines of Statewide Significance, commercial timber harvest may not exceed 30% of the timber volume in a ten-year period. Forestry is the predominant use in the upper watersheds of Chelan County and does not affect shorelines within the City of Wenatchee.

6.1.4 Upland Development outside of Shoreline Jurisdiction

Although SMP regulations only apply within shoreline jurisdiction, development outside of shoreline jurisdiction may influence shoreline ecological functions. The potential impacts of development outside of shoreline jurisdiction tend to be more indirect than impacts within shoreline jurisdiction; nevertheless, their potential effects can be significant, and include the following:

- Reduced infiltration potential on hillslopes and in headwater areas increases surface flows and reduces groundwater storage. This increases peak flows and flashiness of shoreline waterbodies, and may result in channel incision and reduced instream channel complexity.
- Increased impervious surfaces and reduced infiltration increases runoff of untreated waters and the potential for water quality degradation through the introduction of herbicides, pesticides, and heavy metals, and other toxic compound to the shoreline waterbody.
- Elimination of upland wildlife corridors.
- Development in channel migration zones and floodplains is inherently susceptible to damage. Efforts to protect new developments have the potential to isolate floodplains and prevent channel migration, thereby interfering with shoreline processes.

Because SMP provisions do not apply to upland areas, other local regulations, including zoning codes, critical areas regulations, floodplain regulations, and stormwater regulations, as well as applicable state and federal regulations will guide development in those areas. Specifically, critical areas regulations for erosion hazards, included in geologically hazardous areas, are expected to limit future development in channel migration zones. Despite these regulations and the spatial separation from the shoreline, developments near shoreline jurisdiction may have some impacts to shoreline functions. For those areas where extensive development is anticipated in the study area, but outside of shoreline jurisdiction, particular attention should be paid during review of those projects under other regulations to ensure that the upland impacts are fully mitigated and no net loss of functions is achieved.

6.2 Summary of Potential Impacts Associated with Overwater Structures and Effects of SMP

Overwater structures can adversely affect ecological functions and habitat in the following ways:

- Alter patterns of light transmission to the water column, affecting macrophyte growth and altering habitat for and behavior of aquatic organisms, including juvenile salmon and other prey species and the composition and diversity of benthic organisms.
- Interfere with long-shore movement of sediments, altering substrate composition and development.
- Contribute to contamination of surface water from chemical treatments of structural materials, as well as indirect effects of boat use and maintenance.
- Clearing of shoreline vegetation to accommodate docks reduces shoreline vegetative functions.

Table 14 identifies the potential impacts of specific likely changes in development in the City of Wenatchee and a summary of the effects of SMP provisions.

Table 14. Summary of Potential Impacts Associated with Over-water Structures in Shoreline Jurisdiction.

Shoreline Function	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to Shoreline Function	Effects of SMP Provisions
	m (Primarily Columbia R	1	
Hydrologic (includes hyporheic)	Creation of more parks/public access sites — construction of over-water structures associated with access and water recreation Construction of new bridges for transportation corridors Repair/reconstruction of existing bridges and culverts	 Modification of flow regimes and channel migration with construction of docks, ramps, bridges, or other recreational-use structures Repair of existing bridges and replacing culverts with bridges could reduce flow impacts, channel constraints, and fish passage barriers 	 Boating facilities prohibited in channel migration zones, areas that would require dredging, or flood hazard zones Shoreline crossings to be designed for the least ecological impact
Water quality		Water quality impacts associated with construction of docks and other in-water structures (e.g., spills, harmful materials use) Water quality impacts from uses associated with new docks (e.g, motor boat use and maintenance) Water quality impacts associated with stormwater generated on new bridges	Toxic wood preservatives are prohibited
Shoreline vegetation		Alterations of aquatic vegetation communities Reduction in riparian vegetation to accommodate new overwater structures Loss of riparian vegetation increases the potential for erosion, bank instability, turbidity, higher water temperatures	 New boating facilities and moorage structures are prohibited over aquatic or emergent vegetation Mitigation standards for new structures may include planting of shoreline vegetation Mitigation required for vegetation removal
Habitat		Alteration of predator/prey dynamics of aquatic species	Dimensional standards to minimize extent of

Shoreline Function	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to Shoreline Function	Effects of SMP Provisions
		 Increasing migration obstacles for juvenile salmonids Less LWD for habitat forming processes Reduction in benthic invertebrates 	 overwater cover Decking standards to maximize light penetration Skirting and walled structures prohibited
Lake (Prima Hydrologic	Creation of more parks/public access sites with associated overwater structures Increased construction of single-family or	Potential interference with movement of sediments, altering substrate composition and development	Boating facilities and moorage structures are prohibited in channel migration zones, areas that would require dredging, or flood hazard zones.
Water quality	community docks associated with existing or new residential use Repair of replacement of existing piers	Water quality impacts associated with construction of docks and other in-water structures (e.g., spills, harmful materials use) Water quality impacts associated with related uses of new docks (e.g., boat maintenance and operation)	Toxic wood preservatives are prohibited
Shoreline vegetation		 Alterations of aquatic vegetation communities Loss of riparian vegetation area Loss of riparian vegetation increases the potential for erosion, bank instability, turbidity, higher water temperatures 	 New boating facilities and moorage structures are prohibited over aquatic or emergent vegetation Mitigation standards for new structures may include planting of shoreline vegetation Mitigation required for vegetation removal
Habitat		Increased shading in nearshore lake habitat areas resulting from dock and pier construction can affect macrophyte growth, and alter habitat for and behavior of aquatic organisms Nighttime lighting effects	 Dimensional standards to minimize extent of overwater cover Decking standards to maximize light penetration Skirting and walled structures prohibited

