Restoration Stewardship Plan

Project sponsors that have completed a restoration project must provide a stewardship plan at the close of the project. A plan is necessary to ensure the landowner will maintain the project area at least ten years after completion. Please complete the information below, sign, and return this form to the RCO grants manager at the close of the project.

Project Title: Chumstick Creek Culverts- RM 0.52 and RM 1.48

Project Number: 19-1584

1. **Project Purpose**. State the project goals and objectives. Goal statements should articulate desired outcomes (the vision for desired future condition) and what species benefit from those outcomes. Objectives are statements of specific outcomes that typically can be measured or quantified over time. Refer to Chapter 4 of the Stream Habitat Restoration Guidelines (wdfw.wa.gov/publications/pub.php?id=00043) for further information on goals and objectives.

Project Goals:

The project goal is to improve migration of salmonids to and from historical spawning and rearing habitat in Chumstick Creek, thus completing a 16+ year effort to remove 33 barriers within the first 9+ miles of Chumstick Creek. This effort will increase spatial structure, abundance, and productivity of salmonids in the Wenatchee watershed. Due to development along the creek a high concentration of stream crossings exist, some of which are barriers to salmonid migration.

The fish passage barrier removal proposed will improve up and downstream fish passage which is one of the habitat limiting factors in Chumstick creek. Salmonid species present in the Chumstick sub-watershed include Chinook salmon (Oncorhynchus tshawystcha), steelhead salmon (O. mykiss), rainbow trout (O. mykiss) and coho. Historically, steelhead used the Chumstick Creek drainage for spawning and rearing.

Project Objectives:

The Project Objective was to remove two fish passage barrier culverts and replace them with structures that meet WDFW fish passage criteria on RM 0.52 and RM 1.48 on Chumstick Creek, tributary to the Wenatchee River in WRIA 45. Post project there will be continue fish passage through the lower 9 miles of Chumstick Creek.

2. **Project Description**. *Provide a written description of the project-related activities that occurred with this grant. Include any future restoration/enhancement activities anticipated.*

Chumstick Culvert at RM 0.52:

This project addressed a fish passage barrier on Chumstick Creek at river mile 0.52. The project replaced a pipe arch culvert (10.9ft. span by 6.9 ft. rise) with a 3-sided concrete box culvert with a top lid (24' span x 16' long x 13' high). The existing culvert was assessed by Washington Department of Fish and Wildlife as a fish passage barrier due to slope (1.25 % slope barrier). The new culvert is located within a 60-foot Chelan County Easement (Motteler Road). The project also included minor habitat enhancement features including habitat boulders, as well as minor bank enhancement work on the downstream right bank of the culvert.

Chumstick Culvert at RM 1.48:

For the Alpenview project, it was determined during the initial design development survey work by Waterfall Engineering that the culvert no longer met the criteria as a fish passage barrier due to channel aggradation that had sufficiently changed the channel slope approach to the culvert. The design engineer Waterfall Engineering assessed the condition of the culvert and existing size which was deemed in good condition, and therefore recommended an alternative design approach. The alternative design approach called for the install of 3 engineered log jam (ELJ) structures and channel re-grading immediately downstream of the culvert that would act to retain sediment and maintain suitable grade approach to the culvert. This design approach was approved by USFWS, FBRB Board, and WDFW. The 3 ELJ structures were installed, channel regraded, and the banks planted post-construction.

3. **Monitoring and Maintenance Responsibilities**. Describe planned maintenance and monitoring activities, including the frequency and duration of each activity to be performed, and who will be responsible for the work.

The monitoring plan for the Chumstick Creek fish passage projects aims to monitor the success of the project and the revegetation of planted areas. All monitoring will be conducted by Chelan County staff.

i. Ground Photo Points

High and low flow ground photo points will be used to track details of the project area's features. During high flows, ground photo points may focus on areas of surface water - floodplain interaction, any visible active erosion, and split flow features. During low flow conditions photos may be focused on changes to channel/bank morphology, and revegetation progress. Any photo point locations will be mapped accordingly, including metadata that describes GPS/azimuth of each photo. Photo points will be conducted annually for three years post-construction.

ii. Vegetation Monitoring

Vegetation monitoring will be conducted for riparian shrubs and trees planted in the project areas. At the time of planting, each plant will receive a brightly colored piece of flagging that will help differentiate it from natural recruitment. The vegetation will be monitored once annually as guided by the project permits, or for three years to ensure 80% survival. If after 3 years 80% survival has not been met, supplemental planting will be required and monitoring will be extended until the survival standard has been met.

4. Planned effectiveness monitoring activities to occur in future years, if relevant.

Effectiveness monitoring activities will be conducted according to the monitoring plan detailed in Section 3 above.

Grantee/Landowner

2/7/24

Date