1.0 INTRODUCTION

The intent of this document is to summarize the evaluation of potential cumulative impacts to shoreline ecological functions that may occur as a result of implementing the City of Ridgefield Shoreline Master Program (SMP) as it is currently proposed. This summary is based on the Clark County Coalition Draft Cumulative Impacts Analysis (Coalition Analysis), dated February 2012 and the provisions outlined in the locally-adopted City of Ridgefield SMP dated March 22, 2012 but adopted on April 12, 2012 (hereafter referred to as the April 2012 SMP).

This report first introduces the shorelines of the state that are located in Ridgefield and its Urban Growth Area (UGA). Based on existing conditions, as documented in the Clark County Coalition Shoreline Inventory and Characterization Report (Coalition ICR) (ESA Adolfson, 2010), the ecological functions most at risk are identified. As part of this analysis “reasonable foreseeable development” is projected for Ridgefield and its UGA using assumptions from the Coalition Cumulative Impacts Analysis. The conclusion discusses potential cumulative impacts, if any, of the City’s Draft SMP on shoreline ecological functions.

2.0 INVENTORY AND CHARACTERIZATION

The Coalition ICR (ESA Adolfson, 2010) identifies existing conditions and assesses the ecological functions and processes in the City’s shoreline jurisdiction. The inventory includes all shoreline areas within the city of Ridgefield and its designated UGA.

2.1 Shorelines of the State

Two shorelines of the state are located within the city limits and UGA: Lake River and Gee Creek.

2.2 Ecological Functions

Based on the findings of the Coalition ICR (ESA Adolfson, 2010), ecological functions most at risk due to land disturbing activities in the City’s shorelines include:

- Shoreline and riparian habitat;
- Water quality and quantity; and
- River/floodplain connectivity.

2.3 Management Recommendations

During the development of the Coalition ICR, an initial set of general management recommendations were generated in response to the findings about shoreline functions for each of the SMA waterbodies in the County. These management recommendations provided guidance to the Coalition as they moved forward in their SMP update process of goals, policies, and regulations. For Ridgefield, these general recommendations for Lake River and Gee Creek are summarized below. For additional discussion and detail please refer to the Coalition ICR.
2.3.1 Vegetation Management

- Riparian areas and vegetation conservation zones should be restored to remove non-native and invasive plant species. Native trees and shrubs should then be planted. Salmon habitat is supported by riparian zones that contain native trees and shrubs, which provide food sources, shading and large woody debris to lakes, rivers and streams.

- Vegetation conservation measures and setbacks and buffers from the ordinary high water mark should be required for all future development along shorelines.

- Prevent the introduction of non-native invasive species and encourage rapid eradication. Develop an invasive plant inventory to track changes and prioritize areas for eradication.

2.3.2 Program Considerations

- Consider the importance of confluence areas (areas where tributaries join the mainstem Columbia River) for juvenile salmonid rearing when developing goals, policies, and regulations.

- Regulatory language should be written in a manner that is easy to understand and provides options for compliance.

- Consider improving the shoreline permitting process to ensure adequate review of impacts, public noticing, compliance with regulations and agency coordination.

- Consider developing an inventory of archaeological sites that contribute to the history and understanding of past human activities in Clark County.

2.3.3 Development Regulations – Hard Armoring

- Consider regulations that encourage and facilitate levee setback projects (e.g., pulling back an existing levee to allow for a larger floodplain area contiguous to a waterbody) and other shoreline enhancement projects.

- Consider requirements for soft-shore bioengineering techniques where new armoring or retrofits cannot be avoided.

- Consider alternatives to new armoring such as setbacks and vegetated riparian zones. New developments should be located on the property in such a manner as to not require shoreline armoring in order to protect the house and other structures.

2.3.4 Development Regulations – Overwater Structures

- Consider size limitations for overwater structures, including new docks, piers or floats.

- Consider joint-use docks prior to construction of single-use residential docks to minimize dock proliferation and shading impacts.
2.3.5 Development Regulations – Mitigation

- Consider requirements for new development to provide an analysis during permit approval of existing and newly proposed impacts to the site-specific ecological functions and values in order to focus and improve the effectiveness of any required mitigation.

