APPENDIX A - CUMULATIVE IMPACTS ANALYSIS

The purpose of this appendix is to assess the cumulative impacts of reasonably foreseeable future development in the shoreline that would result from development and activities over time under the proposed City of Federal Way Shoreline Master Program (SMP). Under the shoreline guidelines, local jurisdictions are required to evaluate and consider cumulative impacts of reasonably foreseeable future development in the shorelines of the state (WAC 17-26-186(8)(d)). Current conditions, foreseeable future development, and beneficial effects of other established regulatory programs are identified and must be discussed.

For the City of Federal Way, shorelines of the state include 4.8 miles of Puget Sound shoreline in the City limits and 12.1 miles of freshwater lake shoreline within both the City limits and the City’s Potential Annexation Area (PAA). The state’s objective in evaluating potential cumulative impacts is to ensure that, when implemented over time, the proposed SMP goals, policies, and regulations will achieve no net loss of ecological functions from current “baseline” conditions. Baseline conditions are identified and described in the City of Federal Way Shoreline Inventory and Characterization Report (Draft) dated August 1, 2006. The proposed Federal Way SMP provides procedures to evaluate individual actions for their potential to impact shoreline resources on a case-by-case basis. The purpose of this evaluation is to determine if impacts to shoreline ecological functions are likely to result from the aggregate of activities and developments in the shoreline that take place over time.

The guidelines state that, “to ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts among development opportunities. Evaluation of such cumulative impacts should consider:

- 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, and federal laws.”

This cumulative impacts assessment uses these three considerations as a framework for evaluating the potential long-term impacts on shoreline ecological functions and processes that may result from development or activities under the proposed SMP over time.

Current Shoreline Condition

As part of the City’s SMP update process, a shoreline inventory and map folio was prepared in the spring and summer of 2006. The Shoreline Inventory and Characterization identifies existing conditions and evaluates the ecological functions and processes in the City’s shoreline jurisdiction. The inventory included all shoreline areas within the City of Federal Way, as well as those found in the Potential Annexation Area (PAA), east of the city limits. The City has two main types of water bodies that are regulated under the City’s SMP: marine coastal shorelines of Puget Sound, and freshwater lakes over 20 acres in size. The Puget Sound

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1 WAC 173-26-186(8)(d)

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Sound marine coastal shoreline is designated a “shoreline of statewide significance.” The freshwater lakes under SMA regulation within the city are Steel Lake, North Lake, and the northwestern shore of Lake Killarney. Further, the City of Federal Way has identified an area largely to the east of the City and east of the Interstate 5 corridor for future annexation. This area is referred to as the Potential Annexation Area (PAA). Lakes subject to SMA regulation located within the City's PAA include Star Lake, Lake Dolloff, Lake Geneva, Five Mile Lake, and the remaining portions of Lake Killarney. The freshwater lakes are all designated as “shorelines of the state.” Lakes or portions thereof in the PAA are currently regulated under the King County SMP. There are no rivers or streams in Federal Way or its PAA that meet the definition of shorelines of the state.

The City of Federal Way encompasses 16.9 miles of shoreline area, including those areas within the PAA. Of this total, an estimated 4.8 miles of shoreline is located along the Puget Sound marine coastline. The remaining shoreline (12.1 miles) is located along freshwater lakes. Key findings of the inventory and characterization are summarized below.

**Watershed Context**

The City of Federal Way is located within two watersheds or Water Resource Inventory Areas (WRIAs) - the Duwamish-Green River WRIA 9 and the Puyallup-White River WRIA 10. The marine coastal areas of Puget Sound within the city as well as Steel Lake and Star Lake and Lake Dolloff in the city's PAA are addressed as part of WRIA 9. Lands within the City that drain to the Puget Sound to the west, and to Mill Creek and the lower Green River to the east lie within the WRIA 9 watershed. This includes the northern portions of the City and the PAA.

The majority of the Federal Way area lies within WRIA 10 and drains to either the White River or to Hylebos Creek. North Lake, Lake Geneva, Lake Killarney, and Five Mile Lake are located within this watershed. These lands drain to the south. The White River flows to the Puyallup River before entering Puget Sound at Commencement Bay. The Hylebos flows to the south into Tacoma and enters the Hylebos Waterway at Commencement Bay.

**Physical and Biological**

Bluffs, beaches, bays, and the mouths of several freshwater streams characterize the City’s coastal / nearshore shoreline (Characterization Figures 3, 7, 9 (full set), and 11 (full set)). Approximately 40 percent of the City's coastal shoreline has been modified with riprap, concrete, or wooden bulkheads (Characterization Figures 11a though 11c). Structures in the shoreline can limit the amount of sediment transported from upland areas to the beach, and are known to cause erosion and loss of some habitats such as sand and fine gravel beaches. Currents naturally move sediments across the beach and alongshore in continual cycles, but these structures interrupt the natural supply and distribution of sediments, causing a change in sediment composition within the nearshore area. However, coastal shoreline in Dumas Bay and Dash Point State Park are in a more natural condition, and coastal processes are less altered. Fish and wildlife that utilize the shoreline depend on these nearshore processes to maintain their habitats and ultimately their populations. Important feeder bluffs have been identified both north and south of Dumas Bay.

The freshwater lakes in the City are located on a broad plateau in the eastern half of the City and in the PAA (Characterization Figures 3, 11d through 11h). The plateau developed from glacial recessional deposits and tills. As the glaciers melted, lakes formed in the scour areas. Lakes in the City drain to five main drainage basins including 1) the Puget Sound, 2) the Green

Passed by Resolution 10-597 on October 19, 2010
River, 3) Mill Creek, 4) the White River, and 5) the Hylebos. Lake shorelines have been modified with bulkheads and other bank protection, but also have significant areas of natural shoreline conditions. On Steel Lake, Star Lake, and Five Mile Lake, approximately 20 to 50 percent of the shoreline has been modified with bulkheads. Shoreline modifications are less frequently occurring on the remaining lakes. In general, shorelines within the City are more highly altered in comparison to those within the PAA.

Designated wetlands are found throughout the City’s shoreline jurisdiction. Wetlands throughout shoreline areas in the city and in the PAA have been degraded to varying degrees as a result of urbanization over the last 60 years. Wetlands near the Puget Sound shoreline typically include tidal marshes and tidally influenced estuaries. Development and armoring along marine shoreline reaches within the City’s jurisdiction have eliminated historical wetlands and prevent connections between interior wetlands and the nearshore area. One larger freshwater wetland is mapped at Dumas Bay as a Palustrine Emergent Scrub/Shrub wetland. This area is within Dumas Bay Park and is unlikely to be impacted by future development. Wetlands are associated with most of the lakes within the shoreline planning area. As mentioned above, shorelines within the City are more highly altered in comparison to those within the PAA.

**Habitat and Species Use**

The City’s coastal and freshwater shorelines are used by a variety of aquatic and terrestrial species including salmonids and other fish, birds, mammals, and a wide variety of invertebrates (Characterization Figure 10). Of special interest are areas that provide habitat for federally listed species and species of local importance (primarily nearshore areas), including bull trout (threatened), Chinook salmon (threatened), coho salmon, as well as great blue heron nest sites. Forage fish such as surf smelt and sand lance (prey for salmonids) spawn on local beaches. Eelgrass beds are also present along the City’s coastal/nearshore areas, specifically near Dash Point State Park and in the northern end of Dumas Bay and northward. Dumas Bay in particular has been identified as a pocket estuary with regional importance within the WRIA 9 nearshore habitat.

The freshwater shoreline lakes within the City and its PAA do not provide habitat for anadromous salmonids or habitat for federally listed species. However, these lakes do provide general habitat for waterfowl, trout, and other aquatic species important to the character of Federal Way and the lakeshore residents. Also, good water quality in the freshwater lakes is important for downstream salmonid habitat in streams such as Hylebos Creek, Joe’s Creek, Mill Creek, Lakota Creek, and the Green River.

**Land Use and Public Access**

The major land uses along the Federal Way coastal / nearshore shoreline are single-family homes, parks, and public facilities (Characterization Figures 12a to 12h). The City’s most common shoreline use is single-family residential, which occupies 55 percent of the coastal shoreline. Parks and public recreational facilities occupy 18 percent of the shoreline. These uses include Dash Point State Park, Dumas Bay Park, Dumas Bay Centre, and Poverty Bay Park. Parks provide opportunities for beach access, fishing, hiking, and recreation.

