

# Shoreline Master Program for City of Chewelah



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## **CHAPTER 1 – INTRODUCTION**

### **Purpose and Intent**

The purpose of this shoreline master program (SMP) is to explore and discuss the ecological systems in and around the City of Chewelah's shorelines and to present a regulatory framework managing development of land along those shorelines in a manner consistent with the Department of Ecology's guidelines and Chewelah's comprehensive plan.

This plan will be the first SMP prepared by the City of Chewelah. The City has been without an SMP since the adoption of the Shoreline Management Act (SMA) in 1971. Recent growth in the community and an increased interest in protecting its shorelines has motivated the City to prepare this SMP. Development of a SMP has been underway in the community for approximately 10 years. Changes in City planning staff, state guidelines, and other events have prevented a SMP from being adopted.

### **Authority**

In 1971, the State of Washington adopted the SMA to ensure that the development of land along the state's major streams, rivers, lakes and ocean shores occur in a manner consistent with the maintenance and enhancement of the shorelines' ecological value. The SMA required the state to develop and maintain a comprehensive shoreline master program, containing goals, policies and development regulations for all shorelines of the state

### **Relationship to the Shoreline Management Act**

The City of Chewelah is required to develop and implement a SMP because Chewelah Creek is considered a shoreline of the state, as defined in the SMA, RCW 90.58.030. The Chewelah SMP establishes goals, policies and regulations for land along shorelines of the state. These shoreline regulations are in conformance with the SMA (RCW 90.58) and with the Department of Ecology shoreline guidelines (WAC-173-26) as revised in 2004.

The City of Chewelah is designing its SMP to have the goals and policies of the shoreline master program that will eventually be included in its comprehensive plan, while the City's zoning ordinance will include the development standards that implement the Shoreline Enhancement Overlay District established later in this SMP. By doing this, the City believes it more effectively integrates shoreline management into the normal land use planning and development regulation process meeting the intent of the SMA.

### **Structure**

This SMP is a stand-alone document, but it has components that could in the future be fully integrated into the comprehensive plan and development regulations. The goals and policies contained in this SMP may be included in the comprehensive plan during the 2007 update process. The regulations for the shoreline environments are intended to be included in the zoning ordinance as a new shoreline enhancement overlay district.

Section Two contains a summary of the shoreline system in Chewelah, providing an inventory of the shorelines' physical conditions and ecological functions. It describes the City's shorelines by reach, detailing habitat conditions, hydrology and unique ecological systems in each

segment of the community's shorelines and shorelands. A full summary of shoreline reaches can be found in Appendix A of this document.

Section Three, in compliance with the shoreline management program guidelines includes a series of elements to address the comprehensiveness of the shoreline environment. The following elements are addressed in this SMP:

- **An economic development element** - for the location and design of industries of statewide significance, transportation facilities, port facilities, tourist facilities, commerce, and other developments whose location is dependent on the use of shorelines.
- **A public access element** - provisions for public access to publicly owned waters.
- **A recreational element** - the preservation and enlargement of recreational opportunities, including but not limited to parks, beaches, and recreational areas.
- **A circulation element** - consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals and other public utilities and facilities, all correlated with the shoreline use element.
- **A use element** - which considers the proposed general distribution and general location and extent of the use on shorelines and adjacent land areas for housing, business, industry, transportation, agriculture, natural resources, recreation, education, public buildings and ground, and other categories of public and private uses of the land.
- **A conservation element** - for the preservation of natural resources, including, but not limited to scenic vistas, aesthetics, and vital estuarine areas for fisheries and wildlife protection.
- **A historic, cultural, scientific, and educational element** - for the protection and restoration of buildings, sites, and areas having historic, cultural, scientific or educational values.
- **A flood damage element** - considering the statewide interest in the prevention and minimizing of flood damages.

Section Four presents the shoreline environmental designations and the policies associated with each. It discusses particular land uses near shorelines, presenting policies on the manner in which they should be designed, permitted and operated. These shoreline environments include:

- **Urban Commercial** - is an area of more intense land use including multi-family residential and commercial development. The purpose of this environment is to ensure optimum use of shorelines that are either presently urbanized or planned for urbanization. Development in urban areas should be managed so it enhances and maintains shorelines for a variety of urban uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded.
- **Shoreline Residential** - is an area of shoreline that allows for residential development and related structures. This designation is intended for low-intensity residential development, similar in character and scale to what is existing in Chewelah's southwestern quadrant.

- **Urban Conservancy** – is an area of low intensity land use such as parks, water-related recreation, or other low intensity uses. 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.

Section Five presents a restoration plan and strategy, designed to improve the shoreline ecological function. It also presents a set of opportunities for restoration projects and identifies local, state, and federal agencies to assist in those restoration opportunities.

Section Six is the regulatory section of the SMP. It contains the regulations including use and setback requirements for development within the shoreline jurisdiction; procedures for the administration of the SMP, and provisions to protect critical areas within the shoreline enhancement overlay district.





## **CHAPTER 2 – SHORELINE SYSTEM**

### **Chewelah Regional Summary**

#### **Location**

Chewelah Creek is located in the Colville River Valley of Stevens County north of Spokane and south of Colville in northeastern Washington. The two main forks of the creek head high in the Selkirk Mountains and flow approximately 20 miles south into the Colville River about 1 mile south of the City of Chewelah.

#### **Geology, Geomorphology and Topography**

The bedrock of the Chewelah Creek Watershed consists of Paleozoic metasedimentary and Precambrian metasedimentary and metavolcanic rocks. The area's bedrock has been deformed by low and high angle reverse faults. A north-trending, low angle reverse fault on the east side of the Colville River Valley (Waggoner, 1990) raised the headwaters of Chewelah Creek relative to its mouth. The watershed is steep in its upper 16 miles largely as a result of the bedrock and faulting. Elevations range from 5,200 feet at the headwaters to 1,650 feet at the mouth.

During the late Pleistocene, the Colville Lobe of the Cordilleran Icesheet covered the Colville River Valley with at least 2300 ft of ice. Ice covered and rounded much of the watershed leaving glacial till in all but the highest elevations. The till consists of a heterogenous mix of clay, silt, sand and gravel. Meltwater streams deposited well sorted sands and gravels on the margins of the icesheet at the intermediate and lower elevations in the study area. Valley trains and kame terraces fill the intermediate elevations thus flattening the floors of these valleys (Carrara et al, 1995). Although mapped by Carrara et al (1995) as glacial outwash, the fan shaped features where the North and South forks of Chewelah Creek exit the mountain front appear to be post-glacial alluvial fans. These fans coalesce and extend to the sharp bend in US 395. The low lying ridge between US 395 and the railroad line northwest of town is likely moraine mantled by outwash.

Fluvial activity has likely dominated the geomorphic processes since the Colville Lobe retreated from the area by ~12,000 yr BP (Carrara et al, 1995). A dendritic drainage pattern developed prior to and/or following the last glaciation. Drainage density in the uplands is intermediate due to the resistant bedrock. Alluvial fans formed at the mouths of upland streams following deglaciation during the late Pleistocene and Holoene. At lower elevations, the post-glacial Colville River deposited silt, sand, gravel and some clay alluvium (Carrara et al, 1995).

#### **Climate**

The contemporary climate of the Chewelah Creek watershed is influenced by the mid-latitude continental mountainous location of the area. Mean monthly temperatures in Chewelah over the 1971-2000 ranged from 26<sup>o</sup>F in January to 67<sup>o</sup>F in July with the mean annual temperature at 47<sup>o</sup>F. The peak-growing season occurs from May through September. Mean annual precipitation was approximately 22 inches during this same period with over 60% of the precipitation falling in October through March. The cool season timing of the precipitation, combined with site latitude, continental location, and elevation results in much of this precipitation falling as snow (Western Regional Climate Center, 2004).

#### **Soils**

Soils in the study area are highly variable as a result of the mountainous terrain, differing

parent materials, and resulting microclimate differences. Soils can be generalized into three groups. Upland soils formed in glacial till, volcanic ash, and loess. Typical soil series include the Aits (Inceptisol), Newbell (Inceptisol), and Donovan (Mollisol). Soils in intermediate elevations of the Chewelah Creek Watershed formed in glacial outwash on terraces and terrace escarpments. These soils include the Bonner, Eloika, and Scrabblers series. The lowest elevations in the watershed include grassland-dominated mollisols in the Colville and Narcisse series. These soils are generally deep and can range from moderately well drained to poorly drained (Donaldson et al, 1982).

### **Vegetation**

Coniferous forests dominate vegetation in northeastern Washington. Uplands have traditionally been influenced by fire and aspect. North and east aspects are dominated by dense stands of Douglas fir, western larch, and lodgepole pine. Douglas fir and ponderosa pine occur as relatively open stands on south and west aspects (Northwest Power and Conservation Council, 2004).

Lowland stream corridors may have or lack a tree canopy. Where a tree canopy is absent, thin-leaf alder, snowberry, willows, mountain maple, red-osier dogwood, and black hawthorn are common. When a tree canopy is present, deciduous black cottonwood, water birch, and quaking aspen are present as well as conifer species including western red cedar, western hemlock, Douglas fir, grand fir, and western white pine (Northwest Power and Conservation Council, 2004).

### **Land Cover & Land Uses**

Much of the Chewelah Creek watershed (greater than 80%) lies within the Colville National Forest where multiple uses prevail. The uplands have traditionally been used for logging, mining, valley bottom mining, and grazing. Much of the lower portion of the watershed is covered by the City of Chewelah business, residential and open space (including the City of Chewelah Park) areas.

### **Water Quantity and Quality**

Chewelah Creek originates high in the Selkirk Mountains as a result of springs, rainfall, and snowmelt. Its discharge reflects the monthly precipitation regime and spring snowmelt. Discharge is typically highest in May and secondarily in April. Conversely, discharge is lowest in August (U.S. Geological Survey, n.d.).

Water quality problems have been noted in the watershed in the recent past. Fecal coliform, dissolved oxygen, pH, and temperature were all issues on Chewelah Creek, and pH has been an issue of concern on Bayley Creek, a tributary to the North Fork of Chewelah Creek, in the 1990s (U.S. Environmental Protection Agency, n.d.).

As expected, the lower portions of Chewelah Creek have been aggrading over time. This has resulted in increased bank erosion, a widening channel, and loss of riparian vegetation (Kessler et al, 1997).

## CHAPTER 3 – GOALS AND POLICIES

The following elements have been considered for the management of the City's shorelines: Shoreline Use; Economic Development; Public Access and Circulation; Conservation; Recreation; Historical, Cultural, Scientific, and Educational; Residential Use; and Shoreline Stabilization and Flood Protection.

The goals and policies of each element have been incorporated into the Shoreline Use Activity Policies. These policies, in turn, are reflected in the Shoreline Enhancement Overlay District of the City's Zoning Ordinance, used to implement the goals and policies for shoreline management outlined in this plan.

The Revised Code of Washington (RCW) defines "Shorelines" as all of the water areas of the state, including reservoirs, and their associated shorelands, together with the lands underlying them where the mean annual flow is greater than twenty cubic feet per second and the wetlands associated with such upstream segments. Of the three creeks within the urban growth area of the City of Chewelah, only Chewelah Creek meets the criteria of "shoreline" under the RCW definition.

### Shoreline Use

- Goal 1.0      Establish and implement policies and standards for land use consistent with SMA along the shorelines of Chewelah. These policies and standards should insure the overall design of land use patterns and will locate activity and development in areas of the shoreline that will be compatible with adjacent uses and will be sensitive to existing shoreline environments, habitat, ecological systems, and historic and cultural sites.
- Policy 1.1      Proposed shoreline uses shall be developed, distributed, and located in a manner that will maintain or improve the health, safety, and welfare of the public when such uses must occupy shoreline areas.
- Policy 1.2      Ensure activities and facilities are located along shorelines in such a manner as to retain or improve the quality of the environment as designated for that area.
- Policy 1.3      Ensure multiple uses of a site and encourage compatible adjacent land uses in shoreline areas.
- Policy 1.4      Shoreline uses shall not infringe upon the rights of others, upon the rights of private ownership, or cause user conflicts.
- Policy 1.5      Utility facilities and right-of-ways should be placed outside shoreline areas to the maximum extent possible. When utility lines require a shoreline location, they should be placed underground.
- Policy 1.6      Design and locate utility facilities in a manner that preserves the natural landscape, shoreline ecology, and minimizes conflicts with present, planned, and future land uses.
- Policy 1.7      Land adjacent to the shorelines should be developed in a manner consistent with the shoreline master program.

- Policy 1.8 Encourage use of shorelines area by uses that are water dependent or water related, and prohibit uses that could contaminate the stream or inhibit public access (e.g. storage of trash or hazardous materials). Encourage local businesses to protect and enhance the creek as an amenity for their property.
- Policy 1.9 All shoreline uses shall not cause a net loss of shoreline ecological function, and shall be located, designed, constructed or maintained to avoid, reduce, or minimize adverse impacts to water quality and fish and wildlife resources.

### **Economic Development**

- Goal 1.0 To insure healthy, orderly economic growth by allowing those economic activities within Chewelah's shorelines which will be an asset to the economy of the area and which minimize and avoid adverse impacts on the quality of the shoreline environment and its ecological functions.
- Policy 1.1 Develop the recreational industry along shorelines in a manner that enhances the public enjoyment of the shoreline.
- Policy 1.2 Economic activity taking place along the City's shorelines shall operate in a manner that does not harm the quality of the environment of the site or adjacent shorelines.
- Policy 1.3 Before commercial or industrial development is permitted within a shoreline, it is the proponent's responsibility to demonstrate that upland areas are not feasible for the intended economic activity.
- Policy 1.4 Proposed economic use of a shoreline should be consistent with this Comprehensive Plan, the Chewelah Parks and Recreation Master Plan, the Chewelah Creek Public Access and Recreation Plan, and the recommendations of the Chewelah Creek Watershed Management Study. Conversely, upland uses should be consistent, in accordance with RCW 90.58.340, with the purpose and intent of these shoreline policies as they affect the shoreline environment.
- Policy 1.5 Limit shoreline industrial and commercial activities to those that are classified as water-dependent or water-oriented uses, except where authorized by individual review, as set forth in the Shoreline Enhancement Overlay District of the City's Zoning Ordinance.
- Policy 1.6 No net loss of ecological functions of Chewelah Creek shall result from development within shoreline jurisdiction.

### **Public Access and Circulation.**

- Goal 1.0 To enhance and provide safe, reasonable, and adequate pedestrian access to the shorelines of Chewelah for the public where such access and circulation routes will have the least possible adverse effect on unique or fragile shoreline features and existing ecological systems, as well as restoring and enhancing shoreline vegetation.

- Policy 1.1 Public access to shorelines should be incorporated into both private and public shoreline development proposals except for low-density residential development, or where deemed inappropriate due to safety hazards, inherent security problems, environmental impacts, or conflicts with adjacent uses. Refer to the Chewelah Parks and Recreation Master Plan and the Chewelah Creek Public Access and Recreation Plan.
- Policy 1.2 Public access to shorelines afforded by street-ends, i.e., right-of-ways, should be made available and enhanced.
- Policy 1.3 Retain existing public access to shorelines and continue to obtain recreational access easements, for non-motorized use where appropriate and reasonable.
- Policy 1.4 Locate and construct access sites providing off-road rest and scenic stops where topography, natural, cultural, and aesthetic features warrant and encourage acquisition of such sites by purchase, lease, or gift where deemed appropriate to the public interest.
- Policy 1.5 Public views from shoreline and upland areas should be preserved and enhanced. Enhancement of views should not be construed to mean excessive removal of vegetation that obstructs or impairs views.
- Policy 1.6 Ensure public access is provided in a manner sensitive to the unique characteristics of the shoreline and preserves the natural character, vegetation, quality of the environment, and any adjacent wetlands.

**Conservation.**

- Goal 1.0 Preserve, protect, and restore the unique renewable and non-renewable, resources, or features of shorelines, and their associated ecological functions.
- Policy 1.1 Preserve cultural and historic features and resources.
- Policy 1.2 Preserve the scenic and aesthetic quality of shorelines and vistas restoring and enhancing shoreline vegetation.
- Policy 1.3 Ensure "no net loss of ecological functions" of the creeks.
- Policy 1.4 Preserve the natural character of streams and riparian areas. Ensure that public and private development, including public access and recreational development, minimizes disturbance of environmental resources and shoreline ecosystems.

**Recreation.**

- Goal 1.0 Have a broad spectrum of recreational opportunities in shoreline areas without destroying the integrity and character of the shoreline.
- Policy 1.1 Recreational developments shall provide public facilities that will adequately protect the shoreline during peak tourist loads so as to preserve the integrity of the environment in which it is located.
- Policy 1.2 Proposed and existing recreational uses shall be safe, healthy, diverse, and inclusive, and make adequate provisions for the following:
- Pedestrian access, both inside and outside the development.

- Proper water, solid waste, and sewage disposal methods.
  - Security and fire protection.
  - Prevention of overflow and trespass onto adjacent properties.
  - Buffering of development from adjacent private property.
- Policy 1.3 Encourage recreational opportunities compatible with adjacent uses and enhance the value of tourism as an asset to Chewelah.
- Policy 1.4 State, county, local governments, and non-profit organizations should be encouraged to acquire additional shoreline property for public recreational use.
- Policy 1.5 The City shall use the guidance and direction of the Comprehensive Plan, Chewelah Parks and Recreation Master Plan, and the Chewelah Creek Public Access and Recreation Plan for additional recreational goals and site designs.
- Policy 1.6 Protect and enhance public views of streams and riparian areas from adjacent upland areas, consistent with the need to protect environmental resources (including vegetation).
- Policy 1.7 Increase public access to Chewelah Creek by developing dedicated street ends (of streets that dead-end at a creek) into public access sites, and adding overlooks or seating to bridges when they are replaced or reconditioned.
- Policy 1.8 The coordination of local, state, and federal recreation planning should be encouraged. Shoreline developments should be consistent with adopted park, recreation, and open space plans.
- Policy 1.9 Facilities for intensive recreational activities shall be permitted only where sewage disposal and garbage disposal can be accomplished without adversely affecting the environment.
- Policy 1.10 Linkage of shoreline parks, recreation areas, and public access points, such as hiking paths, bicycle paths, and easements should be encouraged.
- Policy 1.11 Development of small-dispersed recreation areas should be encouraged to avoid undue use pressures at a few points along the shoreline.
- Policy 1.12 On City owned and managed property the City will work toward restoring shorelines to their natural state balancing increased public access, recreation value, and ecological function.

**Historical, Cultural, Scientific, and Educational.**

Goal 1.0 Protect, preserve, and restore important historical, cultural, scientific, and educational sites located along the shorelines of Chewelah for general public use and enjoyment.

- Policy 1.1 Acquire sites deemed valuable in an educational or cultural sense through purchase or gift to assure their protection and preservation.

- Policy 1.2 Ensure that access to historic, educational, and cultural sites does not reduce their attraction or degrade the quality of the environment.
- Policy 1.3 Suspected significant sites and newly discovered sites should be preserved until their value for retention is determined and alternatives are explored.
- Policy 1.4 Historical or culturally significant sites are of high priority in the selection of recreational areas.
- Policy 1.5 Significant historic, educational, and cultural sites may be considered for multiple uses.
- Policy 1.6 Educate the public about the natural function, historic role and recreational benefits of Chewelah Creek. Encourage the entire community to get involved in reserving and preserving this resource.
- Policy 1.7 Adverse impacts to areas deemed archeologically, culturally, and historically significant shall be avoided.

**Shoreline Stabilization and Flood Protection.**

Goal 1.0 Development or use activities along City shorelines should be designed to reduce the impacts by flooding.

- Policy 1.1 Actions to reduce impacts from flooding, erosion, and accretion include all structural and non-structural means, including biotechnical (bioengineered) bank stabilization, and other means of shoreline protection.
- Policy 1.2 Structural solutions to reduce shoreline damage should be allowed only after it is demonstrated non-structural solutions would not be able to reduce the damage.
- Policy 1.3 Ensure proposals for shoreline stabilization and flood protection conform to other applicable shoreline use and activity policies and regulations, where appropriate.
- Policy 1.4 Encourage the use of native plant materials in restoration of riparian areas or landscaping new development adjacent to streams or wetlands.
- Policy 1.5 Encourage the design and use of naturally regenerating systems of erosion control and water quality treatment in riparian areas.
- Policy 1.6 Shoreline stabilization and flood protection activities should be undertaken in a coordinated manner among affected property owners and public agencies, and should consider entire systems or sizeable stretches of riparian shorelines.
- Policy 1.7 Shoreline stabilization and flood protection works should provide the following:
- Protection of the physical integrity of shoreline processes and other properties that may be damaged by interruptions of the geo-hydraulic system.

- Protection of water quality and natural ground water movement.
  - Protection of valuable fish and wildlife, and their habitats,
  - Preservation of valuable recreation resources, aesthetic values and shoreline features, and scenery.
  - Reestablishing the vegetation of shoreline areas with native species.
- Policy 1.8 Bank protection measures should be located, designed, and constructed primarily to prevent damage to existing development.
- Policy 1.9 All new development should be located and designed to prevent or minimize the need for shoreline stabilization measures and flood protection measures. New development requiring shoreline stabilization should be discouraged.
- Policy 1.10 Stabilization and protection measures should be designed using best available technical practice and guidance, such as the Integrated Streambank Protection Guidelines available from the Washington State Department of Fish and Wildlife.
- Policy 1.11 Use of car bodies, uprooted tree stumps, scrap building material, asphalt from street work, or any other discarded equipment or appliances for shoreline stabilization shall be prohibited.
- Policy 1.12 The design of stabilization or protection measures of publicly financed or subsidized measures shall consider providing public pedestrian access to shorelines for low-intensity outdoor recreation.
- Policy 1.13 Natural features, such as snags, stumps, or uprooted trees, which support fish and other aquatic systems should be left undisturbed.
- Policy 1.14 All flood protection measures should be placed landward of the natural floodway boundary.
- Policy 1.15 New structural flood hazard reduction measures shall only be allowed when it is demonstrated by a scientific and engineering analysis that they are necessary to protect existing development and that nonstructural measures are not feasible.

**Residential.**

- Goal 1.0 Residential growth and development should take place in appropriate areas being sensitive to and non-destructive to the shoreline environments of Chewelah.
- Policy 1.1 Ensure proposed residential developments are compatible with the quality of shoreline areas.
- Policy 1.2 Residential developments should be designed and located to preserve the natural landscape and shoreline ecology, and to minimize conflicts with present and planned land uses.



- Policy 1.3 Residential development located along shorelines shall comply with all applicable floodplain management ordinances and other city management ordinances.
- Policy 1.4 Residential development should be permitted only where there are adequate provisions for utilities, circulation, and access.
- Policy 1.5 The density of development, lot coverage, and height of structures should be appropriate to the physical capabilities of the site.
- Policy 1.6 New residential developments should provide adequate setbacks from the water and between structures to protect natural features, preserve views, and minimize use conflicts.
- Policy 1.7 Residential development should be designed to preserve shoreline vegetation, control erosion, protect water quality, preserve shoreline aesthetic characteristics, and provide normal public use of the water.
- Policy 1.8 Residential development and accessory uses shall be prohibited over water.
- Policy 1.9 New residential development should be encouraged to cluster dwelling units in order to preserve natural features and wetlands, minimize physical impacts, and reduce utility and road costs.

### **Commercial**

- Goal 1.0 Commercial development should take place in appropriate areas being sensitive to and non-destructive to the shoreline environments of Chewelah.
- Policy 1.1 Commercial developments should be located inland from the shoreline areas, and shall be prohibited over water.
- Policy 1.2 New commercial development should be located in areas with existing commercial uses and in a manner minimizing sprawl and inefficient use of shoreline areas.
- Policy 1.3 Structures should not significantly impact views from upland properties, public roadways, or from the water.
- Policy 1.4 Commercial development in shoreline areas should be encouraged to provide physical and/or visual access to shorelines.
- Policy 1.5 Parking facilities are not encourage in shoreline jurisdiction and should be located to minimize their impacts on shorelines by being located inland away from the waters' edge.
- Policy 1.6 Commercial development will not result in a net loss of shoreline ecological functions or have significant adverse impact to other shoreline uses, resources and values.

### **Industrial**

- Goal 1.0 Industrial development should take place in appropriate areas being sensitive and non-destructive to the shoreline environments of Chewelah.

- Policy 1.1 Industrial uses along shorelines shall be water-dependent and/or water-related.
- Policy 1.2 Cooperative use of common industrial properties with other land uses is encouraged in shoreline areas.
- Policy 1.3 New or expanded industrial development along shorelines should be designed, constructed, and maintained to minimize adverse environmental impacts.
- Policy 1.4 Public access along industrial shoreline areas is encouraged where it does not endanger public health, safety, or welfare.
- Policy 1.5 Industrial development will not result in a net loss of shoreline ecological functions or have significant adverse impact to other shoreline uses, resources and values.

### **Landfills**

*Landfill means the addition of soil, sand, rock, gravel, sediment, earth retaining structure, or other material to an area waterward of the Ordinary High Water Mark (OHWM), in wetlands, or on shorelands in a manner that raises the elevation or creates dry land.*

- Goal 1.0 Landfills should be limited to the maximum extent possible and shall not create a loss of ecological function of shoreline areas.
  - Policy 1.1 Draining or filling of wetlands should be prohibited.
  - Policy 1.2 Landfills should be allowed only when necessary to facilitate water dependent and/or public uses permitted by the City's shoreline management goals and policies.
  - Policy 1.3 Shoreline fills should be designated and located so there will be no significant damage to existing ecological systems or natural resources, and no alteration of local currents, surface water drainage, or flood waters which would result in a hazard to adjacent life, property, and natural resource systems.
  - Policy 1.4 Factors to be considered in evaluating fill projects include: total water surface reduction, impediment to water flow and circulation, reduction of water quality, and destruction of habitat.
  - Policy 1.5 The perimeter of landfills shall be designed to avoid or eliminate erosion and sedimentation impacts, both during initial landfill activities and over time.
  - Policy 1.6 Where permitted, landfills should be the minimum necessary to provide for the proposed use.

### **Solid Waste Disposal**

- Goal 1.0 Solid waste disposal should be limited in shoreline areas to prevent contamination and entry into surface waters.
  - Policy 1.1 Solid waste disposal should not be permitted within the shoreline area affected by the City's shoreline goals and policies, except where necessary for temporary residential storage.

- Policy 1.2 Sanitary landfills shall not be located in shoreline areas.
- Policy 1.3 All debris, overburden, and other waste materials from construction should be handled, maintained, and disposed of in such a way to prevent their entry into any surface waters.

### Transportation

- Goal 1.0 Transportation facilities in shoreline areas should be located, designed, constructed, and maintained to minimize adverse impacts on the land and water environment, and should respect the natural character of the shoreline and make every effort to preserve wildlife, aquatic life, their habitats, and wetland areas.
  - Policy 1.1 Highways, roads, railways, and parking facilities should be located away from shoreline areas.
  - Policy 1.2 New transportation facilities should be located and designed to minimize the need for shoreline protection measures. Waterway crossings should be minimized to the maximum extent possible.
  - Policy 1.3 Transportation facilities should avoid hazardous shoreline areas, i.e., slide and slump areas, poor foundation soils, and wetlands.
  - Policy 1.4 Location of roads and railroads should not require the re-routing of shoreline channels.
  - Policy 1.5 Roads and railroads should be designed, constructed, and maintained to minimize erosion and to permit natural movement of ground water and floodwaters.
- Goal 2.0 Transportation facilities should encourage public access to shorelines.
  - Policy 2.1 Trail and bicycle systems sensitive to shoreline environments should be encouraged along shorelines.
  - Policy 2.2 Joint use of transportation corridors within shoreline areas for roads, utilities, and non-motorized forms of transportation is encouraged.
  - Policy 2.3 Abandoned or unused road or railroad right-of-ways, which offer opportunities for public access to or adjacent to the water, should be acquired and/or retained for public access.



## CHAPTER 4 – SHORELINE ENVIRONMENTS

### Shoreline Enhancement Overlay District

Enactment of the SMA in 1971 reflected a growing concern among the residents of Washington State with the adverse effects of unplanned and uncoordinated development on the states shorelines. While the SMA provides the basis for the management and regulation of shoreline development, it also aims to foster and plan for all reasonable and appropriate shoreline uses that enhance and conserve shorelines rather than detract from them.

The SMA establishes a cooperative program of shoreline management between local government and the state. Local government has the primary responsibility for initiating and administering the regulatory program for shoreline development. The Washington State Department of Ecology (Ecology) acts primarily in a supportive and review capacity with primary emphasis on ensuring consistency with the policy and provisions of the SMA and local shoreline programs.

A Shoreline Master Program (SMP) serves as the standard for implementation of state policy. From the City's perspective, a SMP also articulates local policies and use regulations governing the physical development of land and water resources affecting shorelines. If the State recognizes a waterway as being a "shoreline of the state" it must be managed under the policies of the SMA. Within the City of Chewelah, only Chewelah Creek is considered a "shoreline of the state," requiring the City to develop and implement a SMP for the protection of that shoreline.

As set forth in the SMA, "shorelands" or "shoreland areas" means those lands extending landward for two hundred feet as measured on a horizontal plane from the OHWM and includes floodways and contiguous floodplain areas landward two hundred feet from such floodways; and all wetlands and river deltas associated with Chewelah Creek. This shoreline jurisdiction is depicted on figure 4.1 below.

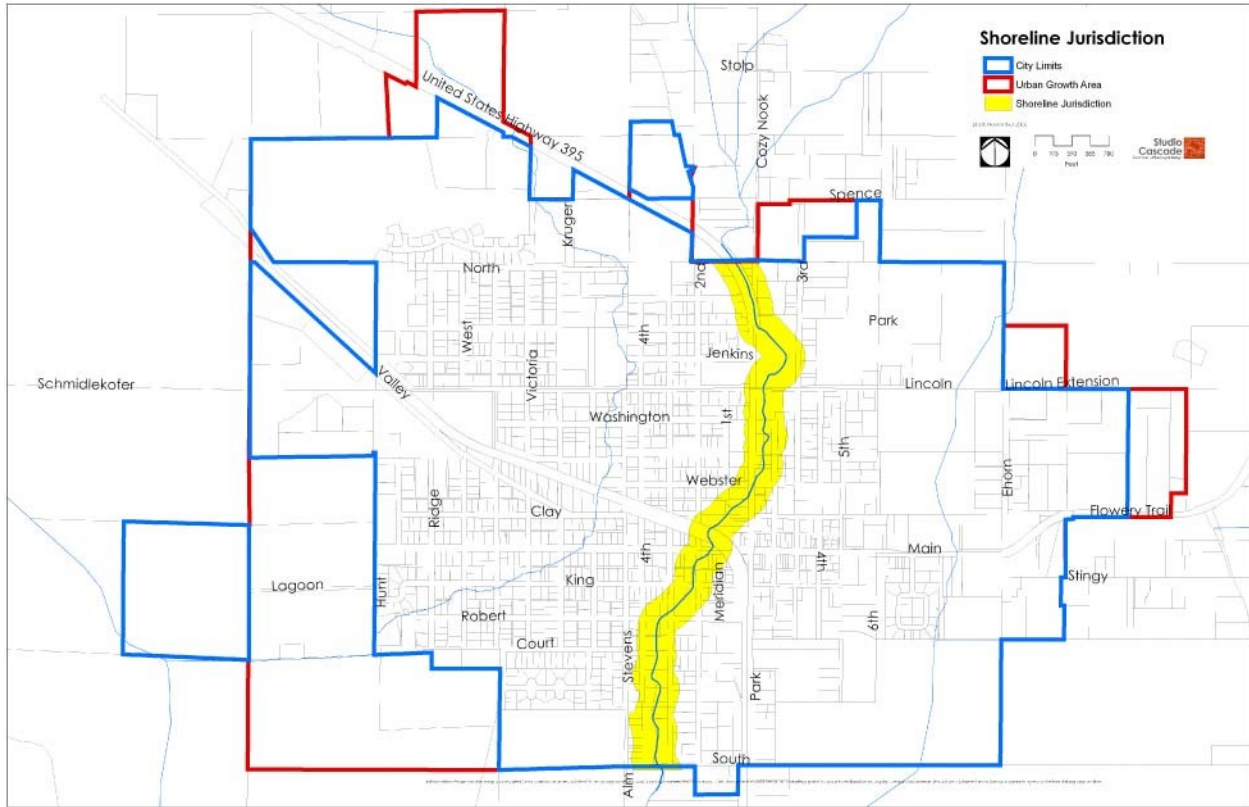


Figure 4.1: Shoreline Jurisdiction

Chewelah Creek is currently designated as critical area. This shoreline master program does not remove or change that designation. However, where designated critical areas occur within a shoreline of the state the SMA governs the management and designation of these critical areas. This transfer of authority is a result of legislation passed in 2003 by the Washington State Legislature. Even with this transfer of authority, state law allows the protection of critical areas within shoreline jurisdiction to have equal protection as critical areas outside shoreline jurisdiction. Figure 4.2 identifies critical areas within the shoreline jurisdiction.