Shoreline	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to	Effects of SMP
Function		Shoreline Function	Provisions
		 on both fish and wildlife Loss of habitat for benthic community, less LWD for habitat complexity 	

SMP standards are designed to minimize the extent of overwater structures, particularly in the nearshore area, which is critical to many small fish, including salmonids. SMP standards prohibit skirting, walled structures, and several toxic preservatives that could otherwise impair water circulation, light attenuation, and water quality. The SMP provides specific dimensional criteria for boating facilities and moorage to minimize the effects of overwater structures, particularly within the nearshore area. For water bodies, the proposed SMP also requires grated decking on piers, ramps, and floats in the area not underlain by float tubs. Together, these design standards minimize the area in which light transmission is affected, thereby limiting the potential impacts of new docks on the aquatic ecosystem. The SMP also provides standards for lighting overwater structures, which helps avoid behavioral impacts to aquatic species at night. In addition to limits on design, siting, and dimensions, the proposed SMP guides the location of boating facilities to minimize any ecological impacts. Furthermore, this SMP prohibits private boating and moorage facilities.

In addition to local shoreline permit requirements, both WDFW and the Corps require permits for the installation, replacement, and repair of overwater structures. Mitigation measures for overwater structures encouraged by WDFW include the installation of grated decking, removal of unused piles (especially those formerly treated with creosote), reduction of pile size and quantity, and general reduction in overall square footage of cover. As part of efforts to minimize and compensate for impacts, mitigation in the form of native shoreline planting is often required. Any new or replacement structure would require a Hydraulic Project Approval (HPA) from WDFW and a Section 10 Rivers and Harbors Act permit from the Corps of Engineers. Because of the presence of listed salmonids, a Corps permit would also entail consultation with the National Marine Fisheries Service to comply with the Endangered Species Act. These agencies would likely require similar mitigation measures noted above for WDFW.

Expansion, reconfiguration, and repair of the existing overwater structures are expected. New structures will need to comply with strict regulations to minimize and mitigate impacts. Where existing shoreline vegetation is

degraded, mitigation measures proposed for new private moorage facilities are expected to offset the impacts of new overwater structure development. Where existing overwater structures are common, dimensional, material, and design standards are expected to reduce the individual impacts of structures compared to existing conditions. Overall, the improvements gained through repair and replacement over time, and mitigation associated with any new overwater structures are expected to achieve no net loss of ecosystem functions.

6.3 Summary of Potential Impacts Associated with Shoreline Stabilization and Effects of SMP

Shoreline stabilization measures typically have the following effects on ecological functions compared to natural shorelines:

- Reduced connectivity between floodplain and river, leading to reduced channel migration potential, floodplain habitat diversity, and floodplain functions.
- Reduction in nearshore habitat quality for juvenile salmonids and other
 aquatic organisms. Specifically, shoreline complexity from downed wood
 and emergent vegetation that provide forage and cover may be reduced or
 eliminated. Elimination of shallow-water and off-channel habitats reduces
 opportunities for small fish to find refuge from predators and from high
 flows.
- Reduction of natural sediment recruitment from the shoreline. This
 recruitment is necessary to replenish substrate and preserve shallow water
 conditions.
- Increase in wave energy at the shoreline if shallow water is eliminated, resulting in increased nearshore turbulence that can be disruptive to juvenile fish and other organisms.

Similar to overwater structures, the impacts of shoreline stabilization will vary seasonally in reservoirs, where water levels fluctuate widely. It can be assumed that direct impacts of shoreline stabilization (e.g., habitat changes, sediment recruitment effects, and effects on wave energy) are not significant during periods when the water levels have significantly receded. On the other hand, certain other indirect effects of shoreline stabilization, such as vegetation clearing to accommodate new structures, are less closely related to fluctuating water levels, and impacts are likely to occur year-round.

Repairs and replacements of existing bulkheads perpetuate the conditions described above. Table 15 identifies the potential impacts of specific likely changes in development in Chelan County.

Table 15. Summary of Potential Impacts Associated with Shoreline Stabilization in Shoreline Jurisdiction.

Shoreline Function	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to Shoreline Function	Effects of SMP Provisions
River/Stream Hydrologic (includes hyporheic)	New, replaced, and repaired shoreline modification such as bulkheads for shoreline residential uses, parks and public access sites, and other water dependent uses	 Reduction in LWD recruitment and other organic material as shoreline habitats are altered Modification of flow regimes and channel migration Reduction in floodplain function leads to higher peak flows, less groundwater recharge, and greater sediment scour, erosion, and channel migration downstream Reduction of natural sediment recruitment from the shoreline. This recruitment is necessary to replenish substrate and preserve shallow water conditions. 	Residential development to avoid the need for future stabilization or flood control Demonstration of need to protect primary structure required for new stabilization Mitigation requirements include improving substrate conditions waterward of OHWM
Water quality		 Water quality impacts associated with construction Reduction in floodplain connectivity reduces floodplain filtration potential Removal of shoreline vegetation increases water temperatures 	Mitigation requirements include planting native vegetation
Shoreline vegetation		Potential associated vegetation loss increases potential for erosion, turbidity, higher water temperatures potential	Mitigation requirements include planting native vegetation
Habitat		Reduction in shoreline complexity and emergent vegetation that provides forage and cover Reduced floodplain connectivity limits off-channel refuge for fish during high flows Reduction of natural	 Preference for soft- shoreline stabilization Mitigation requirements include improving substrate conditions waterward of OHWM and planting native vegetation