Land uses along the City’s freshwater lakes are primarily single-family residential and public parks. Single-family residential use occupies between 55 and 80 percent of the shoreline on most lakes, with the exception of North Lake (35 percent) and Five Mile Lake (32 percent).
Parks, boat ramps, and public facilities occupy 9 to 39 percent of the lake shorelines. Public access to the lakes occurs via parks including Steel Lake Park, Lake Geneva Park, Lake Killarney Park, and Five Mile Lake Park, as well as several boat ramps owned by Washington Department of Fish and Wildlife.

**Reasonably Foreseeable Future Development and Use**

The City of Federal Way has an established land use pattern in the shoreline jurisdiction that predates the current regulatory regime. The pattern generally includes public waterfront parks and single-family residential development within the City’s shorelines. Since 1999, at the time existing SMP regulations were adopted, the City has received an average of 3 building permits per year for residential construction within the shoreline (including new residential construction, residential remodel and addition, and residential accessory structures). A total of 34 building permits were issued in the shoreline jurisdiction since 1999. In addition, there are only two residential piers on the Puget Sound coastal shoreline and no public marina within the City.

Currently, the Puget Sound shoreline within the City is largely developed. Of the total number of parcels along the City’s Puget Sound shoreline, few undeveloped parcels remain (Table 1) and most of these are located in areas of residential zoning. On the other hand, a greater number of undeveloped parcels are found along the freshwater lake shorelines, particularly along North Lake and lakes within the City’s PAA. However, critical areas and their buffers encumber high proportions of the undeveloped parcels within the freshwater lake shorelines (Table 1), particularly within the PAA. These lots may not be developable except through the shoreline variance process. For example, approximately 70 percent of the undeveloped parcels along the shorelines of North Lake and Lake Dolloff are completely encumbered by critical areas. Critical areas in this analysis refer to wetlands, streams, their required buffers, and steep slopes (over 40 percent). Although PAA areas have not yet been annexed to the City of Federal Way, there are plans to annex the entire PAA at some point in the future. All developed land along both the Puget Sound and lake shorelines, both within the City and the PAA, contains use patterns that are consistent with both the City’s current zoning and vision of future land use as established by the City’s Comprehensive Plan land use designations.

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1. Lots entirely encumbered with critical areas are those lots where developable areas are not available without major impacts to critical areas and their required buffers. Encumbered lots could contain wetlands, steep slopes, streams, or critical areas, which collectively would cover all or the large majority of a parcel.

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Table 1. Total parcels, developable parcels, and completely encumbered parcels within the shoreline areas of Federal Way and associated Potential Annexation Areas (PAAs).

<table>
<thead>
<tr>
<th></th>
<th>Total Number of Parcels</th>
<th>Number of Undeveloped Parcels (% of total)</th>
<th>Undeveloped Parcels (%) considered developable</th>
<th>Undeveloped Parcels (%) encumbered by Critical Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CITY LIMITS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puget Sound Shoreline</td>
<td>220</td>
<td>16</td>
<td>78</td>
<td>22</td>
</tr>
<tr>
<td>North Lake</td>
<td>96</td>
<td>97</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>Steel Lake</td>
<td>131</td>
<td>37</td>
<td>38</td>
<td>61</td>
</tr>
<tr>
<td>Portion of Lake Killarney (within City)</td>
<td>5</td>
<td>80</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>WITHIN PAA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portion of Lake Killarney (within PAA)</td>
<td>90</td>
<td>62</td>
<td>25</td>
<td>93</td>
</tr>
<tr>
<td>Dolloff Lake</td>
<td>105</td>
<td>91</td>
<td>27</td>
<td>63</td>
</tr>
<tr>
<td>Five Mile Lake</td>
<td>60</td>
<td>85</td>
<td>22</td>
<td>78</td>
</tr>
<tr>
<td>Lake Geneva</td>
<td>67</td>
<td>100</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>Star Lake</td>
<td>112</td>
<td>55</td>
<td>12</td>
<td>87</td>
</tr>
</tbody>
</table>

Based on the nature of the shoreline within the City limits, the lack of extensive vacant developable land and consistency among land use regulations and long-range plans, reasonable foreseeable development will likely primarily include redevelopment of property, as well as limited new development particularly near the lakes in the PAA.

In addition to the above assessment of undeveloped parcels within shoreline areas, Table 2 below shows the results of an analysis of potential redevelopment and subdivision throughout the City and PAA shoreline areas. The assessment was keyed to look at these two land use activities, as they represent a significant amount of the potential development that could intensify use of the City’s shoreline areas.

Table 2. Potential redevelopment and subdivision within Federal Way and the PAA, based on parcel size and assessed property and improvement values.3

<table>
<thead>
<tr>
<th></th>
<th>Total Number of Parcels</th>
<th>Parcels with Redevelopment Potential (% of total)</th>
<th>Parcels with Subdivision Potential (% of total)</th>
<th>Total parcels with Redevelopment or Subdivision Potential (% of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITHIN CITY LIMITS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puget Sound Shoreline</td>
<td>220</td>
<td>25</td>
<td>15</td>
<td>36</td>
</tr>
<tr>
<td>North Lake</td>
<td>96</td>
<td>7</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Steel Lake</td>
<td>131</td>
<td>9</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Portion of Lake Killarney (within City)</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

3 To determine subdivision potential, the buildable lot area of shoreline parcels was compared to the minimum lot square footage allowed by the underlying zoning; parcels were determined to have potential for subdivision when the lot area was greater than 2.5 times the minimum lot square footage allowed by the underlying zoning. To determine potential for likely redevelopment, the assessed value of each lot’s improvements was compared to the assessed value of property; parcels were determined to have potential for redevelopment when the improvements were worth less than 50% of the value of the property – results exclude those parcels with no buildable area due to inventoried critical areas or other encumbrances.

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This analysis conducted in 2009 indicates that given the underlying zoning, there is potential for subdivision on 15 percent of the parcels along the City's marine shoreline, as well as greater potential for redevelopment. In both cases, the majority of parcels identified were within the East Puget Sound reach of the shoreline area (see Map 1, attached, for distribution of parcels identified by this analysis). It is likely that the 25 percent identified for redevelopment along this shoreline is substantially inflated due to the significant land values associated with the properties.

Like the marine shoreline, the analysis also indicates that subdivision could occur on six to 19 percent of the residential lots located in the City and PAA freshwater lake shorelines. The typical size and shape of these lots, however, limits the amount of impact that subdivision and development of these lots could potentially have on shoreline ecological functions. The average size of subdividable lots would allow for a maximum four-lot subdivision. This does not factor in any other limitation on subdivision beyond inventoried critical areas and buffers, such as other un-mapped critical areas, site restraints, and access issues. In addition, as shown on Figure 8, lots with subdivision and/or redevelopment potential are largely long and narrow, with the narrow end fronting the marine and lake shorelines. Given this parcel shape, new development associated with subdivision would likely occur behind the footprint of existing development or farther away from the lakeshore in most cases.

An analysis of development permits within existing City shoreline areas over the last four years supports a pattern of redevelopment as the primary reasonable foreseeable development, and also suggests that significant amounts of property subdivision is not likely to occur within the foreseeable future. Table 3 documents the analysis, queried from the City’s permit database for all activity since 2005. Redevelopment and development will not likely result in significant changes in types of land use (e.g., single-family to multi-family, commercial, or industrial uses).
Table 3. Development (numbers of permits) since 2005 based on permit activity within the shoreline areas of Federal Way.4

<table>
<thead>
<tr>
<th>Within City Limits</th>
<th>New SF Construction on vacant lot</th>
<th>New SF Construction with demolition</th>
<th>Single-Family addition and/or remodel</th>
<th>Accessory structure on Single-Family lot</th>
<th>Shoreline modification (i.e. dock, bulkhead)</th>
<th>Other Permits (number of permits and type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puget Sound Shoreline</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>3</td>
<td>3 – Bulkhead repairs (2) &amp; exemption for new bulkhead (1)</td>
<td>2 – Boundary line adjustment 1 – Sewer improvement project</td>
</tr>
<tr>
<td>North Lake</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 – Boundary line adjustment</td>
</tr>
<tr>
<td>Steel Lake</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1 – repair of existing piers</td>
<td>1 - Boundary line adjustment 1 – Proposal for 29 lot subdivision</td>
</tr>
<tr>
<td>Portion of Lake Killarney (within City)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 – New office building</td>
</tr>
</tbody>
</table>

This data shows that limited development on vacant residential lots, as well as on the areas of vacant commercial lots along Lake Killarney, has occurred over the last several years. Further, the permit history shows that the primary pattern of active development along the City’s largely developed lake shorelines is redevelopment and accessory development of residential lots. These redevelopment activities have also occurred at relatively low levels within Federal Way shoreline areas. For example, less than two percent of the lots along the Puget Sound shoreline have received shoreline permits on an annual basis for the last 4 years.

