



Memorandum

Date: June 16, 2017

To: Department of Community Development

From: Tawni Dalziel, P.E., Sr. Stormwater Program Manager

Subject: Zackuse Creek Fish Passage and Stream Restoration Project – Preliminary TIR

Project

The City of Sammamish Public Works Department proposes to construct the Zackuse Creek Fish Passage and Stream Restoration Project to improve salmon spawning habitat in the Lake Sammamish watershed. The project includes replacing two undersized pipe culverts and one undersized box culvert that partially or completely block migrating salmon with fish passable culverts. The three culverts being replaced are located under East Lake Sammamish Parkway NE, the East Lake Sammamish Trail, and East Lake Sammamish Shore Lane NE in the City of Sammamish. Additionally, approximately 490 linear feet of Zackuse Creek will be restored and reestablished to improve salmon spawning habitat upstream of the culvert replacements.

The project includes work on both private property and public right of way. The three culvert replacements are planned in the following locations 1) East Lake Sammamish Parkway, approximately 900 ft south of its intersection with Louis Thompson Hill Road, 2) King County Parks East Lake Sammamish Trail - Tax Parcel 3225069015, and 3) East Lake Sammamish Shore Lane - Tax Parcel 1738700085 (Weber). Additional private property work will be completed on Tax Parcels 3225069021 (Pereyra) for the stream restoration portion of the work.

Owner: Wally Pereyra

Parcel No.: 3225069021

Address: 202 East Lake Sammamish Parkway NE

Legal Description:

LOT B SAMMAMISH BLA# BLA2013-00180 REC# 20140307900003 SD BLA BEING
POR OF SE 1/4 OF NW 1/4 SD STR LY ELY OF E LK SAMMAMISH PKWY NE

Owner: Peter Weber

Parcel No.: 1738700085

Address: 205 East Lake Sammamish Shore Lane

Legal Description:

CONNELLS SUBDIV GOVT LOT 2 UNREC PORTION GOVT LOT 2 STR 32-25-06
DESCRIBED AS FOLLOWS: BEGINNING AT INTERSECTION OF SOUTH LINE SD
GOVT LOT 2 WITH WLY LINE NORTHERN PACIFIC RAILWAY R/W TH N 38-00 E
ALONG SD WLY LINE 813.29 FT TO TPOB TH CONTG N 38-00 E 75 FT TH N 52-00
W 225 FT M/L TO WLY LINE SD GOVT LOT 2 TH SWLY ALONG SD LOT LINE TO

PT N 52-00 W FROM TPOB TH S 52-00 E 220 FT M/L TO TPOB TGW 2ND CLASS
SHORELANDS ADJ -AKA TRACT 18 & NORTH HALF TRACT 17 WILLIS J
CONNELL'S SUBDIVISION UNRECORDED

Owner: King County Parks

Parcel No.: 322506-9015

Address: King County Parks East Lake Sammamish Regional Trail

Legal Description:

PORTION BURLINGTON NORTHERN & SANTA FE RAILWAY CO'S (FORMERLY NP RAILWAY CO)
SNOQUALMIE BRANCH LINE R/W 100 FT IN WIDTH OVER & ACROSS GOVT LOTS 1, 2, 3 & 4 & NE QTR OF
SW QTR STR 32-25-06 LESS PORTION AS DEEDED TO A. H. & S. HOLMBOE UNDER REC NO 9410200685;
LESS PORTION DEEDED TO G. & J. EPPERSON UNDER REC NO 9902101586; TGW PORTION SD RAILWAY
CO'S SNOQUALMIE BRANCH LINE R/W 100 FT IN WIDTH OVER & ACROSS GOVT LOT 2 STR 31-25-06

Core Requirement No. 1 - Discharge at Natural Location

The project will maintain discharge to Lake Sammamish through improvements to the three culverts and restoration of the Zackuse stream channel.

Core Requirement No. 2 – Offsite Analysis

Zackuse Creek flows into Lake Sammamish along the eastern shoreline of the lake, approximately 900 feet south of Louis Thompson Road in the City of Sammamish. The creek flows down a west-facing slope in a steep-sided ravine east of the East Lake Sammamish (ELS) Parkway before reaching a forested wetland adjacent to the Parkway, at an approximate elevation of 40 feet. The creek then turns into three braided channels before flowing into a 30-inch diameter concrete pipe beneath East Lake Sammamish Parkway. Zackuse Creek continues under East Lake Sammamish Trail in a 36-inch diameter concrete pipe. Once more, the creek passes under East Lake Shore Lane Drive through a concrete box culvert three feet high and one foot wide.

The existing stream alignment along East Lake Sammamish Parkway causes embankment erosion. Erosion in this area has produced road failures. The current stream alignment possesses a low slope grade, which causes the creek to disperse from one channel to several braided channels. These braided channels allow vegetation to thrive and creates a barrier for aquatic life.

See Figure 1 – Offsite Analysis Map

See Figure 2 – Environmentally Critical Areas Map

Core Requirement No. 3 – Flow Control

The project will add less than 5,000 SF of new impervious surface and less than $\frac{3}{4}$ acre of pervious surface. Therefore, the project meets the basic exemption from formal flow control. New impervious added will include three additional feet of road shoulder on each side. This will accommodate a new guard rail over culvert headwalls on East Lake Sammamish Parkway.

Core Requirement No. 4 – Conveyance System

Three fish passage culverts were designed consistent with Washington Department of Fish and Wildlife standards for fish passage culverts, including passage of the 100-year storm event. Culverts will be 12-ft in width and 8-ft 9-inch high. Western Washington Hydrology Model was used to calculate low and high flows through the restored channel and culverts. The final design report will include detailed calculations of the culvert and stream design.