Shoreline Function	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to Shoreline Function	Effects of SMP Provisions
Lake		sediment recruitment from the shoreline. This recruitment is necessary to replenish substrate and preserve shallow water conditions • Elimination of shallow-water habitat may also increase vulnerability of juvenile salmonids to aquatic predators	
Hydrologic	New,	Increase in wave energy at	Residential
Tiyarologic	replaced, and repaired shoreline modification such as bulkheads for shoreline residential uses, parks and public access sites, and other	the shoreline if shallow water is eliminated, resulting in increased nearshore turbulence that can be disruptive to juvenile fish and other organisms. Disruption of shoreline wetlands Shoreline scour from downward force of waves hitting bulkheads	development to avoid the need for future stabilization or flood control Demonstration of need required for new stabilization Mitigation requirements include improving substrate conditions waterward of OHWM
Water quality	water dependent uses	 Water quality impacts associated with construction Removal of shoreline vegetation increases erosion and water temperatures 	Mitigation requirements include planting native vegetation
Shoreline vegetation		Potential associated vegetation loss increases potential for erosion, turbidity, higher water temperatures	Mitigation requirements include planting native vegetation
Habitat		 Reduction in nearshore habitat quality- shoreline complexity and emergent vegetation that provides forage and cover may be reduced or eliminated Reduction of natural sediment recruitment from the shoreline. This recruitment is necessary to replenish substrate and 	Preference for soft- shoreline stabilization Mitigation requirements include improving substrate conditions waterward of OHWM and planting native vegetation

Shoreline	Major Types of Anticipated Future Development Likely to Affect Shoreline Function	Potential Impacts to	Effects of SMP
Function		Shoreline Function	Provisions
		preserve shallow water conditions • Elimination of shallow-water habitat may also increase vulnerability of juvenile fish to aquatic predators	

The SMP sets standards for new and repaired shoreline armoring, as well as conditions and uses where new shoreline armoring is allowed or prohibited. Under the proposed SMP, new developments must be designed and sited to avoid the need for structural shoreline stabilization wherever feasible. Residential subdivisions must be designed so that shoreline stabilization will not be required. Structural shoreline stabilization is not allowed except to protect restoration projects, or unless a geotechnical analysis demonstrates that it is necessary to protect a primary structure from erosive action caused by currents, waves, or other waterward processes.

Where structural stabilization is necessary, the SMP establishes a preference for soft structural stabilization and requires that the size of the structure be minimized to the greatest extent possible. Together, these measures should successfully minimize the extent of new shoreline stabilization, and may result in a reduction or softening of existing stabilization measures. Finally, the SMP requires mitigation for stabilization impacts. Mitigation measures include improving substrate conditions waterward of the OHWM and planting native vegetation along the shoreline. These measures are expected to mitigate for the changes in shoreline gradient associated with stabilization and to ensure that shoreline vegetative functions are maintained, or in some cases, improved.

Both the Corps and the WDFW have jurisdiction over new shoreline stabilization projects and repairs or modifications to existing shoreline stabilization. Where actions may affect federally threatened or endangered species, the Corps must consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS) regarding potential Endangered Species Act issues. As part of those agencies' efforts to minimize and compensate for shoreline stabilization-related impacts, the federal agencies require mitigation, frequently through the implementation of native shoreline planting plans. Further, NMFS requires additional impact compensation measures for many bank modification projects,

including angling the face of the structure landward to reduce wave turbulence, and/or shifting the structure as far landward as feasible.

Over time, the combined effects of the proposed SMP, implementation of the Shoreline Restoration Plan, permit reviews from the WDFW and the Corps, and planned restoration actions are expected to result in a reduction or softening of existing stabilization structures, and any new stabilization structures that are permitted will be accompanied by appropriate minimization and mitigation measures to offset shoreline impacts.

6.4 Summary of Potential Impacts Associated with Mining and Dredging and Effects of SMP

Mining and dredging operations are conducted to serve several distinct objectives in Chelan County and Washington State. Channel dredging may be conducted for flood control, navigation, utility installation, the construction or modification of essential public facilities and regional transportation facilities, and/or restoration. Gravel bar mining may occur for flood control purposes. Metals mining and floodplain gravel mining are also conducted for commercial resource extraction.

Each of the practices identified above has potential impacts on ecological and physical river processes, summarized below.

Dredging:

- Simplification of in-channel habitats.
- Disruption of benthic community.
- Reduction in shallow-water habitat.
- Alteration in channel hydrologic and sediment processes.
- Reduction in water quality from turbidity and in water dredge material disposal.

Metals mining:

- Water quality contamination from mine tailings, which often include high levels of dissolved metals and cyanide complexes.
- In-water gold mining disturbs the substrate, potentially disturbing benthic communities and temporarily results in increased turbidity.

Floodplain gravel mining:

- Alteration of hydrologic and sediment transport processes, potentially leading to erosion, channel incision, head cutting, and/channelization of a river upstream or downstream from the mining location.
- Potential to strand fish during pit capture events.

• Loss of floodplain habitat associated with armoring and levees to isolate pits from the river channel.

The SMP includes provisions to ensure that impacts are avoided, minimized and mitigated through the design, location, construction, maintenance, and reclamation actions.

The following is a more in-depth discussion of the potential effects of floodplain gravel mining and approaches to minimizing and mitigating impacts. Gravel pits from commercial mining in floodplains and channel migration zones have the potential to alter hydrologic and sediment transport processes and result in habitat simplification. If a channel shifts course into a gravel pit, a process known as "pit capture," it has the potential to cause channel bank and bed instability upstream and downstream through accelerated erosion, river channelization, channel incision, disruption in sediment transport, and degradation of habitat, including benthic invertebrate assemblages and salmon spawning habitat, upstream and downstream of a pit (Norman et al. 1998, Cluer 2009). Pit capture may present stranding hazards for native fish species, and gravel pits may provide warm water predator habitat (Cluer 2009).