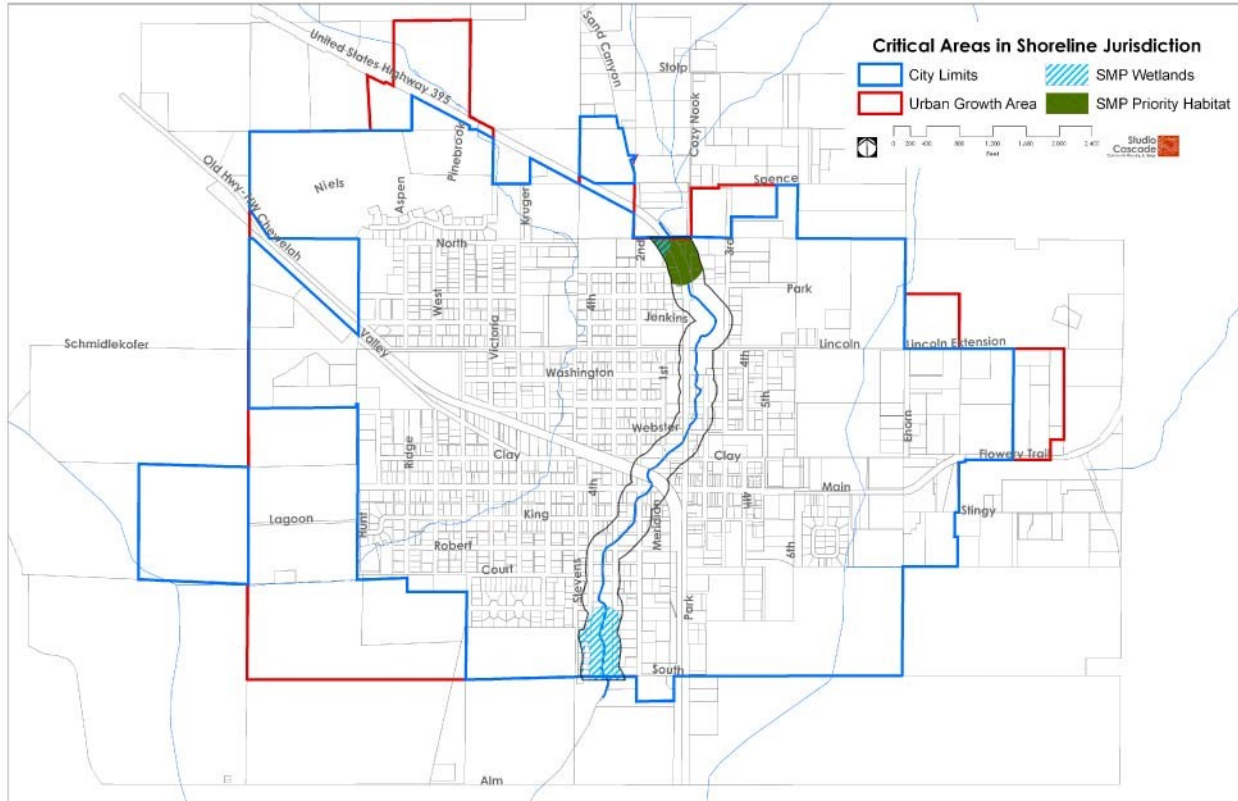


Figure 4.2: Critical Areas in Shoreline Jurisdiction

### Shoreline Environment Designations

The City of Chewelah, based on the environment designation criteria below and the inventory and analysis prepared by Central Washington University, has established 3 designations for the shorelines of Chewelah Creek. The three designations are Urban Commercial, Shoreline Residential, and Urban Conservancy. These designations have been delineated geographically into 3 different reaches as defined by the inventory and analysis. Regulations have been established in the City's Zoning Ordinance for activities and development occurring within these shoreline environments.

What follows is a description of the designation criteria used to determine the environment designation on the City's shorelines. Additionally, the previously mentioned goals and policies can be used to manage appropriate use and development within this shoreline environment.

### Urban Commercial Environment

The Urban Environment is an area of more intense land use including multi-family residential and commercial development. The purpose of this environment is to ensure optimum use of shorelines that are either presently urbanized or planned for urbanization. Development in urban areas should be managed so it enhances and maintains shorelines for a variety of urban uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded.

### Management Policies

- A. In regulating uses in the "urban" environment, first priority should be given to intense commercial development and mixed-use developments.
- B. Full use of existing urban areas should be achieved before further expansion of intensive development is allowed. Reasonable long-range projections of regional economic need should guide the amount of shoreline area designated urban commercial.
- C. Policies and regulations shall assure no net loss of shoreline ecological functions as a result of new development. Where applicable, new development shall include environmental cleanup and restoration of the shoreline to comply with any relevant state and federal law.
- D. Where feasible, visual and physical public access should be required as provided for in WAC 173-26-221(4)(d).
- E. Aesthetic objectives should be implemented by means such as sign control regulations, appropriate development siting, screening and architectural standards, and restoration and maintenance of natural vegetative buffers.

### Designation Criteria

Shorelines to be designated urban should meet at least one (1) of the following criteria.

- A. Areas used or designated for high intensity commercial, recreational, or for multiple-family residential development.
- B. Areas of lower intensity use, where surrounding land use is urban and urban services are available.
- C. Areas to be designated urban should not have biophysical limitations to development, such as floodplains, steep slopes, slide hazard areas, marshes, bogs or swamps, and/or sensitive areas.

### **Urban Conservancy Environment**

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.

### Management 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 non-water oriented uses.



### Designation Criteria

Urban conservancy environments are areas that are compatible with maintaining or restoring of the ecological functions of the area, which are generally not suitable for water-dependent uses and that lie in incorporated municipalities, urban growth areas. An urban conservancy environment designation should be applied to shoreline areas if any of the following characteristics apply:

- A. They are suitable for water-related or water-enjoyment uses;
- B. They are open space, flood plain or other sensitive areas that should not be more intensively developed;
- C. They have potential for ecological restoration;
- D. They retain important ecological functions, even though partially developed; or
- E. They have the potential for development that is compatible with ecological restoration.

Lands that may otherwise qualify for designation as urban conservancy and which are designated as "mineral resource lands" pursuant to RCW 36.70A.170 and WAC 365-190-070 may be assigned a designation within the "urban conservancy" environment that allows mining and associated uses in addition to other uses consistent with the urban conservancy environment.

### ***Shoreline Residential Environment***

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

### Management Policies

- A. Standards for density, minimum frontage, width, setbacks, lot coverage limitations, buffers, shoreline stabilization, vegetation conservation, critical area protection, and water quality shall be set to assure no net loss of shoreline ecological functions, taking into account the environmental limitations and sensitivity of the shoreline area, the level of infrastructure and services available, and other comprehensive planning considerations.
- B. Multifamily and multi-lot residential and recreational developments should provide public access and joint use for community recreational facilities.
- C. Access, utilities, and public services should be available and adequate to serve existing needs and/or planned future development.

### Designation Criteria

Assign a "shoreline residential" environment designation to shoreline areas inside urban growth areas, as defined in RCW 36.70A.110, incorporated municipalities, "rural areas of more intense development," or "master planned resorts," as described in RCW 36.70A.360, if they are predominantly single-family or multifamily residential development or are planned and platted for residential development.

### Environmental Designation Maps

Maps and descriptive material showing the geographic location and extent of the urban shoreline environment are adopted as part of the City’s shoreline development regulations, the Shoreline Enhancement Overlay District in the Chewelah Zoning Ordinance. These maps are included as part of this Comprehensive Plan. However, the official map of shorelines for Chewelah is located on the City of Chewelah Official Designations Map.

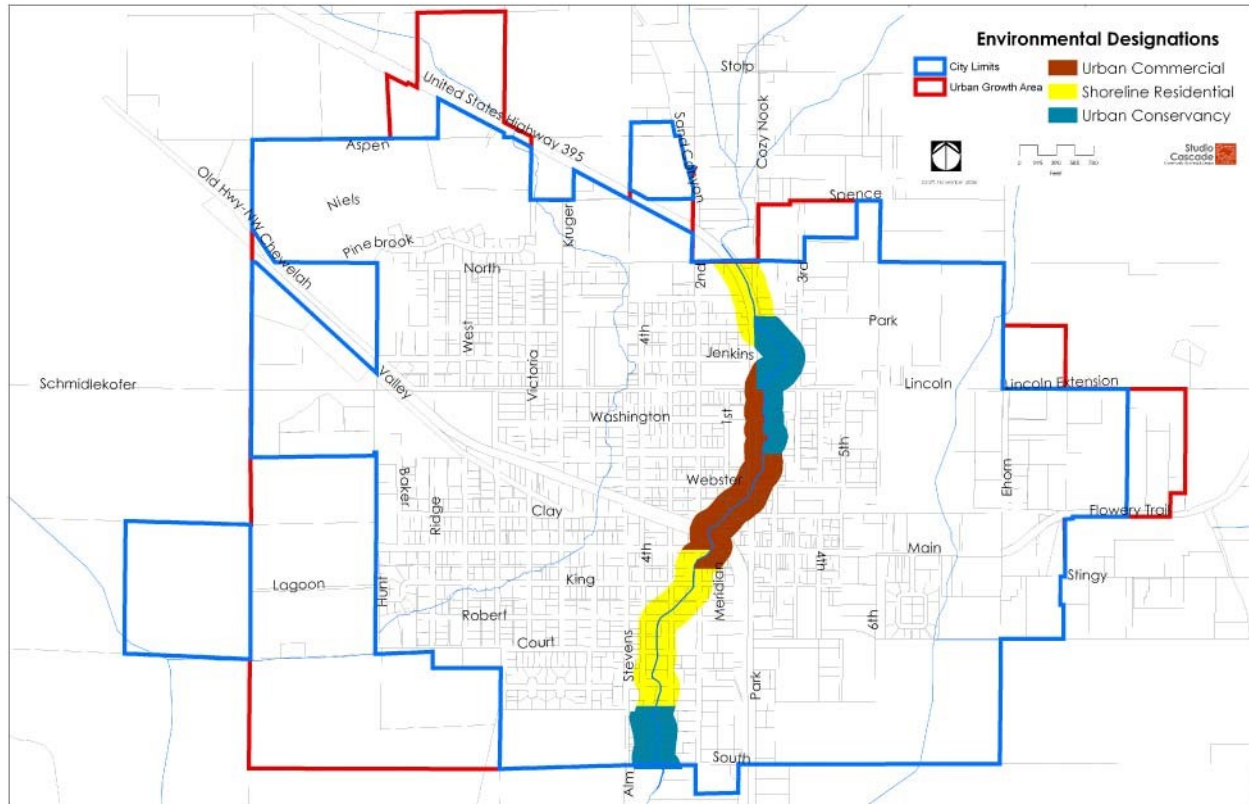


Figure 4.3: Environmental Designations

The provisions of the Shoreline Enhancement Overlay District apply to all shorelines of the state as defined herein. Where conflicts arise between the shoreline development regulations and other land use regulations applicable in shoreline areas, the more restrictive will apply. If no designation can be identified, the area shall be automatically assigned the urban conservancy designation.

## CHAPTER 5 - RESTORATION PLAN AND STRATEGY

### Measures to Restore Ecosystem Wide Processes

The Chewelah Creek Watershed Management Plan (1994) and the City of Chewelah Comprehensive Plan (2002) both provide many useful recommendations to protect and restore ecosystem-wide processes important to maintaining ecologically functioning shorelines.

### Restoration

Water quality issues: Effects on watershed from upland developments can be addressed through integration with GMA planning. Work with Washington Department of Transportation, Stevens County Road Department and Burlington Northern Railroad to direct storm runoff away from waterways or install settling basins/containment ponds. Work with the US Forest Service and Stevens County Conservation District to reduce fertilizer and pesticide use on agricultural, forestry, and residential land near the shoreline. Work with the City of Chewelah to upgrade sewage pipes and stormwater mains.

Riparian habitat issues: Work with the US Forest Service and Stevens County to implement a watershed program to restore riparian vegetation and function. Retrofit shore protection structures with bioengineered approaches. Maintain and enhance the biological and physical functions and values of wetlands including the ability to control and filter storm water runoff. Provide for reasonable buffers around wetlands in order to provide a local habitat for wetland plant and animal communities, and to reduce or minimize intrusions from humans and domestic animals. Stewardship strategies should be implemented for the long-term management of wetlands.

### Reach Specific Opportunities for Restoration and Protection

	Reach 1	Reach 2	Reach 3
<b>Opportunity A</b>	Encourage property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species.	Encourage property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species.	Encourage property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species.
<b>Opportunity B</b>	Protect priority species habitat in the north end of the reach.	Restore native riparian vegetation buffers along proposed public access points.	Restore native riparian vegetation buffers along proposed public access points.
<b>Opportunity C</b>	Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.	Develop stormwater diversions or containment ponds to restore stream habitat and wetlands from non-point pollution runoff.	Mitigate DOE facilities.

	Reach 1	Reach 2	Reach 3
<b>Opportunity D</b>	Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.	Mitigate DOE facilities.	Prevent further revetments and encourage the planting of native vegetation to stabilize streambanks with bioengineered approaches.
<b>Opportunity E</b>	Develop stormwater diversions or containment ponds to restore stream habitat and wetlands from non-point pollution runoff.	Prevent further revetments and encourage the planting of native vegetation to stabilize streambanks with bioengineered approaches.	Develop stormwater diversions or containment ponds to restore stream habitat and wetlands from non-point pollution runoff.
<b>Opportunity F</b>	Restore a native riparian vegetation buffers along its proposed public access points.	Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.	Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.
<b>Opportunity G</b>	Prevent further revetments and encourage the planting of native vegetation to stabilize streambanks with bioengineered approaches.	Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.	Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.
<b>Opportunity H</b>			Wetland areas should be protected from further encroachment by residential and agricultural development.

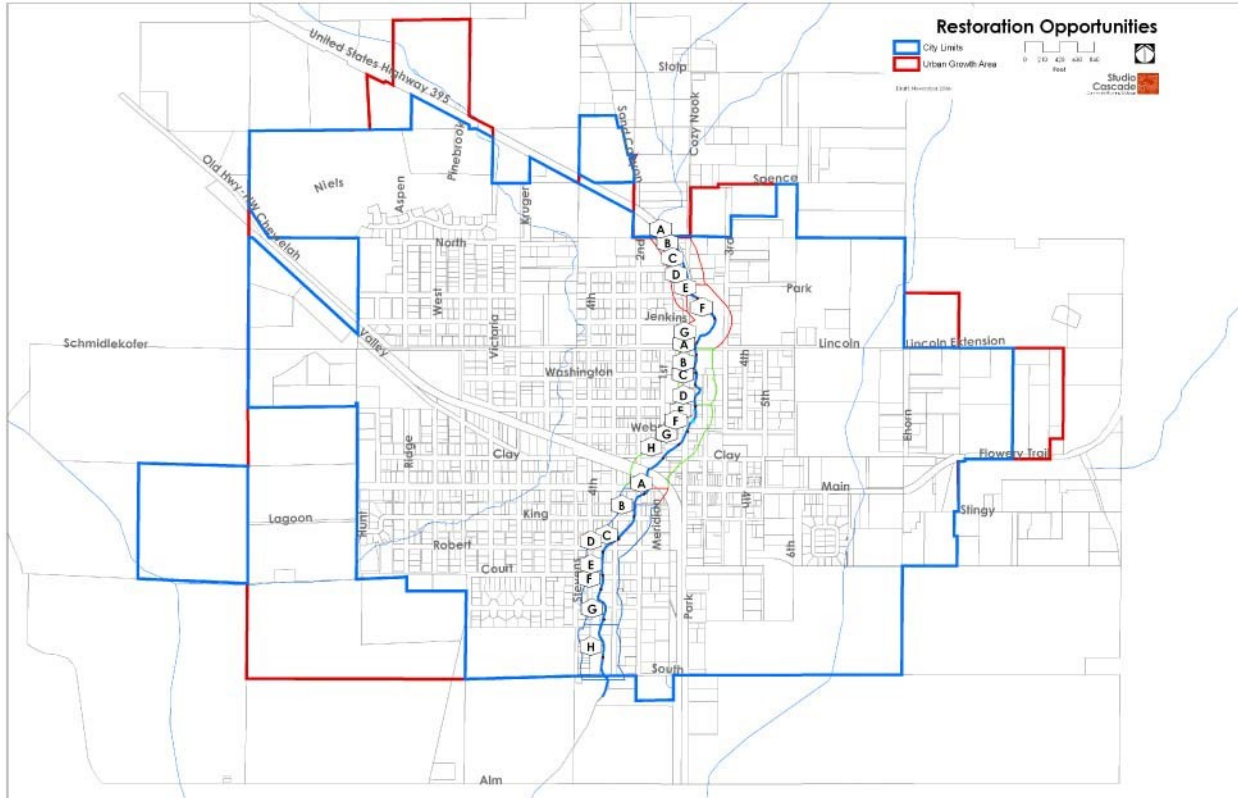


Figure 5.1: Opportunity Map

### Goals and Policies of the Restoration Plan

The Shoreline Management Guidelines require that the City of Chewelah include in its sSMP a shoreline restoration plan. This plan must include goals and policies that promote the restoration of shoreline ecological functions. The concept of ecological functions recognizes that any ecological system is composed of a wide variety of interacting physical, chemical and biological components that are interdependent in varying degrees and collectively produce the landscape and habitats that support and maintain shoreline ecological functions. The purpose of the following section is to identify goals, policies and implementation measures that will serve to improve the overall condition of habitats and resources of the shorelines of Chewelah Creek. In addition to the shoreline goals and policies established above the following goals and policies for the restoration plan are as follows:

#### Restoration Goals and Policies

- Goal 1.0      Ensure that "no net loss" of shoreline ecological function results from development
  - Policy 1.1      Use existing regulations to ensure permitted development will not cause a net-loss of shoreline ecological functions and protect priority species habitat.
    - Objective 1.1.1      Develop regulations in the shoreline master program to ensure implementation of the no net-loss policy.
    - Objective 1.1.2      Enforce no net-loss regulations through permit conditions and post permit project monitoring.

- Policy 1.2 Emphasize the prevention of degradation of shoreline ecological functions and identify mitigation measures prior to issuance of development approvals consistent with the requirements of WAC 173-26-201(e) pertaining to environmental impact mitigation.
  - Policy 1.3 Monitor exempt and permitted development and uses to assure compliance with the goals, policies and use activity regulations of the SMP
- Goal 2.0 Restore impaired shorelines and improve their ecological functions.
- Policy 2.1 Encourage the preservation and enhancement of vegetation along shoreline areas.
  - Policy 2.2 Identify and implement mitigation measures for the 303(d) facilities on Chewelah Creek.
    - Objective 2.2.1 Work with the Department of Ecology to identify appropriate mitigation measures.
  - Policy 2.3 Develop a stormwater management strategy for stormwater diversions and containment ponds.
    - Objective 2.3.1 Retrofit existing stormwater discharges with containment ponds, settling basins, and oil separators.
    - Objective 2.3.2 Work with the Department of Washington State Department of Transportation, Stevens County, and Burlington Northern Santa Fe Railroad.
  - Policy 2.4 Work with the County Weed Board to control noxious weeds through treatment and removal.
  - Policy 2.5 Encourage the planting of appropriate native riparian vegetation along public and private shorelines.
    - Objective 2.5.1 Produce a guidebook identifying shoreline vegetation and appropriate planting techniques.
- Goal 3.0 The City will establish working relationships with residents and other agencies that have impacts on the shoreline environment.
- Policy 3.1 Work with property owners to restore areas of shoreline including replacing existing revetments with bio-engineered approaches and removal of fence crossings.
  - Policy 3.2 Educate residents on the care, maintenance, and planting of appropriate native plants.
    - Objective 3.2.1 Produce brochure to handout to residents who live along the shoreline that identifies native plants, planting techniques, and agencies that can assist them in shoreline restoration.

Policy 3.3      Work with agencies identified in City of Chewelah Restoration Plan to assist in shoreline restoration projects.

**Existing Projects and Programs**

There are a number of public and private agencies that have some management or oversight responsibilities regarding the protection of shoreline areas. Some of these responsibilities include: the protection or restoration of shorelines, maintaining shoreline aesthetics, enhancing public access, maintaining recreation values, and maintaining wildlife habitat. The agencies having interests in shoreline protection and restoration are as follows:

- WSU Cooperative Extension Service of Stevens County
- Washington State Department of Fish and Wildlife
- Washington State Department of Parks and Recreation
- Washington State Department of Ecology
- Natural Resource Conservation Service
- Stevens County
- Washington State Department of Natural Resources
- City of Chewelah
- United States Fish and Wildlife Service
- Chewelah School District
- Washington State Department of Transportation

**Restoration Projects to Achieve Goals and Timelines**

The City of Chewelah has identified and prioritized restoration opportunity projects. These projects are based on the inventory and analysis report completed for the City's SMP. Chewelah prioritized the projects by identifying a set of six criteria and scoring each project opportunity for how well that project furthered that criteria. These priorities and projects were used to identify and inform the goals and policies of the restoration plan. The table below identifies the restoration project or opportunity, identifies possible funding agencies, and establishes a timeline for achieving restoration goals.

Project	Funding and Program Sources	Timelines and Benchmarks
Mitigate DOE facilities.	WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / Washington State Department of Natural Resources / United States Fish and Wildlife Service/ Washington State Department of Fish and Wildlife / Washington State Department of Ecology / Stevens County / City of Chewelah	Work with the two 303d facilities, Ecology and other agencies to mitigate the 303d facilities; 2017.
Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.	City of Chewelah / Stevens County / Washington State Department of Ecology / Washington State Department of Fish and Wildlife	Continue to enforce existing flood management regulations.

Project	Funding and Program Sources	Timelines and Benchmarks
Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.	Washington State Department of Natural Resources / United States Fish and Wildlife Service / Washington State Department of Fish and Wildlife / Stevens County / City of Chewelah	Increase capacity of bridge at south end of Chewelah park 2027.
Develop stormwater diversions or containment ponds to protect the stream habitat from non-point pollution runoff from neighboring development.	City of Chewelah / Stevens County / Natural Resource Conservation Service / Washington State Department of Natural Resources / Washington State Department of Ecology / Washington State Department of Transportation	Continue to require on-site containment of stormwater for new development; continuous.
Restore channelized sections with in-stream structures and natural vegetation.	Washington State Department of Fish and Wildlife / United States Fish and Wildlife Service / WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / Washington State Department of Natural Resources	Develop a plan to restore channelized sections of Chewelah Creek; 2027.
Restrict animal access to the riparian zone by replacing cross-stream fencing with parallel fencing setback from the stream bank.	City of Chewelah / Stevens County / Washington State Department of Fish and Wildlife / Natural Resource Conservation Service / WSU Cooperative Extension Service of Stevens County	Enforce animal keeping ordinance; 2010.
Protect wetland areas from further encroachment by residential and agricultural development.	City of Chewelah / Stevens County / WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / Washington State Department of Ecology	Continue site plan approval process; continuous.
Protect existing wetlands from encroachment by residential development and non-point source pollution from the highway.	City of Chewelah / Stevens County / WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / Washington State Department of Ecology / Washington State Department of Transportation	Continue site plan approval process; continuous. Work with WA-DOT to plant riparian buffers along Hwy 395; 2020.



Project	Funding and Program Sources	Timelines and Benchmarks
Protect priority species habitat as indicated on the biological conditions map.	WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / United States Fish and Wildlife Service / Washington State Department of Fish and Wildlife / Stevens County/ City of Chewelah	Continue to use the site plan review process for protecting priority habitat; continuous.
Encourage property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species.	Chewelah School District/ WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / Washington State Department of Fish and Wildlife / Washington State Department of Ecology / Stevens County	Develop or distribute brochure describing restoration processes; 2008. Recommend and condition site plan permits maintain riparian buffer; continuous.
Restore a native riparian vegetation buffers along parks, limit clearing and disturbance on residential properties with shoreline frontage.	Washington State Department of Parks and Recreation / Chewelah School District/ WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / Washington State Department of Fish and Wildlife / Washington State Department of Ecology	Develop a shoreline advisory committee to identify restoration opportunities on city owned property; 2007.
Remove existing revetments and replace the removed structures with bio-engineered approaches.	Washington State Department of Fish and Wildlife / United States Fish and Wildlife Service / WSU Cooperative Extension Service of Stevens County / Natural Resource Conservation Service / Washington State Department of Natural Resources	Develop generalized planting plan for Chewelah Park; 2010. Implement planting plan; 2015 or as funding is available.

**Implementation Strategies and Mechanisms**

The intent of the restoration plan is to achieve overall improvements in shoreline ecological functions over time, when compared to the status at the time of adoption. As mentioned in the introduction to this section the implementation of the restoration plan is primarily non-regulatory policies and programs. This section identifies existing programs that may be used to achieve implementation of restoration projects.

**Stevens County Conservation District Cost Share Programs**

Cost share programs offer financial and technical assistance for conservation projects. People who have an idea for a project that will have a positive effect on water quality, wildlife habitats, or replanting, are encouraged to contact SCCD.

**Watershed Conservation/Habitat Restoration Program**

The Natural Resource Conservation Service (NRCS) funds this program. The program provides funding to acquire trees and shrubs and plant them in shoreline areas with the intent of rehabilitating the shoreline/riparian ecosystem.

**Wetlands Reserve Program Plant Materials Program**

The purpose of this NRCS program is to provide native plants that can help solve natural resource problems. Beneficial uses for which plant material may be developed include wetland restoration, water quality improvement, stream bank and riparian area protection and other special conservation treatment needs.

**Wildlife Habitat Incentives Program**

The NRCS Wildlife Habitat Incentives Program provides financial incentives to develop habitat for fish and wildlife on private lands. Participants agree to implement a wildlife habitat development plan and USDA agrees to provide cost-share assistance for the initial implementation of wildlife habitat development practices.

**Inland Northwest Land Trust (INLT)**

INLT identifies high ecological value land and negotiates long-term conservation easements or outright land purchases. Some of these easements and purchases include shoreline areas.

**Washington Department of Fish and Wildlife (WDFW) Backyard Wildlife Sanctuary Program**

This program is managed by the WDFW Wildlife Program and designed to help landowners help wildlife around their home by enhancing native habitat. Some properties are adjacent to streams and lakes.

**Landowner Incentive Program (LIP) (WDFW)**

The LIP is a competitive grant process to provide financial assistance to private landowners for the protection, enhancement, or restoration of habitat to benefit "species at risk" on privately owned lands. Species at risk is defined for LIP as any fish or wildlife species that is federally or state listed as threatened or endangered, is proposed or is a candidate for listing as threatened or endangered, as well as any other animal species determined to be at risk by WDFW. This program applies to landowners with frontage on streams and lakes.

**Landowner Incentive Program (LIP)(US Fish and Wildlife Service)**

The purpose of this program is to provide grants to support on-the-ground projects that enhance, protect, or restore habitats that benefit "species-at-risk" on privately owned lands. Private landowners, individually or as a group, can submit project proposals.

**North American Wetlands Conservation Act (NAWCA) Grants Program (US Fish and Wildlife Service)**

The purpose of this program is to provide funding to support the long-term protection of wetlands and associated upland habitats needed by waterfowl and other migratory birds in North America. Projects must support long-term wetlands acquisition, restoration, and/or enhancement. Organizations and individuals who have developed partnerships to carry out wetlands conservation projects may participate.

**Partners for Fish and Wildlife (PFW) (US Fish and Wildlife Service)**

The purpose of this program is to support voluntary restoration of wetlands and other fish and wildlife habitats on private land through public-private partnerships. Projects are designed to restore native habitat to as near a natural state as possible.

**Private Stewardship Program (PSP) (US Fish and Wildlife Service)**

The purpose of this program is to provide grants and other assistance on a competitive basis to individuals and groups for voluntary conservation efforts to benefit federally listed, proposed,

or candidate species, or other at-risk species on private lands. Private landowners and groups and organizations that partner with landowners may participate in this program.

**Aquatic Lands Enhancement Account Grant Program**

The Aquatic Lands Enhancement Account (ALEA) Grant Program provides grant-in-aid support for the purchase, improvement, or protection of aquatic lands for public purposes, and for providing and improving access to such lands. It is guided by concepts to re-establishment of naturally self-sustaining ecological functions related to aquatic lands, providing or restoring public access to the water, and increasing public awareness of aquatic lands as a finite natural resource and irreplaceable public heritage.

***Protection and Restoration Monitoring***

At least every 5 years the City of Chewelah will evaluate the restoration and protection strategies and compile a report analyzing their success in achieving the restoration plans goals and policies. The report may include recommendations to improve policies that will improve the success of shoreline protection and restoration strategies.

In order to increase awareness of potential restoration opportunities, Chewelah will provide the information in this plan to property owners owning shoreline properties that have been identified as presenting restoration opportunities. It will also be included in pre-application materials provided to potential applicants for shoreline permits and persons requesting exemptions.



## CHAPTER 6 – SHORELINE REGULATIONS

Section 1 – Definitions

Section 2 – Shoreline Enhancement Overlay District

Section 3 – Uses and Setbacks

Section 4 – Shoreline Permit Review

### Section 1 – Definitions

- A. **Agriculture** means the tilling of the soil, the raising of crops, horticulture, gardening, keeping or raising of livestock and poultry for commercial purposes, and any agricultural industry or business such as dairies, nurseries, greenhouses, or similar uses.
- B. **Aquifer, Sole Source:** An area designated by the U.S. Environmental Protection Agency under the Safe Drinking Water Act of 1974, Section 1424(e). The aquifer(s) must supply fifty percent (50%) or more of the drinking water for an area without a sufficient replacement available.
- C. **Average Grade Level** means 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: Provided, that in the case of structures to be built over water, average grade level shall be the elevation of ordinary high water. Calculation of the average grade level shall be made by averaging the elevations at the center of all exterior walls of the proposed building or structure.
- D. **Best Available Science:** Current scientific information used in the process to designate, protect, or restore critical areas, that is derived from a valid scientific process as defined by WAC 365-195-900 through 925. Sources of best available science are included in “Citations of Recommended Sources of Best Available Science for Designating and Protecting Critical Areas” published by the Washington State Department of Community, Trade, and Economic Development.
- E. **Best Management Practices:** Conservation practices or systems of practices and management measures that control soil loss and reduce water quality degradation caused by high concentrations of nutrients, animal waste, toxics, and sediment; minimize adverse impacts to surface water and ground water flow, circulation patterns, and to the chemical, physical, and biological characteristics of wetlands; protect trees and vegetation designated to be retained during and following site construction; and provide standards for proper use of chemical herbicides within critical areas.
- F. **Critical Aquifer Recharge Area (CARA):** Areas designated by WAC 365-190-080(2) that are determined to have a critical recharging effect on aquifers used for potable water as defined by WAC 365-190-030(2).
- G. **Critical Habitat:** Habitat necessary for the survival of endangered, threatened, rare, sensitive or monitor species.
- H. **Development:** A use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel or minerals; bulk heading; 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 overlying lands subject to SMA.

