



# KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS

614 DIVISION STREET (MS-26), PORT ORCHARD, WA 98366-4699 | KITSAP1: 360.337.5777 | KITSAPGOV.COM

U.S. Army Corps of Engineers  
Attn: CECW-CE (Lisa Kiefel)  
441 G Street NW  
Washington, DC 20341-3000

Re: Proposals from non-federal interests for proposed feasibility study;  
**Burley Creek Watershed Flood Risk Mitigation and Environmental Restoration  
Feasibility Study**

Dear Ms. Kiefel

Kitsap County, State of Washington is pleased to submit this proposed feasibility study for the Burley Creek Watershed Flood Prevention and Fish Passage Mitigation project. Burley Creek is located in south Kitsap County and directly feeds into the Puget Sound via Henderson Bay. The watershed presents a significant challenge as it experiences yearly flooding, has numerous culverts that are barriers to fish passage and significant water quality issues due to rural septic tanks and agricultural farm activity.

Provide the name of all non-Federal interests planning to act as the sponsor:

**Kitsap County, Washington State is the primary non-federal interest and will act as the primary sponsor. As there are significant fish barrier culverts within the watershed two tribes claim this area as their "usual and accustomed areas". The Suquamish Tribe and the Squaxin Tribe will work with the county to monitor progress within the basin. Other major stakeholders include the Washington State Department of Fish and Wildlife, the Kitsap Public Health District, and the Conservation District.**

State if this proposal is for a feasibility study or a modification to an authorized USACE project:  
**The proposal is for a feasibility study.**

State the project purpose of the proposed study or modification.

**The purpose of the study is to holistically analyze the Burley Creek basin from the Burley Lagoon in north Pierce County to the headwaters of Burley Creek in south Kitsap County.**

**It is anticipated that the study will identify remedial actions to mitigate the effects on the built environment, the natural environment and the transportation of people and goods.**

**The study will address significant flood issues that cause public safety concerns; fish passage barriers especially with regard to two species, Chinook and Steelhead that are identified as**



Endangered Species; and water quality degradation that affects downstream shellfish fisheries due to fecal coliform levels. Remedial action is expected to re-establish riparian habitat and remove the fish barriers.

## Burley Creek Basin Overview

The Burley Creek Basin encompasses an area of approximately 12 square miles (7,700 acres) and contains over 9 miles of stream corridor. The basin supports chum, coho, *steelhead*, cutthroat and the only known population of *chinook* in Kitsap County. The Burley Creek basin includes numerous small ponds and lakes as well as the larger Horseshoe Lake. The main drainage channel from Horseshoe Lake forms Little Bear Creek, the largest tributary to Burley Creek. The outlet for the basin is Burley Lagoon, which is listed as “Conservancy” per the Kitsap County Shoreline Master Plan and High Quality Habitat by the Washington State Department of Fish and Wildlife (WDFW). WDFW has also identified several crossings as fish barriers and designated a Priority Index (PI) number, which ranks the barrier in order of fish passage. All of these designations highlight the environmentally sensitive nature of the Burley Creek/Lagoon system. In addition, this study aligns with the rehabilitative efforts outlined within Pierce County and Kitsap County Codes that address the shellfish closure issues in the Burley Lagoon.

A large portion of the Burley Creek Basin is listed as either a Category One or Category Two Critical Aquifer Recharge area, particularly in the lower half of the basin. The main channel of Burley Creek (from Burley Lagoon to Mullenix Rd) is also listed as a “Shoreline of the State”<sup>1</sup> by the Department of Natural Resources and as a 100-yr floodplain zone by FEMA.

The project has numerous components that have been identified by Kitsap County staff.

- Spruce Road Bridge Scour repair

The Spruce Road Bridge is the last crossing on Burley Creek before it empties into the Burley Lagoon. The bridge was constructed in 1958 and does not meet current standards for traffic safety (bridge rails) or water crossings (constriction and sharp channel angles). This bridge is not a fish barrier.

<sup>1</sup>The Shoreline of the State designation normally requires a State Environmental Policy Act (SEPA) review. However, if the projects meet the requirements for a Fish Enhancement Hydraulic Project Approval (HPA) permit, the projects will be exempt from a SEPA review. In addition, the HPA permit may exempt “fish passage and



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watershed restoration projects” within the study area from a Substantial Development Permit per sections 6.2.3C - 15 and 16 of the Kitsap County Master Shoreline Program.

