

## **DRAFT SHORELINE BUFFER MAPPING METHODOLOGY**

After consulting with Ecology and URS staff, the following mapping system was established to guide the mapping of the shoreline environmental buffers.

### **General Mapping Procedures, Criteria, and References:**

When mapping the shoreline buffer distance from the ordinary high-water mark (OHWM), the information gathered during the shoreline inventory phase, existing shoreline natural features and other GIS layers, historic and current aerial photography, and researched literature on stream buffer zones were relied upon.

The Shoreline Buffer layer was created by going block by block at a scale of 1:2400 to determine the shoreline buffer distances from the OHWM. The quality of the existing shoreline condition and the potential for shoreline restoration were considered after reviewing the guiding shoreline inventory and GIS layers.

The existing development regulations and densities allowed were reviewed. The existing Critical Areas Regulations and critical areas buffers provided further guidance in setting buffer distances.

Consistent with the Shoreline Management Act (RCW 90.58), the primary objectives of setting the shoreline buffers included:

- Ensure no further degradation of the shoreline.
- Set buffer distances to achieve a “no net loss” of shoreline ecological functions.
- Set buffer distances, where possible, to increase the potential for future shoreline restoration.
- Critical Areas Regulations layers and buffers provided a strong basis for the shoreline buffer determination.

### **General summary of the results of the shoreline protection and restoration buffer:**

- Generalized buffer distance increments of 50, 60, 75, 100, 150, and 200 feet were set. These distances fit existing shoreline constraints such as existing development patterns.
- Generally, areas with the shoreline Natural Environment designation were given a 200-foot buffer.
- The Intensive Urban shoreline environment designation was generally given a 50-foot buffer.
- A buffer of 50 feet was applied to the Wastewater Treatment Environment based upon current disturbances and planned new facilities.

### **Shoreline Buffer General Mapping Criteria:**

Typically the smallest linear increment of a shoreline buffer category deemed to ensure protection was a single block length or 300 feet. The smallest linear buffer length ended up being roughly 580 feet in the Lower Crossing area.

Larger single parcels with greater than 300 feet of river frontage and greater than 2 acres of developable land that have the potential for on-site development intensity transfer and the greatest opportunity for shoreline jurisdiction restoration, received a single consistent buffer because of the restoration potential during redevelopment.

The shoreline buffer designation for a linear stretch was compared with the buffer designation on the opposite side of the river and the designations adjacent to the site. A lower priority objective was to ensure that there was some consistency with adjacent stretches when the conditions were generally the same.

The middle of existing improved right of ways that generally ran parallel to the river corridor were used as a separation line for buffers as drawn on the maps. This is consistent with the proposed regulations.

Generally, all critical steep slopes within the 200 foot shoreline jurisdiction were included within the buffer area.

### **GIS Layers most relied upon during shoreline buffer mapping:**

- Existing Land Use and Development Patterns:
  - Platting pattern and lot size
  - Existing land uses
  - Amount of current and historic site disturbance
  - Road Network – Roads running parallel to river corridor
  - Utility corridors – electric, water, sewer, stormwater
- 2006 and 2007 Orthophotos for existing ground and vegetation conditions
- Historic Orthophotos for vegetation and land use reference – Primarily 1958.
- Critical Areas Inventories and Buffers:
  - Fish and Wildlife Habitat layers
  - Floodplains
  - Wetlands and buffers
  - Upland Slopes - Steep Slopes: greater than 16 percent (generally all included within shoreline buffer)
  - Highly Erodible Soils combined with steep slopes
  - Channel Migration Zone - this will help ensure that future bank stabilization or armoring is not needed.
  - Geologically Hazardous Areas combined with steep slopes
  - Streams and other seasonal water bodies

### **Shoreline GIS Inventory Layers:**

- Environmental Designation from the Shoreline Inventory
- Upland slopes
- Shoreline Vegetation Inventory and Class layers
- Ordinary High-Water Mark and 200-foot Shoreline Jurisdiction
- Shoreline Restoration Opportunity layer
- Bank Armoring layer
- Wastewater Outfall locations
- Other Shoreline Features layer