- Require mitigation sequencing as per the shoreline guidelines. Project designs should demonstrate avoidance and minimization, prior to compensatory mitigation or replacement of functions.

- The goal of mitigation is no net loss of shoreline ecological functions from the baseline condition established in the ICR.

- Consider requiring public access that is commensurate with the scale and character of future development and avoids adverse effects on the natural shoreline character and functions.

2.4 Shoreline Use Analysis

2.4.1 Lake River

Existing uses along Lake River in Ridgefield are almost entirely composed of vacant lands. Waterfront uses include the Port of Ridgefield and McCuddy’s Marina. The Port property is degraded and the site of a major environmental cleanup effort nearing its final phase. The Port is planning a mixed-use development for the site called Millers’ Landing that would include office, light industrial, moorage, retail uses, and public amenities. McCuddy’s Marina includes covered moorage, boathouses, and moorage for houseboats. There is a community of floating homes totaling approximately 55 structures along 2-3 piers. The site also includes a boat launch and dock. The Burlington Northern-Santa Fe railroad track parallels Lake River through the city.

2.4.2 Gee Creek

Existing uses in the Gee Creek shoreline planning area are a mix of suburban residential and vacant lands. Gee Creek is crossed by four roadways, at least one of which is culverted. There are no apparent water-oriented uses on Gee Creek. Three water production wells are located in Abrams Park within the Gee Creek shoreline planning area, and an Olympic Gas Pipeline runs under Gee Creek in Abrams Park.

3.0 SHORELINE DESIGNATIONS

Shoreline Designations (SDs) were developed based on a review of the Coalition ICR, biological and physical characteristics of the shoreline, existing development patterns, and goals and aspirations of the community as expressed through the Ridgefield Comprehensive Plan. The City was also informed by the definitions in Washington State’s Shoreline Guidelines (WAC 173-26-211). The specific methodology by which the designations were established is described in the February 2012 Coalition CIA as well as the Shoreline Designation Rationale Memo dated June 2011.
The five designations that are proposed in the Draft SMP include the following:

1. **Aquatic** – The purpose of this designation is to protect, restore, and manage the unique characteristics and resources of the areas waterward of the ordinary high-water mark. This designation is applied to all lands waterward of the OHWM in Gee Creek and Lake River.

2. **Natural** – The purpose of this designation is to protect those shoreline areas that are relatively free of human influence or that include intact or minimally degraded shoreline ecological functions intolerant of human use. These systems require that only very low intensity uses be allowed in order to maintain the ecological functions and ecosystem-wide processes. Consistent with the policies of the designation, restoration of degraded shorelines within this environment is appropriate. This designation is not currently utilized within the city limits or the urban growth area.

3. **Urban Conservancy** – The purpose of this designation is to protect and restore ecological functions of open space, floodplains, and other sensitive lands, where they exist in urban and developed settings, while allowing a variety of compatible uses. This designation is concentrated around Gee Creek and the majority of the eastern shore of Lake River.

4. **Medium Intensity** – The purpose of this designation is to accommodate primarily residential development and appurtenant structures, but to also allow other types of development that are consistent with this chapter. An additional purpose is to provide appropriate public access and recreational uses. This designation is not currently utilized within the city limits or the urban growth area.

5. **High Intensity** – The purpose of this designation is to provide for high-intensity water-oriented commercial, transportation, and industrial uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded. This designation is concentrated along the northern portion of Lake River.

The following designations are also included in the Draft SMP to maintain consistency countywide; however, these designations do not apply within the city limits or the urban growth area:

6. **Rural Conservancy – Residential** – The purpose of this designation is to protect shoreline ecological functions, conserve existing natural resources and valuable historic and cultural areas in order to provide for sustained resource use, achieve natural floodplain processes, and provide recreational opportunities.