Despite potential negative impacts of gravel mining, "Careful siting, planning, limiting mining, a thorough hydrogeological analysis, use of alternative resources, and innovative reclamation can mitigate and reduce some mining impacts (Norman et al. 1998)." Potential approaches to minimize ecological impacts include modification of pit design and restoration strategies to provide diverse off-channel habitats (e.g., emergent marsh, open water, and forested areas) that can benefit fish and other aquatic species (Norman 1998, Cluer 2009). Wide, topographically higher, and thickly vegetated buffers could be considered to minimize interactions between the river and mining pit (Norman 1998).

The proposed SMP prohibits mining.

In addition to the SMP, mining is regulated by other County, State, and Federal regulations. In-water mining requires a Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife (WDFW); however, WDFW does not have jurisdiction over floodplain mining until after an avulsion has occurred. The Surface Mine Reclamation Act, administered by Washington Department of Natural Resources, generally requires extensive hydrologic analysis, which outlines management measures to limit channel erosion and avulsion, and which requires mines to be reclaimed immediately after each segment is mined.

Given the mining is prohibited in this SMP, mining operations are not expected to result in a loss of ecological functions.

7 CUMULATIVE IMPACTS ON ECOLOGICAL FUNCTION

In addition to the relevant regulations discussed in those sections above which apply to the City, the City developed regulations specific to local conditions, plans, and interests. The following discussion will build on the discussion of potential impacts and effects of SMP regulations from Section 6 to present a summary analysis of how planned development is likely to affect existing conditions on a local scale in light of local SMP regulations, other regulations (Section 5), and planned restoration (Section 4.5).

7.1 Unincorporated Chelan County

The proposed SMP designates shoreline buffers for unincorporated Chelan County as the larger of the standard riparian buffer (see Table 16 below) and the common line setback. The common line setback is measured by averaging the setbacks of structures existing on adjacent waterfront lots. The County's approach of using the larger of the riparian buffer and the common line setbacks ensures that new development will protect existing ecological functions, and will not progressively encroach on the shoreline in existing developed areas. The County's vegetated buffer requirements also help minimize the effects of development outside of shoreline jurisdiction on shoreline ecological functions.

Table 16. Environment-specific riparian buffer widths for unincorporated Chelan County.

Location	High Intensity (feet)	Low Intensity (feet)	
Natural/Conservancy Environments	250	200	
Rural Environment	150	100	
Urban Environment	100	75	
Lower Lake Chelan Basin (all environments)1	50	25	

In addition to shoreline buffer standards, provisions in the proposed SMP require tree retention and mitigation for unavoidable removal of trees. This provision helps to ensure that vegetation in the shoreline environment will be maintained.

The County's shoreline critical areas regulations also provide development standards to ensure that the unique ecological functions of wetlands, geologically hazardous areas, frequently flooded areas, and critical aquifer recharge areas are maintained.

7.1.1 Stemilt/Squilchuck - Colockum (WRIA 40a/b)

The Stemilt/Squilchuck – Colockum basin lies in the southern part of the County and is largely rural in character with housing focused around Malaga and rural industrial businesses along the Columbia River. There are also occasional orchards and farms, and vegetation is primarily composed of scrub-shrub, evergreen, and deciduous forests. Development potential is limited by shoreline critical areas regulations in areas with cliffs and bluffs along the Columbia River and wetland areas within shoreline jurisdiction. In the western part of the basin, there are several lakes and reservoirs that qualify as shorelines of the state surrounded by large forested parcels. There is little public land along many of the shorelines.

Anticipated development along shorelines is relatively low in the Chelan County portion of WRIA 40. Within shoreline jurisdiction, only approximately 26 new single-family residential developments and approximately 6,000 square feet of industrial development are anticipated (Table 17). Industrial development would occur in Urban and Rural shoreline designations along the Columbia River. Residential development is expected to occur along the Urban environment of Cortez Lake, which is already a highly developed residential area. Some residential development is also anticipated in the Rural and Conservancy designations along the Columbia River in shoreline jurisdiction. The majority of the shoreline in Meadow Lake is composed of forestry resource lands, so forestry-related state and federal regulations will minimize effects of those activities. Because of the Conservancy designation and associated buffers, little activity is expected around reservoirs.

Table 17. Summary of waterbodies with likely residential, commercial, and industrial development in shoreline jurisdiction in WRIA 40a/b.

Waterbody / Environment Designation	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Shoreline Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)
Urban				
Columbia River	183.65	1278.30 (81.50)	0	7,237,949 (5,427,707)
Cortez Lake	33.24	18.37 (18.37)	13 (13)	0
Rural				
Columbia River	102.17	174.48 (25.10)	6 (6)	466,077 (466,077)

Waterbody / Environment Designation	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Shoreline Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)
Conservancy				
Columbia River	124.86	1,274.73 (5.93)	33 (7)	0

The overall extent of anticipated development and associated impacts is relatively low in WRIA 40a/b, and the overall development intensity will not change significantly. SMP buffer regulations will limit development to the outer portion of shoreline jurisdiction, and provisions to conserve vegetation and maintain water quality will avoid degradation of shoreline functions.

7.1.2 Wenatchee (WRIA 45)

Shorelines in the Wenatchee watershed (WRIA 45) are largely in public use and classified as resource uses such as forestry and to a lesser extent, agriculture and mineral. These ongoing resource uses are primarily regulated by existing local, state, and federal regulations. No development is anticipated in the Natural environment designation in WRIA 45, which occupies 86% of shoreline jurisdiction in the watershed. Likely future development is focused on the Wenatchee River, which is presently characterized by approximately 12% low-intensity development.

Approximately 85 single-family residential developments are expected, primarily amidst existing low-density residential development in the Rural environment on the Wenatchee River. Many more residential developments are anticipated in the broader study area (451 total).