- I. **Erosion hazard areas:** At least those areas identified by the United State Department of Agriculture Soil Conservation Service as have a “severe” rill and inter-rill erosion hazard and may experience severe to very severe erosion (WAC 365-190-030 (5).
- J. **Exempt Development:** Any development of which the total cost or fair market value, whichever is higher, does not exceed five thousand dollars (\$5,000), if such development does not materially interfere with the normal public use of the water or shorelines of state and local significance, and any development which does not meet the definition of substantial development contained in these regulations.
- K. **Fair Market Value:** The expected price at which the development can be sold to a willing buyer. For developments which involve nonstructural operations such as dredging, drilling, dumping, or filling, the fair market value is the expected cost of hiring a contractor to perform the operation or where no such value can be calculated, the total of labor, equipment use, transportation, and other costs incurred for the duration of the permitted project.
- L. **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.
- M. **Flood Insurance Map:** The official map on which the Federal Insurance Administration has delineated the areas of special flood hazards and include the risk premium zones applicable to the community. Also known as “flood insurance rate map” or “FIRM.”
- N. **Floodplain:** The one hundred (100) year floodplain and means that land area susceptible to being inundated by stream derived waters with a one percent (1%) chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulation maps.
- O. **Floodway:** Those portions of the area of a creek valley lying stream ward from the outer limits of a watercourse upon which flood waters are carried during periods of flooding that occur with reasonable regularity, although not necessarily annually, said floodway being identified, under normal condition, by changes in surface soil conditions or changes in types or quality of vegetative ground cover condition. The floodway shall not include those lands that can reasonably be expected to be protected from flood waters by flood control devises maintained by or maintained under license from the federal government, the state, or a political subdivision of the state.
- P. **Frequently Flooded Areas:** Lands in the flood plain subject to a one percent (1%) or greater chance of flooding in any given year. Frequently flooded areas perform important hydrologic functions and may present a risk to persons and property as designated by WAC 365-190-080(3). Classifications of frequently flooded areas include, at a minimum, the 100-year flood plain designations of the Federal Emergency Management Agency and the National Flood Insurance Program.
- Q. **Functions and Values:** The beneficial roles served by critical areas including, but not limited to, water quality protection and enhancement, fish and wildlife habitat, food chain support, flood storage, conveyance and attenuation, ground water recharge and discharge, erosion control, wave attenuation, protection from hazards, historical and

archaeological and aesthetic value protection, and recreation. These beneficial roles are not listed in order of priority.

- R. **Geologically Hazardous Areas:** Areas that because of their susceptibility to erosion, sliding, earthquake, or other geological events, may not be suited to the siting of commercial, residential, or industrial development consistent with public health or safety concerns.
- S. **Mitigation:** A negotiated action involving the avoidance, reduction or compensation for possible adverse impacts. In the following order of preference this includes:
  - 1. Avoiding the impacts altogether by not taking action;
  - 2. Reducing or eliminating impacts by preservation or maintenance;
  - 3. Minimizing impacts by limiting degree or magnitude;
  - 4. Rectifying impacts by repairing, rehabilitating or restoring;
  - 5. Compensating for impacts by in-kind replacement; or
  - 6. Monitoring impacts by a planned evaluation process.
- T. **Monitoring:** Evaluating the impacts of development proposals on the biological, hydrological, and geological elements of such systems and assessing the performance of required mitigation measures throughout the collection and analysis of data by various methods for the purpose of understanding and documenting changes in natural ecosystems and features, and includes gathering baseline data.
- U. **Native Vegetation:** Those plants indigenous to the creeks of Chewelah.
- V. **Non-water-Oriented Use:** Upland uses that have little or no relationship to the shoreline. All uses that are not water-dependent, water-related, or water-enjoyment uses. Adding public access features to a non-water-oriented use does not automatically change the inherent use to a water-enjoyment use. Examples may include, but are not limited to, professional offices, automotive sales or repair shops, mini-storage facilities, multi-family residential development, convenience stores, and gas stations.
- W. **Official Shoreline Environment Maps:** All maps adopted as part of the development regulations delineating the geographic boundaries of all water bodies and shoreline environment designations of Chewelah coming under the jurisdiction of the Shoreline Management Act, the City of Chewelah Comprehensive Plan, and this Title.
- X. **Ordinary High-Water Mark (OHWM):** The mark found by examining the creekbed and banks, and determining where the presence and action of waters are so common that the soil has a character distinct from that of the abutting upland. Where the OHWM cannot be found, it shall be the line of mean high water.
- Y. **Priority Habitat and Species (PHS):** As classified by the Department of Fish and Wildlife priority species require protective measures for their perpetuation due to their population status, sensitivity to habitat alteration, and recreational, commercial, or tribal importance. Priority species include: State Endangered, Threatened, Sensitive, and Candidate species; animal aggregations considered vulnerable; and those species of recreational, commercial, or tribal importance that are vulnerable. Priority habitats are those habitat types or elements with unique or significant value to a diverse assemblage

of species. A priority habitat may consist of a unique vegetation type or dominant plant species, a described successional stage, or a specific structural element. The PHS List is a catalog of habitats and species considered to be priorities for conservation and management. (WAC 173-26-020(34))

- Z. **Qualified Professional:** A person with experience and training in the applicable critical area. A qualified professional must have obtained a B.S. or B.A. or equivalent degree in biology, engineering, environmental studies, fisheries, geomorphology or related field, and two years of related work experience.
- AA. **Riparian Area:** An area of land and vegetation adjacent to a stream or lake that has a direct effect on the stream. This includes woodlands, vegetation, and floodplains
- BB. **Restoration:** Measures taken to restore an altered or damaged natural feature including:
1. Active steps taken to restore damaged wetlands, streams, protected habitat, or their buffers to the functioning condition that existed prior to an unauthorized alteration; and
  2. Actions performed to reestablish structural and functional characteristics of the critical area that have been lost by alteration, past management activities, or catastrophic events.
- CC. **Re-vegetate:** To plant an area which has undergone clearing, grading, or other means of vegetative removal.
- DD. **SMA:** Shoreline Management Act of 1971, RCW 90.58, as amended.
- EE. **Shorelines:** All of the water areas designated by the City of Chewelah and their associated wetlands as defined in RCW 90.58.030, including the land underlying them.
- FF. **Shoreline Jurisdiction:** For the purposes of this Title, the total combined area within the designated natural floodway for shorelines, and those areas adjacent and extending landward from such designated natural floodways, and any wetlands, as defined herein, associated therewith.
- GG. **Shoreline of the State:** The total of all shorelines and shorelines of statewide significance within the state. They include Chewelah Creek.
- HH. **Shoreline Permit:** Any form of permission required under this Title prior to undertaking activity on shorelines of the City, including substantial development permits, variances, conditional use permits, and shoreline exemptions.
1. Shoreline Conditional Use means a use, development, or substantial development classified as a conditional use or is not classified within the applicable development regulation occurring within a shoreline jurisdiction of the City.
  2. Shoreline Substantial Development Permit shall mean any development of which the total cost or fair market value exceeds five thousand dollars, or any development which materially interferes with the normal public use of the water or shorelines of the state.
  3. Shoreline Variance means to grant relief from the specific bulk, dimensional or performance standards of this Title to a particular piece of property located in a shoreline jurisdiction of the City, which because of peculiar physical characteristics, would be deprived privileges commonly enjoyed by other properties in the same area. A shoreline variance shall not allow a use that is otherwise prohibited.



- II. **Seismic hazard areas:** Areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, or soil liquefaction.
- JJ. **Subdivision:** The division of land into five (5) or more lots, tracts, parcels, sites or divisions for the purpose of sale or lease
- KK. **Short Subdivision:** The division of land into four (4) or fewer lots, tracts, or parcels for the purpose of sale or lease.
- LL. **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.
- MM. **Water-Enjoyment Use:** A recreational or similar use facilitating public access to the shoreline as a primary character 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 character of the use and which, through location, design and operation assures 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 public and the shoreline oriented space within the project must be devoted to the specific aspects of the use that foster shoreline enjoyment.
- NN. **Water-Oriented Use:** Any one or a combination of water-dependent, water-related or water-enjoyment uses.
- OO. **Wetlands** are areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, 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. However, wetlands may include those artificial wetlands intentionally created from non-wetland areas created to mitigate conversion of wetlands (RCW 36.70A.030 (21)).

## Section 2 – Shoreline Enhancement (SE) Overlay District

### ***Purpose and Intent***

The purpose of the Shoreline Enhancement (SE) Overlay District is to preserve and enhance the community appearance along the shorelines of the City of Chewelah, and to implement the polices and procedures of the Washington State Shoreline Management Act of 1971, RCW 90.58, and the shoreline policies and procedures of the Chewelah Comprehensive Plan. All proposed uses and development occurring within shoreline jurisdiction shall conform to RCW 90.58, the SMA, and this SMP.

The intent is to provide for the management of the City's shorelines allowing reasonable development, improving public access to shorelines, protecting and enhancing views from adjacent upland area, and ensure no net loss of shoreline ecological functions.

### General Provisions

- A. The SE Overlay District is the area of shoreline jurisdiction. Any development proposed on a parcel of land within the SE Overlay District shall be subject to project review as required in this section unless specifically exempted.
- B. Words used in the present tense shall include the future; the singular shall include the plural and the plural the singular; and the word shall is mandatory and not permissive.
- C. Based upon the goals and policies established in the City's Comprehensive Plan, the following general regulations apply to all shoreline uses and activities in Chewelah.
  - 1. Miscellaneous
    - a. Any development or use activity which occurs within the SE Overlay District, whether it requires a shoreline permit or not, must comply with the provisions of these development regulations. For development or activity along Chewelah Creek the provisions and policies of SMA, as amended, are also required.
    - b. The disposal of solid waste in all shoreline environments is prohibited except in temporary containers designed to collect litter.
    - c. Bridges and similar structures must be designed in a manner that does not significantly constrict the flow of the City's waterways.
    - d. Any development designed for human habitation is not permitted on or over water.
    - e. All shoreline developments and uses shall utilize measures to minimize any increases in surface water runoff and to control, treat, and release runoff so receiving water quality and shoreline properties and features are not adversely affected. Such measures may include grassy swales, interceptor drains, and landscaped buffers.
    - f. All shoreline development shall be located, designed, constructed, and maintained to minimize interference with beneficial natural shoreline processes, such as water circulation, sand and gravel movement, accretion and erosion.
    - g. Land clearing, grading, filling, and alteration of natural drainage features and landforms shall be limited to the minimum necessary for development. Surfaces cleared of vegetation and not to be developed must be replanted as soon as possible. Surface drainage systems or substantial earth modifications involving greater than two hundred fifty cubic yards (250cy) of material shall be designed to prevent maintenance problems or adverse impacts on shoreline features.
    - h. All development shall be located, designed, constructed, and managed to protect and/or not adversely affect those natural features which are valuable, fragile or unique to the community, including but not limited to the following:
      - i) Wetlands
      - ii) Natural resources, including but not limited to, sand and gravel deposits.
      - iii) Fish, wildlife habitats, migratory routes, and spawning areas.
      - iv) Natural or man-made scenic vistas or features.

- i. All shoreline development shall be designed in accordance with all applicable local and FEMA flood control and management codes and regulations, the State Environmental Policy Act (SEPA), and other applicable local land use codes.
  - j. Mining shall not occur in any shoreline jurisdiction.
  - k. New development shall retain, preserve, and enhance native riparian vegetation.
  - l. Shoreline development shall not cause a net loss of shoreline ecological function.
2. Public Access
- a. Development shall not block or interfere with the normal public use of, or public access to, publicly owned shorelines and water bodies.
  - b. Developments shall be required to protect and enhance physical and visual public access to the water and shorelines.
  - c. Developments, whether recreational, residential, or commercial and industrial, located along public shorelines or unique shoreline areas may be required to provide view corridors, public access ways, recreational trail easements, or other amenities upon a determination by the City that the action would enhance public enjoyment of the shoreline and not unduly conflict with the proposed use, adjacent uses, or public safety nor adversely impact the shoreline environment.
  - d. Any required public access easements shall be of a size and design appropriate to the site, size, and general nature of the proposed development. Such easements shall be recorded on a property deed or face of a plat as a condition running in perpetuity with the land.
  - e. Signs which indicate the public's right of access shall be installed and maintained in conspicuous locations at required public access sites.
  - f. Public use may be limited to daylight hours.
  - g. As much as possible, public access sites shall have direct and easy access from a public road or right-of-way.
  - h. Public access shall be considered in all shoreline developments, provided public access may not be required where it is demonstrated by the Applicant, and determined by the City in its findings, one (1) or more of the following provisions apply:
    - i) Unavoidable hazards to the public exist which cannot be prevented by any practical means.
    - ii) Inherent security requirements of the use cannot be satisfied through the use of alternative design features or other solutions.
    - iii) The cost of providing the access, easement, or an alternative amenity, is unreasonable disproportionate to the total cost of the proposed development.
    - iv) Unacceptable environmental harm will result from the public access which cannot be mitigated.

- v) Significant undue and unavoidable conflict between the proposed access and adjacent uses would occur and cannot be mitigated.
  - vi) The development is limited to low intensity single-family residential development of four dwelling units per acre (4du/ac) or less.
  - i. Provided, the Applicant has first demonstrated, and the City has determined in its findings, all reasonable alternatives for providing public access have been exhausted including, but not limited to, the following.
    - i) Regulating access by such means as maintaining a gate and/or limiting hours of use.
    - ii) Designing separation of uses and activities, i.e. fences, terracing, use of one-way glazing, hedges, landscaping, etc.
    - iii) Provisions of access at a site geographically separated from the proposal, such as a street end or trail system.
5. Required public access sites shall be fully developed and available for public use at the time of occupancy of the development.

### Section 3 – Uses and Setbacks

- A. Uses allowed on a lot in the SE Overlay District shall be the same as the underlying zone in which the parcel is located. Each use shall be evaluated using the review process identified in this section in conjunction with the requirements of state and federal regulations.
- B. Chewelah Creek has the following shoreline designations:
  - 1. Urban Commercial Environment
  - 2. Shoreline Residential Environment
  - 3. Urban Conservancy Environment.
- C. Table 1, Use Compatibility Matrix. Identifies the uses and activities that require review for a Statement of Exemption, Shoreline Substantial Development Permit, or Shoreline Conditional Use Permit. Uses not listed in Table 1 shall be subject to Shoreline Conditional Use Permit.
- D. Table 2, Setback, Height, and Dimensional Requirements, indicates setback, height, and other dimensional requirements for structures, uses, and activities conducted in the area of shoreline jurisdiction. Both the dimensional requirements and the applicable use and activity descriptions must be complied with for development in shoreline jurisdictions to occur.
  - 1. To prevent the degradation of surface waters from entry nutrients, pesticides, manure and pathogens, and sediment into surface waters, a riparian buffer a minimum of 35 feet is required for all areas located adjacent to surface waters.

2. The riparian buffer shall include the required setbacks identified in Table 2. Native plants and trees in the buffer must be left undisturbed unless presenting an immediate hazard to an overhead electrical line or structure or an approved riparian restoration/rehabilitation plan.
  
3. No building shall exceed thirty-five feet in height above average grade that will obstruct the view of a substantial number of residences on areas adjoining shorelines.

**Table 1. Use Compatibility Matrix**

Use/Activity Designation	Chewelah Creek
<b>Agricultural</b>	
Cultivation & grazing	SSDP
Agricultural building greater than 1,200sf	SSDP
Feedlots	Prohibited
Single-Family Dwelling	Shoreline Exempt (1)
<b>Commercial Development</b>	
Water-dependent	SSDP
Water-related & enjoyment <sup>8</sup>	SSDP
Non-water-oriented	SCUP
<b>Industrial Development</b>	
Water-dependent	SSDP
Water-related	SSDP
Non-water-oriented	SCUP
<b>Landfill</b>	
Water-ward of OHWM	Prohibited
Water-ward of OHWM for restoration projects	SCUP
Landward of OHWM	SSDP
<b>Landscaping</b>	
Water-ward of OHWM	Prohibited
Landward of OHWM	Shoreline Exempt
<b>Mining</b>	
	Prohibited
<b>Parking</b>	
Serving a permitted use	SSDP
Commercial/paid parking	SCUP
Recreational Development	SSDP
<b>Residential Development</b>	
Single-family	Shoreline Exempt (1)
Two-family/duplex	SSDP
Multiple-family (3+ units)	SSDP
Subdivision developments	SSDP
Shoreline Stabilization and Flood Protection	SCUP
Single-family bulkhead	Shoreline Exempt (1)
<b>Signs</b>	
On-premises	Shoreline Exempt (2)
Off-premises - outdoor advertising	Prohibited
Highway/public information/temporary	Shoreline Exempt (2)
<b>Recreation Development</b>	
Permanent recreation sites	SSDP

**Table 1. Use Compatibility Matrix**

Use/Activity Designation	Chewelah Creek
Parking areas	SCUP
Golf course/ Playfields/ Active Recreation	SSDP
Recreational trails - non-motorized	SSDP
Camp sites	SCUP
<b>Solid Waste Disposal</b>	
Permanent/ long-term solid waste storage	Prohibited
Temporary/ incidental to permitted use	Shoreline Exempt(1)
<b>Transportation Facilities</b>	
Motorized transportation facilities	SSDP
<b>Utilities</b>	
Urban service utilities (if no alternative outside shoreline area)	SCUP
<b>Notes:</b> (1) Provided applicable general regulations contained in this section are met.	
<b>Abbreviations:</b> SSDP = Shoreline Substantial Development Permit, SCUP = Shoreline Conditional Use Permit	

**Table 2. Setback, Height, and Dimensional Requirements**

Use/Activity Designation	Urban Commercial	Shoreline Residential	Urban Conservancy
<b>Agricultural</b>			
Cultivation & grazing setback	35'(1)	35'(3)	35'(3)
Building setback	50'	50'	100'
Feedlots	n/a	n/a	n/a
Height limits, except for silos	35'	35'	25'
<b>Commercial Development</b>			
Water-related & enjoyment setback	50'	n/a	n/a
Non-water-related setback	50'	n/a	n/a
Building height limit	45'	n/a	n/a
<b>Industrial Development</b>			
Building setback	75'	n/a	n/a
Building height limit	45'	n/a	n/a
<b>Landscaping</b>			
Water-ward of OHWM	n/a	n/a	n/a
Landward of OHWM	native veg. only	native veg only	native veg only
<b>Parking(2)</b>			
Water-related and enjoyment	100'	50'	50'
Non-water related or enjoyment	100'	n/a	n/a
<b>Recreational Development</b>			
Permanent recreation sites setback	25'	25'	25'
Access roads, restrooms, & accessory structure setback	50'	50'	50'
Building height limit	35'	35'	35'
Impervious surface coverage (max)	65%	35%	10%
Water related or enjoyment	35'	35'	35'
Non-water related	50'	50'	50'
Recreational trails - non-motorized	25'	25'	25'
Camp sites	50'	50'	100'
<b>Residential Development</b>			
All dwelling units setback	50'	50'	50'

**Table 2. Setback, Height, and Dimensional Requirements**

Use/Activity Designation	Urban Commercial	Shoreline Residential	Urban Conservancy
Building height limit	35'	35'	35'
Maximum impervious surface coverage	65%	35%	10%
<b>Transportation Facilities</b>			
Secondary and access roads setback	50'	50'	75'
Arterials, highways, & railroads setback	100'	100'	150'
<b>Utilities</b>			
Distribution lines buildings (3)	50'	50'	100'
Building height limit	45'	35'	35'
<p><b>Notes:</b> 1 – unless reduced pursuant to animal keeping standards in Chewelah Municipal Code                  2 – parking facilities shall be setback landward of the principal building being served.                  3 – except buried lines and approved water crossings.</p> <p><b>All re-vegetation activities must use native vegetation for the first 35' of the setback. The remainder of the setback may use non-invasive vegetation</b></p>			

E. Archeological, Cultural, and Historical.

1. Regulations.

- (a) Shoreline permits shall contain provisions requiring developers to immediately stop work and notify the City, Washington State Office of Historic Preservation, and affected tribes if any items of archeological interest are uncovered during excavations. In such case, the applicant shall be required to allow site inspection and evaluation by a professional archeologist to ensure all possible valuable archeological data is properly salvaged.
- (b) Significant archeological, historical, and cultural sites of community or regional interest shall be permanently preserved for scientific study, education, and public observation. When the City determines scientific or historical value, a shoreline substantial development permit will not be issued which would pose a threat to the site. The City may require development be postponed in such areas to allow investigation of public acquisition potential and/or retrieval and preservation of significant artifacts.
- (c) For Chewelah Creek, in the event unforeseen factors constituting an emergency as defined in RCW 90.58.030 necessitate rapid action to retrieve or preserve artifacts or data identified above, the project may be exempted from the shoreline permit requirement of these regulations. The City shall notify Ecology and the State Attorney General's Office of such a waiver in a timely manner.
- (d) Commercial developments focusing on archeological and historic or cultural sites and facilities are subject to the regulations for Commercial Development.
- (e) During construction or site disturbance the applicant must contact the Washington State Office of Archeology and Historic Preservation and any affected tribes if archeological resources are found.
- (f) In areas known to contain archeological resources, shoreline permits shall require a site inspection prior to review.

F. Commercial

1. Regulations.

- (a) Commercial developments permitted along shorelines, in descending order of preference are as follows:
    - i. Water-dependent uses.
    - ii. Water-related uses.
    - iii. Water-enjoyment uses.
    - iv. Non-water-oriented uses.
  - (b) Commercial uses and activities are not permitted over water.
  - (c) The City of Chewelah shall require and use the following information in review of commercial development proposals.
    - i. Specific nature of the commercial activity.
    - ii. Need for shoreline frontage.
    - iii. Special considerations for enhancing the relationship of the activity to the shoreline.
    - iv. Provisions for public visual and/or physical access to the shoreline.
    - v. Provisions to ensure development will not cause severe negative environmental impacts.
  - (d) Commercial development shall be designed and maintained in a neat, orderly, and environmentally sound manner, consistent with the character and features of surrounding areas. To this end, the City Administrator may adjust the project dimensions and increase required setbacks established in Table 2 and/or prescribe reasonable use intensity and screening as deemed appropriate. Need and special considerations for landscaping and buffer areas shall also be subject to review and approval.
  - (e) Commercial development shall not result in a net loss of ecological function of Chewelah Creek.
  - (f) Drainage and surface runoff from commercial areas shall be controlled so pollutants will not be carried into water bodies.
2. Commercial uses and activities shall comply with the specific requirements set forth in Tables 1 and 2 of this Section.

G. Industrial.

1. Regulations.

- (a) Industrial developments permitted along shorelines, in descending order of preference are as follows:
  - i. Water-dependent uses.
  - ii. Water-related uses.



- iii. Water-enjoyment uses.
  - iv. Non-water-oriented uses.
  - (b) Industrial uses are not permitted over water.
  - (c) Storage and/or disposal of industrial wastes are prohibited in shoreline jurisdictions.
  - (d) All new or expanded upland industrial development shall be set back and buffered from adjacent shoreline properties in non-industrial use, per setback requirements contained in Table 2. Buffers shall be landscaped with native and/or non-invasive plant species and maintained to provide a transitional area and protect shorelines and adjacent properties from visual or noise intrusion, minimize erosion, and protect water quality. Buffer areas shall not be used for storage of industrial equipment or materials or for waste disposal.
  - (e) Display and other exterior lighting shall be designed and operated to minimize glare, avoid illuminating nearby properties, and prevent hazards for public traffic.
  - (f) Industrial development shall provide public access to the shoreline and/or provide opportunities for public viewing of industrial activity whenever practical and safe, and when such access does not curtail industrial operations.
  - (g) Accessory development not requiring a shoreline location shall be sited in upland areas away from the shoreline. This development includes parking, warehousing, open air storage, waste storage and treatment, stormwater runoff control facilities, utilities, and land transportation development.
  - (h) Proposals for new industrial developments shall demonstrate the need for expansion into an undeveloped area.
  - (i) The developer must demonstrate adequate consideration has been given to, and plans made to, mitigate negative environmental impacts, including but not limited to, air, water, and noise pollution and the loss of fish and wildlife habitat.
  - (j) Industrial development shall not result in a net loss of ecological function of Chewelah Creek.
2. Industrial development shall comply with the specific requirements set forth in Tables 1 and 2 of this section.
- H. Landfills.
- 1. Regulations.
    - (a) Applications for landfill permits in a shoreline jurisdiction shall include the following:
      - i. Proposed use of the landfill area.
      - ii. Physical, chemical, and biological characteristics of the fill material.
      - iii. Source of landfill material.
      - iv. Method of placement and compaction.

- v. Location of landfill relative to natural or existing drainage patterns.
  - vi. Location of the perimeter relative to the OHWM and 100-year floodplain.
  - vii. Perimeter erosion control or stabilization means.
  - viii. Type of surfacing and runoff control devices.
- (b) Landfills shall be permitted only when in conjunction with and necessary to facilitate a water-dependent or public use permitted or exempt by these development regulations.
  - (c) Landfills are not permitted in floodplains.
  - (d) Perimeters of permitted fill projects shall be designed and constructed with silt curtains, vegetation, retaining walls, or other mechanisms and appropriately sloped to prevent erosion and sedimentation, both during initial landfill activities and afterwards.
  - (e) Fill materials shall be of such quality that they will not cause degradation of water quality.
  - (f) Landfills shall be permitted only where it is demonstrated the proposed action will not:
    - i. Result in damage to water quality, fish, and/or riparian wildlife habitat; or
    - ii. Adversely alter natural surface water drainage and circulation patterns, currents, river flows, or significantly reduce floodwater capacities.
  - (g) Where landfills are permitted, the fill shall be the minimum necessary to provide for the proposed use.
  - (h) Landfills shall be permitted only when used as preparation for a specific development otherwise permitted by these development regulations.
  - (i) All fills waterward of the OHWM shall obtain a shoreline conditional use permit except ecological restoration proposals.
  - (j) Landfills shall not result in a net loss of ecological function of Chewelah Creek.
2. Landfills shall comply with the specific requirements set forth in Tables 1 and 2 of this section.
- I. Parking.
- 1. Regulations.
    - (a) Parking facilities are not encouraged within shoreline jurisdiction. Parking facilities within the jurisdiction of these development regulations shall be designed and landscaped to minimize adverse impacts upon adjacent shorelines and abutting properties. The landscaping shall consist of native vegetation within the riparian buffer, to be planted within one (1) year after completion of construction and provide an effective screening three (3) years after planting.
    - (b) Upland parking facilities within the jurisdiction of these development regulations shall provide safe and convenient pedestrian circulation within the parking area and to the shoreline.

- (c) Commercial parking facilities shall not be permitted over water or along shorelines.
  - (d) Parking facilities shall be designed to avoid, reduce, or minimize adverse impacts on the shoreline environment.
  - (e) Parking facilities shall provide adequate provisions to control surface water runoff from contaminating shorelines. This is the responsibility of the facility owner.
  - (f) Parking facilities shall not limit public access to shoreline areas where applicable.
  - (g) Parking facilities shall not result in a net loss of ecological function of Chewelah Creek.
2. Parking activities shall comply with the specific requirements set forth in Tables 1 and 2 of this section.
- J. Recreational.
1. Regulations.
- (a) All proposed recreational development shall be analyzed for their potential effect on shoreline environmental quality and natural resources.
  - (b) Recreational development shall comply with updated local and state health regulations at all times, and such compliance made a condition of the shoreline permit.
  - (c) Favorable consideration shall be given to developments, which provide public recreational uses and facilitate public access to shorelines.
  - (d) Vehicular traffic is prohibited on streambeds. Perimeters of parking areas shall be landscaped to minimize visual impacts to shorelines, roadways, and adjacent properties.
  - (e) Recreational development shall provide facilities for non-motorized access, such as pedestrian or bicycle paths, to link upland recreation areas to shorelines.
  - (f) Recreational facilities shall make adequate provisions for water supply, sewage disposal, and garbage collection.
  - (g) Recreational facilities shall make adequate provisions, such as screening, buffer strips, fences, and signs, to prevent overflow and to protect the value and enjoyment of adjacent or nearby private properties.
  - (h) All permanent recreational structures and facilities shall be located outside officially mapped floodways. Trailer spaces, developed camping sites, and similar facilities shall not be located in the floodway.
  - (i) Accessory facilities, such as restrooms, recreation halls, commercial services, access roads, and parking areas shall be located outside of the floodway.
  - (j) For recreation development requiring the use of fertilizers, pesticides, or other toxic chemicals, such as golf courses and playfields, the Applicant shall submit plans demonstrating methods to be used to prevent leachate from entering adjacent water bodies. Buffer strips using native vegetation shall be included in

the plan. The City shall determine the maximum width necessary for buffer strips, but in no case shall the buffer strips be less than thirty-five feet (35').

- (k) In approving shoreline recreational development, the City shall ensure development will maintain, enhance, or restore desirable shoreline features, including unique and fragile areas, wetlands, scenic views, and aesthetic values. To this end, the City may condition project dimensions, location of project components on the site, intensity of use, screening, parking requirements, and setbacks, as deemed appropriate to accomplish this.
- (l) No recreation building or structure, except bridges, shall be built over the water.
- (m) Proposals for recreational development shall include plans for sewage disposal.
- (n) Signs indicating the public's right of access to shoreline areas shall be installed and maintained in conspicuous locations at the point of access and the entrance thereto.
- (o) Proposals for recreational development shall include a landscape plan. Native, self-sustaining vegetation is required, but non-invasive species may be suitable outside of the riparian buffer with City approval. Design and location of permitted structures or facilities shall be accomplished so as to avoid or minimize the removal of on-site native vegetation.
- (p) Recreational development shall not result in a net loss of ecological function of Chewelah Creek.

- 2. Recreational development shall comply with the specific requirements set forth in Tables 1 and 2 of this section.

K. Residential.

1. Regulations.

- (a) Residential development shall not be approved where flood control, shoreline protection measures, or bulk heading will be required to create residential lots or site area. Residential development shall be located and designed to avoid the need for structural streambank protection and flood protection measures.
- (b) If wetlands or other unique and fragile features are located on a development site, clustering or similar design of residential units shall be required in order to avoid any development in such areas.
- (c) Residential development is prohibited within floodways and within other hazardous areas such, as steep slopes and areas with unstable soils or geologic conditions.
- (d) Residential structures and accessory structures are prohibited over water.
- (e) All residential structures, accessory uses, and facilities shall be arranged and designed to preserve views and vistas to and from shorelines and water bodies, and be compatible with the aesthetic values of the surrounding area.
- (f) Prior to issuance of a Building Permit, Substantial Development Permit, or other development approval, the developer shall submit adequate plans for

preservation of shoreline vegetation, for control of erosion during and after construction, and for the replanting of the site after construction resulting in permanent shoreline stabilization.