7. **Rural Conservancy – Resource Lands** – The purpose of this designation is to protect shoreline ecological functions, conserve existing natural resources and valuable historic and cultural areas in order to provide for sustained resource use, achieve natural floodplain processes, and provide recreational opportunities.
4.0 SHORELINE MASTER PROGRAM

4.1 Goals and Policies

The Ridgefield Draft SMP has goal statements and policies for general and specific shoreline developments, modifications and uses (see Chapter 3 of the Draft SMP). Goals and policies were developed based on the state’s shoreline guidelines, the Coalition ICR, Clark County Coalition SMP Update Management Strategy, input from the general public, and the City’s Comprehensive Plan. New policies were developed that are unique to the City’s Draft SMP. Policies that were included based on the Coalition ICR are intended to address the management recommendations and to ensure no loss of shoreline functions from baseline conditions.

4.2 Regulations

The Draft SMP establishes regulations for general and specific shoreline developments, modifications and uses. The regulations are generally designed to improve protection of shoreline ecological functions and management of the resources identified in the Coalition ICR. Protective regulations in the draft SMP include, but are not limited to:

4.2.1 Critical Areas

- The critical area regulations from Ridgefield Municipal Code (RMC) Chapter 18.280 and the Flood Control regulations from RMC Chapter 18.750 have been included in Chapter 5A of the Draft SMP.

- Critical areas (i.e., fish and wildlife habitat conservation areas, streams, and wetlands) are protected through buffers, mitigation sequencing, and requirements that mitigation meet the standard of no net loss of ecological functions. For example, the minimum riparian buffer width for Type S streams is 150 feet, which is wider than most setbacks for shorelines uses. The critical area regulations require riparian buffers be protected, or where development is allowed, activities must result in no net loss of riparian habitat functions on the site.

- Reasonable use exceptions must be processed as a shoreline variance.

4.2.2 Water Quality

- New development must meet current stormwater management standards, BMPs must be used to control treatment and release of surface runoff, and erosion control methods must be used during construction and operation.

- Other regulations prohibit the use of herbicides, fungicides, fertilizers, and pesticides within 25 feet of a waterbody, except by a qualified professional in accordance with state and federal laws. In-water structures must be constructed of materials that will not adversely affect water quality or aquatic plants and animals over the long term.
4.2.3 Vegetation Conservation

- Removal of native vegetation must be avoided. Where removal cannot be avoided, it must be minimized and mitigated to result in no net loss of shoreline ecological function.
- Topping trees is prohibited and pruning is only allowed in limited amounts.
- Developments must be located to avoid clearing and grading mature or multi-storied plant communities and to retain habitat connectivity.
- Habitat that cannot be replaced or restored within 20 years must be preserved.
- When restoring or enhancing vegetation, native species must be used.

4.2.4 Structural Shoreline Stabilization

- New hard armoring must obtain a conditional use permit and prove that soft-shore stabilization is not feasible.
- Naturally regenerating systems for the prevention and control of shoreline erosion must be used instead of structural solutions where (1) the length and configuration of shoreline will accommodate such systems; (2) such protection is a reasonable solution to the needs of the specific site; and (3) the project will achieve one or more of the following:
  - Recreate or enhance natural shoreline conditions;
  - Create or enhance natural habitat;
  - Reverse otherwise erosional conditions; or
  - Enhance access to the shoreline, especially to public shorelines

5.0 RESTORATION PLAN

A Clark County Coalition Draft Shoreline Restoration Plan was developed as part of the SMP update process (ESA Adolfson, 2011). Restoration opportunities were identified for Lake River and Gee Creek and are summarized below.

5.1 Lake River

Restoration opportunities that would be implemented at a programmatic level include the following:

- Create and/or restore side channel and off-channel habitat for chum spawning and coho overwintering;
- Restore riparian forest on the western shore;
- Supplement large woody debris;
- Control invasive riparian vegetation;
- Enhance and restore wetland habitat;
- Improve water quality;
- Remove, lower, or set back dikes and levees;
- Provide for adequate in-stream flows through management of water withdrawals; and
- Support stewardship and volunteer opportunities for restoration through local environmental non-profit entities such as Lower Columbia River Estuary Partnership (LCREP).