Commercial and industrial development of approximately 26,740 and 102,640 square feet, respectively, may occur (Table 18). These non-residential uses are focused along the Wenatchee River in the Rural environment and the Columbia River in the Conservancy environment; significantly more commercial and industrial development may be expected in the study area outside of shoreline jurisdiction. Commercial and industrial development on the Wenatchee River is expected in areas with existing, under-utilized development zoned Rural Commercial and Rural Industrial. Buffers ranging from 100 to 150 feet will be required for redevelopment of these areas. On the Columbia River, industrial development is anticipated on vacant lands that are zoned Industrial, and a 200-

to 250-foot buffer will apply. Shoreline buffers and stormwater standards will limit potential impacts on shoreline functions.

Table 18. Summary of waterbodies with likely residential, commercial, and industrial development in shoreline jurisdiction in WRIA 45.

Waterbody / Environment Designation (rivers followed by lakes)	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Shoreline Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Commercial Sq Ft in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)		
Urban	Τ	07.04		T			
Wenatchee River	74.94	97.34 (25.43)	3 (1)	0	0		
Rural							
Chiwawa River	57.07	29.93 (17.77)	16 (8)	0	0		
Chumstick Creek	211.92	30.02 (30.02)	1 (1)	0	0		
Nason Creek	48.32	29.65 (10.35)	2 (1)	0	0		
Peshastin Creek	266.94	361.18 (75.96)	13 (4)	36,277 (1,282)	0		
Wenatchee River	1,085.45	1,824.47 (294.84)	221 (52)	53,693 (14,424)	123,744 (27,571)		
Fish Lake	12.03	4.93 (4.93)	1 (1)	0	0		
Lake Wenatchee	182.45	130.95 (39.89)	37 (14)	0	0		
Conservancy							
Columbia River	27.49	16.96 (3.61)	0	0	32,096 (28,917)		
Peshastin Creek	238.83	515.72 (10.08)	11 (0)	768 (239)	0		
Wenatchee River	512.23	655.54 (18.06)	27 (2)	63,603 (16)	0		

In addition to development potential presented above, relatively little development or redevelopment may be possible in the Peshastin UGA. Only approximately five dwellings, 6,300 square feet of commercial, and 2,400 square feet of industrial uses are likely in shoreline jurisdiction (Table 19).

Table 19. Summary of waterbodies with likely residential, commercial, and industrial development in shoreline jurisdiction in the Peshastin UGA in WRIA 45.

Waterbody / Environment Designation	Acres in Total Shoreline Jurisdiction	Acres in Study Area (Shoreline Jurisdiction) Outside of Buffers	Single Family Units (Study Area (Jurisdiction)	Multi-Family Units Study Area (Jurisdiction)	Commercial Sq Ft Study Area (Jurisdiction)	Industrial Sq Ft Study Area (Jurisdiction)
Urban						
Wenatchee River	72.97	44.60 (11.19)	26 (3)	1 (1)	6,495 (3,636)	2,393 (2,393)
Rural						
Wenatchee River	15.52	14.69 (3.51)	2 (1)	6 (0)	39,537 (2,675)	0

The majority of development in the Wenatchee watershed will occur in the Rural environment, where riparian buffers of 100 to 150 feet apply. Where existing development is further from the shoreline, common line setback requirements will ensure that the integrity of existing shoreline vegetation is retained. The conservation of shoreline buffers also helps ensure that residential development outside of shoreline jurisdiction will not degrade shoreline functions.

Some residential development is anticipated on Lake Wenatchee among existing single-family residential development. Extensive overwater coverage is already present on Lake Wenatchee, associated with single-family residential development. Repair and replacement of existing piers is expected to result in a reduction in overwater surface coverage in the nearshore area and increased light transmission as a result of the installation of grated decking and removal of skirting, required under the SMP. New overwater structures are likely to accompany residential development of existing vacant parcels on Lake Wenatchee. These new structures will need to comply with strict standards to minimize and mitigate for any impacts (See section 6.2 for details).

Development of recreational and public access areas on public lands could result in the removal of vegetation and increased soil compaction in areas of intensive use. The proposed SMP regulations require mitigation for any potential impacts associated with development of public access.

The Wenatchee River Channel Migration Zone Study identified 24 restoration sites for preservation, enhancement, or restoration. Although no time or implementation strategy exists to protect and restore the sites, it is expected that actions will be taken as opportunities allow.

Actions to comply with the Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Plan (TMDL), including identifying and addressing sources of water quality impairments, are expected to improve water quality conditions in the Wenatchee basin in the near future.

7.2 City of Wenatchee

The primary anticipated changes in the City of Wenatchee's shorelines include multi-family residential development and commercial and industrial development and redevelopment in the High Intensity environment on the Columbia River (Table 20). Some single-family residential development is anticipated in the study area near the Wenatchee River, but outside of shoreline jurisdiction. Significant development is not anticipated in the Shoreline Residential, Waterfront Park, or Urban Conservancy environments, which combined, cover 62% of the City's shoreline jurisdiction.

Existing conditions in the High Intensity environment on the Columbia River include commercial and industrial areas, where development, roads, and the railroad are located adjacent to the River, and shoreline vegetation is sparse.

Table 20. Summary of waterbodies with likely residential, commercial, and industrial development in shoreline jurisdiction in the City of Wenatchee.

Waterbody / Environment Designation	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Shoreline Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Multi-Family Units in Study Area (Jurisdiction)	Commercial Sq Ft Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)
High Intensity						
Columbia River	38.49	86.68 (25.44)	0	302 (59)	23,193 (4,565)	221,636 (221,636)

The effects of upland development are primarily influenced by the extent and type of development and impervious surface coverage, the location of the development and proximity to the waterbody, and the quality and extent of vegetated buffers. The proposed SMP includes provisions for the City of Wenatchee that require that any vegetation removal is minimized and mitigated through planting within the buffer or in a vegetated corridor perpendicular to the shoreline (2:1 replacement ratio for significant trees and 1:1 replacement ratio

for all other vegetation). These provisions are expected to minimize the impacts of development where existing properties have substantial vegetation coverage.