- (g) Storm drainage facilities shall be required for residential development projects involving five (5) or more lots. Storm drainage facilities shall be separate from sewage disposal transport facilities and include provisions to prevent uncontrolled and untreated direct surface water runoff into receiving waters.
  - (h) Residential shoreline development shall not result in the loss of shoreline ecological functions.
  - (i) New multiunit residential development, including the subdivision of land for more than four parcels, should provide community and/or public access in conformance with the SMP, unless it is determined that such access will result in incompatible uses, safety security issues, results in an adverse impact to the shoreline environment.
- 2. Residential development shall comply with the specific requirements set forth in Tables 1 and 2 of this Section.
  - 3. Single-family residential development is permitted subject to the regulations contained herein. Single-family development greater than thirty feet (35') high requires approval of both a Shoreline Substantial Development Permit and Shoreline Variance Permit. Duplexes and multiple-family dwellings are permitted subject to approval of a Shoreline Substantial Development Permit. Although a Shoreline Substantial Development Permit is not required for construction within a shoreline jurisdiction by an owner, lessee or contract purchaser of a single-family residence for their own use or the use of their family, such construction and all normal accessory structures must otherwise conform to these development regulations.
- L. Shoreline Stabilization and Flood Protection.
- 1. Regulations.
    - (a) All new development activities including the subdivision of land shall be located and designed to prevent or minimize the need for shoreline stabilization and flood protection. Non-structural flood hazard reduction measures are preferred over structural methods.
    - (b) Any shoreline stabilization measures shall be designed using best available technical practice and guidance. New or enlarged structural shoreline stabilization measures for an existing primary structure should not be allowed unless there is conclusive evidence, documented by a geotechnical analysis, that the structure is in danger from shoreline erosion. Normal sloughing or erosion of shorelines without a geotechnical analysis is not demonstration of need.
    - (c) Selective pruning of trees for safety and view protection may be allowed and the removal of noxious weeds is authorized
    - (d) The City shall require and use the following information during its review of streambank protection and flood protection proposals.
      - i. Purpose of project.

- ii. Hydraulic characteristics of shorelines within one-half (1/2) mile on each side of proposed project.
  - iii. Existing shoreline stabilization and flood protection devices within one-half (1/2) mile on each side of proposed project.
  - iv. Construction material and methods.
  - v. Physical, geological, and/or soil characteristics of the area.
  - vi. Predicted impact upon streams and hydraulic processes, adjacent properties, and shoreline and water uses.
  - vii. A geotechnical analysis that evaluates on-site drainage issues and addresses drainage problems away from the shoreline edge before considering structural shoreline stabilization.
- (e) Shoreline stabilization and flood protection measures shall not be designed and constructed in such a manner resulting in channelization of streams.
  - (f) Upon project completion, all disturbed shoreline areas shall be restored to an improved condition by replanting with native plants.
  - (g) Shoreline stabilization or flood hazard management measures shall, to the extent possible, be planned, designed, and constructed to allow for channel migration. These measures shall not reduce the volume and storage capacity of waterways and adjacent wetlands or floodplains.
  - (h) Use of car bodies, scrap building materials, asphalt or concrete from street work, or any other discarded pieces of equipment, concrete, or appliances for the stabilization of shorelines is prohibited.
  - (i) The developer or owner of property shall remove and dispose of materials used in previous stabilization measures.
  - (j) Shoreline stabilization and flood protection development shall not result in a net loss of ecological function of Chewelah Creek.
2. Shoreline stabilization and flood protection shall comply with the specific requirements set forth in Tables 1 and 2 of this section.

M. Signs.

1. Regulations.
- (a) The following types of signs are permitted in any shoreline jurisdiction.
    - i. Highway or railroad sign necessary for direction, safety, or public information.
    - ii. Public information sign directly relating to a permitted local shoreline activity.
    - iii. Temporary directional sign to public or quasi-public events. Such signs shall be removed within ten (10) days following the event.
  - (b) Signs must follow the provisions and requirements of applicable City of Chewelah ordinances and regulations.

2. Signs shall comply with the specific requirements set forth in Tables 1 and 2 of this section.
- N. Solid Waste Disposal.
1. Regulations.
    - (a) Shorelines shall not be used for any sanitary solid waste operations or the disposal of solid wastes.
  2. Solid waste disposal is prohibited in all shoreline jurisdictions. Temporary storage in litter and refuse containers is permitted in shoreline areas if maintained in sanitary condition in compliance with all state and local health requirements.
- O. Transportation Facilities
1. Regulations.
    - (a) Proposals for shoreline transportation facilities shall adequately demonstrate the following.
      - i. Need for a shoreline location and no reasonable upland alternative exists.
      - ii. Construction is designed to protect the adjacent shoreline against erosion, uncontrolled or polluting drainage, and other factors detrimental to the environment both during and after construction.
      - iii. Project has been designed to fit existing topography as much as possible, thus minimizing alterations to the natural environment.
      - iv. All debris, overburden, and other waste materials from construction will be handled, maintained, and disposed of in such a way as to prevent their entry into any water body.
      - v. Consistency with existing transportation system plans.
      - vi. Include plans for pedestrian and bicycles where feasible.
    - (b) Culvert installations in waterways shall meet the requirements of the Washington State Department of Fish and Wildlife. Such culvert installations may require a hydraulics permit.
    - (c) All excess construction materials shall be removed from the shoreline area following completion of construction.
    - (d) All excavation materials and soils exposed to erosion by all phases of road, bridge, and culvert work shall be stabilized and protected by seeding, mulching, or other effective means, both during and after construction.
    - (e) Where permitted to parallel shorelines, roads or railroads shall be set back a sufficient distance from the OHWM to leave a usable shoreline area for shoreline recreation, access, or natural riparian zone.
    - (f) Major highways, freeways, and railways shall be located outside of shoreline jurisdictions wherever feasible.

- (g) Transportation and utility facilities shall make joint use of right-of-ways and consolidate crossings of water bodies where adverse impact to the shoreline can be minimized by doing so.
  - (h) Landfills for transportation facility development are not permitted in water bodies or on associated wetlands EXCEPT when all structural or upland alternatives have been proven infeasible and the transportation facilities are necessary to support uses consistent with these regulations.
  - (i) New transportation facilities in shoreline jurisdictions should be located and designed to minimize or prevent the need for shoreline protective measures, such as riprap or other bank stabilization, landfills, bulkheads, or substantial site re-grading.
  - (j) Roads and railroads shall cross-shoreline areas and water bodies by the shortest, most direct route feasible, unless such route would cause more damage to the environment.
  - (k) Transportation facilities allowed to cross over water bodies and associated wetlands shall utilize elevated, open-pile, or pier-structures whenever feasible.
  - (l) Roads and railroads shall be located to minimize the need for routing surface waters into and through culverts.
  - (m) Bridge construction shall conform to the following.
    - i. Bridge approach fills shall not encroach in the floodway of any water channel.
    - ii. All bridges shall be a minimum of three feet (3') above the one hundred (100) year flood elevation in order to pass all expected debris and anticipated high water flows from a one hundred (100) year flood event.
  - (n) Foot or vehicular bridges crossing waterways for the private use of individual landowners shall be evaluated for need and design. They shall meet the same standards for water quality protection and erosion control as all other bridges.
  - (o) Private road construction and maintenance shall conform to the following standards.
    - i. Road sub-grade widths shall be the minimum allowable with the intended use, generally not more than twenty feet (20') for single-lane roads.
    - ii. Roads shall follow natural contours where possible. Natural benches, ridge tops, and flat slopes are preferred locations.
    - iii. Planting or seeding with appropriate ground cover or by matting immediately following construction shall protect erodible cut-and-fill slopes.
  - (p) Transportation facilities shall include stormwater runoff filtering.
  - (q) Transportation Facility improvements shall not result in a net loss of ecological function of Chewelah Creek.
2. Transportation facilities shall comply with the specific requirements set forth in Tables 1 and 2 of this section.



- P. Utilities.
1. Regulations.
    - (a) Applications for installation of utility facilities shall include the following.
      - i. Description of the proposed facilities.
      - ii. Reason(s) why the utility facility requires a shoreline location.
      - iii. Alternative locations considered and reasons for their elimination.
      - iv. Location of other utility facilities in the vicinity of the proposed project and any plans to include the facilities of other types of utilities in the project.
      - v. Plans for reclamation of areas disturbed by construction.
      - vi. Plans for control of erosion and turbidity during construction.
      - vii. Identification of any possibility for locating the proposed facility within an existing utility right-of-way.
      - viii. Project timeline including duration of project and proposed dates of project start and completion.
    - (b) Utility development shall, through coordination with government agencies, provide for compatible, multiple uses of sites and right-of-ways. Such uses include shoreline access points, trail systems, and other forms of recreation and transportation. Provisions of such uses will not unduly interfere with utility operations, or endanger public health and safety.
    - (c) The following utility facilities, which are not essentially water-oriented, are prohibited in shoreline jurisdictions unless authorized by Shoreline Conditional Use Permit where it can be shown that no alternatives exist.
      - i. Water and sewer system treatment plants.
      - ii. Utility substations and control facilities.
      - iii. Accessory uses and administrative structures for utilities.
      - iv. Production, transmission, and processing facilities
    - (d) In shoreline jurisdictions, utility transmission lines, pipelines, and cables shall be placed underground unless demonstrated to be unfeasible. Further, such lines shall utilize existing right-of-ways, corridors, and/or bridge crossings whenever possible. Proposals for new utility corridors in shoreline jurisdictions involving water crossings must fully substantiate the infusibility of existing routes.
    - (e) Utility facilities shall be located and designed to avoid destruction of or damage to marshes, bogs, and swamps; important wildlife areas; and other unique and fragile areas.
    - (f) Necessary underwater pipelines transporting material intrinsically harmful to aquatic life or potentially injurious to water quality, including sewer lines, shall be provided with automatic shut off valves at each end of the underwater segments.

- (g) Where major utility facilities must be placed in a shoreline jurisdiction, the location and design shall be chosen to not destroy or obstruct existing scenic views.
  - (h) Utility development allowed in shoreline jurisdictions shall utilize required setback areas for screening of facilities from water bodies. Additional screening may be required and determined on a case-by-case basis.
  - (i) Clearing for the installation or maintenance of utilities shall be kept to a minimum and upon project completion any disturbed area shall be restored or brought to a condition better than prior activities, including replanting with native species, and maintenance care until the newly planted vegetation is established.
  - (j) Utility improvements shall not result in a net loss of ecological function of Chewelah Creek.
2. Utility facilities shall comply with the specific requirements set forth in Tables 1 and 2 of this section.

#### Section 4 – Shoreline Permit Review

- A. **General.** There is hereby established an administrative system designed to assign responsibilities for implementation of the Shoreline Enhancement (SE) Overlay District and shoreline permit review for Chewelah to prescribe an orderly process by which to review proposals and permit applications, and to ensure all persons affected by the SE Overlay District are treated in a fair and equitable manner.
- B. **Permits Required.** Any person wishing to undertake development within shoreline jurisdiction shall apply for a Substantial Development Permit, a Shoreline Conditional Use Permit, a Shoreline Variance permit, or a Statement of Exemption. Based on the City's Comprehensive Plan and SE Overlay District, the Administrator shall determine which permit is required or if the proposal is exempt from a shoreline permit.
1. **Substantial Development Permits.** Any development of which the total cost or fair market value exceeds five thousand dollars, or any development, which materially interferes with the normal public use of the water or shorelines of the state. No substantial development shall be undertaken on shorelines of the City without first obtaining a Substantial Development Permit from the City. Applications for such permits shall be made on forms provided by the Administrator. An application shall provide the information necessary to be considered complete as specified in the application process.
- (a) Development authorized by a shoreline substantial development permit shall not begin until thirty (30) days from the date the Administrator files the approval with the Department of Ecology and the Attorney General.
2. **Shoreline Conditional Uses.** A shoreline conditional use is any use, development, or substantial development classified as a conditional use or any use not classified within the SMP. A Shoreline Conditional Use Permit allows flexibility in varying the application of the use regulations consistent with the shoreline master program, the comprehensive plan, and the SMA. Shoreline Conditional Use Permits should also

be granted in a circumstance where denial of the permit would result in a thwarting of those same policies. In authorizing a Shoreline Conditional Use, special conditions may be attached to the permit to prevent undesirable effects of the proposed use. Uses that are specifically prohibited may not be authorized with approval of a Shoreline Conditional Use Permit. Applications for such permits shall be made on forms provided by the administrator. An application shall provide the information necessary to be considered complete as specified in the application process.

- (a) Uses classified as Shoreline Conditional Uses in the SE Overlay District may be authorized provided the applicant can demonstrate all of the following:
    - i. Proposed use will be consistent with the shoreline policies of SMA and the City's Comprehensive Plan.
    - ii. Proposed use will not interfere with the normal public use of public shorelines.
    - iii. Proposed use of the site and design of the project will be compatible with other permitted uses within the area.
    - iv. Proposed use will cause no significantly adverse effects to the shoreline environment in which it is to be located.
    - v. Public interest suffers no substantial detrimental effect.
  - (b) In considering approval of 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 the SMA and this SMP and shall not produce substantial adverse effects to the shoreline environment.
  - (c) **Unclassified Uses.** Other uses not classified in the SE Overlay District may be authorized as Shoreline Conditional Uses provided the applicant can demonstrate, in addition to the criteria set forth above, extraordinary circumstances preclude reasonable use of the property in a manner consistent with the use regulations and policies of shoreline management practices. The total or cumulative impact of the Shoreline Conditional Uses should also remain consistent with the shoreline master program, the comprehensive plan, and the policies of SMA.
3. **Shoreline Variance.** A shoreline variance means to grant relief from the specific bulk, dimensional or performance standards of this Title to a particular piece of property located in a shoreline jurisdiction of the City, which because of peculiar physical characteristics, would be deprived privileges commonly enjoyed by other properties in the same area. A shoreline variance shall not allow a use that is otherwise prohibited. Applications for variances shall be made on forms provided by the administrator. An application shall provide the information necessary to be considered complete as specified in the application process.
- (a) Shoreline variance permits for development or uses that will be located landward of the ordinary high water mark (OHWM), as defined in RCW

90.58.030 (2)(b), and/or landward of any wetland as defined in RCW 90.58.030 (2)(h), may be authorized provided the applicant can demonstrate all of the following:

- i. Strict requirements of the bulk, height, dimensional, or performance standards set forth in the SE Overlay District preclude or significantly interfere with a reasonable use of the property not otherwise prohibited by the SE Overlay District.
  - ii. Hardship described above is specifically related to the property, and is the result of unique conditions, such as irregular lot shape, size, or natural features, and the application of the SE Overlay District, and not from deed restrictions or the applicant's own actions.
  - iii. Design of the project will be compatible with other permitted activities in the area and will not cause adverse effects to adjacent properties or the shoreline environment.
  - iv. Shoreline Variance authorized does not constitute a grant of special privilege not enjoyed by other properties in the area, and will be the minimum necessary to afford relief.
  - v. Public interest will suffer no substantial detrimental effect.
- (b) Shoreline Variances for development located water-ward of the OHWM or within marshes, bogs, or swamps as designated in WAC 173-22, may be authorized provided the applicant can demonstrate all the criteria stated above as well as the public right of navigation and use of the shorelines will not be adversely affected by granting the Shoreline Variance.
- (c) In the granting of all Shoreline Variances, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if Shoreline Variances were granted to other developments in the area where similar circumstances exist, the total of the Shoreline Variances should also remain consistent with the policies of this shoreline master program, the comprehensive plan, and shoreline policies of SMA.
- (d) Construction pursuant to a Shoreline Variance being issued shall not begin nor can construction be authorized except as provided in the SE Overlay District and the provisions of RCW 90.58.020 shall also apply. In all instances, extraordinary circumstances shall be shown and the public interest shall suffer no substantial detrimental effect.

**C. Exemptions from Substantial Development Permit Requirements**

1. An exemption from the Substantial Development Permit requirements does not constitute an exemption from the policies and use regulations of the Shoreline Management Act, the provisions of this Master Program, and other applicable city, state, or federal permit requirements. The following shall not be considered substantial developments for the purpose of this Master Program.
2. Any development of which the total cost or fair market value, whichever is higher, does not exceed five thousand (\$5,000) dollars, if such development does not

- materially interfere with the normal public use of the water or shorelines of the state. For purposes of determining whether or not a permit is required, the total cost or fair market value shall be based on the value of development that is occurring on shorelines of the state. The total cost or fair market value of the development shall include the fair market value of any donated, contributed or found labor, equipment or materials;
3. 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 within a reasonable period after decay or partial destruction except where repair causes substantial adverse effects to the 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;
  4. Construction of a normal protective bulkhead common to single family residences. A "normal protective bulkhead" is constructed at or near the ordinary high water mark to protect a single-family residence and is for protecting land from erosion, not for the purpose of creating dry land. Where an existing bulkhead is being replaced, it shall be constructed no further waterward of the existing bulkhead than is necessary for construction of new footings;
  5. 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 the SMA or this SMP. 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;
  6. Construction and practices normal or necessary for farming, irrigation, and ranching activities, including agricultural service roads and utilities, 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 area 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;
  7. Construction by an owner, lessee, or contract purchaser of a single family residence for his own use or for the use of his family, which residence does not exceed a height of thirty-five (35) feet above average grade level and meets all requirements of the state agency or local government having jurisdiction thereof;

8. Construction of a dock, including community dock, designed for pleasure craft only, for the private noncommercial use of the owner, lessee, or contract purchaser of a single-family residence or multi-family residences. The fair market value of the dock does not exceed ten thousand (\$10,000) dollars, but any subsequent construction having a fair market value exceeding two thousand five hundred (\$2,500) dollars occurs within five (5) years of completing of the prior construction, a substantial development permit is required;
9. Operation, maintenance, or construction of canals, waterways, drains, reservoirs, or other facilities that now exist or are hereafter created or developed as part of an irrigation system for the primary purpose of making use of system waters, including return flow and artificially stored ground water for the irrigation of lands;
10. The marking of property lines or corners on state owned lands, when such marking does not significantly interfere with the normal public use of the surface waters;
11. 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 part of an agricultural drainage or diking system.
12. Any project with certification from the Governor pursuant to Chapter 80.50 RCW.
13. Watershed restoration projects as defined in WAC 173-27-040. Local government shall review the projects for consistency with the shoreline master program in an expeditious manner and shall issue its decision along with any conditions within forty-five (45) 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.
14. A public or private project that is designed to improve fish or wildlife habitat fish passage, when all of the following apply:
  - (a) The project has been approved in writing by the department of fish and wildlife;
  - (b) The project has received hydraulic project approval by the department of fish and wildlife pursuant to chapter 77.55 RCW;
15. Site exploration and investigation activities that are prerequisite to preparation of an application for development authorization under this chapter, if:
  - (a) The activity does not interfere with the normal public use of the surface waters;
  - (b) 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;
  - (c) 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;
  - (d) A private entity seeking development authorization under this section first posts a performance bond or provides other evidence of financial responsibility to the local jurisdiction to ensure that the site is restored to preexisting conditions.

D. **Statement of Exemption.**

1. Applicants for all non-shoreline permits or approvals within the shoreline jurisdiction must obtain a written “Statement of Exemption” from securing a Shoreline Substantial Development Permit. This process verifies the action is exempt and offers the applicant an itemization of shoreline policies and other requirements applicable to the proposed project. In the case of development subject to the policies and regulations of the SE Overlay District, the City’s Comprehensive Plan, and SMA, but exempt from the Shoreline Substantial Development Permit process. The City shall attach shoreline management terms and conditions to the building permits and other permits and approval pursuant to RCW 90.58.140.
  2. Whenever a development falls within the exemption criteria and is subject to a US Army Corps of Engineers Section 10 or Section 404 Permit, the Administrator shall prepare a Statement of Exemption, and transmit a copy to the applicant and the Washington State Department of Ecology. Exempt development shall not require a Shoreline Substantial Development Permit, but may require a Shoreline Conditional Use Permit, Shoreline Variance, or a Statement of Exemption.
  3. Before determining a proposal is exempt, the Administrator may conduct a site inspection to ensure the proposal meets the exemption criteria. The exemption granted may be conditioned to ensure the activity is consistent with the SE Overlay District, the City’s Comprehensive Plan, and SMA.
  4. Exemption from Shoreline Substantial Development Permit requirements does not constitute exemption from the policies and use regulations of the SMA, the Comprehensive Plan, the SMP, or other applicable city, state, or federal permit requirements.
- E. **Information Prior to Submitting Application.** Prior to submitting an application for a Substantial Development Permit, a Conditional Use Permit, and/or a Variance, applicants are encouraged to request pre-application meeting. This will enable the applicant to become familiar with the requirements of this shoreline master program, other applicable regulations, and the approval process. The pre-application process shall be conducted according to procedures established by the Administrator.
- F. **Shoreline Applications**
1. Within twenty-eight (28) days of receiving an application for a Substantial Development Permit, a Conditional use, or a Variance the Administrator or designee shall provide a written determination stating that the application is either complete or incomplete. If an application is incomplete, then the determination shall include a statement indicating what is necessary to make the application complete. A determination of completeness shall not preclude the city from requesting additional information or studies.
  2. An application is complete if it includes the following:
    - (a) A completed application form as provided by the City,
    - (b) A legal description and map(s) showing the entire parcel of land owned by the Applicant
    - (c) Site Plan, drawn to scale and including the following:

- i. Site boundary;
  - ii. Property dimensions in vicinity of project;
  - iii. North arrow and scale;
  - iv. Ordinary high water mark;
  - v. Typical cross-section or sections showing:
    - (a) Existing ground elevation;
    - (b) Proposed ground elevation;
    - (c) Height of existing structures;
    - (d) Height of proposed structures;
  - vi. Where appropriate, proposed land contours using five-foot (5') intervals in water areas and ten-foot (10') intervals on areas landward of OHWM, if development involves grading, cutting, filling, or other alteration of land contours;
  - vii. Dimensions and location of existing structures to be maintained;
  - viii. Dimensions and locations of proposed structures, parking, and landscaping;
  - ix. Source, composition, and volume of any fill material;
  - x. Composition and volume of any extracted materials, and identify proposed disposal area;
  - xi. Location of proposed utilities, such as sewer, septic tanks and drain fields, water, gas, and electricity;
  - xii. If the development proposes septic tanks, proof that the proposed development complies with local and state health regulations;
  - xiii. Shorelines areas;
- (d) Vicinity Map;
- i. Indicate site location using natural points of reference, i.e., roads, state highways, prominent landmarks, etc.;
  - ii. If the development involves the removal of any soils by dredging or otherwise, identify the proposed disposal site on the map. If disposal site is beyond the confines of the vicinity map, provide another vicinity map showing the precise location of the disposal site and its distance to nearest city;
- (e) A brief narrative description of the general nature of the improvements and land use within one thousand feet (1,000') in all directions from development site;
- (f) Adjacent Land Owners. After a determination completeness, names and addresses of all real property owners certified by a title company within three hundred feet (300') of property where development is proposed;



- (g) If the proposal site includes critical areas as defined in Chapter 7 of this shoreline master program then the following additional application requirements shall apply:
    - i. A scaled drawing showing the dimensions, and the exact boundary of the critical area on the project site;
    - ii. Identification of specific means to mitigate any potential adverse environmental impacts of the proposal;
    - iii. Top view and typical cross-section views of the critical area (and buffer, if applicable) to scale;
    - iv. If the critical area is a wetland, a qualified professional shall provide a delineation report using the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands, unless the Planning Director determines the project exempt from further review. The project shall be exempt from further review if the Applicant can clearly show:
      - (a) No adverse impacts will occur to the wetland or its buffer; and
      - (b) The proposed use or structure is located beyond the required buffer or building setback zone based upon wetland type.
  - (h) Identification of specific means to mitigate any potential adverse environmental impacts of the proposal.
3. The City may require additional information deemed necessary to verify compliance with the provisions of this shoreline master program.
- G. **Fees.** At the time of an application request, the Applicant shall pay a filing fee as determined by the City Council, by resolution. Sufficient fees shall be charged to the Applicant to cover the costs of evaluation of the application.
- H. **Public Notice**
- 1. **Notice of Application.** Within fourteen (14) days after a completeness determination, a Notice of Application shall be published in a newspaper of general circulation, within the area in which the development is proposed. The Notice of Application shall include the following:
    - (a) Description of the location of the project and a statement that any person desiring to present their views to the City may do so in writing within thirty (30) days of the notice of application;
    - (b) If applicable, the notice shall include the date of the public hearing and state that any person may submit oral or written comments at the hearing. All persons who indicate their desire to receive a copy of the final order shall be notified, in a timely manner;
    - (c) The Notice of Application must be published in the appropriate newspaper at least once. The Notice of Application may be combined with the other notices such as SEPA and public hearings;

- (d) For site-specific developments, the Administrator shall also post the Notice of Application on-site per Chewelah Municipal Code 18.20.
  - (e) The Administrator may require other methods of public notice to accomplish the objectives of reasonable notice to the adjacent landowners and the public.
2. Notice of Public Hearing. Prior to a public hearing, if the hearing date was not included in the notice of application, the Administrator shall prepare a notice of public hearing that states the nature of the proposal, time of the hearing, and location of the hearing. The public hearing should be held at the earliest possible date after the thirty (30) day public comment period for the notice of application. The notice of public hearing shall include the following:
- (a) Description of the location of the project and a statement that any person desiring to present their views to the City may submit oral or written testimony at the hearing.
  - (b) Date, location, and time of the public hearing.
  - (c) A written notice of the public hearing at which the Planning Commission will consider the application shall be mailed or delivered to the applicant a minimum of seven (7) days prior to the hearing.
  - (d) The Administrator shall also post the Notice of Public Hearing on-site.
3. Notice of Decision. After a decision is made by the review authority the Administrator shall prepare a notice of decision that contains the following:
- (a) The date of the application and the date of determination of completeness of application;
  - (b) A description of the project or requested action and the location of the property;
  - (c) A statement of any SEPA threshold determination;
  - (d) A statement of the action taken by the review authority;
  - (e) A statement that the action is final unless an appeal is submitted within the appeal period set by this title;
  - (f) A statement describing the procedure for an appeal;
  - (g) The notice of decision shall be distributed as follows:
    - i. Publication of the notice in the official city newspaper;
    - ii. Mailing of the notice to the applicant or applicant's representative and to any person who, prior to the rendering of the decision, requested notice of the decision or submitted comments on the application.
    - iii. The Department of Ecology
    - iv. The Attorney General
  - (h) A statement that work or construction is not authorized until twenty-one (21) days from the date the permit is filed with Ecology or until all review proceedings initiated within twenty-one days from the date of such filing have been terminated;

**I. Public Hearing Required**

1. The Planning Commission shall hold a public hearing on an application for a Shoreline Conditional Use or Shoreline Variance.
2. The Administrator shall prepare a staff report on the proposed development or action summarizing the comments and recommendations of city departments, affected agencies and special zones, and evaluating the development's consistency with the requirements of the Shoreline Master Program, the Chewelah Comprehensive Plan, and other applicable city regulations. The staff report shall include findings, conclusions and proposed recommendations for the disposition of the development application.
3. At the time and in the place appointed, the planning commission shall conduct a public hearing for the purpose of taking testimony, hearing evidence, considering the facts pertinent to the proposal, and evaluating the proposal for consistency with the requirements of this title and other applicable plans and regulations.
4. The planning commission may grant approval, approval with conditions, or may deny the project based on the testimony received and the findings made. No permit shall be granted unless the proposed development is consistent with the provisions of this Master Program, the SMA, and the SE Overlay District. The burden of proving that the proposed development is consistent with the shoreline master program, Shoreline Management Act, and Shoreline Enhancement Overlay shall be on the Applicant.
5. Planning Commission Decision. Within five (5) days of the decision, the Administrator shall send the Commission's final order, including findings and conclusions to the following:
  - i. The Applicant.
  - ii. The Department of Ecology.
  - iii. The Attorney General.
6. After City approval of a Shoreline Conditional Use Permit or Shoreline Variance, the Administrator shall submit the permit to Ecology for its approval, approval with conditions, or denial. Upon receipt of Ecology decision, the Administrator shall notify those interested persons having requested the outcome of such decision.

**J. Time Limit on Approval**

1. Duration of Permits. The City of Chewelah may issue shoreline permits with termination dates of up to five (5) years. If a permit does not specify a termination date, the following requirements apply, consistent with WAC 173-14-060.
  - (a) Time Limit for Substantial Progress. Construction, or substantial progress toward completion, must begin one (1) year after approval of the shoreline permit.
  - (b) Extension for Substantial Progress. The City of Chewelah may, at its discretion with prior notice to parties of record and Ecology, extend the two (2) year time period for the substantial progress for a reasonable time up to one (1) year based

on factors, including the inability to expeditiously obtain other governmental permits which are required prior to the commencement of construction.

2. Five (5) Year Permit Authorization. If the applicant has not completed construction within five (5) years of approval, the City will review the shoreline permit and, upon showing of good cause, will either extend the permit for one (1) year, or terminate the permit. Prior to the City authorizing any permit extensions, it shall notify any parties of record and Ecology.
- K. **Revision of Permits.** When an applicant desires to revise a shoreline permit, the applicant must submit detailed plans and text describing the proposed changes. If the Administrator determines the revisions proposed are within the scope and intent of the original permit, consistent with WAC 173-14-064, the Administrator may approve the revision. "Within the scope and intent of the original permit" means all of the following:
1. No additional over-water construction is involved, except pier or bridge construction may be increased by five hundred square feet (500sf) or ten percent (10%), whichever is less;
  2. Ground area coverage and height is not increased more than ten percent (10%);
  3. Additional structures do not exceed a total of two hundred fifty square feet (250sf);
  4. The revision does not authorize development to exceed setback, lot coverage, or any other requirement of the SE Overlay District;
  5. Additional landscaping is consistent with conditions, if any, attached to the original permit;
  6. The use authorized pursuant to the original permit is not changed;
  7. No adverse environmental impact will be caused by the revision;
  8. If the sum of the proposed revision and any previously approved revisions do not meet the criteria above, an application for a new shoreline permit must be submitted. If the revision involves a Shoreline Conditional Use or Shoreline Variance conditioned by Ecology, the revision also must be reviewed and approved by Ecology. A City or Ecology decision on revision to the permit may be appealed within twenty-one (21) days of such decision;
  9. Construction allowed by the revised permit not authorized under the original permit is undertaken at the applicant's own risk until the expiration of the appeals deadline.
- L. **Bonds.** Bonds in favor of the City may be required from the applicant to post a bond to assure full compliance with any terms and conditions imposed on any substantial development, conditional use, or variance permit. All bonds shall be in an amount to assure the City that any deferred improvement will be carried out within the time stipulated.
- M. **Nonconforming Development.** Nonconforming development is a shoreline use or structure which was lawfully constructed or established prior to the effective date of this Shoreline Master Program, the SMA, or amendments thereto, but does not conform to the present regulations, standards, or policies of the shoreline master program or SMA. In such cases, the following standards shall apply:

1. Nonconforming development may be continued provided it is not enlarged, intensified, increased, or altered in any way thereby increasing its nonconformity;
2. A nonconforming development which is moved any distance must be brought into conformance with SMA and the SE Overlay District;
3. If a nonconforming development is damaged to an extent not exceeding seventy-five percent (75%) replacement cost of the original structure, it may be reconstructed to those configurations existing immediately prior to the time the structure was damaged, provided that application is made for the permits necessary to restore the development within six months of the date the damage occurred, and all permits are obtained and the restoration is completed within two years of permit issuance;
4. If a nonconforming use is discontinued for twelve (12) consecutive months or for twelve (12) months during any two (2) year period, any subsequent use shall be conforming. It shall not be necessary to show that the owner of the property intends to abandon the nonconforming use in order for the nonconforming rights to expire;
5. A nonconforming use shall not be changed to another nonconforming use, regardless of the conforming or nonconforming status of the building or structure in which it is housed;
6. An undeveloped lot, tract, parcel, site, or division which was established prior to the effective date of SMA and the SE Overlay District but does not conform to the present lot size or density standards, may be developed so long as such development conforms to all other requirements of SMA and the SE Overlay District.