Within the PAA, there is moderate potential for new development along the shorelines of freshwater lakes. Between 12 and 30 percent of the total lots along these lakes are considered developable within the shoreline jurisdiction, and between four and 20 percent have some potential for subdivision. Due to existing land use patterns, King County zoning, and proposed designation for shoreline areas within the City’s Comprehensive Plan, new development will likely be single-family residential along the lakes in the PAA. Once annexed, additional lakefront residential development is anticipated.

Redevelopment and development of primarily single-family residential uses will also include many activities that are exempt from requiring a Shoreline Substantial Development Permit (SSDP) (FWRC 15.05.130 and WAC 173-27-040). These activities include construction of single-family residences, shoreline modification, and construction of docks. Although a SSDP would not be required, all of these development activities would still be required to meet the

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4 Federal Way did not secure access to King County permit activity records. As such, shoreline areas within the PAA are not included in Table 2. Due to the similarity in zoning and land use between City and PAA lakes, it is anticipated that development trends have been similar to City shoreline areas within the PAA shoreline areas.
provisions of the updated SMP requirements. During permit review for land use and development activities, the City will ensure compliance with the guidelines of the updated SMP (FWRC 15.05.130(1)). The details of specific SMP provisions are summarized and discussed below in order to demonstrate how reasonably foreseeable exempt activities, as well as other activities, will not lead to a net loss of ecological function within the foreseeable future.

Potential Use Conflicts

Key issues identified within the Federal Way SMP include redevelopment at more intensive levels and potential for land subdivision, especially within the lake shoreline planning areas, and the potential for these activities to further alter shoreline vegetation or limit the growth of riparian areas, increase impervious surface, and otherwise modify shorelines. Although future redevelopment and subdivision may limit the City's ability to improve shoreline and riparian conditions, the following sections detail how the updated SMP allows for planned and desired uses while ensuring that these uses will not lead to net loss of ecological function.

Changes to Shoreline Environment Designations

At the time of incorporation in 1990, the City of Federal Way adopted the King County SMP. In 1998 and 1999, the City developed and adopted its own local SMP. Shoreline management goals and policies are contained in the land use element of the Federal Way Comprehensive Plan (FWCP, Section 2.8.5). Shoreline development regulations and permitting procedures are codified in Title 15 of the Federal Way Revised Code (FWRC). The City's SMP established a system of "shoreline environment designations" that provide a uniform basis for applying policies and use regulations within distinctly different shoreline areas. Shoreline environment designations function like zoning overlays. That is, they do not replace the underlying zoning regulations for density, setbacks, etc., but they may impose additional development standards or regulations for portions of property within the shoreline jurisdiction. Generally, environment designations are based on existing and planned development patterns, biological and physical capabilities and limitations of the shoreline, and a community's vision or objectives for its future development.

The existing (1999) SMP uses four shoreline environment designations: 1) Urban, 2) Conservancy, 3) Rural, and 4) Natural. Since the plan was adopted, the City's shoreline has expanded through the annexation of North Lake and a portion of Lake Killarney. These areas were originally designated as Urban Environment by the King County SMP and are currently being managed by the City using the County's SMP provisions. As a result of annexations, the City's SMP was left with several inconsistencies. Most notable, similar residential neighborhoods are designated differently (i.e., lakes with similar residential uses are treated differently under the City's SMP versus King County's SMP for recently annexed areas). The City's shoreline parks are similarly designated differently (Poverty Bay Park and Dash Point State Parks are designated Conservancy and Dumas Bay Park is designated Natural).

The proposed SMP addresses inconsistencies in the 1999 SMP by providing a new system of environment designations, in compliance with State guidelines (WAC 173-26-211). The new system applies designation criteria and management policies consistently across areas with similar current and planned land uses and resource characteristics. The new shoreline designations also pre-plan for future annexation areas so that future inconsistencies in shoreline development are avoided. Elimination of these inconsistencies will help the City reduce net loss of ecological function in the shoreline over time.
The proposed SMP environment designations includes a “Shoreline Residential” environment for areas of the City that are characterized by single or multi-family residences or planned as such; an “Urban Conservancy” environment that includes waterfront park areas and residential areas; and a “Natural” environment which is designated for the purpose of protecting those shoreline areas that are relatively free of human influence or that include intact or minimally degraded shoreline functions sensitive to human use. The proposed SMP did not include an “Aquatic” shoreline environment, since all shoreline uses in the City are paired with an upland use and therefore another shoreline environment. The proposed environment designations are consistent with both the existing land use pattern and the Comprehensive Plan future land use designations.

Changes to Development Standards and Use Regulations

The proposed SMP offers several changes to the development regulations that encourage shoreline conservation and prohibit activities that would cause adverse impact to shoreline functions and processes. These changes include limiting shoreline modifications such as bulkheads and riprap revetments along much of the City’s shoreline. These shoreline modifications have significantly altered the natural net-shore drift direction and the availability and local distribution of beach sediment. Further, the conservation of shoreline vegetation has been emphasized in the new shoreline regulations for the City to further stabilize shorelands and increase habitat functions. Other changes related to development of specific uses in the shoreline are also designed to protect shoreline ecological functions and processes, while continuing to allow legal uses, encourage public access, and allow sensitive development. The proposed changes are summarized in Table 4 below.

These proposed changes to development standards and use regulations are, in general, more protective than the existing SMP. Redevelopment would be allowed in all environments, but redevelopment of more intense water-dependent uses would be restricted to the Urban Conservancy environments. As redevelopment occurs in other environments (particularly for shoreline stabilization), policies and development standards establish a preference for alternative “soft-shore” erosion control or stabilization designs. In some cases, project applicants would be required to demonstrate why a “soft-shore” design would not provide adequate protection of existing development. Over time these changes will likely have a net beneficial effect on shoreline ecological processes as properties are redeveloped.

<table>
<thead>
<tr>
<th>DEVELOPMENT / USE</th>
<th>1999 SMP REQUIREMENTS</th>
<th>2007 SMP UPDATE REQUIREMENTS (REVISED 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoreline Modification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulkheads and shoreline stabilization</td>
<td>Conditional Use in all environments.</td>
<td>Permitted in Shoreline Residential and Urban Conservancy, but prohibited in Natural. Requires applicant to demonstrate that softshore armoring techniques do not provide adequate upland protection. Bulkheads not permitted unless necessary to protect primary structures.</td>
</tr>
</tbody>
</table>

Passed by Resolution 10-597 on October 19, 2010
**DEVELOPMENT / USE** | **1999 SMP REQUIREMENTS** | **2007 SMP UPDATE REQUIREMENTS (REVISED 2009)**
--- | --- | ---
Breakwaters | Prohibited in all environments. | Prohibited in all environments. |
Jetties and Groins | Prohibited in all environments. | Prohibited in all environments. |

**Shoreline Use**

| Office and Commercial Development | Permitted in all environments. | Conditional Use in Urban Conservancy environment. Prohibited in all other environments. |
| Recreational Development | Permitted in all environments. | Permitted in all environments. |
| Residential Development | Permitted in all environments. | Permitted in all environments, except Conditional Use in Natural Environment. |
| Accessory Structures | Permitted in all environments. | Permitted in all environments, except Conditional Use in Natural Environment. |
| Utilities | Permitted in all environments. | Permitted in all environments, except Conditional Use in Natural Environment. |
| Transportation/Parking Facilities | Permitted in all environments. | Permitted in all environments, except prohibited in Natural Environment. |

The 2009 revised SMP does allow for piers and docks on marine shorelines within Shoreline Residential and Urban Conservancy environments. Piers and docks will continue to be prohibited within the Natural marine shoreline environments, including the high functioning, unaltered shorelines of Dash Point State Park, portions of Dumas Bay (Dumas Bay Park), and one reach of the City’s eastern Puget Sound shoreline (along Poverty Bay Park). Although this change in regulations creates the potential for additional piers and docks along the marine shoreline, significant development of piers and docks is not anticipated. Currently, the common residential mooring approach along the City’s marine shoreline is use of mooring buoys. It is anticipated that this existing pattern will continue within the foreseeable future for several reasons:

- The updated SMP requirements specify a preference for use of residential mooring buoys over residential docks and piers, including a provision that property owners must demonstrate why a mooring buoy would not provide adequate moorage for recreational watercraft (FWRC 15.05.050 2(l)(i)). Given that the existing pattern is predominantly mooring buoys, it will likely be difficult for individual property owners to demonstrate that such moorage is inadequate for recreational boating purposes.