The City's SMP applies standard buffers specific to each environment designation. The City's standard shoreline buffer width in the High Intensity environment is 60 feet from the OHWM. In the High Intensity environment, the separation from development to the OHWM ranges from 36 feet to approximately 240 feet in places where development is separated from the shoreline by a park or right-of-way. SMP regulations provide some variability in the buffer standards to accommodate unique site characteristics, provide better long-term protection for the environment and increase functional performance in degraded or impaired areas. A reduction up to 25% of the standard buffer widths may be approved if the applicant provides mitigation that results in a higher functioning buffer than would be provided by a standard buffer without enhancement, or if existing conditions prevent functional riparian conditions. Buffer reductions beyond 25%, but not more than 50% of the standard buffer, may be allowed, but must be accompanied by a demonstration that other siting alternatives are not possible, and a critical area study documenting that the "no net loss" standard will be met. Buffer enhancements are expected to offset any potential functional decline related to a reduction in buffer width.

With the exception of one parcel, south of Riverfront Park, properties identified as having development potential within the City are separated from the shoreline by another development, use, or a road, and the nearest parcel boundary is generally landward of the standard buffer width. For those parcels separated from the shoreline, the control of stormwater runoff is the most significant concern for shoreline functions. Stormwater management is required in the SMP to be consistent with Ecology's latest stormwater manual for Eastern Washington, which provides standards and best management practices.

Continued development of recreational and public access areas along the shorelines of the City present potential increases in the intensity of land use in the City's public lands. Such changes could result in the removal of vegetation and increased impervious surfaces. The City's proposed SMP regulations require that public access shall avoid shoreline impacts and that any impacts shall be mitigated. Furthermore, the proposed SMP requires the implementation of best management practices to limit water quality impacts from the use of pesticides or fertilizers that could be associated with the maintenance of public use sites. In addition to the potential for recreational enhancement, the City's public shoreline parks offer opportunities for ecological improvement. Possible actions identified in the Shoreline Restoration Plan include a reduction of shoreline armoring, removal of non-native vegetation, native revegetation, shoreline stabilization, and the addition of interpretive nature and/or historical

signs. A combination of native revegetation and bioengineering techniques could be provided to secure the shoreline from excessive erosion.

7.3 City-Associated Urban Growth Areas

7.3.1 Wenatchee UGA

Within the unincorporated Wenatchee UGA, industrial development is anticipated in the High Intensity environment on the Columbia River. Only two single-family residential developments are expected in shoreline jurisdiction (Table 21). The analysis shows potential industrial development on the Wenatchee River in the Urban Conservancy environment; however, industrial uses are prohibited in the Urban Conservancy environment. Much of the study area is in public use, and recreational uses may be developed over time.

Existing conditions in the High Intensity environment on the Columbia River include industrial development, highway, and railroads closely bordering the River. Vegetation is patchy, generally consisting of a narrow strip of shrubs.

Table 21. Summary of waterbodies with likely residential, commercial, and industrial development in shoreline jurisdiction in the City of Wenatchee UGA.

Waterbody / Environment Designation	Acres in Total Shoreline Jurisdiction	Acres Outside of Buffers in Study Area (Shoreline Jurisdiction)	Single Family Units in Study Area (Jurisdiction)	Industrial Sq Ft in Study Area (Jurisdiction)		
High Intensity						
Columbia River	78.94	83.48 (22.03)	0	59,020 (37,029)		
Shoreline Residential						
Wenatchee River	3.95	3.77 (1.19)	4 (2)	0		
Urban Conservancy						
Wenatchee River	72.59	81.86 (13.44)	56 (0)	40,421 (13,543)*		

^{*} Despite land use analysis results, these uses are not permitted in the specified environment designation.

The proposed SMP includes provisions for the City of Wenatchee that any vegetation removal is minimized and mitigated through planting within the buffer or in a vegetated corridor perpendicular to the shoreline (2:1 replacement ratio for significant trees and 1:1 replacement ratio for all other vegetation).

These provisions are expected to minimize the impacts of development where existing properties have substantial vegetation coverage.

The City's SMP applies standard buffers specific to each environment designation. The City's standard shoreline buffer width in the High Intensity environment is 60 feet from the OHWM. Buffer reduction options are consistent with the City's SMP, presented in Section 4.5. Existing shoreline setbacks in a randomly sampled subset of the High Intensity environment range from approximately 35 feet to 115 feet. Buffer standards and vegetation conservation standards are expected to retain shoreline vegetative functions. Additionally, over half of the potential industrial development area in the City's UGA is separated by the shoreline by public lands or other uses, which will ensure that development is spatially removed from the shoreline on those parcels. For those parcels separated from the shoreline, the control of stormwater runoff is the most significant concern for shoreline functions. Stormwater management is required in the SMP to be consistent with Ecology's latest stormwater manual for Eastern Washington, which provides standards and best management practices for the control and treatment of stormwater runoff.

The SMP also requires that industrial development is located, designed, and constructed to ensure no net loss of ecosystem functions. Where possible, industrial development and redevelopment are encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated. Federal and state requirements for hazardous materials clean up or management also must be met. The SMP provisions are expected to result in improved ecological conditions where industrial redevelopment occurs because stormwater improvements will be required, and environmental cleanup and restoration will be encouraged. In summary, SMP standards are expected to result in no net loss of shoreline functions, and if cleanup efforts are pursued, an improvement in shoreline functions could occur within the Wenatchee UGA.