**N. Duties and Responsibilities**

1. Administrator or their designee is vested with the following:
  - (a) Overall administrative responsibility for the Shoreline Enhancement Overlay District;
  - (b) Authority to approve, approve with conditions, or deny Shoreline Substantial Development Permits and shoreline permit revisions in accordance with the policies and provisions of the shoreline master program, the City's Comprehensive Plan, and the SMA;
  - (c) Authority to grant Statements of Exemption from Shoreline Substantial Development Permits;
  - (d) Authority to determine compliance with the State Environmental Policy Act (SEPA), RCW 43.21C.
2. The duties and responsibilities of the Administrator shall include the following:
  - (a) Establish the procedures and preparing forms deemed essential for the administration of the City's shoreline policies and development regulations;

- (b) Advise interested citizens and applicants of the purposes, goals, policies, regulations, and procedures of SMA, the City's Comprehensive Plan, and the SE Overlay District, and any changes or amendments thereto;
  - (c) Make administrative decisions and interpretations of the policies and regulations of the State Shoreline Management Act (SMA) RCW 90.58, the City's Comprehensive Plan, and the SE Overlay District;
  - (d) Collect applicable fees;
  - (e) Determine all necessary information and materials are provided with shoreline permit applications;
  - (f) Make field inspections, as necessary;
  - (g) Review all provided and related information deemed necessary for appropriate application needs;
  - (h) Determine if a Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, or Shoreline Variance is required and provide the appropriate application forms;
  - (i) Review and analyze Shoreline Substantial Development Permit applications, making written findings and conclusions, and approving, approving with conditions, or denying such permits;
  - (j) Submit Shoreline Conditional Use Permit and Shoreline Variance Applications and make written recommendations and findings on such permits to the Planning Commission for their consideration and official action;
  - (k) Assure proper notice is given to appropriate persons and the public for all hearings;
  - (l) Provide technical and administrative assistance to the Planning Commission as required for effective and equitable implementation of the shoreline master program, the comprehensive plan, and the SMA;
  - (m) Investigate, develop, and propose amendments to the City's Comprehensive Plan and the SE Overlay District as deemed necessary to more effectively and equitably achieve the City's shoreline management goals and policies, and those of SMA;
  - (n) Seek remedies for alleged violations of the provisions of SMA, the SE Overlay District, or of conditions of any approved shoreline permit issued by the City Chewelah;
  - (o) Coordinate information with affected agencies.
3. The Chewelah Planning Commission, hereinafter known as the Commission, is vested with authority to perform the following:
- (a) Approve, approve with conditions, or deny Shoreline Conditional Use Permits or Shoreline Variances after considering the findings and recommendations of the Administrator. Any decision on this matter made by the Commission may be appealed as set forth in the Section on Local Appeals;

- (b) The duties and responsibilities of the Commission shall include the following:
  - i. Consideration of and Shoreline Conditional Use and Shoreline Variance Applications on regular meeting days or public hearings;
  - ii. Review the findings and conclusions for permit applications submitted by the Administrator;
  - iii. Approve, approve with conditions, or deny Shoreline Conditional Use Permits and Shoreline Variances;
  - iv. Base all decisions on shoreline permits on the shoreline master program goals and policies, criteria established in the SE Overlay District, the City's Comprehensive Plan, and the SMA;
  - v. At the discretion of the City Administrator, require any applicant granted a shoreline permit to post a bond or other acceptable security with the City conditioned to assure the applicant and/or their successors in interest shall adhere to the approved plans and all conditions attached to the shoreline permit. Such bonds or securities shall have a face value of at least one hundred fifty percent (150%) of the estimated development cost, including attached conditions. The City Attorney shall approve such bonds or securities as to form;
- 4. The Chewelah City Council, hereinafter known as the Council, is vested with authority to perform the following:
  - (a) Decide and review local appeals of the Administrator's or Commission's actions and interpretations on regular meetings days or public hearings;
  - (b) Review the findings and conclusions for shoreline permit applications submitted by the Administrator or Commission, and appeals of the Administrator's or Commission's actions and interpretations;
  - (c) Approve any revisions or amendments to the City's Comprehensive Plan and the SE Overlay District in accordance with the requirements of SMA;
  - (d) Base all decisions on shoreline permits or appeals on the criteria established in the SE Overlay District, the City's Comprehensive Plan, and SMA;
  - (e) Review and act upon any recommendations of the Administrator for amendments or revisions to the shoreline policies of the City's Comprehensive Plan and the regulations of the SE Overlay District. The Council shall enter findings and conclusions setting forth factors it considered in reaching its decision. To become effective, any amendments to the Comprehensive Plan or SE Overlay District must be reviewed and approved by Ecology, pursuant to RCW 90.58.190 and WAC 173-19.
- O. **Shoreline Program Review and Amendments.**
  - 1. The SE Overlay District, along with the shoreline policies of the City's Comprehensive Plan, shall be periodically reviewed and adjustments made as necessary to reflect changing local circumstances, new information or improved data, and changes in State statutes and regulations. This review process shall be consistent with WAC 173-19 requirements and shall include a local citizen

- involvement effort and public hearing to obtain the views and comments of the public.
2. **Amendments.** Any of the provisions of the SE Overlay District or shoreline policies of the City's Comprehensive Plan may be amended as provided for in state law. Amendments or revisions to the SE Overlay District and/or the shoreline policies of the City's Comprehensive Plan do not become effective until approved by Ecology.
- P. **Severability.** If any provisions of the SE Overlay District, or its application to any person or legal entity or parcel of land or circumstances is held invalid, the remainder of the SE Overlay District, or the application of the provisions to other persons or legal entities or parcels of land or circumstances, shall not be affected.
- Q. **County Tax Assessor.** As provided for in RCW 90.58.290, the county assessor in establishing the fair market value of the property shall consider the restrictions imposed by this shoreline master program.
- R. **Local Appeals.** Any decision made by the Administrator or Commission regarding shoreline permits, shoreline policy or regulation interpretations, permit revisions, or other action within the scope of their responsibility, may be appealed to the Council as set forth in the Chewelah Municipal Code Chapter 18.20.
- S. **Appeal to State Shorelines Hearings Board.** Any person aggrieved by the granting, denying, rescinding, or modification of a shoreline permit may seek review from the State Shorelines Hearings Board by filing an original and one (1) copy of the request with the Hearings Board within twenty-one (21) days the permit decision is filed with Ecology. If the case is a variance or conditional use permit decision of Ecology, twenty-one (21) days from the date Ecology transmits its decision to the City and applicant
- T. **Enforcement and Penalties.** The choice of enforcement action and the severity of any penalty should be based on the nature of the violation and the damage or risk to the public or to public resources. The existence or degree of bad faith of the persons subject to the enforcement action, the benefits accrued to the violator, and the cost of obtaining compliance may also be considered.
1. **Civil Penalty.**
    - (a) The City Attorney shall bring such injunctive, declaratory, or other actions as are necessary to ensure no uses are made along shorelines in conflict with the provisions of SMA and the SE Overlay District, and to otherwise enforce the provisions of SMA and the SE Overlay District.
    - (b) Any person who fails to conform to the terms of a shoreline permit issued, undertakes a development or use along City shorelines without first obtaining any shoreline permit, or who fails to comply with a cease and desist order shall also be subject to a civil penalty not to exceed one thousand dollars (\$1,000) for each violation. Each day of violation shall constitute a separate violation.
    - (c) **Aiding and Abetting.** Any person who, through an act of commission or omission procedures, aids, or abets in the violation shall be considered to have committed a violation for the purposes of civil penalty.



- (d) A notice in writing shall impose the penalty provided for in this section, either by certified mail with return receipt requested or by personal service, to the person incurring the same from the City of Chewelah. The notice shall include the content of order specified below.
  - (e) Within thirty (30) days after the notice is received, the person incurring the penalty may apply in writing to the City of Chewelah for remission or mitigation of such penalty. Upon receipt of the application, the City may remit or mitigate the penalty only upon a demonstration of extraordinary circumstances, such as the presence of information or factors not considered in setting the original penalty. Any penalty imposed pursuant to this section by the City shall be subject to review by the City Council.
  - (f) Penalties jointly imposed by the City and Ecology shall be appealed to the Shorelines Hearings Board. When the City and Ecology impose a penalty jointly, it may be remitted or mitigated only upon such terms as both the City and Ecology agree.
  - (g) Content of order shall set forth and contain the following:
    - i. Description of the specific nature, location, extent, and time of violation and the damage or potential damage.
    - ii. Notice the violation or the potential violation cease and desist or, in appropriate cases, the specific corrective action to be taken within a given time. A civil penalty under this section may be issued with the order and it shall specify a date certain or schedule by which payment will be complete.
  - (h) The cease and desist order issued under this subsection shall become effective immediately upon receipt by the person to whom the order is directed.
  - (i) Failure to comply with the terms of a cease and desist order can result in enforcement actions including, but not limited to, the issuance of a civil penalty.
2. Applicants applying for a shoreline permit after commencement of a use or activity may, at the discretion of the City be required to pay a delinquent permit penalty not to exceed three (3) times the appropriate shoreline permit fee paid by the Applicant. A person who has caused, aided, or abetted a violation within two (2) years after the issuance of a regulatory order, notice of violation, or penalty by the City or Ecology against said person may be subject to a delinquent permit penalty not to exceed ten (10) times the appropriate shoreline permit fee paid by the Applicant. Delinquent permit penalties shall be paid in full prior to resuming the use or activity.
3. Issuance of civil penalties is mandatory in the following instances:
- (a) Violator has ignored the issuance of an order or notice of violation.
  - (b) Violation causes or contributes to significant environmental damage to shorelines as determined by the City.
  - (c) Person causes, aids, or abets in a violation within two (2) years after issuance of a similar regulatory order, notice of violation, or penalty by the City or Ecology against said person.

4. Minimum Penalty Levels
  - (a) Regarding all violations that are mandatory penalties, the minimum penalty is two hundred fifty dollars (\$250).
  - (b) For all other penalties, the minimum penalty is one hundred dollars (\$100).
5. In addition to incurring civil liability, any person found to have willfully engaged in activities along shorelines in violation of the provisions of SMA, the City's Comprehensive Plan, and the SE Overlay District shall be guilty of a gross misdemeanor and shall be punished by a fine of not less than one hundred dollars (\$100) nor more than one thousand dollars (\$1,000), by imprisonment in the county jail for not more than ninety (90) days for each separate offense, or by both fine and imprisonment. The fine for the third and all subsequent violations in any five (5) year period shall be not less than five hundred dollars (\$500) nor more than ten thousand dollars (\$10,000).
6. Any person subject to the regulatory program of SMA and the SE Overlay District who violates any provision thereof or shoreline permit issued pursuant thereto shall be liable for all damage to public or private property arising from such violation, including the cost of restoring the affected area to its condition prior to violation. The City Attorney shall bring suit for damages under this Section on behalf of the City. Private persons shall have the right to bring suit for damages under this Section on their own behalf and on the behalf of all persons similarly situated. If liability has been established for the cost of restoring an area affected by the violation, the court shall make provisions to assure that restoration will be accomplished within reasonable time at the expense of the violator. In addition to such relief, including money damages, the court in its discretion may award attorney's fees and costs of the suit to the prevailing party.
7. No building permit, septic tank permit, or other development permit shall be issued for any parcel of land developed or divided in violation of the SE Overlay District. All purchasers or transferees of property shall comply with provisions of the SE Overlay District. Each purchaser or transferee may recover damages from any person, firm, corporation, or agent selling, transferring, or leasing land in violation of the SE Overlay District. Damages may include any amount reasonably spent as a result of inability to obtain any development permit and spent to conform to the requirements of the SE Overlay District, as well as cost of investigation, suit, and reasonable attorney's fees occasioned thereby. Such purchaser, transferee, or lesser may, as an alternative to conforming their property to these requirements, rescind the sale, transfer, or lease and recover cost of investigation and reasonable attorney's fees occasioned thereby from the Violator.

**U. Right of entry.**

1. When necessary to make an inspection to enforce any of the provisions of this SMP or when the Administrator has reasonable cause to believe that a violation of the SMP exists, the Administrator or their representative may enter such premises to inspect the suspected violation or to perform any duty imposed by the SMP provided:

- (a) If the premises are occupied, they shall present proper credentials and request entry;
  - (b) If the premises are unoccupied, they shall first make a reasonable effort to locate the owner of the premises and request entry
2. No owner or occupant of any premises shall fail to provide prompt entry to the Administrator or authorized representative for the purposes of inspection and examination. If such entry is refused, the Administrator shall have recourse to every remedy provided by law to secure entry; including, any person violating this subsection is guilty of a misdemeanor.



## CHAPTER 7 – CRITICAL AREAS IN SHORELINE AREAS

### Section 1: Purpose, Intent and Applicability

- A. This chapter applies to the construction, alteration, or enlargement of any building or structure, excavation, grading, earthwork construction, and the removal of vegetation on any land, which meets the classification standards for any critical area as, defined in this chapter that is within the shoreline enhancement overlay as defined by this shoreline master program.
- B. Critical areas for this shoreline master program are areas within 250' of designated wetlands and critical wildlife habitat. Any development proposed on a parcel of land within shoreline jurisdiction with a critical area shall be subject to the site plan review process and the regulations of this section, as defined in Chewelah Municipal Code 18.16, in addition to any shoreline master program review.

### Section 2: Permitted, Conditional and Prohibited Uses

- A. Uses allowed on a lot with critical areas within in the SE Overlay District shall be the same as the underlying zone in which the parcel is located. Each use shall be evaluated using the review process identified in the shoreline master program in conjunction with the requirements of state and federal regulations and this chapter.

### Section 3: Project Review Required

- A. All Land use or building permits for clearing or development activities within two hundred and fifty feet (250') of a critical area as defined on the data maps, shall be subject to review under provisions of this chapter unless exempted in Subsection D below.
- B. For those projects determined by the City Administrator likely to have an impact to the critical areas, the applicant shall submit a technical study identifying the precise limits of the critical area and its function and resource value as part of the application. The study shall be prepared by a qualified professional with demonstrated qualifications in the area of concern and shall apply best available science as part of its analysis.
- C. Projects subject to this Chapter shall submit an application consistent with Chapter 6 of this document.
- D. The following activities shall be allowed in critical areas provided they are conducted using best management practices and at a time and in a manner designed to minimize adverse impacts to the critical area:
  - 1. Conservation or preservation of soil, water, vegetation, fish, shellfish and other wildlife;
  - 2. Outdoor recreational activities which do not involve disturbance of the resource or site area, including fishing, hunting, bird watching, hiking, horseback riding and bicycling;
  - 3. Harvesting wild crops in a manner that is not injurious to the natural reproduction of such crops and provided the harvesting does not require tiling of soil, planting of crops or alteration of the resource by changing existing topography, vegetation, water conditions or water sources;

4. Education, scientific research and use of nature trails;
  5. Existing and ongoing agriculture activities, including farming, horticulture, aquaculture, irrigation, ranching or grazing of animals;
  6. Normal and routine maintenance of legally constructed irrigation and drainage ditches;
  7. Normal and routine maintenance, repair or operation of existing serviceable structures, facilities or improved areas, not including expansion, change in character or scope or construction of a maintenance road;
  8. Minor modification (such as construction of a patio, balcony or second story) of existing serviceable structures where the modification does not adversely impact the functions of the critical area.
- E. The City requires applicants to demonstrate that development on a site determined to have critical areas will protect the resource by taking one of the following steps (listed in order of preference):
1. Avoid impacts to the resource altogether.
  2. Minimize the impact by limiting the degree or magnitude of the action and its implementation by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts.
  3. Rectify the impact by repairing, rehabilitating or restoring the affected environment to the conditions existing at the time of the initiation of the project.
  4. Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action.
  5. Compensate for the impact by replacing, enhancing or providing substitute resources or environments.
  6. Monitor the impact and take appropriate corrective steps.
- F. If a critical resource on the property that is being developed in the City crosses a jurisdictional line, the City shall coordinate with Stevens County in the review of the project.
- G. Projects subject to this Chapter shall obtain a permit consistent with Section 3 of Chapter 6 of this document.

### **Section 3: Wetlands**

- A. The existence of a wetland and the location of its boundary (as designated in the National Wetlands Inventory) shall be determined by the applicant through the performance of a field investigation applying a methodology acceptable to the Washington Department of Ecology's wetland rating system. Qualified professionals shall perform wetland determinations and delineations using an acceptable methodology.
- B. A wetland containing features satisfying the criteria of more than one of the following categories shall be classified in the highest applicable category. A wetland can be classified into more than one category when distinct areas that clearly meet the criteria

of separate categories exist. Wetland rating categories shall be applied as the wetland exists at the time of the adoption of this Title or as it exists at the time of an associated permit application. Wetland rating categories shall not change due to illegal modifications. The following are the Eastern Washington Wetland Rating Categories as specified in *Washington State Wetland Rating System for Eastern Washington - Revised*, Ecology Publication #04-06-015 or as updated:

1. Category I wetlands are more sensitive to disturbance than most wetlands, are relatively undisturbed and contain some ecological attributes that are impossible to replace or provide a very high level of function. Category I wetlands are:
    - (a) Those areas identified by the Washington Natural Heritage Program as high quality, relatively undisturbed wetlands, or wetlands that support state Threatened or Endangered plant species;
    - (b) Alkali wetlands;
    - (c) Bogs;
    - (d) Mature and old-growth forested wetlands over ¼ acre in size dominated by slow-growing native trees;
    - (e) Forested wetlands with stands of Aspen; or
    - (f) Wetlands that perform many functions very well.
  2. Category II wetlands occur more commonly than Category I wetlands need a high level of protection. Category II wetlands are:
    - (a) Forested wetlands in the channel migration zone of rivers,
    - (b) Mature forested wetlands containing fast growing trees,
    - (c) Vernal pools present within a mosaic of other wetlands,
    - (d) Wetlands with a moderately high level of functions.
  3. Category III are generally wetlands that have been disturbed, smaller, and less diverse than Category II wetlands. Category III wetlands are
    - (a) Vernal pools that are isolated
    - (b) Wetlands with a moderate level of functions.
  4. Category IV wetlands have the lowest levels of functions and are often heavily disturbed. These are wetlands that are replaceable, and in some cases may be improved. Replacement of wetland functions cannot be guaranteed in any specific case.
- C. Development near wetlands shall observe the following buffers from the edge of the wetland. No development or activity shall occur within the required buffers unless the applicant can demonstrate that the proposed use or activity will not degrade the functions and values of the wetland and other critical areas according to the evaluation criteria from Subsection E below. In no case shall any development or activity be permitted closer to the edge of the wetland than within one-half of the required buffer.

Wetland Category	Buffer
Category I	250 feet
Category II	200 feet
Category III	150 feet
Category IV	50 feet

- D. Buffer zones may be increased if the Planning Commission finds, on a case-by-case basis and based upon best available science, at least one of the following applies:
1. A larger buffer is necessary to maintain viable populations of existing species, or
  2. The wetlands are used by species proposed or listed by the federal government or the State as endangered, threatened, rare, sensitive or being monitored as habitat for those species or has unusual nesting or resting sites, or
  3. The adjacent land is susceptible to severe erosion and erosion control measures will not effectively prevent adverse wetland impacts, or
  4. The adjacent land has minimal vegetative cover or slopes greater than twenty-five percent (25%).
- E. Buffer zones may be decreased to no less than fifty percent (50%) if the Planning Commission finds, on a case-by-case basis and based upon Best Available Science, that all of the following apply:
1. The critical area report provides a sound rationale for a reduced buffer, and
  2. The existing buffer area is well-vegetated with native species and has less than ten percent (10%) slopes, and
  3. No direct or indirect, short-term or long-term adverse impact to the wetland will result from the proposed activity.
- F. Wetland buffer areas may be used for conservation and restoration activities, passive recreation (including trails, wildlife viewing structures & fishing access areas) and stormwater management facilities.
- G. If activities will result in the loss or degradation of a regulated wetland or buffer, a mitigation or enhancement plan prepared by a qualified expert shall be submitted for review and approval by the Town. Any mitigation or replacement wetland shall follow the recommended minimum guidelines specified by the Department of Ecology. *(Department of Ecology's Wetland Mitigation in Washington State, Part 2: Developing Mitigation Plans (Version 1, Publication #06-06-011b, March 2006)*

**Section 5: Critical Wildlife Habitat**

- A. Development in the shoreline jurisdiction that may impact habitat conservation areas shall provide a habitat management plan, prepared by a qualified expert. The habitat management plan shall be in conformance with WA Department of Fish and Wildlife requirements, for evaluation by local, state and federal agencies (as identified by the US



Fish and Wildlife Service, the National Marine Fisheries Service, the Washington Department of Fish and Wildlife, and the Department of Natural Resources).

- B. The habitat management plan shall be based on best available science and best management practices and shall be designed to achieve specific habitat objectives and shall include, at a minimum:
  - 1. A detailed description of vegetation on and adjacent to the project area,
  - 2. Identification of any species of local importance, priority species, or endangered, threatened, sensitive or candidate species that have a primary association with habitat on or adjacent to the project area, and assessment of potential project impacts to the use of the site by the species,
  - 3. A discussion of any federal, state or local special management recommendations, including Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the project area,
  - 4. A detailed discussion of the potential impact on habitat by the project, including potential impact to water quality,
  - 5. A discussion of measures, including avoidance, minimization and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed land use activity,
  - 6. A discussion of continuing management practices that will protect habitat after the project site has been developed, including proposed monitoring and maintenance programs.
- B. A habitat conservation area may be altered only if the proposed alteration of the habitat or the mitigation proposed does not degrade the functions and values of the habitat.
- C. Non-indigenous plant, wildlife or fish species to the region shall not be introduced into a habitat conservation area unless authorized by a state or federal permit or approval.
- D. The habitat management plan shall address the project area of the proposed activity, all habitat conservation areas and recommended buffers within three hundred feet (300') of the project area and all other critical areas within three hundred feet (300') of the project area.

### **Section 6: Frequently Flooded Areas**

- A. Applicants for development within frequently flooded areas shall comply with provisions of the flood damage prevention ordinance.
- B. Frequently flooded areas shall be the one hundred (100) year floodplain as identified on the City's FIRM.

### **Section 7: Data Maps**

- A. Critical areas within shoreline jurisdiction hereby designated on Figure 4.2 Critical Areas in Shoreline Jurisdiction and contain the best available graphic depiction of critical areas.
- B. The critical areas data maps are intended to alert the development community, appraisers, current and 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 City Administrator to order a technical study identifying the precise limits of the critical area and its function and resource value.

C. Interpretation of Data Maps

1. The City Administrator is vested with the ability to interpret the data maps. An affected property owner or other party has a right to appeal the administrative determination in accordance with CMC 18.20.
2. The data maps are 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 are protected under all the provisions of this chapter. The exact location of critical areas shall be determined by the applicant as a result of field investigations performed by qualified professionals using the definitions found in this chapter.

**APPENDIX 1**

**CITY OF CHEWELAH  
SHORELINE INVENTORY AND CHARACTERIZATION**

JUNE 2005

**Geo-Ecology Research Group  
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## **1. Introduction**

In 2004, the City of Chewelah obtained a grant from the Washington State Department of Ecology (DOE) to conduct a characterization of its shoreline jurisdiction as defined by the state's Shoreline Management Act (RCW 90.58). The purpose of this study is to conduct a baseline inventory of abiotic, biological and cultural conditions in the City of Chewelah's shoreline jurisdiction to provide the basis for the City's Shoreline Master Program update. This characterization will help the City identify existing conditions, determine functions and values of shoreline resources, and explore opportunities for conservation and restoration of ecological functions within the shoreline jurisdiction. These findings will help provide a framework for future updates to the City's shoreline environment designations and shoreline management policies and regulations.

## **Methodology**

Following DOE (2004) protocols, this shoreline inventory and analysis attempts to integrate findings in an accessible manner through narrative and associated maps to inform SMP planning decisions and to provide a baseline for adaptive management and cumulative impact assessment. The resulting shoreline characterization indicates management opportunities for protection of ecological functions, restoration of degraded habitat, improving public access, and supporting water-dependent use.

Using existing reports, the protocol begins with providing a regional context, including a vicinity map, that describes the regional setting, climate, topography and land uses, and indicates the extent of shorelines that are under SMA jurisdiction. This regional context sets the stage for the characterization of ecosystem-wide processes that are influencing the ecological functions within the shoreline jurisdiction, focusing on upland and adjacent land uses that affect the flow of water, sediment, nutrients and materials. This characterization uses existing regional plans, as well as data and information from existing studies, data and technical information, to identify management issues and determine the relationship of ecosystem-wide processes to shoreline functions, the health of those functions, and measures to protect or restore healthy processes and functions. Management issues addressed include flooding, erosion and sedimentation, loss and fragmentation of habitat, water pollution, and exotic species.

Following the characterization of ecosystem-wide processes, the protocol requires the characterization of the shoreline jurisdiction's ecological functions, which first requires mapping preliminary reach boundaries and documenting the rationale used. By overlaying stream hydrology, land use, and aerial photos, reach boundaries are created by considering changes in land use and zoning, vegetation cover, and/or geomorphic units (e.g. notable changes in gradient, confinement, surficial geology).

After determining reach boundaries, assessment of the ecological function of each reach begins with overlaying biological features and critical physical areas, including fish and conservation areas, wetlands, riparian and aquatic vegetation, frequently flooded areas, and geologically hazardous areas, such as areas of slope instability or erosion. Next, possible impacts to

ecological functions are determined by overlaying shoreline modifications, including structures (e.g. bulkheads, docks, storm drains), facilities cutting across the shoreline (e.g. roads and bridges), and land uses (e.g. agriculture, impervious surfaces). The results of these overlays are provided in a narrative summary and tables describing existing shoreline functions as evidenced by the mapped physical, biological and modification features.

The final step in the shoreline characterization is to overlay cultural and regulatory constraints to future use of the shoreline, and combine that analysis with the analysis of ecological functions to identify opportunities for shoreline protection and use. Cultural resources, public access, and regulatory designations that define and/or constrain future uses are mapped and summarized in both narrative and tables. These include archaeological and historic sites, public access, and zoning designations. Ecological protection and restoration opportunities are then identified through the physical, biological and cultural modification synthesis map overlays, while public access and cultural resource protection needs and opportunities are identified through the cultural jurisdiction synthesis maps. Preliminary shoreline environmental designation boundaries are also determined for each reach, based on existing use patterns and the biological and physical characteristics of the shoreline.

### **Principal Data Sources**

A number of Stevens County, State, and federal agency data sources, and technical reports were reviewed to characterize overall watershed conditions and to assess the ecological function of the City of Chewelah's shorelines in this watershed context. Sources reviewed for this report include:

#### 1) Reports and Maps:

Chewelah Creek Watershed Management Plan (1994).

Comprehensive Growth Management Plan and Environmental Impact Statement for the City of Chewelah (2002).

A Creek Runs Through It. Chewelah Creek Public Access and Recreation Plan (1993).

Quartzite Watershed Management Project. Final Environmental Impact Statement. Colville National Forest (2003)

Geologic map of the Chewelah 1:100,000 quadrangle, Washington-Idaho. (Washington Department of Natural Resources 1990)

Surficial geology map of the Chewelah 30 x 60 quadrangle, Washington and Idaho (U.S. Geological Survey 1995)

Soil Survey of Stevens County, Washington. (U.S.D.A.-Soil Conservation Service 1982).

Historical Climate Information. (Western Regional Climate Center 2004)

Monthly Streamflow Statistics for the Nation (USGS)

U.S. Environmental Protection Agency. n.d. Listed Water Information. Website: <http://oaspub.epa.gov/pls/tmdl/enviro.control>. Accessed 27 August 2004.

Colville River Fecal Coliform Total Maximum Daily Load Study (Washington State Department of Ecology 2002)

## 2) Digital Databases

In addition, the following digital databases were also used as part of the inventory and analysis process:

- City of Chewelah. (n.d.). Zoning.
- Interior Columbia Basin Ecosystem Management Project. (1995). Potential Natural Vegetation.
- United States Department of Agriculture, Natural Resources Conservation Services. (2003). Soil Survey Geographic (SSURGO) Database.
- United States Environmental Protection Agency. 1994. GIRAS Landuse/Landcover data for the Conterminous United States by quadrangles at scale 1:250,000; Stevens County.
- United States Fish and Wildlife Service. (2003). National Wetlands Inventory Data.
- Washington Department of Ecology. (1998). 303(d) Listings.
- Washington Department of Fish and Wildlife. (1997). GAP Analysis.
- Washington State Department of Natural Resources. (2000). Digital 1:100,000-scale Geology of Washington.
- Washington State Department of Natural Resources. (1996). Digital 1:24,000-scale Transportation (Roads and Railroads) of Washington.
- Federal Emergency Management Agency Flood Insurance Program Maps. Floodplain. Data received from Stevens County through City of Chewelah.
- Washington Department of Fish and Wildlife (2002). Priority Habitats and Species, Natural Heritage Site, and StreamNet databases.

## 3) Data Sources Developed by Geo-Ecology Research Group

The following digital datasets were developed from a variety of sources:

- Riparian tree cover. Digitized from 1996 1:24,000 Washington Department of Transportation orthophotos.
- Paye and Thomason Creek land use. Digitized from 1996 1:24,000 Washington Department of Transportation orthophotos.
- Chewelah Creek land use. Digitized from hard copy of Chewelah Creek Shoreline Land Use Types (Knox 2003)
- Impervious surfaces. Digitized from 1996 1:24,000 Washington Department of Transportation orthophotos.

- Public access/enhancement points. Digitized from Chewelah Creek Public Access and Recreation Plan (1993).

We also conducted a field survey of the City's shoreline jurisdiction to collect information on riparian vegetation conditions and land use, as well as map the following information:

- bridge and fence crossings.
- shore protection
- storm drains and culverts
- revetments

### **Report Organization**

The report is divided into three principal sections. After Section 1, the Introduction, Section 2 provides the regional context and characterization of watershed conditions and ecosystem-wide processes. Section 3 provides the inventory and analysis of ecological functions in the shoreline jurisdiction by reach. This section includes a presentation and discussion of the shoreline reach breaks used, and separate discussions of the physical, biological, and cultural modification, and jurisdictional characteristics of each reach. These discussions are augmented by several tables in the appendix, as well as synthesis maps included in the accompanying DVD map portfolio. Each reach-level inventory and analysis includes a summary of shoreline conditions, including draft environmental designations and identification of potential opportunities for protecting and restoring ecological functions. Again, accompanying maps are included in the DVD map portfolio.

### **Use of Map Portfolio**

To provide final synthesis maps at appropriate viewing scales that will inform the analysis report and illustrate findings, we chose to use an electronic map portfolio accessed through ESRI ArcReader, a free, easy-to-use mapping application that allows users to view, explore, and print maps. ArcReader © is a great way to deliver interactive mapping capabilities that access a wide variety of dynamic geographic information. Using ArcReader ©, anyone can view high-quality maps created using the ArcGIS© software (ESRI 2005).