- The marine areas along the Federal Way shoreline are a moderately high energy environment, with significant wave, current, and tidal actions. This environment creates technical and financial challenges in designing, building, and maintaining a pier/dock.
Some portions of the marine shoreline are characterized by residential uses set behind a high bluff. In these areas, shoreline characteristics and hazards have and will continue to provide additional technical and financial constraints on the development of residential piers/docks.

For these reasons, significant development of new piers on the marine shoreline is not anticipated within the foreseeable future.

**Changes to the Treatment of Non-conforming Uses and Structures**

Much of the development in the Federal Way shoreline predates incorporation of the City and/or adoption of the Washington Shoreline Management Act in 1971. Several properties and developments in the City’s shoreline do not conform to current zoning or SMP regulations. The 1999 SMP addresses “non-conforming” uses or structures in the shoreline jurisdiction. However, the proposed SMP includes policies and regulations that are designed to increase protection of shoreline resources over time.

Under the proposed SMP, structures or uses that were legally established, but which now do not conform to the City’s zoning code or are non-conforming with regard to the use regulations in the proposed SMP may continue as long as they do not increase or expand in their non-conformity. The policies and regulations related to non-conforming structures and non-conforming uses in the shoreline are also consistent with the City’s zoning code regulations.

**Restoration Planning**

Consistent with state guidelines (173-26-186), the proposed SMP includes a new section of goals and policies addressing shoreline restoration within Federal Way. The goals and policies for restoration have also been modified to acknowledge that the City’s intent is to meet the “no net loss” standard, and result in an overall improvement to the condition of the habitat and resources within the shoreline jurisdiction of the City.

The draft Restoration Plan dated December 2006 addresses the shoreline restoration element of the SMP. The proposed SMP identifies restoration opportunities that include programmatic opportunities (e.g., surface water management, water quality improvement, public education), site-specific opportunities (e.g., protection of feeder bluffs, restoration of stream mouth deltas and pocket estuaries), regional plans and policies for Puget Sound restoration, and potential funding and partnership opportunities. The SMP’s restoration planning is focused on areas where shoreline functions have been degraded by past development activities. These areas with impaired functions were identified in the City’s Shoreline Inventory and Characterization. The implementation of these restoration opportunities will have the effect of improving shoreline ecological functions within the City over time.

**Beneficial Effects of Any Established Regulatory Programs under Other Local, State, and Federal Laws**

The City’s SMP is meant to be consistent with and work in conjunction with several City, State, and federal programs and planning documents to protect the functions and values of shoreline resources and protect the health and safety of City residents. These programs include, but are not limited to, the following:
City Programs and Planning Documents

City of Federal Way Comprehensive Plan

General goals and policies established in the City of Federal Way Comprehensive Plan (2007) relate to the preservation of existing residential neighborhood character, protection of environmental resources, and the promotion of economic development. The Comprehensive Plan seeks to balance these social, environmental, and economic goals through land use and zoning regulations, critical areas regulations using best available science, and development regulations. In relation to shorelines, the Comprehensive Plan seeks to preserve or develop shorelines and adjacent areas in a manner that assures a balance of shoreline uses with minimal adverse effect on the quality of life, water, and environment (City of Federal Way, 2007).

The City’s existing Shoreline Master Program goals and policies are included as an element in the land use chapter of the City’s current Comprehensive Plan. These goals and policies encourage water-oriented uses and existing residential uses in balance with protection of the Puget Sound shoreline’s natural resources (City of Federal Way, 2007). This document also establishes shoreline environment designations as Natural, Conservancy, Rural, or Urban Environments, depending on the land use and intensity of development. The proposed SMP environmental designations are consistent with the land use vision expressed in the Comprehensive Plan. Following adoption, the City’s proposed SMP goals and policies will be incorporated as a chapter of the City’s Comprehensive Plan.

Federal Way Revised Code Title 19: Zoning – Title 19 of the FWRC establishes zoning designations. Zoning implements the Comprehensive Plan’s vision for future land use. Zoning designations near the Puget Sound shoreline include Single-Family Residential, and Multi-Family Residential. Zoning designations near the freshwater lake shorelines include Single-Family Residential and Corporate Park. Shoreline zoning is consistent with the designations in the proposed SMP.

Federal Way Revised Code Title 19, Division V: Critical Areas – Title 19, Division V, of the FWRC establishes development standards, buffers, and permitted uses in designated critical areas. Critical areas include geologic hazardous areas, streams, regulated lakes, regulated wetlands, regulated wellheads and critical aquifer recharge areas and wellhead protection areas. Standards in this chapter are designed to protect these areas from adverse impacts. The City updated its Critical Areas code in 1999. Designated critical areas are found throughout the City’s shoreline jurisdiction, particularly streams, flood hazard areas, and geologic hazard areas. Consistent with state guidelines, development standards for critical areas that are physically located in the shoreline jurisdiction have been fully incorporated into the proposed SMP by including these regulations as part of the shoreline regulations.

City of Federal Way Surface Water Management Division

The City’s Surface Water Management Utility is guided by the Comprehensive Surface Water Management Plan (1995) and the City’s Comprehensive Plan (2007). The Surface Water Management Division (SWM) is responsible for the comprehensive management of the City’s surface water systems. This involves protecting developed and undeveloped properties from flooding, runoff, and water quality problems, while continuing to accommodate new development. The SWM Division also promotes the preservation of natural drainage systems, protection of fishery resources and wildlife habitat. The City’s Surface Water Capital Improvement Program identifies, funds, and implements site-specific projects intended to provide flood control or alleviation, improve and enhance riparian habitat, replace culverts to...
improve fish passage, and improve water quality from stormwater runoff. The Surface Water Management restoration program is currently focused on stream resources, with limited emphasis on restoration of lakes and marine shorelines.

City of Federal Way Aquatic Vegetation Management Programs and Lake Management Districts

The City is currently administering aquatic vegetation management programs for Steel and North Lakes. The Steel Lake program is funded through lake management district fees, while the North Lake program is currently funded by DOE grant funds. The City works with both Steel Lake and North Lake residents to control invasive aquatic vegetation and conduct public education and outreach in an effort to maintain the beneficial uses of these lakes. The SWM Division works with Lake Management Districts established for North Lake and Steel Lake to control invasive aquatic vegetation and maintain water quality for recreational enjoyment. The LMDs fund periodic treatment of invasive aquatic weeds with herbicide application and/or physical removal of weeds. Two advisory groups are actively engaged in the management of these lakes: 1) the Steel Lake Advisory Committee, and 2) the North Lake Steering Committee. Restoration efforts on the lake shorelines should be coordinated with the activities of the aquatic vegetation programs LMDs for North and Steel Lakes in particular.

State and Federal Regulations

A number of state and federal agencies may have jurisdiction over land or natural elements in the City’s shoreline jurisdiction. Local development proposals most commonly trigger requirements for state or federal permits when they impact wetlands or streams; potentially affect fish and wildlife listed under the federal Endangered Species Act (ESA); result in over five acres of clearing and grading; or affect the floodplain or floodway. As with local requirements, state and federal regulations may apply throughout the City, but regulated resources are common within the City’s shoreline jurisdiction. The state and federal regulations affecting shoreline-related resources include, but are not limited to:

Endangered Species Act

The federal ESA addresses the protection and recovery of federally listed species. The ESA is jointly administered by the National Oceanic and Atmospheric Administration (NOAA) Fisheries (formerly referred to as the National Marine Fisheries Service), and the United States Fish and Wildlife Service (USFWS). The Puget Sound marine shoreline, along with the lower portion of several of the tributaries streams and Hylebos Creek, which several of the City’s lakes drain to, provides significant migration, spawning, and rearing habitat to several salmonid species. The WDFW SalmonScape database (WDFW, 2006), PHS Data, as well as A Catalog of Washington Streams and Salmon Utilization - Volume I, Puget Sound Region (Williams et al., 1975), identify the known presence of salmonids in local streams.

