

## **Issaquah Creek Restoration at the Salmon Run Nature Park**

### Project Description

Restoration within the Salmon Run Nature Park proposes to restore fish and wildlife habitat in Issaquah Creek and its riparian areas, to provide floodplain connectivity, to increase channel flow conveyance capacity, to protect stream banks from further eroding to the detriment of water quality, and to restore native vegetation along the channel. The project occurs along a 450 foot reach of Issaquah Creek downstream from the Juniper Street crossing in the City of Issaquah (City-owned Parcel numbers 8843900576, 8843900571, 8843900591).

The City received grant funding in December 2014 for design and permitting, and has applied for construction funding for project start date in early summer 2016.

The stream restoration will focus on the following three objectives: restoring riparian and floodplain habitat, restoring instream habitat, and stabilization of eroding stream banks. This will be achieved by removing invasive non-native plants, removing floodplain fill, creating floodplain side channels and channel meanders to relieve pressure off the eroding east bank, installing large woody debris habitat, bioengineering to stabilize the east bank along Gilman Village, and riparian vegetation enhancements. These restoration elements will increase the amount of spawning, rearing, resting, and refuge habitat available for salmonids.

### Stream Channel and Floodplain Restoration

The City proposes to decrease ongoing scour along the right (east) side of the creek by strategically placing large woody debris and a rounded cobble and small boulder mixture along the bank. The left bank downstream from the Juniper Street bridge will be excavated to create a floodplain bench, which should further reduce erosion along the right bank. A hydraulic model will be developed for this reach to assess effects on flood stage of the proposed design for various design flows. The adjacent floodplain will also be selectively excavated to locally increase channel capacity, improve floodplain connections, and allow for future, limited channel migration towards the left bank and away from the eroding right bank. In the process of excavating the floodplain, existing stream armoring will also be removed.

### Habitat Improvements

It is anticipated that logs would be placed in clusters along the right (east) streambank at locations and in configurations designed to dissipate streamflow energy and provide “hard” points for bank stability. Additional placement of rounded cobbles and boulders along with bioengineered bank stabilization techniques will supplement log structure function with respect to bank stability along that bank. Clustered logs with root wads extending part way into the channel will result in localized downward scour, to form pools and quiet-water refuge areas for fish and at the same time provide protective cover within those habitats. Additional logs will be placed in a more dispersed fashion across the to-be excavated left (west) bank floodplain areas such that they will come into contact with streamflow to

provide localized quiet-water refuge areas at different elevations across a range of elevated flows.

### Invasive Removal and Native Revegetation

Currently, the undeveloped City-owned parcels that comprise most of the project area are vegetated primarily with invasive vegetation including Himalayan blackberry, ivy, and Japanese knotweed. Existing ornamental vegetation including seedling ornamental cherries and plums and hazelnut trees are also present. As part of the proposed project, all invasive plant species and some (if not all) of the ornamentals will be removed. These areas will be revegetated with native species. The City plans to partner with Mountain to Sound Greenway Trust to revegetate the riparian areas on the site and conduct maintenance monitoring on the site for 5 years post-project.

### Project Restoration Summary:

- 1) Restore 1.4 acres of riparian and floodplain areas for habitat and plant species diversity:
  - Remove non-native invasive vegetation and restore riparian buffer
  - Excavate fill soils from the floodplain to create side channels or overflow pathways for improved floodplain connectivity, increase from 40 to 50 foot stream width to 60 to 80 feet in sections.
  - Install native vegetation over 69,963 SF (1.6 ac), including increased percentage and diversity of coniferous trees and other native vegetation.
  
- 2) Restore 450 LF of Issaquah Creek (both banks) for channel complexity and instream habitat:
  - Remove sections of hardened/armored creek bank
  - Create or encourage channel meandering through fill removal and strategic placement of LWD hard points
  - Install 25 instream large woody debris (LWD)
  
- 3) Stabilize 275 LF of eroding east bank while providing instream habitat:
  - Placement of individual or paired LWD along the east bank
  - Install bioengineered bank protect at large eroding stream bank at downstream end of project reach.

**ATTACHMENT-PHOTOGRAPHS**

**Salmon Run Nature Park  
Issaquah Creek Restoration**

**Scour along Issaquah Creek east bank.**



**Rock and invasives along Issaquah Creek east bank.**



Scour along Issaquah Creek east bank.



**Rock along the west bank.**



**Scour along the west bank downstream of Juniper Street bridge.**



**Salmon Run Nature Park looking southwest toward Juniper Street.**