Included on the DVD are 7 main folders:

- an ArcReader90 folder
- 6 data/map folders
  - Physical (physical.pmf)
  - Biological (biological.pmf)
  - Cultural Modifications (Cultural\_modifications.pmf)
  - Cultural Jurisdictional (Cultural\_jurisdictional.pmf)
  - Protection-Restoration Opportunities (Protection\_Restoration.pmf)

- Environmental Designations (Env\_Desig.pmf)

To begin using ArcReader to view maps, install ArcReader by navigating to the folder 'ArcReader90'. Click on Setup.exe and follow on-screen instructions.

Once ArcReader has been successfully installed, navigate to one of the data/map folders. Each of these folders contains two other folders called 'data' and 'pmf'. Ignore the data folder. Open the pmf folder and double click the pmf file with the same name as the parent folder.

If ArcReader has been installed properly (note – ArcReader will not install on PCs running Windows 98.) the ArcReader map will open up. The table of contents has intentionally been disabled in each of these ArcReader maps. Upon opening, a warning will flash on screen telling you as much, click OK. You are now ready to view and print ArcReader map files.

Each of the map files opens to the full extent of the map. If the user navigates to **VIEW → BOOKMARKS**, then they can zoom the map to each individual reach or to the extent of the entire area. This option is always available to the user. The user may also explore the map data using the zoom tool. There are two sets of zoom tools in ArcReader ©. One tool (#1) is used to zoom within the data window and the second tool (#2) is used to zoom in on the entire map

## **2. Ecosystem-wide Summary**

### ***Location***

The Chewelah Creek watershed, approximately 66,475 acres in size, is located in the Colville River Valley of Stevens County north of Spokane and south of Colville in northeastern Washington. The two main forks of Chewelah Creek head high in the Selkirk Mountains and flow ~20 miles south into the Colville River about 1 mile south of the City of Chewelah. Two additional creeks, Paye and Thomason, while not tributaries of Chewelah Creek, are considered as part of the watershed because of their proximity. Paye Creek originates from springs northwest of the city, and flows through the western portion of the City of Chewelah, entering the Colville River adjacent to the city's municipal sewage lagoons. Thomason Creek originates in the forested region east of Chewelah, and cuts across the southeast corner of Chewelah before entering the Colville River.

### ***Geology, Geomorphology and Topography***

The bedrock of the Chewelah Creek Watershed consists of Paleozoic metasedimentary and Precambrian metasedimentary and metavolcanic rocks. These units have been intruded by Mesozoic plutonic rocks (Waggoner, 1990). The area's bedrock has been deformed by low and high angle reverse faults. A north-trending, low angle reverse fault on the east side of the Colville River Valley (Waggoner, 1990) raised the headwaters of Chewelah Creek relative to its mouth. The watershed is a steep in its upper ~16 miles largely as a result of the bedrock and faulting. Elevations range from ~5200 feet in the headwaters to ~1650 feet at the mouth.

During the late Pleistocene the Colville Lobe of the Cordilleran Icesheet covered the Colville



River Valley with at least 2300 ft of ice. Ice thus covered and rounded much of the watershed leaving till in all but the highest elevations. The till consists of a heterogenous mix of clay, silt, sand and gravel. Meltwater streams deposited well sorted sands and gravels on the margins of the icesheet at the intermediate and lower elevations in the study area. Valley trains and kame terraces fill the intermediate elevations thus flattening the floors of these valleys (Carrara et al, 1995). Although mapped by Carrara et al (1995) as glacial outwash, the fan shaped features where the North and South forks of Chewelah Creek exit the mountain front appear to be post-glacial alluvial fans. These fans coalesce and extend to the sharp bend in US 395. The low lying ridge between US 395 and the railroad line northwest of town is likely moraine mantled by outwash.

Fluvial activity has likely dominated the geomorphic processes since the Colville Lobe retreated from the area by ~12,000 yr BP (Carrara et al, 1995). A dendritic drainage pattern developed prior to and/or following the last glaciation. Drainage density in the uplands is intermediate due to the resistant bedrock. Alluvial fans formed at the mouths of upland streams following deglaciation during the late Pleistocene and Holocene. At lower elevations, the post-glacial Colville River deposited silt, sand, gravel and some clay alluvium (Carrara et al, 1995).

## **Climate**

The contemporary climate of the Chewelah Creek watershed is influenced by the mid-latitude, continental, mountainous location of the area. Mean monthly temperatures in Chewelah over the 1971-2000 climate normal ranged from 26°F in January to 67°F in July with the mean annual temperature at 47°F. The peak growing season occurs from May through September. Mean annual precipitation was approximately 22 inches during this same period with over 60% of the precipitation falling in October through March. The cool season timing of the precipitation, combined with site latitude, continental location, and elevation results in much of this precipitation falling as snow (Western Regional Climate Center, 2004).

## **Soils**

Soils in the study area are highly variable as a result of the mountainous terrain, differing parent materials, and resulting microclimate differences. Soils can be generalized into four groups. The soils of mountain slopes surrounding the Chewelah region are generally thin, rocky and steeply sloping (City of Chewelah 2002). Upland soils formed in glacial till, volcanic ash and loess, and are generally very deep and well drained. Typical soil series here include the Aits (Inceptisol), Newbell (Inceptisol), and Donovan (Mollisol) Soils in intermediate elevations of the Chewelah Creek Watershed formed in glacial outwash on terraces and terrace escarpments (Donaldson et al, 1982). These soils are very deep and well drained and include the Bonner, Eloika, and Scrabblers series. All are Inceptisols reflecting the relatively short time they have had to develop. The lowest elevations in the watershed include grassland-dominated mollisols in the Colville and Narcisse series and very immature entisols in Peone series formed on floodplains, alluvial fans, the perimeters of lakes, and in various depressions. These soils are generally deep but range from moderately well drained to poorly drained. Soils

in the valley floor where the City of Chewelah is located are deeper and richer agricultural soils that are subject to high water tables and frost heave (City of Chewelah 2002).

## **Vegetation**

Vegetation in the northeastern Washington is dominated by coniferous forests. Uplands have traditionally been influenced by fire and aspect. North and east aspects are dominated by dense stands of Douglas fir (*Pseudotsuga menziesii*), western larch (*Larix occidentalis*), and lodgepole pine (*Pinus contorta*). Douglas fir and ponderosa pine occur as relatively open stands on south and west aspects (Northwest Power and Conservation Council [NPCC], 2004).

Lowland stream corridors may have or lack a tree canopy. Where a tree canopy is absent, thin-leaf alder (*Alnus sinuate*), snowberry (*Symphoricarpos albus*), willows (*Salix spp.*), mountain maple (*Acer glabrum*), red-osier dogwood (*Cornus stolonifera*), blue elderberry (*Sambucus cerulea*) and black hawthorn (*Crataegus douglasii*) are common. When a tree canopy is present, deciduous black cottonwood (*Populus trichocarpa*), water birch (*Betula occidentalis*), and quaking aspen (*Populus tremuloides*) are present as well as conifer species including western red cedar (*Thuja plicates*), western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), and western white pine (*Pinus monticola*) (Northwest Power and Conservation Council, 2004).

## **Land Cover and Land Uses**

Much of the Chewelah Creek watershed (>80%) lies within the Colville National Forests, where multiple uses prevail. The uplands have traditionally been used for logging, mining, and grazing, and increasingly for residential and recreational development. Forest practices may affect water quality by increasing the load of sediments, nutrients, and chemicals, as well as changing streamflow patterns, which in turn may result in flooding and increased stream temperatures in Chewelah and Thomason Creeks (United States Department of Agriculture, Forest Service [FS] 2003). Camping and off-road vehicle use are two additional watershed issues found in the National Forest, leading to increased garbage and destruction of habitat (Chewelah Creek Watershed Management Committee [CCWMC] 1994). From the National Forest region, the two forks of Chewelah Creek flow west and south through agricultural land and rural residential areas with homes on 10-20 acre parcels. Riparian vegetation, water quality and sedimentation is also affected by these other land uses in the watershed, including agriculture (e.g. cattle and horse grazing, pig farms, hay and grain crops), illicit dumping activity, and residential development, including septic tank impacts. Much of the lower portion of the watershed is covered by the City of Chewelah business, residential and open space (including the City of Chewelah Park) areas. Paye Creek flows through an area of agricultural, rural residential, and municipal land, including a 200 home subdivision started in 1992. Thomason Creek flows through forested, agricultural, and rural residential land, including Flowery Trail Road, a heavily used winter recreation access road, before flowing through a rural portion of the city (FS 2003).

## **Water Quantity and Quality**

Chewelah Creek originates high in the Selkirk Mountains as a result of springs, rainfall, and snowmelt. Its discharge reflects the monthly precipitation regime and spring snowmelt. Discharge is typically highest in May and secondarily in April. However, annual peak daily flows can occur from January to May, resulting from snowmelt or rain-on-snow events. Conversely, discharge is lowest in August, though annual daily flows can occur from August to December (U.S. Geological Survey, n.d.). Maximum daily flows vary greatly from year-to-year, from 56 cfs to 300 cfs, while flooding recurrence levels range between 15-20 years (CCWMC 1994). While Chewelah Creek has a mean annual flow above 20 cfs below the confluence of its north and south forks (which is required to be protected under the Shoreline Management Act), the mean annual flows of Paye and Thomason are lower than 20 cfs. The streamflows of all three creeks are beneficial for aquifer recharge, livestock watering, and fish habitat.

Water quality problems have been noted in the watershed in the recent past. Fecal coliform, dissolved oxygen, pH, and temperature were all issues on Chewelah Creek, and pH has been an issue of concern on Bayley Creek, a tributary to the North Fork of Chewelah Creek, in the 1990's (U.S. Environmental Protection Agency, n.d.). Heavy recreational uses at Chewelah City Park, especially during the Chataqua festival held each July, is thought to be a principal source of fecal coliforms. In addition, during 1993, Chewelah Creek contributed approximately 12% of the flow to the Colville River and approximately 23% of the daily load of nitrate-nitrites (CCWMC 1994). High fecal coliform readings have also been recorded on the lower reaches of Paye Creek (DOE 2002), while higher turbidity and sedimentation have been noted as water quality issues for Chewelah and Thomason Creeks (CCWMC 1994). The high levels of sedimentation in Thomason Creek are largely attributable to Flowery Trail Road's high traffic levels, lack of vegetative cover on cutslopes and hillslopes, and the use of maintenance sand in the winter (FS 2003). Finally, excessive aquatic vegetation and corresponding higher levels of plant nutrients and lower levels of dissolved oxygen have also been noted as a problem at the mouth of Thomason Creek, though vegetation was removed in 1995 and has not become a water quality or fish blockage issue since.

## **Measures to Protect and Restore Ecosystem-Wide Processes**

The Chewelah Creek Watershed Management Plan (1994) and the City of Chewelah Comprehensive Plan (2002) both provide many useful recommendations to protect and restore ecosystem-wide processes important to maintaining ecologically functioning shorelines. These include the following:

### Protection

**Hydrology issues:** Permits for new development and setback legislation can be used to mitigate stormwater flows. New developments should be required to use Stormwater Best Management Practices. Build new roads away from surface water.

**Water quality issues:** Wetlands and riparian vegetation can be protected to mitigate effects of upland sources. Public education on fertilizer, pesticide and septic tank impacts may be useful,

especially for shoreline residents. Slow runoff from unsurfaced roads as well as forestry, agriculture, recreational, and construction sites with proper erosion controls and Best Management Practices. Work with U.S. Forest Service to reduce camping impacts through use regulations and public education. Avoid off-road vehicle use and development on hydric or highly erodible soils. Work with Stevens County to identify neighboring jurisdictions for coordination of water quality management plans, including the US Forest Service.

***Riparian habitat issues:*** New development can be regulated to ensure protection of riparian habitat. Use zoning and shoreline regulations to prevent encroachment of riparian and wetland habitat by new development, including the use of buffers and adequate shoreline setbacks for new construction. Protect wetland and riparian vegetation to mitigate effects of upland nonpoint pollution sources, both by maintaining natural shoreline and aquatic plants as well as preventing their removal. Prevent protection of shoreline with hard structures, rather relying on bioengineering approaches for streambank stabilization to be developed with Stevens County Conservation District.

## Restoration

***Water quality issues:*** Effects on watershed from upland developments can be addressed through integration with GMA planning. Work with Washington Department of Transportation, Stevens County Road Department and Burlington Northern Railroad to direct storm runoff away waterways or install settling basins/containment ponds. Work with the US Forest Service and Stevens County Conservation District to reduce fertilizer and pesticide use on agricultural, forestry, and residential land near the shoreline. Work with Stevens County Weed Board and Stevens County Conservation District to harvest excess aquatic vegetation at mouth of Thomason Creek.

***Riparian habitat issues:*** Work with the US Forest Service and Stevens County to implement a watershed program to restore riparian vegetation and function. Retrofit shore protection structures with bioengineered approaches. Maintain and enhance the biological and physical functions and values of wetlands. Provide for reasonable buffers around wetlands in order to provide a local habitat for wetland plant and animal communities, and to reduce or minimize intrusions from humans and domestic animals. Stewardship strategies should be implemented for the long term management of wetlands. Maintain the natural value of wetlands to control and filter storm water runoff.

### 3. Reach Inventory and Analysis

#### ***Shoreline Jurisdiction Reach Breaks***

Several sources were used to map the shoreline jurisdiction as shown on Figure 3 and synthesis maps in the map portfolio. The City of Chewelah city and urban growth boundary were received from the City via Studio Cascade. Creek boundaries were digitized from Washington Department of Transportation 1:24,000 color orthophotos (1996), using FEMA information as a guide. Associated wetland locations were mapped based on National Wetland Inventory information. For the purposes of this inventory, those wetlands assumed to be associated with shorelines (fall within 200 feet as measured from the top of the riverbank or floodway, or if they are connected to the defined creek shoreline environment by being within the 100 year floodplain) are included in the shoreline area shown on Figure 3. To categorize distinct reaches of the Town's shorelines for characterization, the shoreline jurisdiction was classified into five preliminary reaches based on biophysical characteristics, as well as general land uses. Table 1 indicates the location of shoreline segments, as well as the justification for breaks between reaches. Reaches are also shown on Figure 3.

#### ***Shoreline Characterizations and Assessments***

##### Reach 1

**ABIOTIC** - see *Physical Synthesis Map in Map Portfolio CD (Physical.pmf)*

##### **Geology, Soils, and Hazards**

The surficial geology in the jurisdiction is entirely sedimentary deposits from a combination of glacial outwash and alluvial fan deposits. As a result, the SMP jurisdiction is comprised of Chewelah fine sandy loam (92.9%) and Chamokane loam (7.1%) (U. S. Department of Agriculture, Natural Resources Conservation Service [NRCS] 2003)(Table 3). The slope in this region also has a low gradient, ranging from 0 to 3 percent. This limited gradient, combined with moderately rapid permeability through the sandy loam layer, results in very slow runoff rates and limited soil erosion due to runoff. However, given the finer soil material, the hazard of wind erosion is relatively high.

Due to a high water table in the area, the soil is actually poorly drained and is rated as having a severe flood hazard risk. As a result, several portions of the SMP are subject to short periods of occasional flooding during the months of February to May. This flooding hazard and wetness characteristics limit homesite development on these soils. The combination of very rapid permeability, higher flooding frequencies, and saturated conditions due to the high water table further increases the risk of contamination of ground water supplies due to seepage from various pollutant sources, including sewage and stormwater system failures.

Due to the soil type, river cutbanks are unstable and are subject to structural failure, especially when natural riparian vegetation is cleared and replaced with lawns and landscaping. In

addition, approximately 46.9% of the SMP jurisdiction is within the relatively narrow 100 year floodplain (DOE 1998c)(Table 2).

**BIOTIC** - see *Biological Synthesis Map in Map Portfolio CD (Biological.pmf)*

### **Vegetation**

Lowland stream corridors such as those found along Chewelah Creek may have or lack a riparian tree canopy (NPPC 2004). When a tree canopy is present, deciduous black cottonwood (*Populus trichocarpa*), water birch (*Betula occidentalis*), and quaking aspen (*Populus tremuloides*) are present as well as conifer species including western red cedar (*Thuja plicates*), western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesi*), grand fir (*Abies grandis*), and western white pine (*Pinus monticola*). Where a tree canopy is absent, thin-leaf alder (*Alnus sinuate*), snowberry (*Symphoricarpos albus*), willows (*Salix spp.*), mountain maple (*Acer glabrum*), red-osier dogwood (*Cornus stolonifera*), blue elderberry (*Sambucus cerulea*) and black hawthorn (*Crataegus douglasii*) are common. Forbs associated with this soil type include redtop (*Agrostis gigantean*) and sedge (*Carex spp.*).

The natural vegetation has been heavily modified by recreational and residential land uses, limiting riparian tree cover to 6.4% of the jurisdiction (Table 4). This limited tree cover is dominated by willows and deciduous black cottonwood, though a variety of other species are found associated with the city park. Other natural vegetation, when present, principally include shrubs such as red osier dogwood and snowberry, as well as reed canary grass (*Phalaris arundinacea*). The natural shrub and grass cover tends to be principally limited by lawns and landscaping associated with the city park and residential development. As a result, most of the reach has an inadequate riparian buffer, often less than 10-20 feet from the streambank.

### **Wetlands**

A small area of seasonally flooded, emergent palustrine wetlands are found in Reach 1 of the SMP jurisdiction (0.55%) (Table 4) (U.S. Fish and Wildlife Service [USFWS] 2003).

### **Fish and Wildlife**

Reach 1 may provide potential habitat for numerous terrestrial species, including 34 birds, 13 small mammals and at least one amphibian (Table 5a). These species include the American Goldfinch, Big Brown Bat, and Long-toed Salamander (Washington Department of Fish and Wildlife [WDFW] 1997). Among these species, the Vaux's Swift, Willow Flycatcher, Townsend's Big-eared Bat, and the Yuma Myotis are current species of concern. In addition, a small area (8.3%) at the north end of the reach is identified as a priority habitat area associated with native vegetation important for wildlife diversity and travel corridors (Table 4). Chewelah Creek has native species of rainbow trout, as well as large numbers of Eastern brook trout and German brown trout, both non-native species (CCWMC 1994).

**CULTURAL MODIFICATIONS** - see *Cultural Modifications Synthesis Map in Map Portfolio CD (Cultural\_modifications.pmf)*

**Land Use (Table 6)**

According to the EPA's Land Use/Land Cover information, of the SMP jurisdiction lands along Reach 1, 46% are classified as residential (U.S. Environmental Protection Agency [EPA] 1994). Of the remaining 51.9% of SMP jurisdiction lands, 18% are commercial services and 36% are urban and built-up land. Classified as urban shoreline use by the City of Chewelah Comprehensive Plan, a preliminary shoreline inventory conducted by the City of Chewelah found that approximately 43.7% of the reach is commercial land use, 23.1% is residential, 7.8% is vacant, and 6.8% is recreational (Knox 2003).

**Transportation Infrastructure (Table 7)**

Roadways occupy 1.21 km of SMP jurisdiction land in Reach 1 (Washington State Department of Natural Resources [WDNR], 1996). These comprise some of the imperviousness found in the jurisdiction, totaling approximately 24% of the reach surface area. Stormwater runoff is often not being adequately buffered by riparian vegetation. In addition, 1 road bridge and 2 pedestrian bridges are located within the reach.

**Shore Protection and Drains (Table 7)**

Approximately 15.9% of the bank along Reach 1 is protected by revetments, including a portion of Chewelah City Park. In addition, 4 storm drains were found along the reach.

**CULTURAL JURISDICTIONS** - see *Cultural Jurisdictional Synthesis Map in Map Portfolio CD* (*Cultural\_jurisdictional.pmf*)

**Zoning (Table 6)**

Current zoning within the SMP jurisdiction of Reach 1 is park (61.2%), retail business (1%), and single family residential (36.9%) (City of Chewelah 2002). Currently the county environmental designation for Reach 1 is rural.

**Public Access/Recreation Enhancement (Table 6)** Three possible locations for improving public access and enhancing recreational opportunities have been identified by the City of Chewelah along this reach (City of Chewelah 1993). Proposed plans for the first location (Point 1) include revegetating both banks of the creek as it passes parallel to Highway 395 and Park Lane, the latter of which could be vacated and removed, allowing re-channeling of the constricted creek and further replanting with native vegetation. These improvements could coincide with the construction of a biking and walking access trail along the east side of the creek. Proposed plans for the second location (Point 2), found within Chewelah City Park, include restoring stream bank vegetation along eroding shorelines and replacing hardened channel stabilization with bio-engineered approaches. Plans for the last location (Point 3) involve widening the pedestrian portion of the bridge crossing Chewelah Creek.

**DOE Facilities and 303(d) Listings (Table 7)**

There are no DOE facilities classified along Reach 1 (DOE 1998b). Chewelah Creek has been identified on 303(d) lists as having fecal coliform issues (DOE 1998a).

**Ecological Function Summary**

**Table 8. Reach 1 Shoreline Characterization Summary**

<b>Hazard Potential</b>	<b>Habitat Conditions</b>	<b>Public Access</b>	<b>Key Modifications</b>
Floodzone: 46.9% Slow soil runoff: 100%	Wetlands: 0.55% Riparian tree cover: 6.4% Priority habitats: 1 Species of concern: 4	Public land: 61.2% Parks: 1 Access Points: 2	Principal land use: Commercial Imperviousness: 24.04% Roads: 1.21 km Bulkheads: 15.9% Storm drains: 4

Ecological functions on Reach 1 have been impaired by commercial and residential development, as well as recreational use stemming from Chewelah City Park. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and nonpoint pollution such as sediment, fertilizers and pesticides. Relatively high levels of impervious surfaces, such as residential roads and buildings, further promote runoff and nonpoint source pollution. Extensive shoreline hardening has replaced stabilizing natural vegetation, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass.

Draft Environmental Designation: Shoreline Residential along the northern portion of the reach, and Urban Conservancy for the city park portion. A small portion in the southern end of the reach could be classified as High Intensity, coinciding with the beginning of commercial land uses – see *Environmental Designations Map in the Map Portfolio CD (Env\_Desig.pmf)*

**OPPORTUNITIES FOR ECOLOGICAL PROTECTION AND RESTORATION**

*(see Opportunities Map in Map Portfolio CD) (Protection\_Restoration.pmf)*

**Opportunity A:** Work with private property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species such as reed canary grass.

**Opportunity B:** Protect priority species habitat in the north end of the reach.

**Opportunity C:** Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.

**Opportunity D:** Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.

**Opportunity E:** Stormwater diversions or containment ponds could be used to protect the stream habitat from nonpoint pollution runoff from neighboring development. Existing stormwater discharges could be retrofitted with containment ponds, settling basins and oil separators to reduce nonpoint pollutants entering stream. Such efforts should be coordinated



between the Washington Department of Transportation, Stevens County, and the City of Chewelah.

**Opportunity F:** Work with the City of Chewelah to restore native riparian vegetation buffers along its park and proposed public access points.

**Opportunity G:** Further revetments should be prevented to minimize adverse effects on stream habitat and the connectivity between stream and riparian habitat. Through removing existing structures and preventing more protective structures, less damage would occur to the natural stream processes. This could coincide with encouragement of planting native vegetation to stabilize streambanks, as well as limiting clearing and disturbance on privately-owned residential properties. The removed structures could possibly be replaced with bioengineered approaches, such as the replanting of cleared banks with willows or other natural, stabilizing vegetation

## Reach 2

**ABIOTIC** - see *Physical Synthesis Map in Map Portfolio CD (Physical.pmf)*

### **Geology, Soils, and Hazards**

The surficial geology in the jurisdiction is entirely sedimentary deposits from a combination of glacial outwash and alluvial fan deposits. As a result, the SMP jurisdiction is completely comprised of Chewelah fine sandy loam (NRCS 2003). The slope in this region also has a low gradient, ranging from 0 to 3 percent. This, combined with moderately rapid permeability through the sandy loam layer, results in slow runoff rates and limited soil erosion due to runoff. However, given the finer soil material, the hazard of wind erosion is relatively high.

Due to a high water table in the area, the soil is actually poorly drained and is rated as having a severe flood hazard risk. As a result, several portions of the SMP are subject to short periods of occasional flooding during the months of February to May. This flooding hazard and wetness characteristics limit homesite development on these soils. The combination of very rapid permeability, higher flooding frequencies, and saturated conditions due to the high water table further increases the risk of contamination of ground water supplies due to seepage from various pollutant sources, including sewage and stormwater system failures.

Due to the soil type, river cutbanks are unstable and are subject to structural failure, especially when natural riparian vegetation is cleared and replaced with lawns and landscaping. In addition, approximately 44.1% of the SMP jurisdiction is within the relatively narrow 100 year floodplain (DOE 1998c)(Table 2).

**BIOTIC** - see *Biological Synthesis Map in Map Portfolio CD (Biological.pmf)*

### **Vegetation**

Lowland stream corridors such as those found along Chewelah Creek may have or lack a riparian tree canopy (NPCC 2004). When a tree canopy is present, deciduous black cottonwood (*Populus trichocarpa*), water birch (*Betula occidentalis*), and quaking aspen (*Populus tremuloides*) are

present as well as conifer species including western red cedar (*Thuja plicates*), western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), and western white pine (*Pinus monticola*). Where a tree canopy is absent, thin-leaf alder (*Alnus sinuate*), snowberry (*Symphoricarpos albus*), willows (*Salix spp.*), mountain maple (*Acer glabrum*), red-osier dogwood (*Cornus stolonifera*), blue elderberry (*Sambucus cerulea*) and black hawthorn (*Crataegus douglasii*) are common. Forbs associated with this soil type include redtop (*Agrostis gigantean*) and sedge (*Carex spp.*).

The natural vegetation has been heavily modified by commercial, recreational and residential land uses, limiting riparian tree cover to 4.6% of the jurisdiction (Table 4). This limited tree cover is dominated by willows and deciduous black cottonwood, though a variety of other species are found associated with residential land uses. Other natural vegetation, when present, principally include shrubs such as red-osier dogwood and snowberry, as well as reed canary grass (*Phalaris arundinacea*), a pervasive exotic species. This shrub and grass cover tends to be principally limited by clearing for lawns and landscaping, as well as the impervious surfaces associated with commercial and residential development. As a result, most of the reach has an inadequate riparian buffer, often less than 10-20 feet from the streambank.

#### **Wetlands**

No wetlands are found in Reach 2 of the SMP jurisdiction (Table 4) (USFWS 2003).

#### **Fish and Wildlife**

Reach 2 may provide potential habitat for numerous terrestrial species, including 34 birds, 13 small mammals and at least one amphibian (Table 5a). These species include the American Goldfinch, Big Brown Bat, and Long-toed Salamander (WDFW 1997). Among these species, the Vaux's Swift, Willow Flycatcher, Townsend's Big-eared Bat, and the Yuma Myotis are current species of concern. Chewelah Creek has native species of rainbow trout, as well as large numbers of Eastern brook trout and German brown trout, both non-native species.

**CULTURAL MODIFICATIONS** - see *Cultural Modifications Synthesis Map in Map Portfolio CD* (*Cultural\_modifications.pmf*)

#### **Land Use (Table 6)**

According to the EPA's Land Use/Land Cover information, of the SMP jurisdiction lands along Reach 2, 96.8% are classified as residential and 3.2% are classified as other urban and built up land (EPA 1994). Classified as urban shoreline use by the City of Chewelah Comprehensive Plan, the preliminary shoreline inventory conducted by the City of Chewelah found that approximately 34.7% of the SMP jurisdiction lands along Reach 2 are classified as residential and 31.6% are classified as commercial (Knox 2003). Of the remaining 33.7% of SMP jurisdiction lands, 6.9% are recreational, 6.7% are non-profit, and 2.1% are classified as municipal.

#### **Transportation Infrastructure (Table 7)**

Roadways occupy 1.06 km of SMP jurisdiction land in Reach 2, in addition to 0.16 km of railroad (WDNR 1996). These comprise some of the imperviousness found in the jurisdiction, totaling approximately 52.5% of the reach surface area. Stormwater runoff is often not being

adequately buffered by riparian vegetation. In addition, 2 road bridges, 1 railroad bridge, and 2 pedestrian bridges are located within the reach.

**Shore Protection and Drains (Table 7)**

Approximately 2.8% of the bank along Reach 2 is protected by revetments. In addition, 2 storm drains were found along the reach.

**CULTURAL JURISDICTIONS** - see *Cultural Jurisdictional Synthesis Map in Map Portfolio CD (Cultural\_jurisdictional.pmf)*

**Zoning (Table 6)**

Current zoning within the SMP jurisdiction of Reach 2 is primarily single family residential (63%)(City of Chewelah 2002). Currently the county environmental designation for Reach 2 is rural.

**Public Access/Recreation Enhancement (Table 6)**

Two possible locations for improving public access and enhancing recreational opportunities have been identified by the City of Chewelah along this reach (City of Chewelah 1993). Proposed plans for the first location (Point 4) include building a 10 foot wide pathway leading to a pedestrian bridge across Chewelah Creek, linking the west side of the highway and the swimming pool. Plans for the second location (Point 5) include better delineation of an unofficial pedestrian pathway and revegetating both banks of the creek with native vegetation.

**DOE Facilities and 303(d) Listings (Table 7)**

There are three DOE facilities (Northwest Marble Products, Inc, Chewelah Feed Lot and Telephone Utilities Corp) along this reach (DOE 1998b). Chewelah Creek has been identified on 303(d) lists as having fecal coliform issues (DOE 1998a).

**Ecological Function Summary**

**Table 9. Reach 2 Shoreline Characterization Summary**

<b>Hazard Potential</b>	<b>Habitat Conditions</b>	<b>Public Access</b>	<b>Key Modifications</b>
Floodzone: 44.1% Slow soil runoff: 100%	Riparian tree cover: 4.6% Species of concern: 4	Access Points: 3	Principal land use: Residential Imperviousness: 52.50% Roads: 1.06 km Bulkheads: 2.8% Storm drains: 2

Ecological functions on Reach 2 have been heavily impaired by residential, recreational and commercial development. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and nonpoint pollution such as sediment, fertilizers and pesticides. High levels of impervious surfaces, such

as roads, buildings, and parking lots, promote runoff and nonpoint source pollution. Some shoreline hardening has replaced natural vegetation, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass.

Draft Environmental Designation: High Intensity along the major portion of the shoreline, which is primarily devoted to commercial use, and Urban Conservancy associated with the recreational uses along the shoreline. – see *Environmental Designations Map in the Map Portfolio CD (Env\_Desig.pmf)*

## **OPPORTUNITIES FOR ECOLOGICAL PROTECTION AND RESTORATION**

*(see Opportunities Map in Map Portfolio CD) (Protection\_Restoration.pmf)*

**Opportunity A:** Work with private property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species such as reed canary grass.

**Opportunity B:** Work with the City of Chewelah to restore a native riparian vegetation buffers along its parks and proposed public access points.

**Opportunity C:** Stormwater diversions or containment ponds could be used to protect the stream habitat from nonpoint pollution runoff from neighboring development. Existing stormwater discharges could be retrofitted with containment ponds, settling basins and oil separators to reduce nonpoint pollutants entering stream. Such efforts should be coordinated between the Washington Department of Transportation, Stevens County, City of Chewelah and Burlington Northern Railroad.