Nearshore habitat is an important environment for juvenile salmonids, where the shallow water depth obstructs the presence of larger predator species (Kerwin and Nelson, 2000). All shoreline segments within the City’s shoreline jurisdiction are known or expected to contain juvenile salmonids including Chinook, which are listed by the ESA as Threatened, as well as bull trout, cutthroat, chum, coho, pink, and sockeye salmon based in the knowledge of species life histories (KCDNR, 2001).

Clean Water Act (CWA)

The federal CWA requires states to set standards for the protection of water quality for various parameters, and it regulates excavation and dredging in waters of the U.S., including wetlands. Certain activities affecting wetlands in the City’s shoreline jurisdiction or work in the adjacent
rivers may require a permit from the U.S. Army Corps of Engineers and/or Washington State Department of Ecology under Section 404 and Section 401 of the CWA, respectively.

**Hydraulic Project Approval (HPA)**

The Washington Department of Fish and Wildlife (WDFW) regulates activities that use, divert, obstruct, or change the natural flow of the beds or banks of waters of the state and may affect fish habitat. Projects in the shoreline jurisdiction requiring construction below the ordinary high water mark of Puget Sound or streams in the city could require an HPA from WDFW. Projects creating new impervious surface that could substantially increase stormwater runoff to waters of the state may also require approval. HPA requirements include incorporation of best management practices (BMPs) to avoid and minimize impacts to waters of the state. BMPs include measures to be incorporated during project construction, such as consideration of fish windows, management of erosion and site runoff, and monitoring, as well measures to be incorporated into the design and ongoing use of a proposed development, such as consideration of in-water materials and stormwater treatment and detention.

**National Pollutant Discharge Elimination System (NPDES)**

Ecology regulates activities that result in wastewater discharges to surface water from industrial facilities or municipal wastewater treatment plants. NPDES Phase II permits are also required for stormwater discharges from industrial facilities, construction sites of one or more acres, and municipal stormwater systems that serve census-defined Urbanized Areas, which include any urbanized areas with more than 50,000 people and densities greater than 1,000 people per square mile. The future beneficial effects of this program, in terms of ecological functions, are discussed within Tables 5 and 6 below.

**Summary of Current and Future Performance of Shoreline Ecological Functions**

Tables 5 and 6 below describe the existing performance of shoreline ecological functions along the Puget Sound shoreline (Table 5) and Federal Way and PAA lakes (Table 6) as described in the Shoreline Characterization Report (ESA Adolfson 2006, updated 2007). Regulations from the proposed SMP that protect ecological functions are identified along with policies for enhancement from the Restoration Plan (ESA Adolfson, updated 2009). The future performance is then assessed based on the type and amount of expected development in the shoreline, the level of protection the proposed SMP regulations provide, and restoration policies and opportunities. Specific opportunities for restoration are outlined in the Restoration Plan.

Current performance of shoreline ecological functions are ranked “low”, “moderate”, and “high” depending on the level of alteration within Federal Way city limits. The Shoreline Characterization does not evaluate the current performance of ecological functions using this ranking system. As such, the evaluation system in the table is intended to summarize the information provided in the Shoreline Characterization; the full report should be evaluated for additional detail regarding existing conditions. Future performance is ranked “reduction,” “no change,” and “improvement” depending on the expected changes from existing conditions over the next seven years (i.e., up to the next SMP update cycle). Based on this assessment, the cumulative actions taken over time in accordance with the proposed SMP are not likely to result in a net loss of shoreline ecological functions from existing baseline conditions.


<table>
<thead>
<tr>
<th>Current Performance</th>
<th>SMP Provisions: Protection (P) or Restoration (R)</th>
<th>Future Performance</th>
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</thead>
<tbody>
<tr>
<td>Shoreline Characterization (ESA Adolfson, 2006, revised 2007)</td>
<td>P = SMP general description (section or regulation)</td>
<td>Cumulative Impact Assessment</td>
</tr>
<tr>
<td>R = Restoration Plan Policy / Site Specific Restoration Actions</td>
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Ecological Function from WAC173-26-201(3)(d)(i)(C): **Hydrology** – Transporting and stabilizing sediment; Attenuating wave and tidal energy

**Puget Sound West: High**
Significant and intact feeder bluffs within this segment, including area within State Park. Feeder bluff makes up 61% of shoreline. Intact and unimpaired Drift Cells. Geomorphic processes have been substantially altered by shoreline modifications.

**Dumas Bay: Moderate to High**
Shoreline is highly modified in areas of residential development; over two-thirds of reach is modified with bulkheads or riprap. Low to moderate bank shoreline with very little feeder bluff. Two streams are the primary sources of sediment to this portion of the shoreline.

**Puget Sound East: Low to Moderate**
Geomorphic processes in this reach have been substantially altered by shoreline modifications, most associated with residential development. This shore is exposed to the greatest amount of fetch and/or wave energy throughout the study area.

P: Replacement or rehabilitation of existing armoring and/or bulkhead structures is allowed, however must be moved to or landward of the OHWM if structure failure has caused OHWM to move beyond existing bulkhead (FWRC 15.05.050(1)(b)(ii–iii)).
P: New shoreline stabilization structures are allowed only when necessary to protect existing development. New stabilization structures are prohibited within the Natural environment (FWRC 15.05.050(1)).
P: When shoreline modification is required, soft shore protection (bioengineering) shall be prioritized over structural options such as bulkheads and riprap (FWRC 15.05.050(1)(a)(ii)).
P: Jetties and groins are prohibited throughout the marine shoreline environment (FWRC 15.05.070(4)).
P: Dredging and fill activity requires a CUP when waterward of the OHWM and is entirely prohibited in Natural environment (FWRC 15.05.050(5)).
P: Development activities, clearing and grading modifications, or the installation and maintenance of landscaping normally associated with residential, commercial, or park use may not occur on or within 50 feet of a geologically hazardous area (including coastal bluffs and steep slope areas) unless no reasonable alternative exists and then only if the development activity or clearing or grading will not lead to or create any increased slide, seismic, or erosion hazard (FWRC 15.10.160).
P: New development on steep slopes and bluffs is required to be set back sufficiently to ensure that shoreline stabilization is unlikely to be necessary during the life of the project as demonstrated by a geotechnical analysis (FWRC 15.05.050(1)c(iii)).
P: Mooring buoys are preferred form of moorage where allowed (not in Natural environment) (FWRC 15.05.050(2)(1)(ii)).
R: Conservation of intact feeder bluffs within Puget Sound West and East

**All reaches: Potential Improvement**
Redevelopment of residential shorelines will increase use of bulkhead alternatives and result in a net improvement in attenuation functions. Reduced use of hard shoreline stabilization will hydrologically reconnect shoreline areas with the shoreline. Critical areas geologic-hazard standards requiring buffers and building setbacks from the top of coastal bluffs will benefit hydrologic functions in high bluff areas. Increased vegetation at the top of bluffs will stabilize soils and improve existing and potential steep slope erosion and failure issues.

The restoration projects prioritized by the Restoration Plan and identified in this table will improve the beach functions. As these restoration projects are implemented, beach functions will improve.
**Current Performance**
Shoreline Characterization (ESA Adolfson, 2006, revised 2007)

**SMP Provisions: Protection (P) or Restoration (R)**
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**Future Performance**
Cumulative Impact Assessment

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**R:** Work with King and Pierce Counties, Washington State Parks, Des Moines, and other entities, or private landowners to develop direct linkages to the waterfront to restore ecological function or natural ecosystems.

**R:** Conserve and restore the tributary mouths and associated wetlands of Dumas Bay (emphasis on west-end streams and wetlands area) as well as tributary mouth within State Park (Restoration Plan Table 2).

**R:** Removal of fill, bulkheads, and other derelict intertidal shoreline structures and restoration of shoreline between Poverty Bay Park and the Dumas Bay Center, as well as at eastern edge of State Park (Restoration Plan Table 2).