8 NET EFFECT ON ECOLOGICAL FUNCTIONS

The CIA indicates that future growth is likely to be targeted along the Columbia and Wenatchee Rivers and environment designations in the City of Wenatchee and Wenatchee UGA. These developments have the potential to impact specific shoreline functions. This analysis can help inform City officials of potential future shoreline impacts and the importance of specific proposed SMP provisions.

The proposed SMP, which includes the Shoreline Restoration Plan, is expected to protect and improve shorelines within the City of Wenatchee while accommodating the reasonably foreseeable future shoreline development. No net loss of shoreline ecological function will be achieved, and ecological functions may improve over time. Other local, state and federal regulations, acting in concert with this SMP, will provide further assurances of improved shoreline ecological functions over time.

As discussed above, major elements of the SMP that ensure no net loss of ecological functions fall into five general categories: 1) environment designations (Chapter 3), 2) general policies and regulations (Chapter 4), 3) shoreline use and modification provisions (Chapter 5),

4) critical areas regulations (Appendix B), and 5) Shoreline Restoration Plan (Appendix C of the SMP).

<u>Environment designations</u>: The Shoreline Analysis Report provided the information necessary to assign environment designations by segment to each of the shoreline waterbodies (see **Chapter 3 of the SMP**). Shoreline uses and modifications were then individually determined to be either permitted (as substantial developments or conditional uses) or prohibited in each of those environment designations. The most uses and modifications are allowed in areas with the highest level of existing disturbance.

<u>General provisions</u>: **Chapter 4 of the SMP** contains a number of regulations on a variety of topics that contribute to protection and restoration of ecological functions.

Shoreline modification and use provisions: Chapter 5 of the SMP contains a number of regulations on a variety of topics that contribute to protection and restoration of ecological functions. Shoreline modification regulations emphasize minimization of size of structures, and use of designs that do not degrade and may even enhance shoreline functions. Use regulations prohibit uses that are incompatible with the existing land use and ecological conditions, and emphasize appropriate location and design of the various uses. These regulations also emphasize avoidance and minimization of ecological impacts via appropriate setbacks, protection and enhancement of vegetation, reduction of impervious surfaces and use of innovative designs such as LID techniques that do not degrade and may even enhance shoreline functions.

Shoreline Restoration Plan: The Shoreline Restoration Plan (Appendix C of the SMP) identifies a number of project-specific opportunities for restoration on both public and private properties inside and outside of shoreline jurisdiction, and also identifies ongoing City programs and activities, restoration partners, and recommended actions consistent with a variety of watershed-level efforts.

The following are some of the key features identified in the proposed SMP and this evaluation which protect and enhance shoreline ecological functions.

- Much of the City's shoreline area is in public ownership or separated by public right-of-way or railroad right-of-way; development is anticipated within shoreline jurisdiction in upland areas that are separated from the shoreline by these identified intervening public ownership and right-ofways.
- Regulations focus development and growth in areas that are already developed or where functions are already degraded, while protecting those areas that are ecologically intact or otherwise sensitive to development pressures.
- Vegetation conservation areas and structural setbacks throughout the
 City is based on environment designation and existing conditions. Larger
 setbacks are required in areas with a higher need for protection of
 shoreline resources.
- SMP provisions require any projects to identify and analyze for potential impacts. When potential for adverse ecological effects exists, projects are to follow mitigation sequencing to avoid, minimize and mitigate any impacts.
- Planned restoration along the shorelines of the City will provide opportunities to restore shoreline ecological functions.
- Emphasis on achieving no net loss of shoreline ecological functions throughout shoreline jurisdiction.

Given the above provisions of the SMP, including the Shoreline Restoration Plan and the key features listed above, implementation of the proposed SMP is anticipated to achieve **no net loss of ecological functions in the shorelines of Wenatchee**.

9 Long-Term Monitoring

City planning staff will track all land use and development activity, including exemptions, within their respective shoreline jurisdictions, and will incorporate actions and programs of other departments as well. Reports will be assembled by each jurisdiction that provides basic project information, including location, permit type issued, project description, impacts, mitigation (if any), and

monitoring outcomes as appropriate. Examples of data categories might include square feet of non-native vegetation removed, square feet of native vegetation planted or maintained, reductions in chemical usage to maintain turf, linear feet of eroding stream bank stabilized through plantings, linear feet of shoreline armoring removed or modified levees, changes to square footage of over-water cover, or number of fish passage barriers corrected.

The report would also recommend or describe relevant updates to WRIA, City goals and implementation plans, and outline current and ongoing implementation of various programs and restoration actions (by local government or other groups) that relate to watershed health.

The staff reports will be assembled to coincide with Comprehensive Plan updates and will be used, in light of the goals and objectives of the Shoreline Master Program, to determine whether implementation of the SMPs is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the Shoreline Analysis Report. In the long term, each local government should be able to demonstrate a net improvement in their respective shoreline environments.

Based on the results of these assessments, each local government may make recommendations for changes to its SMP.

10 References

- Berg Consulting. 2004c. Lake Chelan Subbasin Plan. Prepared for the Northwest Power and Conservation Council. May 2004. Available at:

 http://www.nwppc.org/fw/subbasinplanning/lakechelan/plan/EntirePlan.pdf
 [Accessed June 30, 2011].
- Chelan County. 2005. Comprehensive Plan. Adopted in 2000. Amended February 14, 2005. Available at: http://www.mrsc.org/govdocs/C461CompPlan.pdf [Accessed June 30, 2011].
- Chelan County website. Chelan County Natural Resource Department (CCNRD). http://www.co.chelan.wa.us/nr/nr_entiat_watershed.htm
- Chelan County Conservation District. 2004. Entiat Water Resource Inventory Area (WRIA 46) Management Plan. Prepared for the Entiat WRIA Planning Unit. October 2004. Available at: http://www.cascadiacd.org/index.php?page_id=255 [Accessed June 30, 2011].