**Opportunity D:** Mitigate DOE facilities.

**Opportunity E:** Further revetments should be prevented to minimize adverse effects on stream habitat and the connectivity between stream and riparian habitat. Through removing existing structures and preventing more protective structures, less damage would occur to the natural stream processes. This could coincide with encouragement of planting native vegetation to stabilize streambanks, as well as limiting clearing and disturbance on privately-owned residential properties. The removed structures could possibly be replaced with bioengineered approaches, such as the replanting of cleared banks with willows or other natural, stabilizing vegetation

**Opportunity F:** Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.

**Opportunity G:** Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.

## Reach 3

**ABIOTIC** - see *Physical Synthesis Map in Map Portfolio CD (Physical.pmf)*

### Geology, Soils, and Hazards

The surficial geology in the jurisdiction is entirely sedimentary deposits from a combination of glacial outwash and alluvial fan deposits. As a result, the SMP jurisdiction is completely comprised of Chewelah fine sandy loam (NRCS 2003). The slope in this region also has a low gradient, ranging from 0 to 3 percent. This, combined with moderately rapid permeability through the sandy loam layer, results in slow runoff rates and limited soil erosion due to runoff. However, given the finer soil material, the hazard of wind erosion is relatively high.

Due to a high water table in the area, the soil is actually poorly drained and is rated as having a severe flood hazard risk. As a result, several portions of the SMP are subject to short periods of occasional flooding during the months of February to May. This flooding hazard and wetness characteristics limit homesite development on these soils. The combination of very rapid permeability, higher flooding frequencies, and saturated conditions due to the high water table further increases the risk of contamination of ground water supplies due to seepage from various pollutant sources, including sewage and stormwater system failures.

Due to the soil type, river cutbanks are unstable and are subject to structural failure, especially when natural riparian vegetation is cleared and replaced with lawns and landscaping. In addition, approximately 44.7% of the SMP jurisdiction is within the relatively narrow 100 year floodplain (DOE 1998c) (Table 2).

**BIOTIC** - see *Biological Synthesis Map in Map Portfolio CD (Biological.pmf)*

### Vegetation

Lowland stream corridors such as those found along Chewelah Creek may have or lack a riparian tree canopy (NPCC 2004). When a tree canopy is present, deciduous black cottonwood (*Populus trichocarpa*), water birch (*Betula occidentalis*), and quaking aspen (*Populus tremuloides*) are present as well as conifer species including western red cedar (*Thuja plicates*), western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesi*), grand fir (*Abies grandis*), and western white pine (*Pinus monticola*). Where a tree canopy is absent, thin-leaf alder (*Alnus sinuate*), snowberry (*Symphoricarpos albus*), willows (*Salix spp.*), mountain maple (*Acer glabrum*), red-osier dogwood (*Cornus stolonifera*), blue elderberry (*Sambucus cerulea*) and black hawthorn (*Crataegus douglasii*) are common. Forbs associated with this soil type include redtop (*Agrostis gigantean*) and sedge (*Carex spp.*).

The natural vegetation has been heavily modified by residential, commercial and agricultural land uses, limiting riparian tree cover to 10.5% of the jurisdiction (Table 4). This limited tree cover is dominated by willows and deciduous black cottonwood. Other natural vegetation, when present, principally include shrubs such as red-osier dogwood and snowberry, as well as reed canary grass (*Phalaris arundinacea*). This shrub and grass cover tends to be principally limited by clearing for lawns and landscaping, as well as the impervious surfaces associated with commercial and residential development. Heavy grazing impacts are also evident in rural

pasture areas in the lower portion of the reach where animal access is unrestricted. As a result, most of the reach has an inadequate riparian buffer, often less than 10-20 feet from the streambank.

### **Wetlands**

Wetlands are found on 9.9 % of Reach 3, dominated by temporarily flooded, emergent palustrine wetlands found in the lower portion of the reach near the confluence with the Colville River (Table 4) (USFWS 2003). Much of this wetland area is underlain by soils identified in the City of Chewelah Comprehensive Plan as good agricultural soils (City of Chewelah 2002).

### **Fish and Wildlife**

Reach 3 may provide potential habitat for numerous terrestrial species, including 34 birds, 13 small mammals and at least one amphibian (Table 5a). These species include the American Goldfinch, Big Brown Bat, and Long-toed Salamander (WDFW 1997). Among these species, the Vaux's Swift, Willow Flycatcher, Townsend's Big-eared Bat, and the Yuma Myotis are current species of concern. Chewelah Creek has native species of rainbow trout, as well as large numbers of Eastern brook trout and German brown trout, both non-native species (CCWMC 1994).

**CULTURAL MODIFICATIONS** - *See Cultural Modification Synthesis Map in Map Portfolio CD (Cultural\_modifications.pmf)*

### **Land Use (Table 6)**

According to the EPA's Land Use/Land Cover information, of the SMP jurisdiction lands along Reach 3, 95.5% are classified as residential and 4.5% are classified as cropland and pasture (EPA 1994). Classified as urban shoreline use by the City of Chewelah Comprehensive Plan, the preliminary shoreline inventory conducted by the City of Chewelah found that 63.2% of the reach is being used for residential uses (Knox 2003). Of the remaining land, 12.2% is classified as commercial, 12.1% is agriculture, and 1.8% is municipal. Only 0.1% of the jurisdiction is vacant.

### **Transportation Infrastructure (Table 7)**

Roadways occupy 1.08 km of SMP jurisdiction land in Reach 3, in addition to 0.01 km of railroad (WDNR 1996). These comprise some of the imperviousness found in the jurisdiction, totaling approximately 21.5% of the reach surface area. Stormwater runoff is often not being adequately buffered by riparian vegetation. In addition, 4 road bridges are located within the reach.

### **Shore Protection and Drains (Table 7)**

Approximately 5.1% of the bank along Reach 3 is protected by revetments. In addition, 2 storm drains were found along the reach.

**CULTURAL JURISDICTIONS** - *see Cultural Jurisdictional Synthesis Map in Map Portfolio CD (Cultural\_jurisdictional.pmf)*

**Zoning (Table 6)**

Current zoning within the SMP jurisdiction of Reach 3 is primarily commercial industrial (94.3%), with the rest being either retail business (5.5%) or single family residential (5.5%)(City of Chewelah 2002). Currently the county environmental designation for Reach 3 is rural.

**Public Access/Recreation Enhancement (Table 6)**

Two possible locations for improving public access and enhancing recreational opportunities have been identified by the City of Chewelah along this reach (City of Chewelah 1993). Proposed plans for the first location (Point 6) include a streambank demonstration project, interpretative signs, and a fishing platform along the west side of Second Street West. Proposed plans for the second location (Point 7) include protecting a large stand of deciduous streambank vegetation, planting shrub thickets of Red osier dogwood, and building a bike/hike trail on the west side of the creek, complete with observation platforms.

**DOE Facilities and 303(d)Listings (Table 7)**

There are two DOE facilities (Roys Chevron and County Shop Chewelah) along this reach (DOE 1998b). Chewelah Creek has also been identified on 303(d) lists as having fecal coliform issues (DOE 1998a).

**Ecological Function Summary**

**Table 10. Reach 3 Shoreline Characterization Summary**

<b>Hazard Potential</b>	<b>Habitat Conditions</b>	<b>Public Access</b>	<b>Key Modifications</b>
Floodzone: 44.7% Slow soil runoff: 100%	Wetlands: 9.90% Undeveloped: % Riparian tree cover: 10.5% Species of concern: 4	Access Points: 2	Principal land use: Residential Imperviousness: 21.50% Roads: 1.08 km Bulkheads: 5% Storm drains: 2

Ecological functions on Reach 3 have been heavily impaired by residential, commercial and agricultural development. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and nonpoint pollution such as sediment, fertilizers and pesticides. Heavy grazing impacts are also evident in rural pasture areas in the lower portion of the reach where animal access is unrestricted. Higher levels of impervious surfaces, such as residential roads, buildings, and parking lots, promote runoff and nonpoint source pollution. Some shoreline hardening has replaced natural vegetation, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass.

Draft Environmental Designation: Shoreline Residential along the major portion of the shoreline, which is primarily devoted to residential use, and Urban Conservancy associated with the agricultural uses and vacant land in the southern end of the shoreline, which is also the

main zone of wetlands in the reach. A small portion in the northern end of the reach could be classified as High Intensity, coinciding with the end of commercial land uses – see *Environmental Designations Map in the Map Portfolio CD (Env\_Desig.pmf)*

## **OPPORTUNITIES FOR ECOLOGICAL PROTECTION AND RESTORATION**

(see *Opportunities Map in Map Portfolio CD (Protection\_Restoration.pmf)*)

**Opportunity A:** Work with private property owners to restore a native riparian vegetation buffer along its shoreline, restrict grazing animal access, as well as aggressively control exotic weed species such as reed canary grass.

**Opportunity B:** Work with the City of Chewelah to restore a native riparian vegetation buffers along its proposed public access points.

**Opportunity C:** Mitigate DOE facilities.

**Opportunity D:** Further revetments should be prevented to minimize adverse effects on stream habitat and the connectivity between stream and riparian habitat. Through removing existing structures and preventing more protective structures, less damage would occur to the natural stream processes. This could coincide with encouragement of planting native vegetation to stabilize streambanks, as well as limiting clearing and disturbance on privately-owned residential properties. The removed structures could possibly be replaced with bioengineered approaches, such as the replanting of cleared banks with willows or other natural, stabilizing vegetation.

**Opportunity E:** Stormwater diversions or containment ponds could be used to protect the stream habitat from nonpoint pollution runoff from neighboring development. Existing stormwater discharges could be retrofitted with containment ponds, settling basins and oil separators to reduce nonpoint pollutants entering stream. Such efforts should be coordinated between the Washington Department of Transportation, Stevens County, the City of Chewelah and Burlington Northern Railroad.

**Opportunity F:** Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.

**Opportunity G:** Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.

**Opportunity H:** Wetland areas should be protected from further encroachment by residential and agricultural development.

Reach 4

**ABIOTIC** - see *Physical Synthesis Map in Map Portfolio CD (Physical.pmf)*



### Geology, Soils, and Hazards

The surficial geology in the jurisdiction is entirely sedimentary deposits from a combination of glacial outwash and alluvial fan deposits. The soils within the SMP jurisdiction are predominantly comprised of Chewelah fine sandy loam (87.1%) (Table 3) (NRCS 2003). The slope in this region also principally has a low gradient, ranging from 0 to 3 percent. As a result, soil permeability is entirely moderately rapid (89.1%) or moderately slow (10.9%).

Due to a high water table in the area, the soil is actually poorly drained and is rated as having a severe flood hazard risk. Runoff is entirely classed as very slow (91.7%) or slow (8.3 %). As a result, several portions of the SMP are subject to short periods of occasional flooding during the months of February to May. This flooding hazard and wetness characteristics limit homesite development on these soils. The combination of very rapid permeability, higher flooding frequencies, and saturated conditions due to the high water table further increases the risk of contamination of ground water supplies due to seepage from various pollutant sources, including sewage and stormwater system failures.

There is either no hazard of soil erosion (91.1 %) or hazard of erosion is slight to moderate (8.3 %). Due to the predominant soil type, river cutbanks are unstable and are subject to structural failure, especially when natural riparian vegetation is cleared and replaced with lawns and landscaping.

Approximately 11.1% of the SMP jurisdiction is within the relatively narrow 100 year floodplain (DOE 1998c) (Table 1).

**BIOTIC** - see *Biological Synthesis Map in Map Portfolio CD (Biological.pmf)*

### Vegetation

Lowland stream corridors such as those found along Paye Creek may have or lack a riparian tree canopy (NPCC 2004). When a tree canopy is present, deciduous black cottonwood (*Populus trichocarpa*), water birch (*Betula occidentalis*), and quaking aspen (*Populus tremuloides*) are present as well as conifer species including western red cedar (*Thuja plicates*), western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), and western white pine (*Pinus monticola*). Where a tree canopy is absent, thin-leaf alder (*Alnus sinuate*), snowberry (*Symphoricarpos albus*), willows (*Salix spp.*), mountain maple (*Acer glabrum*), red-osier dogwood (*Cornus stolonifera*), blue elderberry (*Sambucus cerulea*) and black hawthorn (*Crataegus douglasii*) are common. Forbs associated with this soil type include redtop (*Agrostis gigantean*) and sedge (*Carex spp.*).

The natural vegetation has been heavily modified by residential and agricultural land uses, limiting riparian tree cover to 2.5% of the jurisdiction (Table 4). This limited tree cover is dominated by willows, thin-leaf alder, and deciduous black cottonwood, though a variety of other species are found associated with landscaping connected with residential development. Other natural vegetation, when present, principally include shrubs such as red-osier dogwood and snowberry, as well as reed canary grass (*Phalaris arundinacea*), a pervasive exotic species. The natural shrub and grass cover tends to be principally limited by clearing for lawns, landscaping, and agriculture, as well as the impervious surfaces predominantly associated with

residential land uses and roads. Heavy grazing impacts are also evident in rural pasture areas in the reach where animal access is unrestricted. As a result, most of the reach has an inadequate riparian buffer, often less than 10-20 feet from the streambank.

### **Wetlands**

Wetlands are found on 51.9 % of Reach 4, dominated by temporarily flooded, emergent palustrine wetlands found in the lower portion of the reach near the confluence with the Colville River (Table 4) (USFWS 2003).

### **Wildlife**

Reach 4 may provide potential habitat for numerous terrestrial species, including 51 birds, 24 mammals and at two amphibians (Table 5b). These species include the American Goldfinch, Big Brown Bat, and Long-toed Salamander (WDFW 1997). Among these species the Vaux's Swift, Willow Flycatcher, and the Yuma Myotis are species of current concern. In addition, a small area, comprising 2.2% of the jurisdiction at the north end of the reach is identified as a priority habitat area associated with riparian native vegetation important for wildlife diversity and travel corridors (WDFW 2002). Another area, totalling 2.6% of the jurisdiction, is classified as a priority waterfowl concentration habitat, associated with spring migration of tundra swans, ducks, and geese, in the south end of the reach (Table 4).

**CULTURAL MODIFICATIONS** - see *Cultural Modifications Synthesis Map in Map Portfolio CD* (*Cultural\_modifications.pmf*)

### **Land Use (Table 6)**

According to the EPA's Land Use/Land Cover information, of the SMP jurisdiction lands along Reach 4, 62.2% are classified as cropland and pasture, 36.9% are classified as residential, and 0.9% is classified as mining (EPA 1994). Classified as urban shoreline use by the City of Chewelah Comprehensive Plan within the city limits, with rural shoreline use extending to the urban growth boundary, this inventory found that 80.3% of the reach is being used for residential uses. Of the remaining land, 8.9% is classified as agriculture, and 2.5% is recreational.

### **Transportation Infrastructure (Table 7)**

Roadways occupy 3.42 km of SMP jurisdiction land in Reach 4, in addition to 0.12 km of railroad (WDNR 1996). These comprise some of the imperviousness found in the jurisdiction, totaling approximately 10.9% of the reach surface area. Stormwater runoff is often not being adequately buffered by riparian vegetation. In addition, 12 road bridges and 22 pedestrian bridges are located within the reach.

### **Shore Protection, Drains and Fence Crossings (Table 7)**

Approximately 3.2% of the bank along Reach 4 is protected by revetments, including concrete and rock bulkheads, cinder blocks, and rock riprap. In addition, 14 fence crossings are found along the reach. No storm drains were found along the reach.

**CULTURAL JURISDICTIONS** - See *Cultural Jurisdiction Synthesis Map in Map Portfolio CD (Cultural\_jurisdictional.pmf)*

**Zoning (Table 6)**

Current zoning within the SMP jurisdiction of Reach 4 is primarily single family residential (53.1%) (City of Chewelah 2002). Of the remaining lands along the SMP jurisdiction, 38.8% are not classified by city zoning, 7.3% are classified as single family residential, and 0.8% are classified as park. Currently the county environmental designation for Reach 4 is rural.

**DOE Facilities and 303(d) Listings (Table 7)**

There are no DOE facilities along Reach 4 (DOE 1998b).

**Ecological Function Summary**

**Table 11. Reach 4 Shoreline Characterization Summary**

Hazard Potential	Habitat Conditions	Public Access	Key Modifications
Floodzone: 11.1% Slow soil runoff: 100%	Wetlands: 51.87% Riparian tree cover: 2.5% Priority habitats: 0 Species of concern: 3	Public land: 0.8% Parks: 1	Principal land use: Residential Imperviousness: 10.94% Roads: 3.42 km Bulkheads: 3.2%

Ecological functions on Reach 4 have been heavily impaired by residential and agricultural development. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and nonpoint pollution such as sediment, fertilizers and pesticides. Heavy grazing impacts are also evident in rural pasture areas in the upper portion of the reach where animal access is unrestricted, impacting both riparian vegetation and water quality. Higher levels of impervious surfaces, such as residential roads, buildings, and parking lots, promote runoff and nonpoint source pollution. Some shoreline hardening has replaced natural vegetation in residential areas, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass. In addition, much of the lower portion of the reach has been channelized through channel straightening and dredging, affecting fish habitat and causing entrenchment that tends to cut off the channel from its floodplain. This habitat is further impaired by the fairly large number of fences found in this reach that restrict animal movement.

Draft Environmental Designation: Shoreline Residential along the major portion of the shoreline, which is primarily devoted to residential use, and Urban Conservancy associated with the agricultural uses and vacant land in the southern end of the shoreline, which is also the main zone of wetlands in the reach. A smaller portion in the northern end of the reach could be classified as Urban Conservancy, coinciding with agricultural land use – see *Environmental Designations Map in the Map Portfolio CD (Env\_Desig.pmf)*

**OPPORTUNITIES FOR ECOLOGICAL PROTECTION AND RESTORATION**

(see *Opportunities Map in Map Portfolio CD (Protection\_Restoration.pmf)*)

**Opportunity A:** Work with private property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species such as reed canary grass.

**Opportunity B:** Work with the City of Chewelah to restore a native riparian vegetation buffers along its parks and proposed public access points, as well as encourage planting native vegetation and limiting clearing and disturbance on privately-owned residential properties with shoreline frontage.

**Opportunity C:** Further revetments should be prevented to minimize adverse effects on stream habitat and the connectivity between stream and riparian habitat. Through removing existing structures and preventing more protective structures, less damage would occur to the natural stream processes. This could coincide with encouragement of planting native vegetation to stabilize streambanks, as well as limiting clearing and disturbance on privately-owned residential properties. The removed structures could possibly be replaced with bioengineered approaches, such as the replanting of cleared banks with willows or other natural, stabilizing vegetation.

**Opportunity D:** Increase capacity of culverts and bridges to convey high flows, thereby reducing flooding potentials.

**Opportunity E:** Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.

**Opportunity F:** Remove fences crossing the stream, and restrict animal access to the riparian zone by replacing cross-stream fencing with fencing parallel to, and setback from, the stream bank.

**Opportunity G:** Stormwater diversions or containment ponds could be used to protect the stream habitat and wetlands from nonpoint pollution runoff from neighboring development. Such efforts should be coordinated between the Washington Department of Transportation, Stevens County, City of Chewelah and Burlington Northern Railroad.

**Opportunity H:** Prevent further channelization, and restore channelized sections with instream structures and natural vegetation.

**Opportunity I:** Wetland areas should be protected from further encroachment by residential and agricultural development.

**Opportunity J:** Protect priority species habitat at either ends of the reach.

Reach 5

**ABIOTIC** - see *Physical Synthesis Map in Map Portfolio CD (Physical.pmf)*

## Geology and Soils

The surficial geology in the jurisdiction is entirely sedimentary deposits from a combination of glacial outwash and alluvial fan deposits. The soils within the SMP jurisdiction are predominantly comprised of Chewelah Fine Sandy Loam (70.2 %), though a variety of 6 other soil types are found in the jurisdiction (NRCS 2003). The slope in this reach primarily has a low gradient, ranging from 0 to 3 percent. As a result, soil permeability is predominantly moderately rapid (72.7 %) or moderate (23.6 %).

Due to a high water table in the area, the soil is actually poorly drained and is rated as having a severe flood hazard risk. Runoff is predominantly classed as very slow (73.1 %) or ponded (9.7%), the latter associated with Saltese muck, which is considered a hydric soil. As a result, several portions of the SMP are subject to short periods of occasional flooding during the months of February to May. This flooding hazard and wetness characteristics limit homesite development on these soils. The combination of very rapid permeability, higher flooding frequencies, and saturated conditions due to the high water table further increases the risk of contamination of ground water supplies due to seepage from various pollutant sources, including sewage and stormwater system failures, as well as failures of outdated septic tank absorption fields in upper portions of the reach not currently incorporated by the city.

There is no hazard of soil erosion in most of the jurisdiction (82.8 %), though 13.6% of the jurisdiction does have a moderate (13%) or very high erosion risk hazard (0.6%). Due to the predominant soil type, river cutbanks are unstable and are subject to structural failure, especially when natural riparian vegetation is cleared and replaced with lawns and landscaping.

Approximately 12.5% of the SMP jurisdiction is within the relatively narrow 100 year floodplain (DOE 1998c) (Table 2).

**BIOTIC** - see *Biological Synthesis Map in Map Portfolio CD (Biological.pmf)*

## Vegetation

Lowland stream corridors such as those found along Thomason Creek may have or lack a riparian tree canopy (NPCC 2004). When a tree canopy is present, deciduous black cottonwood (*Populus trichocarpa*), water birch (*Betula occidentalis*), and quaking aspen (*Populus tremuloides*) are present as well as conifer species including western red cedar (*Thuja plicates*), western hemlock (*Tsuga heterophylla*), Douglas fir (*Pseudotsuga menziesi*), grand fir (*Abies grandis*), and western white pine (*Pinus monticola*). Where a tree canopy is absent, thin-leaf alder (*Alnus sinuate*), snowberry (*Symphoricarpos albus*), willows (*Salix spp.*), mountain maple (*Acer glabrum*), red-osier dogwood (*Cornus stolonifera*), blue elderberry (*Sambucus cerulea*) and black hawthorn (*Crataegus douglasii*) are common. Forbs associated with the predominant soil type include redtop (*Agrostis gigantean*) and sedge (*Carex spp.*).

The natural vegetation has been heavily modified by residential and agricultural land uses, limiting riparian tree cover to 0.2% of the jurisdiction (Table 4). This limited tree cover is dominated by willows, thin-leaf alder and deciduous black cottonwood, though a variety of other species are found associated with residential development. Other natural vegetation,

when present, principally include shrubs such as red-osier dogwood and snowberry, as well as reed canary grass (*Phalaris arundinacea*), a pervasive, exotic plant. The natural shrub and grass cover tends to be principally limited by clearing for lawns, landscaping and agricultural land uses, as well as the impervious surfaces associated with residential development and roads. As a result, most of the reach has an inadequate riparian buffer, often less than 10-20 feet from the streambank. Heavy grazing impacts are also evident in rural pasture areas in the upper portion of the reach where animal access is unrestricted, impacting both riparian vegetation and water quality.

### **Wetlands**

Wetlands are found on 88% of Reach 5 (Table 4) (USFWS 2003). Seasonally flooded wetlands comprise 7.4% of the reach, temporarily flooded wetlands comprise 1.2% of the reach and wetlands that are temporarily or seasonally flooded and well drained comprise 79.4% of the reach. Much of this wetland area is underlain by soils identified in the City of Chewelah Comprehensive Plan as good agricultural soils. In addition, these wetlands have been disturbed by adjacent development and agriculture, compromising continuous plant cover and habitat values (City of Chewelah 2002).

### **Fish and Wildlife**

Reach 5 may provide potential habitat for numerous terrestrial species, including 51 birds, 22 mammals and at two amphibians (Table 5c). These species include the American Goldfinch, Big Brown Bat, and Long-toed Salamander (WDFW 1997). Among these species the Vaux's Swift, Willow Flycatcher, and the Yuma Myotis are species of current concern. Thomason Creek is also classified as a fish-bearing stream, likely providing habitat for native species of rainbow trout as well as Eastern brook trout (FS 2003).

**CULTURAL MODIFICATIONS** - See *Cultural Modification Synthesis Map in Map Portfolio CD* (*Cultural\_modifications.pmf*)

### **Land Use (Table 6)**

According to the EPA's Land Use/Land Cover information, of the SMP jurisdiction lands along Reach 5, 78.8% are classified as cropland and pasture, 14.6% are classified as residential, 5.1% is commercial and services, and 1.5% is classified as mixed urban (EPA 1994). Classified as rural shoreline use by the City of Chewelah Comprehensive Plan, this shoreline inventory found that 91.2% of the reach is being used for residential uses. Of the remaining land, 5.9% is classified as agriculture, 2.8% is vacant, and 0.1% is commercial.

### **Transportation Infrastructure (Table 7)**

Roadways occupy 0.68 km of SMP jurisdiction land in Reach 5 (WDNR 1996). These comprise some of the imperviousness found in the jurisdiction, totaling approximately 1.7% of the reach surface area. Stormwater runoff is often not being adequately buffered by riparian vegetation. In addition, 4 road crossings and 1 pedestrian bridge are located within the reach.

### **Shore Protection, Fence Crossings and Drains (Table 7)**

None of the bank along Reach 5 is protected by revetments, though 7 fence crossings are located within the reach. No storm drains were found along the reach.

**CULTURAL JURISDICTIONS** – see *Cultural Jurisdictional Synthesis Map in Map Portfolio CD (Cultural\_jurisdictional.pmf)*

**Zoning (Table 6)**

Current zoning within the SMP jurisdiction of Reach 5 is primarily unclassified (49.6%), with the remaining being single family residential (25.8%), multi family residential (18.3%), or retail business (6.4%) (City of Chewelah 2002). Currently the county environmental designation for Reach 4 is rural.

**DOE Facilities and 303(d) Listings (Table 7)**

There are no DOE facilities along Reach 5 (DOE 1998b).

**Ecological Function Summary**

**Table 12. Reach 5 Shoreline Characterization Summary**

Hazard Potential	Habitat Conditions	Public Access	Key Modifications
Floodzone: 12.5%	Wetlands: 88%		Principal land use:
High erosion soils: 0.6%	Riparian tree cover: 0.2%		Residential
Slow soil runoff: 86.4%	Priority habitats: 2		Imperviousness: 1.69%
High soil runoff: 0.6%	Species of concern: 3		Roads: 0.68 km

Ecological functions on Reach 5 have been heavily impaired by residential and agricultural development. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and nonpoint pollution such as sediment, fertilizers and pesticides. The portion of the reach not incorporated by the city is presently not on a municipal sewage system may be susceptible to septic tank failures, which can lead to further water pollution. Heavy grazing impacts are also evident in rural pasture areas in the upper portion of the reach where animal access is unrestricted, impacting both riparian vegetation and water quality. Higher levels of impervious surfaces, such as residential roads and buildings promote runoff and nonpoint source pollution. Some shoreline hardening has replaced natural vegetation in residential areas, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass. In addition, much of the lower portion of the reach has been channelized through channel straightening and dredging, affecting fish habitat and causing entrenchment that tends to cut off the channel from its floodplain. This habitat is further impaired by the fairly large number of fences found in this reach that restrict animal movement.

Draft Environmental Designation: Shoreline Residential along the upper portion of the shoreline, which is primarily devoted to residential use, and Urban Conservancy associated with the agricultural uses and vacant land in the southern end of the shoreline, which is also the main zone of wetlands in the reach. – see *Environmental Designations Map in the Map Portfolio CD (Env\_Desig.pmf)*

**OPPORTUNITIES FOR ECOLOGICAL PROTECTION AND RESTORATION**

*(see Opportunities Map in Map Portfolio CD) (Protection\_Restoration.pmf)*

**Opportunity A:** Work with private property owners to restore a native riparian vegetation buffer along its shoreline, as well as aggressively control exotic weed species such as reed canary grass.

**Opportunity B:** Limit floodplain development and ensure that new development is raised above the 100-year floodplain elevation.

**Opportunity C:** Remove fences crossing the stream, and restrict domestic animal access to the riparian zone by replacing cross-stream fencing with fencing parallel to, and setback from, the stream bank.

**Opportunity D:** Wetland areas should be protected from further encroachment by residential and agricultural development.

**Opportunity E:** Prevent further channelization, and restore channelized sections with instream structures and natural vegetation.



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**APPENDIX**

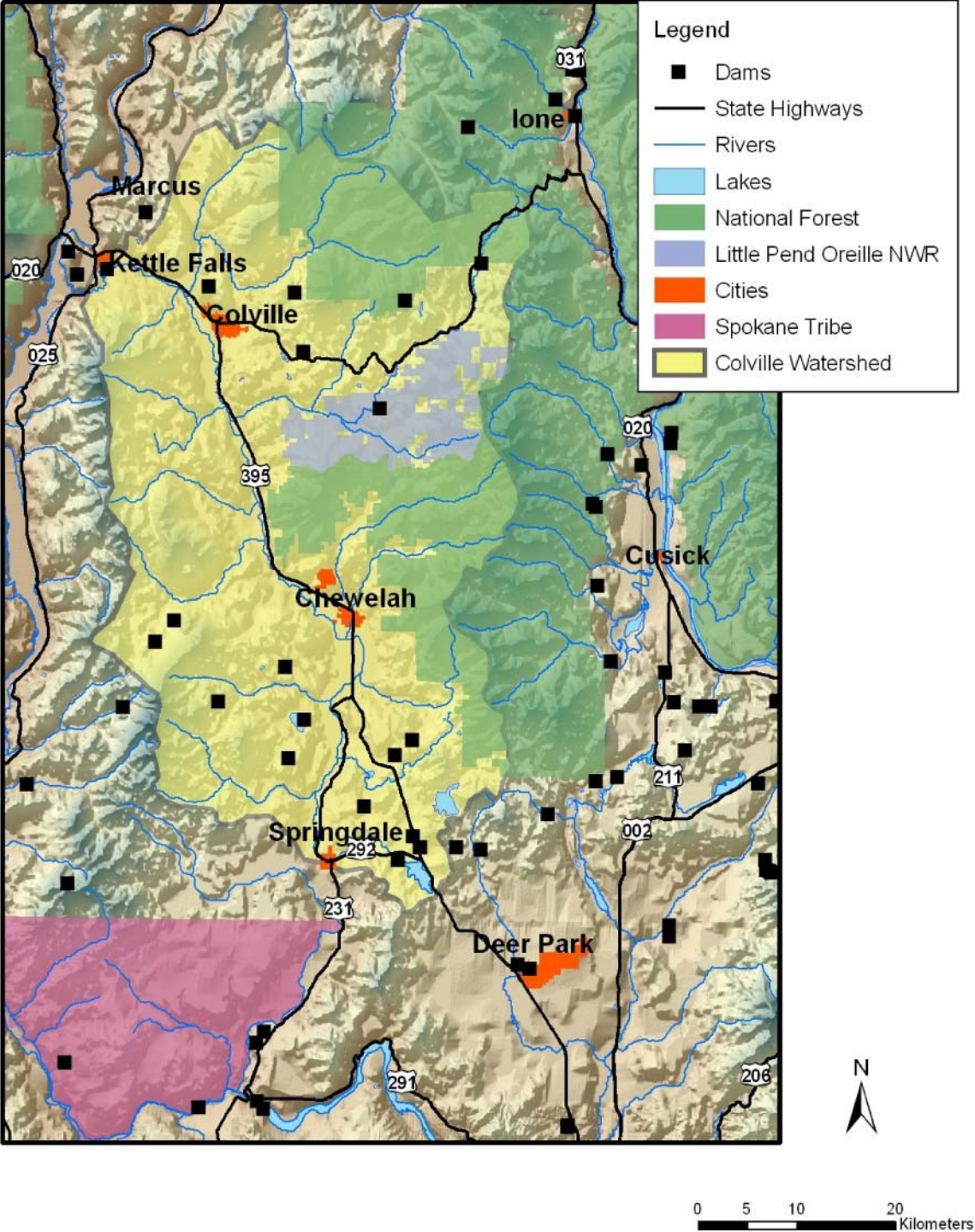


Figure 1.1: Regional Context for City of Chewelah Shoreline, Washington



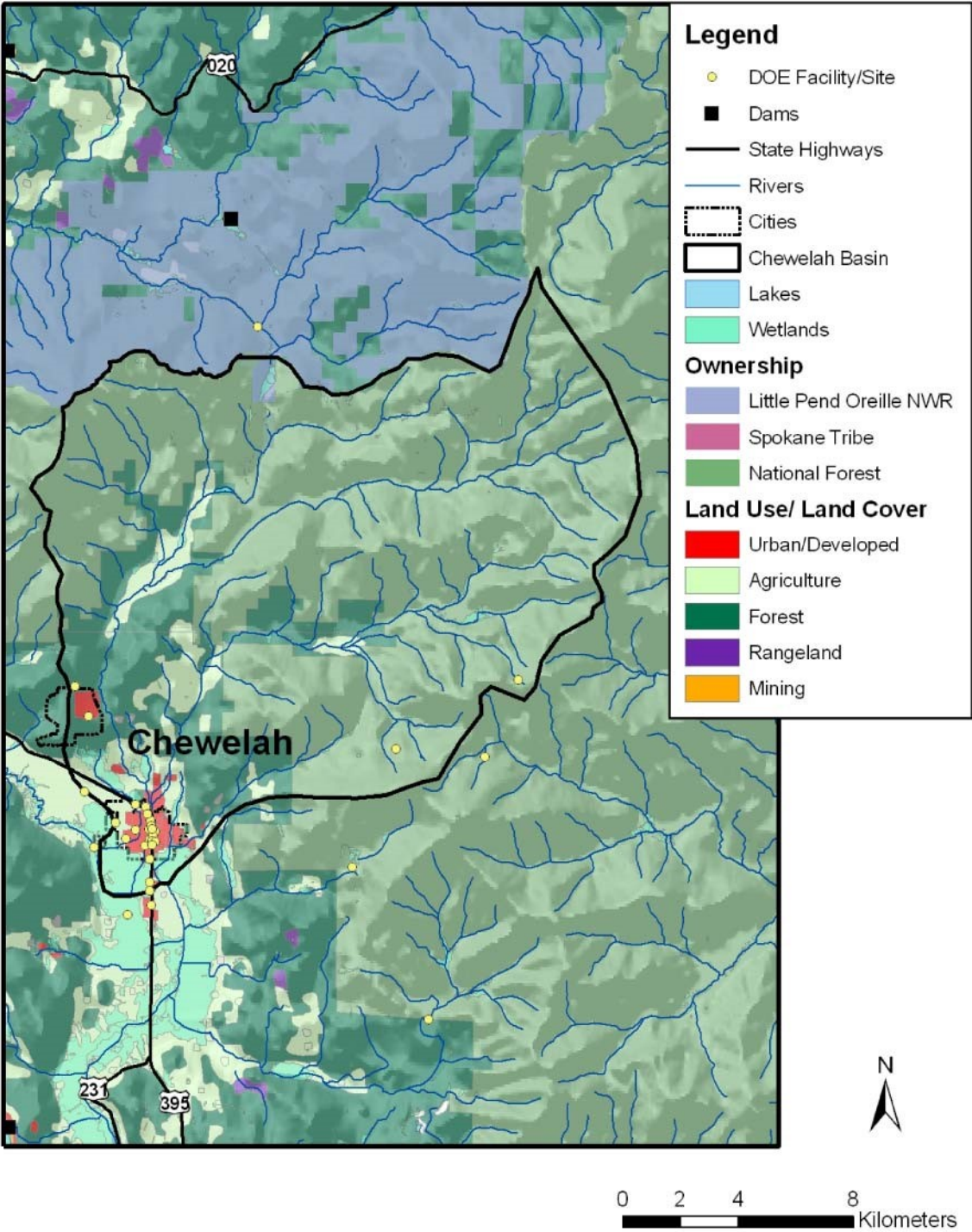


Figure 1.2: Ecosystem-Wide Management Issues, Chewelah, Washington.