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Ecological Function from WAC173-26-201(3)(d)(i)(C): 

**Water Quality:** Removing excessive nutrients and toxic compounds

**Puget Sound West: High**
Significant and intact feeder bluffs within this segment, including area within State Park. Moderately functioning streams enters the State Park shoreline (although erosion issues have become more prevalent), and marine riparian is largely intact with mixed coniferous and deciduous forest community.

**Dumas Bay: Moderate to High**
Shoreline is highly modified in areas of residential development; over two-thirds of reach is modified with bulkheads or riprap. Two streams and associated wetlands within the shoreline environment.

---

**P:** All activities and development within the shoreline jurisdiction (including clearing and grading activities) shall incorporate water pollution control measures and best management practices (BMPs) for stormwater management. Such measures shall address both temporary impacts to water quality from construction activities as well as the need for permanent stormwater management facilities in compliance with the requirements and restrictions of all applicable city and state regulations (FWRC 15.05.040(3)).

**P:** Mitigation is required for developments that create unavoidable impacts adverse to shoreline vegetation. Mitigation shall ensure that no net loss in the amount of vegetated area or the ecological functions performed by the disturbed vegetation (FWRC 15.05.040(1) and Critical Areas regulations, incorporated into Title 15 – Shoreline Management).

**P:** Piers, docks, mooring buoys, or floats must be constructed out of materials that will not adversely affect water quality. Use of chemically treated wood is prohibited in freshwater shorelines. Use of creosote treated wood is prohibited in marine shorelines. (FWRC 15.05.050(2)(g)).

**P:** Shoreline stabilization must be constructed and maintained in a manner that does not degrade the quality of affected waters (FWRC 15.05.050(2)(e)).

**All reaches: Potential Improvement**
Redevelopment of residential and recreational shorelines use will enhance marine riparian function and result in improved water quality. Redevelopment will also correspond with improved stormwater treatment and detention, as well as use of improved materials and techniques for in-water structures.

The restoration projects prioritized by the Restoration Plan and identified in this table will improve water quality (especially restoration projects that remove creosote piers and other derelict structures from the shoreline), and restoration goals and policies will assist in identifying additional opportunities and implementing water quality.
Current Performance
Shoreline Characterization (ESA Adolfson, 2006, revised 2007)

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Cumulative Impact Assessment

**Current Performance**

**Shoreline Characterization (ESA Adolfson, 2006, revised 2007)**

**SMP Provisions: Protection (P) or Restoration (R)**

<table>
<thead>
<tr>
<th>Puget Sound East: Low to Moderate</th>
<th>SMP Provisions: Protection (P) or Restoration (R)</th>
<th>Future Performance</th>
</tr>
</thead>
</table>
| Riparian vegetation in this reach has been substantially altered by shoreline modifications, most associated with residential development. Residential practices, including yard maintenance and non-point pollution, are primary sources of potential water quality issues. | 15.05.050(1)).
P: Transportation and parking facilities are allowed in the natural environment only when necessary to serve an allowed use and subject to the approval of a CUP; construction of transportation facilities must protect shorelands against erosion and uncontrolled or polluting drainage (FWRC 15.05.100(5)(a)(iv) and 15.05.080(5)(a)(v)).
R: Removal of creosote piles in intertidal zone on east and west edges of Dumas Bay Park (Restoration Plan Table 2).
| monitoring programs. |

**Future Performance**
Cumulative Impact Assessment

**Ecological Function from WAC173-26-201(3)(d)(i)(C):**

**Fish and Wildlife Habitat:** Space or conditions for reproduction, resting, hiding and migration; and food production and delivery; maintain characteristic plant community; recruitment of large woody debris and other organic material

**Puget Sound West: High**
Significant and intact mixed forest riparian habitat extends along much of the reach, and provides significant connectivity with upland and stream habitats within the State Park.
Open spaces associated with streams and ravines landward of the marine shoreline provide significant habitat, including eagle perching habitat and anadromous fish (coho and cutthroat) habitat.

<table>
<thead>
<tr>
<th>Puget Sound West: High</th>
<th>SMP Provisions: Protection (P) or Restoration (R)</th>
<th>Future Performance</th>
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</thead>
</table>
| P: Piers and docks prohibited in Natural environment; may be permitted in Shoreline Residential and Urban Conservancy environments (FWRC 15.05.050(2)).
P: Public piers and docks shall only be allowed for water-dependent uses and public access subject to a shoreline CUP, and must result in no net loss of ecological functions associated with critical salmonid habitat (FWRC 1505.050(2)(a)).
P: Any pier, dock, mooring buoy, or float must be constructed out of materials that will not adversely affect water quality. Use of chemically treated wood is prohibited in freshwater lake and marine shorelines (FWRC 15.05.050(2)(g)).
P: Bulk of docks and pier, where allowed, is controlled: no dwelling unit may be constructed on a pier or dock; no covered pier, dock, moorage, or | All reaches: No Change or Potential Improvement |

**Near term restoration actions identified in the Restoration Plan will improve habitat if implemented: removal of derelict creosote pilings and other in-water structures would improve the intertidal habitat, and restoration and enhancement of stream micro-estuaries would provide significant fish and wildlife habitat.**

**In addition, impacts to vegetation**

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Eight species of native salmonids are documented as (or are likely to) using the nearshore environment (all environments) including chinook, chum, coho, sockeye, and pink salmon, and cutthroat, steelhead, and bull trout. Forage fish also use the marine nearshore environment.

Dumas Bay: Moderate
Shoreline is highly modified in areas of residential development; over two-thirds of reach is modified with bulkheads or riprap. Two streams and associated wetlands within the shoreline environment provide significant habitat for salmonids, other fish, shorebirds, waterfowl, amphibians, and likely other species.

Puget Sound East: Low to Moderate
Riparian vegetation is mixed trees and grasses. Much of Reach 1A is armored with concrete and wooden bulkheads, and riprap seawalls. LWD or drift log accumulations have been mapped along unarmored portions of Reach 1A.

Current Performance
Shoreline Characterization (ESA Adolfson, 2006, revised 2007)

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functions must be mitigated to achieve no net loss of functions provided by vegetation.

Critical areas geologic-hazard standards requiring buffers and building setbacks from the top of coastal bluffs will benefit hydrologic functions in high bluff areas. Increased vegetation at the top of bluffs will stabilize soils and improve existing and potential steep slope erosion and failure issues. Additional incorporated CAO protections for wetlands and streams within the shoreline area will improve habitat conditions over time within shoreline jurisdiction.

Passed by Resolution 10-597 on October 19, 2010
### Current Performance
Shoreline Characterization (ESA Adolfson, 2006, revised 2007)

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<td><strong>R</strong> = Restoration Plan Policy / Site Specific Restoration Actions</td>
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15.05.040).

**P**: Transportation and parking uses require a CUP in the Natural environment; parking is restricted to where required to serve a permitted shoreline use, and must meet stormwater requirements (FWRC 15.05.100(5)(a)(iv)).

**R**: Continue to work with the State, King County, Watershed Resource Inventory Area (WRRA) 9, and other governmental and non-governmental organizations to explore how local governments can contribute to the preservation of ecological processes and shoreline functions (Restoration G1-Policy 1).

**R**: Continue to work with WRRA 9 to restore shoreline habitats and shoreline functions that support listed species, as well as other anadromous fisheries (Restoration G1-Policy 2).

**R**: Prioritize restoration and enhancement first based upon the greatest net ecological benefit, as compared to the project cost (Restoration G2-Policy 1).

**R**: Work with owners of other publicly owned land such as Washington State Parks to encourage restoration and enhancement projects, including funding strategies (Restoration G2-Policy 3).

**R**: Enhancement and restoration efforts directed toward improving ecological functions along the nearshore using Best Available Science are required of all new development or redevelopment activities. All overwater structures will conform to Best Management Practices (BMPs) to ensure salmonids can use the nearshore corridor along this shoreline and that forage fish spawning beaches and eelgrass beds are not impacted (Restoration UW7 Policy).