### 5.2 Gee Creek

Restoration opportunities that would be implemented at a programmatic level include the following:

- Enhance and restore riparian vegetation in degraded areas through education and acquisition, livestock fencing, and topsoil restoration;
- Control invasive riparian vegetation;
- Remove barriers to fish habitat and supplement large woody debris;
- Restore associated wetland habitat; and
- Use groundwater recharge and infiltration techniques as part of stormwater management strategy.

The site-specific restoration opportunities identified for the Gee Creek area include:

- Upgrade stormwater facilities and outfalls at numerous locations noted in 2007 Clark County Stormwater Needs Assessment Program (SNAP) report.
- Control invasive vegetation at numerous locations noted in 2007 SNAP report.
- Conduct further analysis of fish passage barriers and replace culverts as needed at numerous locations noted in 2007 SNAP report.
- Assess and replace fish passage barriers, for example at Union Pacific railroad crossing near mouth of Gee Creek.
6.0  CUMULATIVE IMPACTS ASSESSMENT

A cumulative impact assessment was prepared on the March 2011 version of the Clark County Coalition Draft SMP and in June 2011 to address the individual Coalition Draft SMPs. In March, a preliminary finding of potential net loss was determined. In response, the Coalition staff with input from citizens and advised by the Shoreline Stakeholder Advisory Committee, Technical Advisory Committee and Independent Science Review Panel, re-examined and changed several of the designations placed on specific shoreline reaches, revised regulations associated with specific use allowances, dimensional standards, such as structure setbacks, and vegetation conservation.

Subsequently, cumulative impact assessments were conducted on the June 2011 versions of Coalition members individual Draft SMPs. The June 2011 Coalition Draft Cumulative Impacts Analysis concluded that cumulative impacts would be minimal to moderate and identified several areas with potential for loss of shoreline ecological function. The document provided four concepts for re-evaluation to help offset the potential for loss. In response, Ridgefield revised several provisions in their Draft SMP which was locally adopted on April 12, 2012. The revised Clark County Coalition Draft Cumulative Impact Analysis (February, 2012) provides additional detail as to which regulations in the City’s Draft SMP serve to protect ecological functions and processes.

6.1  Reasonably Foreseeable Future Development

The table below shows the amount of shoreline properties (both in acres and percent) located in City of Ridgefield and its urban growth area. Most shoreline properties are classified as public lands, residential vacant, and residential underutilized. Very few properties are classified as commercial and none are classified as industrial. The numbers in acres and percentages presented in this document have been updated from the June 2011 version of this report due to changes in the City’s UGA and other refinements to the data.

<table>
<thead>
<tr>
<th>Cumulative Impact Analysis Categories</th>
<th>Acres</th>
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<tr>
<td>Built</td>
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<tr>
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</tr>
<tr>
<td>Vacant</td>
<td>0</td>
<td>0%</td>
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</tbody>
</table>
### Cumulative Impact Analysis Categories

<table>
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<tr>
<th></th>
<th>Acres</th>
<th>Percentage</th>
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</thead>
<tbody>
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<tr>
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<tr>
<td>Tax Exempt lands</td>
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<td>0%</td>
</tr>
<tr>
<td><strong>Total acres in shoreline jurisdiction</strong></td>
<td><strong>144</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

According to the density allowed by the underlying zoning, *residential vacant* lands have the potential to develop with an additional 196 units in Ridgefield and its urban growth area. However, this value does not take into account the percent of land that would be constrained by critical areas, the percent of land necessary to build supporting infrastructure (roads, stormwater ponds), and the likelihood of actual development in the next 20 years (typically referred to as the market factor). (As an example, in the 2007 Buildable Lands Report for King County and its cities, local governments deducted 20-25% of the gross available single family residentially zoned acres for critical areas, discounted 12-13% of the remaining acreage for infrastructure, and further discounted 14-18% of remaining acreage for market factor. This resulted in nearly half of the available gross acreage being deducted or discounted to forecast buildable lands. These deductions had been validated by analysis of actual development since 2002.)