- City of Cashmere. 2008. City of Cashmere Comprehensive Land Use Plan "The Heart of Cashmere". Adopted January 25, 1999. Amended January 14, 2008.
- City of Chelan. 2008. Strategic Plan 2008-2009. Approved on September 11, 2008 at City of Chelan Council meeting.
- City of Chelan. 2007. City of Chelan Comprehensive Land Use Plan. Adopted June 25, 1998. Available at:

 http://www.cityofchelan.us/planning/pdf/PlanningPDF/2007%20Comprehensive%20Plan.pdf [Accessed June 30, 2011].
- City of Chelan. Chelan Municipal Code. Available at: http://www.codepublishing.com/WA/Chelan/ [Accessed June 30, 2011].
- City of Chelan Parks and Recreation Department. 2007. Parks and Recreation Comprehensive Plan 2008-14. July 26, 2007.
- City of Entiat. 2008. City of Entiat Waterfront Visioning Process 2008/2009. October.
- City of Entiat. 2009a. City of Entiat Comprehensive Land Use Plan.
- City of Entiat. 2009b. Lake Entiat Waterfront Business District Subarea Plan. November 2009.
- City of Leavenworth. 2007. Downtown Master Plan. Prepared by the Community Development Department. September 2007.
- City of Leavenworth. 2003. City of Leavenworth Comprehensive Plan. Adopted in 2001. Amended August 12, 2003.
- City of Wenatchee. 2008. Planning to Blossom 2025 Wenatchee Urban Area Comprehensive Plan. Adopted April 26, 2007. Amended September 11, 2008.
- City of Wenatchee and Chelan County Public Utility District. 2003. Wenatchee Waterfront Sub-Area Plan.
- Cluer, B. Ecological Opportunities for Gravel Pit Reclamation On the Russian River. Russian River Pit Symposium Report Final. Available at:

 http://www.swr.noaa.gov/pdf/NMFS%20Symposium_final_9-29-09a_low_rez.pdf [Accessed June 28, 2011].
- Droll, R. 2007. Don Morse Park Master Plan Summary. Prepared for City of Chelan.

 April 2007. Available at:

 http://www.cityofchelan.us/parks/pdfdocs/donmorseparkmasterplanexecsummary.pdf. [Accessed June 30, 2011]

- Duke Engineering Services. 2000. Lake Chelan Fisheries Investigation. Final Report. Lake Chelan Hydroelectric Project No. 637. Prepared for the Chelan County Public Utilities Department. September 26, 2000. 95pp.
- Ecology. 2009. Wenatchee River Watershed Dissolved Oxygen and pH Total Maximum Daily Load Water Quality Improvement Plan (Draft). Washington State Department of Ecology Publication No. 09-10-075. October 2009.
- ESA Adolfson. 2009. Waterfront Master Plan. Prepared for City of Entiat, December 2009.
- J.T. Atkins & Company PC. 2003. Upper Valley Plan. Prepared for the Steering Committee and the Chelan County PUD.
- Landerman-Moore Associates and Robert W. Droll. 1997. City of Leavenworth Parks and Recreation Comprehensive Plan. Prepared for the City of Leavenworth.
- Laura Berg Consulting. 2004. Lake Chelan Subbasin Plan. Prepared for the Northwest Power and Conservation Council. May 28, 2004. http://www.nwppc.org/fw/subbasinplanning/lakechelan/plan/EntirePlan.pdf
- Norman, D.K. Reclamation of flood-plain sand and gravel pits as off-channel salmon habitat. Washington Geology, v. 26, no. 2/3, p. 21-28.
- Norman, D.K., Cederholm, C.J., and Lingley, W.S., Jr., 1998, Flood plain, salmon habitat, and sand and gravel mining. Washington Geology, v. 26, no. 2/3, p. 3-20.
- Norman, D.K. and R.L. Raforth. Innovations and trends in reclamation of metal-mine tailings in Washington. Washington Geology, v. 26, no. 2/3, p. 3-20.
- RH2 Engineering, Inc. 2007. WRIA 40A Watershed Plan. Prepared for WRIA 40A Squilchuck/Stemilt Planning Unit. May 2007.
- RH2 Engineering, Inc. and Geomatrix Consultants. 2008. Lake Chelan WRIA 47 Final Draft Planning Unit Charter. Prepared for Chelan County Natural Resources Department. Approved December 13, 2007.
- UCSRB [Upper Columbia Salmon Recovery Board]. 2007. Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan. August 2007.
- US Forest Service. 2010. The Holden Mine: Update on Site Cleanup Activities. June 23, 2010. Available at: http://www.fs.fed.us/r6/wenatchee/holden-mine/pdf/Holden-mine-update-Summer-2010.pdf [Accessed June 30, 2011].

- WDFW [Washington Department of Fish and Wildlife]. 2006. Diversion Screening and Fish Passage Inventory Report for Colockum Creek, Stemilt Creek and Squilchuck Creek. http://wdfw.wa.gov/hab/tapps/reports/wria40paper.pdf
- Wenatchee Watershed Planning Unit. 2006. Wenatchee Watershed Management Plan. Vol. 1. April 26, 2006.
- WRIA 40A Planning Unit. 2008. Final WRIA 40A Detailed Implementation Plan. October, 2008.

APPENDIX A: SHORELINE USE AND MODIFICATION MATRICES

[will be inserted when these use and modification matrices have been finalized by each City and the County]

APPENDIX B: LAND CAPACITY ANALYSIS