**R**: Encourage protection, enhancement, or restoration of native riparian vegetation through incentives and non-regulatory programs (Restoration G4-Policy 2).
Table 6: Freshwater Lakes – Assessment of Shoreline Functions

<table>
<thead>
<tr>
<th>Ecological Function from WAC173-26-201(3)(d)(i)(C):</th>
<th>SMP Provisions: Protection (P) or Restoration (R)</th>
<th>Future Performance</th>
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</thead>
<tbody>
<tr>
<td><strong>Hydrology</strong> – Water storage; sediment storage and maintenance of base flows</td>
<td><strong>P</strong>: Replacement or rehabilitation of existing armoring and/or bulkhead structures is allowed, however, must be moved to be landward of the OHWM if structure failure has caused OHWM to move beyond existing bulkhead (FWRC 15.05.050(1)(b)(ii–iii)).</td>
<td><strong>No Change or Potential Improvement</strong></td>
</tr>
<tr>
<td><strong>All Lakes: Low to Moderate</strong></td>
<td><strong>P</strong>: New shoreline stabilization structures are allowed only when necessary to protect existing development. New stabilization structures are prohibited within the Natural environment (FWRC 15.05.050(1)).</td>
<td><strong>Cumulative Impact Assessment</strong></td>
</tr>
<tr>
<td>Drainage areas for lakes are highly developed with SF residential uses, with significant sources of inflow from stormwater and surface water runoff. Lakes store input water before being released to outlet systems.</td>
<td><strong>P</strong>: When shoreline modification is required, soft shore protection (bioengineering) shall be prioritized over structural options such as bulkheads and riprap (FWRC 15.05.050(1)(a)(ii)).</td>
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<td>Semi-rural to moderate density residential uses and developments surrounding the lakes have resulted in placement of bulkheads, removal of forested vegetation and other alterations. Significant number of residential parcels additionally have docks. Limited areas of forested riparian habitat minimize recruitment of organic inputs.</td>
<td><strong>P</strong>: Dredging and fill activity requires a CUP when waterward of the OHWM and is entirely prohibited in Natural environment (FWRC 15.05.050(5)).</td>
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<td>Several of the lakes have long unaltered riparian shorelines with associated significant wetland areas, including North Lake, Lake Dolloff, Lake Killarney, and Five Mile Lake. The wetland complexes and vegetated communities associated with these lakes enhance hydrologic functions. Generally, however, loss</td>
<td><strong>P</strong>: Mooring buoys are preferred form of moorage where allowed (not in Natural environment) (FWRC 15.05.050(2)(b)(iii)).</td>
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<td></td>
<td><strong>P</strong>: Protection of shoreland areas provided by Geohazards CAO regulations, as detailed in Ecological Functions – Hydrology section of Table 5 (FWRC 15.10.160).</td>
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<td><strong>P</strong>: Additional CAO protection for impacts to wetlands, streams, and other habitat areas within the shoreline environment: impacts must be avoided, minimized, and mitigated consistent with the requirements of the Critical Areas regulations (incorporated at Chapter 15.10 FWRC). See sections: 15.10.170 (stream setbacks), 15.10.210 (stream rehabilitation), 15.10.12220 (intrusion into stream setbacks), 15.10.240 (wetland determination), 15.10.250 (wetland categories and buffers), 15.10.260 (structures, improvements, and clearing and grading within regulated wetlands), and 15.10.270 (intrusions into regulated buffers) for further detail on critical areas protection.</td>
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<td><strong>R</strong>: Continue to work with the State, King County, Watershed Resource Inventory Area (WRJA) 9, and other governmental and non-governmental</td>
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Passed by Resolution 10-597 on October 19, 2010
Current Performance  
Shoreline Characterization (ESA Adolfson, 2006, revised 2007)  

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| Disturbance of wetlands in the basin eliminates essential storage, recharge, or water quality improvement functions. | Organizations to explore how local governments can contribute to the preservation of ecological processes and shoreline functions (Restoration G1-Policy 1).  
R: Promote shoreline vegetation restoration, and the control of invasive weeds species, to enhance marine riparian and freshwater lakeshore habitats (Restoration G2-Policy 2).  
R: Encourage voluntary restoration projects in degraded shoreline environments (Restoration Goal 4 – see Restoration Plan for additional details on G4 policies). | The lake and the adjacent shorelands over time. |

**Ecological Function from WAC173-26-201(3)(d)(i)(C):**  
Water Quality: Removing excessive nutrients and toxic compounds; Attenuating wave energy  

| All Lakes: Moderate  
Lakes generally show the following conditions:  
- Moderately high water clarity  
- Generally low phosphorous and algae concentrations  
Despite stormwater inputs from developed basin, lakes maintain a moderate overall level of water quality. This suggests that the system performs moderately well in receiving and removing nutrients and toxic compounds.  

Attenuation of wave energy is not a significant issue due to the small lake areas, although wind mixing is a potential concern due to lack of riparian vegetation around many of the lakes.  
P: All activities and development within the shoreline jurisdiction (including clearing and grading activities) shall incorporate water pollution control measures and best management practices (BMPs) for stormwater management. Such measures shall address both temporary impacts to water quality from construction activities as well as the need for permanent stormwater management facilities in compliance with the requirements and restrictions of all applicable city and state regulations- (FWRC 15.05.040(3)).  
P: Mitigation is required for developments that create unavoidable impacts adverse to shoreline vegetation. Mitigation shall ensure that no net loss in the amount of vegetated area or the ecological functions performed by the disturbed vegetation (FWRC 15.05.040(1)) and Critical Areas regulations at FWRC Chapter 15.10.  
P: Piers, docks, mooring buoys, or floats must be constructed out of materials that will not adversely affect water quality. Use of chemically treated wood is prohibited in freshwater shorelines. Use of creosote treated wood is prohibited in marine shorelines. (FWRC 15.05.050(2)(g)).  
P: Shoreline stabilization must be constructed and maintained in a manner that does not degrade the quality of affected waters (FWRC 15.05.050(1)).  
P: Construction of transportation facilities must protect shorelands against erosion and uncontrolled or polluting drainage (FWRC 15.05.080(5)(a)(v) and FWRC 15.05.100(5)(a)(iv)).  

Improvement  
As redevelopment occurs along the lake shorelines, toxic materials in the water and pollutants entering the water will be reduced. Upland BMPs will help reduce nutrient sources from entering stormwater runoff, and sedimentation and erosion impacts will be reduced by implementation of BMPs during construction. New development will be required to meet City stormwater requirements (FWRC 15.05.040(3)).  
Redevelopment of SF residential properties will require enhancement of the lake’s riparian shoreline. (FWRC 15.05.040(1)). Tree and vegetation protections within the riparian area will improve wave attenuation functions, reducing wind mixing. In addition, vegetated...
Current Performance  
Shoreline Characterization (ESA Adolfson, 2006, revised 2007) | SMP Provisions: Protection (P) or Restoration (R)  
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<td>P:</td>
<td>When shoreline modification is required, soft shore protection (bioengineering) shall be prioritized over structural options such as bulkheads and riprap (FWRC 15.05.050(1)(a)(ii)).</td>
<td>buffers will aid in removing excessive nutrients and toxins from shallow groundwater entering the lake. Stabilizing shorelines with vegetation will increase overwater vegetation, moderating lake temperatures by providing shading (FWRC 15.05.050(1)(a)(xi)).</td>
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<td>R:</td>
<td>Encourage protection, enhancement, or restoration of native riparian vegetation through incentives and non-regulatory programs. (Restoration G4-Policy2).</td>
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<td>R:</td>
<td>Work with owners of other publicly owned land such as Washington State Parks to encourage restoration and enhancement projects, including funding strategies (Restoration G2-Policy 3).</td>
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<td>R:</td>
<td>Collect information to evaluate and assess potential shoreline degradation and impairments observed by the community. (Restoration G3-Policy 1).</td>
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Ecological Function from WAC173-26-201(3)(d)(i)(C):  
**Fish and Wildlife Habitat:** Space or conditions for reproduction, resting, hiding and migration; and food production and delivery; **R**ecruitment of large woody debris and other organic material.

**All Lakes: Low to Moderate**  
Development surrounding the lakes has highly modified riparian vegetation on the majority of the Federal Way freshwater shorelines. The vegetation of the majority of parcels fronting the shoreline is characterized by residential lawns and landscaping. Maintained lawn extends to the lake edge on several parcels at each lake. However, the majority of parcels contain at least some overhanging vegetation.