**Table 1: SMP Reach Breaks for Inventory and Analysis, City of Chewelah.**

Reach	Length (m)	Start	Reach Break Justification	End
1	505	North line of SE <sup>1</sup> / <sub>4</sub> , SE <sup>1</sup> / <sub>4</sub> , S11, T32N, R40E	Edge of urban growth boundary.	South line of SW <sup>1</sup> / <sub>4</sub> , SW <sup>1</sup> / <sub>4</sub> , S12, T32N, R40E
2	617	South line of SW <sup>1</sup> / <sub>4</sub> , SW <sup>1</sup> / <sub>4</sub> , S12, T32N, R40E	Land use change from residential to commercial uses and road crossing.	SE <sup>1</sup> / <sub>4</sub> , NE <sup>1</sup> / <sub>4</sub> , S14, T32N, R40E
3	812	SE <sup>1</sup> / <sub>4</sub> , NE <sup>1</sup> / <sub>4</sub> , S14, T32N, R40E	Land use change from commercial to residential uses and road crossing.	South line of NE <sup>1</sup> / <sub>4</sub> , SE <sup>1</sup> / <sub>4</sub> , S14, T32N, R40E
4	3214	SE <sup>1</sup> / <sub>4</sub> , NW <sup>1</sup> / <sub>4</sub> , S11, T32N, R40E	Either end of urban growth boundary. Principally residential land use.	West line of S14, T32N, R40E
5	1532	SE <sup>1</sup> / <sub>4</sub> , NE <sup>1</sup> / <sub>4</sub> , S13, T32N, R40E	Either end of urban growth boundary. Principally rural/agricultural land use.	NE <sup>1</sup> / <sub>4</sub> , SW <sup>1</sup> / <sub>4</sub> , S13, T32, R40E

**Table 2: Hydrological Characteristics of the SMP Jurisdiction, City of Chewelah.**

Reach	Creek Length (m)	Total Acres	Floodplain (% Area)
1	505.1	15.1	46.9
2	617.4	18.3	44.1
3	812.2	24.9	44.7
4	3213.8	149.1	11.1
5	1532.5	121.1	12.5

**Table 3: Soil Characteristics of the SMP Jurisdiction, City of Chewelah**

Reach	Soil Type	% Area	Permeability	% Area	Runoff	% Area	Hazard of Erosion	% Area
1	Chewelah Fine Sandy Loam	92.9	moderately rapid	100.0	very slow	100.0	none	100.0
	Chamokane Loam	7.1						

2	Chewelah Fine Sandy Loam	100.0	moderately rapid	100.0	very slow	100.0	none	100.0
3	Chewelah Fine Sandy Loam	100.0	moderately rapid	100.0	very slow	100.0	none	100.0
4	Chewelah Fine Sandy Loam	87.1	moderately rapid	89.1	slow	8.3	none	91.7
	Hodgson Silt Loam, 3 to 15 % Slopes	8.3	moderately slow	10.9	very slow	91.7	slight to moderate	8.3
	Chamokane Loam	2.0						
	Colville Silt Loam, Drained	2.5						
5	Chewelah Fine Sandy Loam	70.2	moderately rapid	72.7	very rapid	0.6	very high	0.6
	Republic Gravelly Sandy Loam, 0 to 25 % Slopes	13.0	moderate	23.6	medium	13.0	moderate	13.0
	Saltese Muck	9.7	moderately slow	3.6	slow	3.6	slight to moderate	3.6
	Hodgson Silt Loam, 3 to 15 % Slopes	3.6			very slow	73.1	none	82.8
	Chamokane Loam	2.5			ponded	9.7		
	Rock Outcrop-Donavan Complex, 30 to 65 % Slopes	0.6						
	Peone Silt Loam, Drained	0.3						

**Table 4: Biological Characteristics of the SMP Jurisdiction, City of Chewelah**

Reach	Wetlands Types	Wetlands (% Area)	Riparian Tree Cover (% Area)	Species of Concern	Priority Habitat and Species	% Area
1	Palustrine, emergent,	0.55	6.4	Townsend's Big-eared Bat	Riparian Zones	8.27
	Persistent, seasonally flooded			Vaux's Swift		
				Willow Flycatcher		
				Yuma Myotis		

Reach	Wetlands Types	Wetlands (% Area)	Riparian Tree Cover (% Area)	Species of Concern	Priority Habitat and Species	% Area
2	None	0.00	4.6	Townsend`s Big-eared Bat	0	0
				Vaux`s Swift		
				Willow Flycatcher		
				Yuma Myotis		
3	Palustrine, emergent, persistent, temporarily flooded, seasonally flooded/well drained	9.90	10.5	Townsend`s Big-eared Bat		0
				Vaux`s Swift	0	
				Willow Flycatcher		
				Yuma Myotis		
4	Palustrine, emergent, persistent, temporarily flooded, seasonally flooded/well drained	47.60	2.5	Yuma Myotis	0	0
				Willow Flycatcher		
				Vaux`s Swift		
	Palustrine, emergent, Persistent, seasonally flooded	2.92				
	Palustrine, forested, broad leaved deciduous, seasonally flooded	1.35				
5	Palustrine, emergent, persistent, temporarily flooded	1.18	0.2	Yuma Myotis	Riparian Zones	2.22
				Willow Flycatcher	Waterfowl Concentrations	2.59
	Palustrine, emergent, persistent, seasonally flooded/well drained	79.40		Vaux`s Swift		
Palustrine, emergent, persistent, seasonally flooded	7.42					

Table 5: GAP Analysis of Species Habitat in Chewelah Creek, City of Chewelah.

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Big Brown Bat	<i>Eptesicus fuscus</i>	American Goldfinch	<i>Carduelis tristis</i>	Long-toed	<i>Ambystoma</i>



Mammals		Birds		Amphibians	
				Salamander	<i>macrodactylum</i>
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	American Robin	<i>Turdus migratorius</i>		
House Mouse	<i>Mus musculus</i>	American Crow	<i>Corvus brachyrhynchos/caurinus</i>		
Mink	<i>Mustela vison</i>	Barn Swallow	<i>Hirundo rustica</i>		
Long-eared Myotis	<i>Myotis evotis</i>	Black-capped Chickadee	<i>Parus atricapillus</i>		
Little Brown Myotis	<i>Myotis lucifugus</i>	Brewer's Blackbird	<i>Euphagus cyanocephalus</i>		
California Myotis	<i>Myotis californicus</i>	Brown-headed Cowbird	<i>Molothrus ater</i>		
Yuma Myotis	<i>Myotis yumanensis</i> *	Canada Goose	<i>Branta canadensis</i>		
Deer Mouse	<i>Peromyscus maniculatus</i>	Cedar Waxwing	<i>Bombycilla cedrorum</i>		
Townsend's Big-eared Bat	<i>Plecotus townsendii</i> *	Chestnut-backed Chickadee	<i>Parus rufescens</i>		
Vagrant Shrew	<i>Sorex vagrans</i>	Cliff Swallow	<i>Hirundo pyrrhonota</i>		
Columbian Ground Squirrel	<i>Spermophilus columbianus</i>	Cooper's Hawk	<i>Accipiter cooperii</i>		
Red Fox	<i>Vulpes vulpes</i>	Downy Woodpecker	<i>Picoides pubescens</i>		
		European Starling	<i>Sturnus vulgaris</i>		
		Great Horned Owl	<i>Bubo virginianus</i>		
		House Finch	<i>Carpodacus mexicanus</i>		
		House Sparrow	<i>Passer domesticus</i>		
		House Wren	<i>Troglodytes aedon</i>		
		Killdeer	<i>Charadrius vociferus</i>		
		Mourning Dove	<i>Zenaida macroura</i>		
		Northern Flicker	<i>Colaptes auratus</i>		
		Red-winged Blackbird	<i>Agelaius phoeniceus</i>		
		Red-tailed Hawk	<i>Buteo jamaicensis</i>		

Mammals		Birds		Amphibians	
		Rufous Hummingbird	<i>Selasphorus rufus</i>		
		Savannah Sparrow	<i>Passerculus sandwichensis</i>		
		Song Sparrow	<i>Melospiza melodia</i>		
		Spotted Towhee	<i>Pipilo maculatus</i>		
		Steller`s Jay	<i>Cyanocitta stelleri</i>		
		Tree Swallow	<i>Tachycineta bicolor</i>		
		Vaux`s Swift *	<i>Chaetura vauxi</i>		
		Violet-green Swallow	<i>Tachycineta thalassina</i>		
		Western Screech-Owl	<i>Otus kennicottii</i>		
		Western Wood-Pewee	<i>Contopus sordidulus</i>		
		Willow Flycatcher *	<i>Empidonax traillii</i>		
* federal or state species of concern					

Table 6: GAP Analysis of Species Habitat in Paye Creek, City of Chewelah.

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Coyote	<i>Canis latrans</i>	Cooper`s Hawk	<i>Accipiter cooperii</i>	Long-toed Salamander	<i>Ambystoma macrodactylum</i>
Beaver	<i>Castor canadensis</i>	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Pacific Treefrog	<i>Hyla regilla</i>
Big Brown Bat	<i>Eptesicus fuscus</i>	Mallard	<i>Anas platyrhynchos</i>		
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	Great Blue Heron	<i>Ardea herodias</i>		
Hoary Bat	<i>Lasiurus cinereus</i>	Cedar Waxwing	<i>Bombycilla cedrorum</i>		
Bobcat	<i>Lynx rufus</i>	Canada Goose	<i>Branta canadensis</i>		

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Striped Skunk	<i>Mephitis mephitis</i>	Red-tailed Hawk	<i>Buteo jamaicensis</i>		
Long-tailed Vole	<i>Microtus longicaudus</i>	Great Horned Owl	<i>Bubo virginianus</i>		
Montane Vole	<i>Microtus montanus</i>	House Finch	<i>Carpodacus mexicanus</i>		
Ermine	<i>Mustela erminea</i>	American Goldfinch	<i>Carduelis tristis</i>		
Long-tailed Weasel	<i>Mustela frenata</i>	Common Nighthawk	<i>Chordeiles minor</i>		
House Mouse	<i>Mus musculus</i>	Vaux`s Swift	<i>Chaetura vauxi</i> *		
Mink	<i>Mustela vison</i>	Killdeer	<i>Charadrius vociferus</i>		
Little Brown Myotis	<i>Myotis lucifugus</i>	Northern Flicker	<i>Colaptes auratus</i>		
California Myotis	<i>Myotis californicus</i>	American Crow	<i>Corvus brachyrhynchos/caurinus</i>		
Yuma Myotis	<i>Myotis yumanensis</i> *	Common Raven	<i>Corvus corax</i>		
White-tailed Deer	<i>Odocoileus virginianus</i>	Western Wood-Pewee	<i>Contopus sordidulus</i>		
Deer Mouse	<i>Peromyscus maniculatus</i>	Steller`s Jay	<i>Cyanocitta stelleri</i>		
Townsend`s Big-eared Bat	<i>Plecotus townsendii</i> *	Bobolink	<i>Dolichonyx oryzivorus</i>		
Raccoon	<i>Procyon lotor</i>	Willow Flycatcher	<i>Empidonax traillii</i> *		
Vagrant Shrew	<i>Sorex vagrans</i>	Brewer`s Blackbird	<i>Euphagus cyanocephalus</i>		
Columbian Ground Squirrel	<i>Spermophilus columbianus</i>	American Kestrel	<i>Falco sparverius</i>		
Northern Pocket Gopher	<i>Thomomys talpoides</i>	Common Snipe	<i>Gallinago gallinago</i>		
Red Fox	<i>Vulpes vulpes</i>	Cliff Swallow	<i>Hirundo pyrrhonota</i>		
		Barn Swallow	<i>Hirundo rustica</i>		
		Song Sparrow	<i>Melospiza melodia</i>		
		Brown-headed Cowbird	<i>Molothrus ater</i>		

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
		Western Screech-Owl	<i>Otus kennicottii</i>		
		Lazuli Bunting	<i>Passerina amoena</i>		
		Black-capped Chickadee	<i>Parus atricapillus</i>		
		House Sparrow	<i>Passer domesticus</i>		
		Chestnut-backed Chickadee	<i>Parus rufescens</i>		
		Savannah Sparrow	<i>Passerculus sandwichensis</i>		
		Ring-necked Pheasant	<i>Phasianus colchicus</i>		
		Spotted Towhee	<i>Pipilo maculatus</i>		
		Black-billed Magpie	<i>Pica pica</i>		
		Downy Woodpecker	<i>Picoides pubescens</i>		
		Sora	<i>Porzana carolina</i>		
		Rufous Hummingbird	<i>Selasphorus rufus</i>		
		Western Bluebird	<i>Sialia mexicana</i>		
		Chipping Sparrow	<i>Spizella passerina</i>		
		Western Meadowlark	<i>Sturnella neglecta</i>		
		European Starling	<i>Sturnus vulgaris</i>		
		Tree Swallow	<i>Tachycineta bicolor</i>		
		Violet-green Swallow	<i>Tachycineta thalassina</i>		
		House Wren	<i>Troglodytes aedon</i>		
		American Robin	<i>Turdus migratorius</i>		
		Eastern Kingbird	<i>Tyrannus tyrannus</i>		
		Western Kingbird	<i>Tyrannus verticalis</i>		

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
		Warbling Vireo	<i>Vireo gilvus</i>		
		Mourning Dove	<i>Zenaida macroura</i>		
		Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>		
* federal or state species of concern					

Table 7: GAP Analysis of Species Habitat in Thomason Creek, City of Chewelah.

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Coyote	<i>Canis latrans</i>	Cooper`s Hawk	<i>Accipiter cooperii</i>	Long-toed Salamander	<i>Ambystoma macrodactylum</i>
Beaver	<i>Castor canadensis</i>	White-throated Swift	<i>Aeronautes saxatalis</i>	Pacific Treefrog	<i>Hyla regilla</i>
Big Brown Bat	<i>Eptesicus fuscus</i>	Red-winged Blackbird	<i>Agelaius phoeniceus</i>		
Northern Flying Squirrel	<i>Glaucomys sabrinus</i>	Mallard	<i>Anas platyrhynchos</i>		
Hoary Bat	<i>Lasiurus cinereus</i>	Great Blue Heron	<i>Ardea herodias</i>		
Bobcat	<i>Lynx rufus</i>	Cedar Waxwing	<i>Bombycilla cedrorum</i>		
Long-tailed Vole	<i>Microtus longicaudus</i>	Canada Goose	<i>Branta canadensis</i>		
Montane Vole	<i>Microtus montanus</i>	Red-tailed Hawk	<i>Buteo jamaicensis</i>		
Ermine	<i>Mustela erminea</i>	Great Horned Owl	<i>Bubo virginianus</i>		
Long-tailed Weasel	<i>Mustela frenata</i>	House Finch	<i>Carpodacus mexicanus</i>		
House Mouse	<i>Mus musculus</i>	American Goldfinch	<i>Carduelis tristis</i>		
Mink	<i>Mustela vison</i>	Common Nighthawk	<i>Chordeiles minor</i>		
Long-eared Myotis	<i>Myotis evotis</i>	Vaux`s Swift	<i>Chaetura vauxi</i> *		
Little Brown Myotis	<i>Myotis lucifugus</i>	Killdeer	<i>Charadrius vociferus</i>		
California Myotis	<i>Myotis californicus</i>	Northern Flicker	<i>Colaptes auratus</i>		

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Yuma Myotis	<i>Myotis yumanensis</i> *	American/ Northwe stern Crow	<i>Corvus brachyrhynchos/caurinus</i>		
White-tailed Deer	<i>Odocoileus virginianu</i>	Common Raven	<i>Corvus corax</i>		
Deer Mouse	<i>Peromyscus maniculatus</i>	Western Wood- Pewee	<i>Contopus sordidulus</i>		
Townsend` s Big- eared Bat	<i>Plecotus townsendii</i> *	Steller`s Jay	<i>Cyanocitta stelleri</i>		
Vagrant Shrew	<i>Sorex vagrans</i>	Bobolink	<i>Dolichonyx oryzivorus</i>		
Columbian Ground Squirrel	<i>Spermophilus columbianus</i>	Willow Flycatcher	<i>Empidonax traillii</i> *		
Northern Pocket Gopher	<i>Thomomys talpoides</i>	Brewer`s Blackbird	<i>Euphagus cyanocephalus</i>		
Red Fox	<i>Vulpes vulpes</i>	American Kestrel	<i>Falco sparverius</i>		
		Common Snipe	<i>Gallinago gallinago</i>		
		Cliff Swallow	<i>Hirundo pyrrhonota</i>		
		Barn Swallow	<i>Hirundo rustica</i>		
		Song Sparrow	<i>Melospiza melodia</i>		
		Brown-headed Cowbird	<i>Molothrus ater</i>		
		Western Screech- Owl	<i>Otus kennicottii</i>		
		Lazuli Bunting	<i>Passerina amoena</i>		
		Black-capped Chickadee	<i>Parus atricapillus</i>		
		House Sparrow	<i>Passer domesticus</i>		
		Chestnut-backed Chickadee	<i>Parus rufescens</i>		

Mammals		Birds		Amphibians	
Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
		Savannah Sparrow	<i>Passerculus sandwichensis</i>		
		Ring-necked Pheasant	<i>Phasianus colchicus</i>		
		Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>		
		Spotted Towhee	<i>Pipilo maculatus</i>		
		Black-billed Magpie	<i>Pica pica</i>		
		Sora	<i>Porzana carolina</i>		
		Western Bluebird	<i>Sialia mexicana</i>		
		Chipping Sparrow	<i>Spizella passerina</i>		
		Rufous Hummingbird	<i>Selasphorus rufus</i>		
		Western Meadowlark	<i>Sturnella neglecta</i>		
		European Starling	<i>Sturnus vulgaris</i>		
		Tree Swallow	<i>Tachycineta bicolor</i>		
		Violet-green Swallow	<i>Tachycineta thalassina</i>		
		House Wren	<i>Troglodytes aedon</i>		
		American Robin	<i>Turdus migratorius</i>		
		Warbling Vireo	<i>Vireo gilvus</i>		
		Mourning Dove	<i>Zenaida macroura</i>		
* federal or state species of concern					

**Table 8: Cultural Jurisdiction and Land Use Characteristics of the SMP Jurisdiction, City of Chewelah.**

Reach	Zoning	% Area	County Land Use	% Area	City Land Use	% Area	Access/Enhancement Points
1	Park	61.2	Residential	46.0	Commercial	43.7	2
	Single Family Residential	36.9	Commercial and Services	18.0	Recreational	6.8	
	Retail Business	1.0	Other Urban and Built-up Land	36.0	Residential	23.1	
					Vacant	7.8	
2	Single Family Residential	63.0	Residential	96.8	Commercial	31.6	3
	Multi Family Residential	4.2	Other Urban and Built-up Land	3.2	Municipal	2.1	
	Retail Business	30.1			Non-Profit	6.7	
					Recreational	6.9	
3	Commercial Industrial	94.3	Residential	95.5	Agriculture	12.1	2
	Single Family Residential	5.5	Cropland and Pasture	4.5	Commercial	12.2	
	Retail Business	5.5			Municipal	1.8	
					Residential	63.2	
					Vacant	0.1	
4	Park	0.8	Residential	36.9	Agriculture	8.9	0
	Single Family Residential	7.3	Cropland and Pasture	62.2	Recreational	2.5	
	Single Family Residential R1-H	53.1	Evergreen Forest Land	0.0	Residential	80.3	
	Retail Business	0.0	Strip Mines, Quarries, Gravel pits	0.9	Vacant	0.0	
	Not classified by city zoning	38.8					
5	Single Family Residential	25.8	Residential	14.6	Agriculture	5.9	0
	Multi Family Residential	18.3	Commercial and Services	5.1	Commercial	0.1	



Reach	Zoning	% Area	County Land Use	% Area	City Land Use	% Area	Access/Enhancement Points
	Retail Business	6.4	Mixed Urban	1.5	Residential	91.2	
	Not classified by city zoning	49.6	Cropland and Pasture	78.8	Vacant	2.8	

Table 9: Cultural Modifications of the SMP Jurisdiction, City of Chewelah.

Reach	Total Reach Length (km)	Total Road Length (km)	Total Rail Length (km)	Bridge and Fence Crossings (#)		Impervious Surfaces	Shore Protection		Storm Drains (#)	DOE Facilities
						% Area	length (m)	% of bank		
1	0.51	1.21	0	Pedestrian bridge	2	24.04	160.4	15.9	4	0
				Road crossing	1					
2	0.62	1.06	0.16	Pedestrian bridge	2	52.50	34.1	2.8	2	Northwest Marble Products, Inc
										Chewelah Feed Lot
				Road crossing	2					Telephone Utilities Corp
				Railroad	1					
3	0.81	1.08	0.01	Road crossing	4	21.50	82.0	5.0	2	Roys Chevron
										County Shop Chewelah
4	3.21	3.42	0.12	Fence Crossing	14	10.94	205.9	3.2	0	0

Reach	Total Reach Length (km)	Total Road Length (km)	Total Rail Length (km)	Bridge and Fence Crossings (#)		Impervious Surfaces	Shore Protection		Storm Drains (#)	DOE Facilities
							% Area	length (m)		
				Road crossing	12					
				Pedestrian bridge	22					
5	1.53	0.68	0	Pedestrian bridge	1	1.69	0	0	0	0
				Fence Crossing	7					
				Road crossing	4					

## APPENDIX II CUMULATIVE IMPACTS

The purpose of this section is to evaluate the cumulative impacts of reasonably foreseeable future development on shoreline ecological functions supported by the goals, policies, and regulations of this shoreline master program. This evaluations includes the factors identified WAC 173-26-186 (8)(d)(i) through (iii):

- Current circumstances affecting the shorelines and relevant natural processes;
- Reasonably foreseeable future development and use of the shoreline; and
- Beneficial effects of any established regulatory programs under other local, state, of federal laws.

### Current circumstances affecting the shorelines and relevant natural processes

Cumulative impact analysis requires an understanding of the current land use patterns, regulations affecting development, shoreline ecological functions, and other cultural and social conditions. Appendix I the foundation of this SMP, established the baseline for understanding the current conditions of Chewelah Creek. The following tables and text summarize the inventory and analysis:

#### Reach 1

Hazard Potential	Habitat Conditions	Public Access	Key Modifications
Floodzone: 46.9% Slow soil runoff: 100%	Wetlands: 0.55% Riparian tree cover: 6.4% Priority habitats: 1 Species of concern: 4	Public land: 61.2% Parks: 1 Access Points: 2	Principal land use: Commercial Imperviousness: 24.04% Roads: 1.21 km Bulkheads: 15.9% Storm drains: 4

Ecological functions on Reach 1 have been impaired by commercial and residential development, as well as recreational use stemming from Chewelah City Park. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and non-point pollution such as sediment, fertilizers and pesticides. Relatively high levels of impervious surfaces, such as residential roads and buildings, further promote runoff and non-point source pollution. Extensive shoreline hardening has replaced stabilizing natural vegetation, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass.

## Reach 2

<b>Hazard Potential</b>	<b>Habitat Conditions</b>	<b>Public Access</b>	<b>Key Modifications</b>
Floodzone: 44.1% Slow soil runoff: 100%	Riparian tree cover: 4.6% Species of concern: 4	Access Points: 3	Principal land use: Residential Imperviousness: 52.50% Roads: 1.06 km Bulkheads: 2.8% Storm drains: 2

Ecological functions on Reach 2 have been heavily impaired by residential, recreational and commercial development. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and nonpoint pollution such as sediment, fertilizers and pesticides. High levels of impervious surfaces, such as roads, buildings, and parking lots, promote runoff and nonpoint source pollution. Some shoreline hardening has replaced natural vegetation, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass.

## Reach 3

<b>Hazard Potential</b>	<b>Habitat Conditions</b>	<b>Public Access</b>	<b>Key Modifications</b>
Floodzone: 44.7% Slow soil runoff: 100%	Wetlands: 9.90% Undeveloped: % Riparian tree cover: 10.5% Species of concern: 4	Access Points: 2	Principal land use: Residential Imperviousness: 21.50% Roads: 1.08 km Bulkheads: 5% Storm drains: 2

Ecological functions on Reach 3 have been heavily impaired by residential, commercial and agricultural development. The riparian vegetation along this shoreline has been largely modified and removed, replaced with lawns, which can promote increased runoff and non-point pollution such as sediment, fertilizers and pesticides. Heavy grazing impacts are also evident in rural pasture areas in the lower portion of the reach where animal access is unrestricted. Higher levels of impervious surfaces, such as residential roads, buildings, and parking lots, promote runoff and non-point source pollution. Some shoreline hardening has replaced natural vegetation, thereby affecting aquatic vegetation and fish habitat. The aquatic habitat is further impacted by exotic weed species such as reed canary grass.

The inventory and characterization of Chewelah Creek shoreline jurisdictions is critical to understanding the shoreline resources. This also establishes the base from which compliance with the standard of "no net loss" is to be measured for purposes of reviewing and approving development within the shoreline jurisdiction.

**No net loss**

WAC 173-26-201 (2)(c) states:

Master programs shall contain policies and regulations that assure, at minimum, no net loss of ecological functions necessary to sustain shoreline natural resources. To achieve this standard while accommodating appropriate and necessary shoreline uses and development, master programs should establish and apply:

- Environment designations with appropriate use and development standards; and
- Provisions to address the impacts of specific common shoreline uses, development activities and modification actions; and
- Provisions for the protection of critical areas within the shoreline; and
- Provisions for mitigation measures and methods to address unanticipated impacts.

Shoreline master programs must achieve a no net loss of ecological functions necessary to sustain shoreline natural resources as development and use of the shoreline continues over time. Influences outside of the shoreline jurisdiction place additional pressure on those same shoreline resources. The goals, policies, regulations, and restoration plan of Chewelah's Shoreline Master Program assures no net loss of shoreline ecological functions.

**Foreseeable future development and use of the shoreline**

There is minimal development opportunity or expected development pressure within the shoreline jurisdiction of Chewelah Creek. Currently, June 2007, there is approximately 2.58 vacant acres within shoreline jurisdiction. All the vacant acres are within the Shoreline Residential environmental designation and include all parcels with only portions of their area within shoreline jurisdiction and associated critical areas.

The existing comprehensive plan designation and zoning for the 2.58 acres are consistent with the SMP's Shoreline Residential Environmental Designation. The primary expected use of these 2.58 acres would be single family residential development. The land quantity analysis completed for the 2007 update of the comprehensive plan did not include these lands as available for development recognizing the fragile nature of these areas; while this does not prohibit development of these parcels it does reduce development pressure on constrained parcels.

The Chewelah SMP has regulations and policies that assure no net loss of ecological functions. Part of these regulations requires exempt development to obtain a statement of exemption from the administrator that reviews the project is consistent with the SMP and SMA.

### **Beneficial effects of any established regulatory programs under other local, state, and federal laws**

The most common permits and/or review issues required for many shoreline/water related projects include:

1. Review for compliance with the State Environmental Policy Act (SEPA), usually completed by the local jurisdiction. This process is completed as a part of the shoreline permitting process.
2. Critical Area Regulations required by the Growth Management Act (GMA), completed by the local jurisdiction. Chewelah's Shoreline Master Program includes critical area regulations that were adopted consistent with the requirements of the GMA.
3. A Hydraulic Project Approval (HPA) from the Washington State Department of Fish and Wildlife. As proved for in RCW 77.55 Construction projects in state waters: Except as provided in RCW 77.55.031, 77.55.051, and 77.55.041, in the event that any person or government agency desires to undertake a hydraulic project, the person or government agency shall, before commencing work thereon, secure the approval of the department in the form of a permit as to the adequacy of the means proposed for the protection of fish life.
4. 401 Water Quality Certification from the Washington State Department of Ecology. This certification is authorized through Chapter 90.48 RCW WATER POLLUTION CONTROL.
5. A building permit from the county or city.