Core Requirement No. 5 – Construction Stormwater Pollution Prevention

The final design plans and report will include a construction stormwater pollution prevention plan.

Core Requirement No. 6 – Maintenance and Operations

Public Works will provide maintenance and operations of the new culvert under East Lake Sammamish Parkway. King County will provide maintenance of the culvert under the East Lake Sammamish Trail, and it is assumed King County will provide maintenance of the new culvert under East Lake Sammamish Shore Lane.

Maintenance will be consistent with NPDES permit requirements.

Core Requirement No. 7 – Financial Guarantees and Liability

The project is a public project and financial guarantees will be required from the City's contractor consistent with WSDOT Standard Specifications.

Core Requirement No. 8 – Water Quality

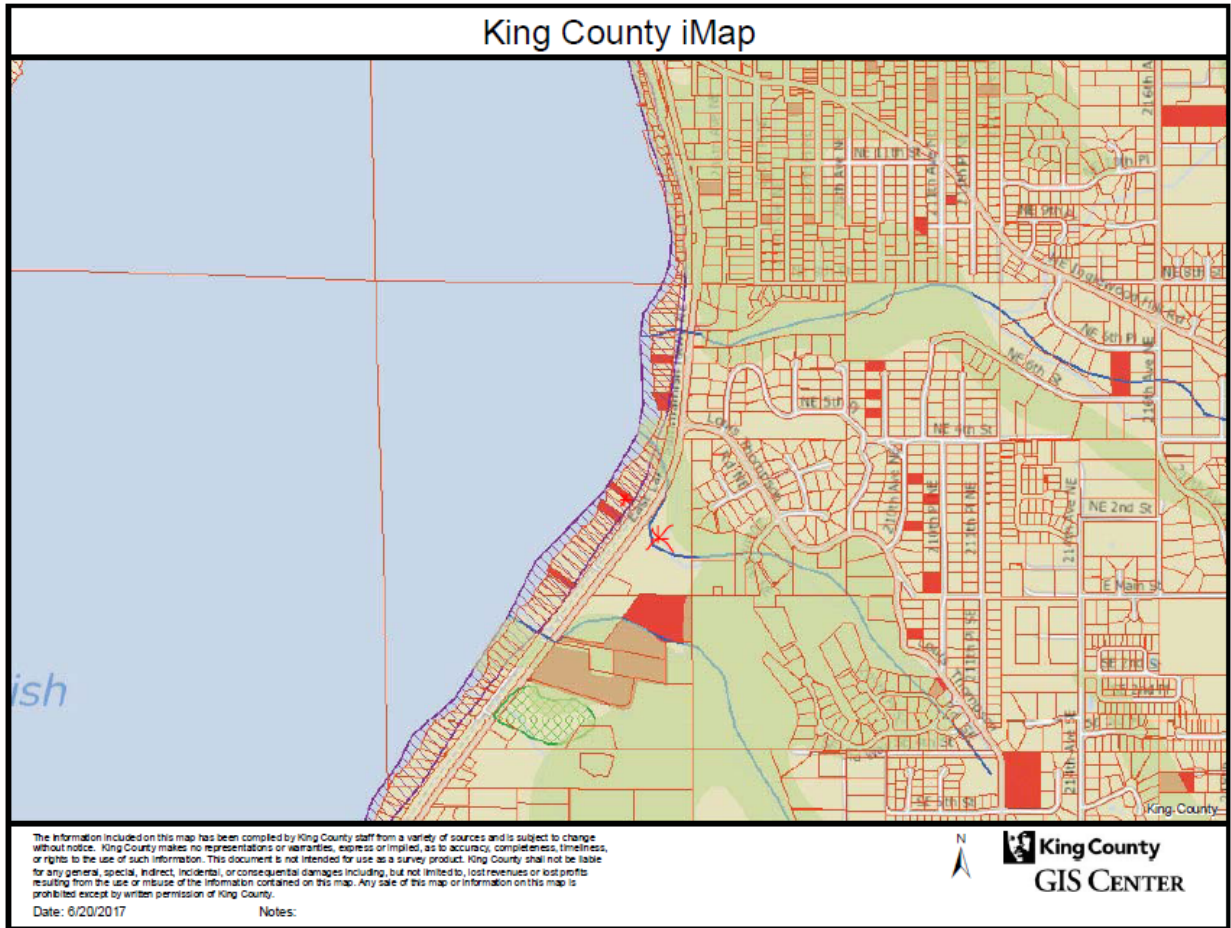
The project will add less than 5,000 SF of new pollution generating impervious surface and less than $\frac{3}{4}$ acre of pollution generating pervious surface. Therefore, the project meets the surface area exemption from formal water quality treatment. New pollution generating impervious added will include three additional feet of road shoulder on each side. This will accommodate a new guard rail over culvert headwalls on East Lake Sammamish Parkway. No new pollution generating pervious surface will be added.

Core Requirement No. 9 – Flow Control BMPs

The project will be designed consistent with low impact development requirements in Core Requirement 9. Best Management Practices will be used to reduce impacts to water bodies. Target surfaces will be dispersed or infiltrated. Further detail will be provided in the final design report.



Figure 1. Offsite Analysis Map



Legend

- Sensitive area notice on title
- Wetland (1990 SAO)
- Stream (1990 SAO)
 - class 1
 - class 2 perennial
 - class 2 salmonid
 - class 3
 - *** unclassified
- Coal mine hazard (1990 SAO)
- Seismic hazard (1990 SAO)
- Erosion hazard (1990 SAO)
- Potential steep slope hazard areas (2016, see explanation-->)
- Potential landslide hazard areas (2016, see explanation-->)

Figure 2 – Environmentally Critical Areas Map