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<td>P:</td>
<td>Setbacks, when required by redevelopment activities per the SMP, must be maintained and managed as vegetation conservation areas. A portion of the vegetation conservation area may be cleared and used to provide shoreline access. (FWRC 15.05.080(3)(d), (e), and -090(3)(d), (e), specific to residential development see FWRC 15.05.080(5)(a)(i)(C) and -090(5)(a)(i)(A)).</td>
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| P: | Impacts to wetlands, streams, and other habitat areas within the shoreline environment must be avoided, minimized, and mitigated consistent with the requirements of the Critical Areas regulations in FWRC Chapter 15.10. Stream and wetland regulations incorporated into the SMP apply to shoreline areas where streams and wetlands occur; stream and wetland setback and buffer standards do not apply to lake shorelines. See FWRC sections: 15.10.170 (stream setbacks), 15.10.210 (stream rehabilitation), 15.10.2240 (intrusion into stream setbacks), 15.10.240 (wetland determination), 15.10.250 (wetland categories and buffers), 15.10.260 (structures, improvements, and clearing and grading within regulated wetlands), and 15.10.270 (intrusions into regulated buffers) for detail on critical areas protection. | **Improvement**  
Impacts to vegetation functions must be mitigated to achieve no net loss of functions provided by vegetation. Redevelopment of SF residential properties will require enhancement of the lake’s riparian shoreline, and the SMP includes required setbacks for new Single-Family and Multi-Family residential development. Tree and vegetation protections within the riparian area will improve organic material recruitment, will provide habitat, and will help regulate water temperatures by providing overwater shading. |
|   |   |   |

Threats to the native aquatic vegetation communities in the lakes, where present, include removal by property owners and recreational

Passed by Resolution 10-597 on October 19, 2010
**Current Performance**
Shoreline Characterization (ESA Adolfson, 2006, revised 2007)

**SMP Provisions: Protection (P) or Restoration (R)**
P = SMP general description (section or regulation)
R = Restoration Plan Policy

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<td>users, and the spread of invasive aquatic vegetation via recreational use or waterfowl.</td>
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<td><strong>P:</strong> There can be no net loss in the amount or ecological function of vegetated area within shoreline jurisdiction and non-native vegetation must be replaced with native vegetation. Mitigation is required for developments that create unavoidable impacts adverse to shoreline vegetation. (FWRC 15.05.040(1)).</td>
<td>Although some residential subdivision is anticipated to occur within the freshwater shoreline areas, especially on lots within the PAA area, the regulations of the SMP will ensure that any increases in actual residential density will correspond with enhanced riparian and shoreline conditions.</td>
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<td><strong>P:</strong> New shoreline stabilization, where required, must be bioengineered to include natural features such as native vegetation (FWRC 15.05.050(1)).</td>
<td>Critical areas geologic-hazard standards requiring buffers and building setbacks from the top of steep slopes will benefit hydrologic functions in areas where steep slopes are adjacent to shorelines. Increased vegetation at the top of bluffs will stabilize soils and improve existing and potential steep slope erosion and failure issues. Additional incorporated CAO protections for wetlands and streams within the shoreline area will improve habitat conditions over time within shoreline jurisdiction.</td>
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<td><strong>P:</strong> Piers and docks prohibited in Natural environment; may be permitted in Shoreline Residential and Urban Conservancy environments (FWRC 15.05.050(2)).</td>
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<td><strong>P:</strong> Public piers and docks shall only be allowed for water-dependent uses and public access subject to a shoreline CUP, and must result in no net loss of ecological functions associated with critical salmonid habitat (FWRC 15.05.050(2)(a)).</td>
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<td><strong>P:</strong> Any pier, dock, mooring buoy, or float must be constructed out of materials that will not adversely affect water quality. Use of chemically treated wood is prohibited in freshwater lake shorelines. Use of creosote treated wood is prohibited in marine shorelines (FWRC 15.05.050(2)(g)).</td>
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<td><strong>P:</strong> Bulk of docks and piers, where allowed, is controlled: no dwelling unit may be constructed on a pier or dock; no covered pier, dock, moorage, or float, or other covered structure is permitted waterward of the OHWM; (FWRC 15.05.050(2)(b) and (c)).</td>
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<td><strong>P:</strong> Construction materials and methods required to minimize water quality and habitat impacts: use of chemically treated wood is prohibited in freshwater lake shorelines (FWRC 15.05.050(2)(g)); any new pier or dock must be constructed from materials (i.e., grating) that allow light penetration through the structure (FWRC 15.05.050(2)(h)); any new pier or dock must be located generally perpendicular to the shoreline, and oriented to minimize shading impacts to the maximum degree feasible (FWRC 15.05.050(2)(i)).</td>
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<td><strong>P:</strong> Dimensional standards are specified for lake shoreline piers and docks: the maximum waterward intrusion of any portion of any pier or dock on a lake shoreline shall not extend further waterward than the average length of the piers or docks on lots abutting the location of the new dock as measured perpendicularly from the ordinary high water mark unless an alternative</td>
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| Shoreline Characterization (ESA Adolfson, 2006, revised 2007) | **SMP Provisions:** Protection (P) or Restoration (R)  
P = SMP general description (section or regulation)  
R = Restoration Plan Policy | **Future Performance**  
Cumulative Impact Assessment |

- The table contains a list of SMP provisions for protection and restoration, including mitigation, transportation, parking, cumulative impact assessment, and restoration efforts.

- The table highlights specific regulations and guidelines for shoreline development, with a focus on ecological preservation and restoration.

- The text describes the importance of cumulative impact assessment, prioritization of restoration, and collaboration with governmental and non-governmental organizations for ecological preservation.

- Endangered and threatened species, as well as other anadromous fisheries, are mentioned as a priority for restoration efforts.

- Enhancement and restoration efforts are directed toward improving ecological functions, with a focus on maintaining and restoring salmonid habitats, forage fish spawning beaches, and eelgrass beds.

- The text emphasizes the importance of Best Management Practices (BMPs) to ensure salmonid access and prevent impacts to forage fish spawning beaches and eelgrass beds.

- The table concludes with a discussion on encouraging protection, enhancement, or restoration of native riparian areas.

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| Vegetation through incentives and non-regulatory programs | Restoration G4-Policy 2. |
Conclusion

The Federal Way shoreline, particularly the Puget Sound coast, is largely developed in residential uses. There are few opportunities for new development within the coastal shoreline jurisdiction. On the other hand, there is a greater potential for future development along the freshwater lake shorelines, particularly for the lakes within the PAA. Therefore, change within the Puget Sound coastal shoreline will primarily be the result of redevelopment activities, whereas development along the lakes will likely be a mix of new development and redevelopment. Shoreline development along the lakes in the PAA may require a shoreline variance process due to the presence of critical areas within the undeveloped lots on these lakes. The system of shoreline environment designations and use regulations in the proposed SMP is consistent with the established land use pattern, as well as the land use vision planned for in the City's comprehensive plan, zoning, and other long-range planning documents. Based on this consistency it is unlikely that substantial changes in the type of shoreline land uses will occur in the future. However, increased residential density is anticipated for the lake shorelines within the PAA.

The proposed SMP provides a new system of shoreline environment designations that establishes more uniform management of the City's shoreline. The updated development standards and regulation of shoreline modifications provides more protection for shoreline processes. SMP regulations (FWRC Chapter 15.05), detailed and referenced in Tables 5 and 6 above, identify key regulations that will ensure no net loss and/or potential improvement of the City's most at risk shoreline ecological functions. The SMP provides standards that will require use of softer shoreline stabilization approaches wherever feasible, regulates where overwater structures may be allowed, as well as the number, size, and character of overwater structures where they are allowed. The SMP requires incorporation of water pollution control measures and best management practices (BMPs) for stormwater management for all development activities, which will limit water quality impacts on marine and lake waters from adjacent shoreland uses. The updated standards and regulations are more restrictive of activities that would result in adverse impacts to the shoreline environment. The restoration planning effort outlined in the proposed SMP provides the City with opportunities to improve or restore ecological functions that have been impaired as a result of past development activities. In addition, the proposed SMP is meant to compliment several City, state, and federal efforts to protect shoreline functions and values.

Based on assessment of these factors, the cumulative actions taken over time in accordance with the proposed SMP are not likely to result in a net loss of shoreline ecological functions from existing baseline conditions.