Therefore, the number of potential future residential units depicted in this document for Ridgefield is higher than would likely occur. The purpose of overestimating development on vacant lands in this manner is to determine impact on ecological functions under a high-impact scenario.

Foreseeable development for public lands within the city’s shoreline jurisdiction includes a proposed mixed use development (Miller’s Landing) on the Port of Ridgefield property from Mill Street north to the city limits on the eastern shore of Lake River. Miller’s Landing is proposed to include green spaces, office space, light industrial, moorage, and retail as well as public access and recreational amenities. Remediation and clean-up of the portion of the site north of the Division Street alignment is currently underway. Other foreseeable developments on public lands include trails and park improvements for recreation and public access.

### 7.0 CONCLUSION

The baseline conditions of ecological functions and processes in the Coalition ICR were used as the basis for decisions made throughout the City’s SMP update process. The inventory was integral to the development of the shoreline environment designations, informed goal and policy development, led to the establishment of protective regulations, and shaped the conclusions of this cumulative impacts analysis. All components of the Coalition’s Cumulative Impacts Analysis (February 2012) are also applicable to this analysis of the City of Ridgefield’s SMP adopted April 12, 2012 unless otherwise stated in this report.
Ridgefield responded to several of the recommendations from the June 2011 Cumulative Impacts Analysis to ensure that potential incremental impacts of exempt activities, illegal actions, ongoing degradation, and the allowance for moorage and the potential for vegetation loss in the Lake River Urban Conservancy shoreline designation do not lead to loss of shoreline ecological functions. The City’s responses to these recommendations in the April 2012 SMP are summarized in the boxed text below:

- **Establish a standard review process for shoreline exemptions to assure that single-family residential and associated exempt activities meet the goals and standards of the program.**
  
  Since the majority of development is anticipated to be single-family residential, a formal process for single-family residential development is needed to reduce cumulative impacts;
  
  **Response:** The City addressed this issue in the April 2012 SMP by requiring a Letter of Exemption for any project claiming exemption from the shoreline substantial development permit process except for those considered to be emergency developments. Language in the SMP clarifies that conditions may be required for exempt development and activities to achieve consistency and compliance with the provision of the program and the SMA.
  
  For emergency exemptions, the City could track these as part of the monitoring and adaptive management plan to ensure that shoreline exemptions related to emergencies are adequately meeting the no net loss standard over time.

- **Further limit where and under what circumstances single-use piers and docks may be permitted;**
  
  **Response:** The City addressed this issue in the April 2012 SMP by prohibiting single-use residential docks, piers, and floats in all environments. Only non-residential docks and piers and floats for public use may be permitted.

- **Due to the proximity of the Ridgefield National Wildlife Refuge, consider specific protections or development provisions to ensure no cumulative impacts to significant habitat in the NWR;**
  
  **Response:** The City evaluated this condition and determined that adequate protection for the NWR had been achieved through the entirety of the SMP provisions including buffers, vegetation conservation and other regulatory standards.

- **Establish a citywide shoreline restoration program to restore degraded habitats in the shoreline. Use of citywide shoreline restoration to offset cumulative impacts is allowed and encouraged by the shoreline guidelines. Incorporate opportunities identified in the Coalition Restoration Plan specifically focused on the following.**
  
  o Revegetation of degraded riparian zones;
  
  o Enhancement of degraded wetlands; and
Preservation of associated wetlands and floodplains through purchase of lands.

**Response:** The City addressed this issue in the April 2012 SMP by expanding the shoreline jurisdiction to include shorelands necessary for buffers for critical areas that occur within shorelines of the state. This will ensure consistent protection for both critical areas and their associated buffers. Several policies and regulations have been added to the April 2012 SMP that identify the restoration of degraded habitats as having precedence over other restoration measures.

While the levels of foreseeable future development in Ridgefield’s shorelines are anticipated to be moderate, the baseline conditions lead to a determination by ESA that the potential for cumulative impacts on shoreline ecological functions are not likely under the City’s April 2012 locally-adopted SMP.