- **Bethel-Burley Rd Culvert to Bridge**

The Bethel-Burley Rd Culvert to Bridge project would remove two 6-ft by 6-ft culverts (with a grade control cascade structure) and replace them with a bridge. It is the second crossing on Burley Creek, upstream from the Spruce Rd Bridge. The current culvert system was determined to be a fish barrier by WDFW (#2 in Kitsap County).

- **Fenton Rd Bridge**

The Fenton Rd Bridge is the third crossing on the main channel of Burley Creek just upstream from the twin culverts on Bethel-Burley Rd. The bridge, built in 1973, is currently experiencing footing scour and is undersized per current water crossing guidelines.

- **Pine Rd Wooden Bridge**

Pine Rd extends east from Bethel-Burley Rd for approximately 250-ft as a single lane, dead-end road. A wooden bridge crossing the main channel of Burley Creek (approximately 500-ft upstream of the Fenton Rd Bridge) was recently discovered on this portion of Pine Rd (within County Right-of-Way). It is unclear who installed or is maintaining the bridge. It is unknown if modifications to the Fenton Rd Bridge will negatively impact this bridge.

- **Bethel-Burley Rd Culvert Replacement (at Mile Post 2.58)**

This culvert has been identified by the Roads department as failing and undersized (causing roadway stability/flooding issues and preventing fish migration). It has not been assigned a PI by WDFW but has been identified as a fish barrier by Kitsap County.

- **Horizon Lane SE Culvert Replacement**

The Horizon Lane SE culvert is another culvert identified by the Roads department as needing replacement due to sedimentation/flooding and fish barrier issues. It has been added to the Transportation Improvement Program (TIP) project list. It should be noted that this portion of the tributary has been listed as “non fish-bearing” but this may be due to the downstream, unlisted WSDOT culvert preventing migration.

- **Miscellaneous Crossings; There are several minor crossings within the Burley Creek basin that have been identified as having issues:**



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1. The culvert crossing on Park Dr SE has been identified as being “perched”. This culvert is located on a fish-bearing tributary and is the closest culvert to the Spruce Rd Bridge.
2. One of the culverts located on Olympic Dr SE has been identified by Kitsap County as being a fish barrier (ranked #103). However, the downstream WSDOT crossing has also been identified as a fish barrier and would prevent migration even if the County’s culvert was replaced. It should also be noted that DNR classifies this tributary as “non fish-bearing”.
3. The culvert crossing on SE Burley-Olalla Rd has been identified by Kitsap County as being a fish barrier (ranked #30).
4. The culvert located on Bethel-Burley Rd SE @ MP 4.00 has been identified by Kitsap County as being a fish barrier (ranked #121).

Provide an estimate, to the extent practicable, of the total cost of the proposed study or modification:

**Based on a pre-study analysis of the watershed and the project, the total cost of the proposed study is \$350,000.**

Describe, to the extent practicable, the anticipated monetary and nonmonetary benefits of the proposal including benefits to the protection of human life and property; improvement to transportation; the national economy; the environment; or the national security interests of the United States:

### **Protection of Property**

Monetary benefits to the proposal are extremely difficult to calculate. It is not known what the property damage costs are from flooding as the incidence of flooding depends entirely upon rainfall in a given year and tidal action from the Burley Lagoon located to the south of the project, however the flood risk to the road is substantial (see photo page 10).

With regard to the Burley Lagoon, protection of the Burley Creek basin directly affects the shellfish fishery in the lagoon. To this end, in 1999 Kitsap County adopted Chapter 18.18 into its code, WATERSHED PROTECTION DISTRICTS – BURLEY LAGOON SHELLFISH CLOSURE RESPONSE STRATEGY AND PROTECTION PROGRAM:

### **18.18.010 Executive Summary and Introduction**

*Burley Lagoon, a 10,000 acre picturesque watershed located on the Key Peninsula in both Pierce and Kitsap Counties, was downgraded in February 1999 from a “conditionally approved” to a “restricted” shellfish growing area – the second downgrade in eighteen years. The pollution sources appear to be failing on-site sewage systems, livestock and pet waste, and storm water runoff. Concerned local and state officials started meeting in January 1999 to discuss the problems, actions already being taken, development of a shellfish closure response strategy and formation of a shellfish protection district. A*



*shellfish closure response team started meeting in February 1999 and has met monthly since. The team consists of several representatives from Kitsap and Pierce Counties, the shellfish industry, and the three lead state agencies – the state Departments of Ecology and Health, and the Puget Sound Water Quality Action Team. This strategy will subsequently evolve into the implementation program for the Burley Watershed Protection District.*

#### **18.18.020 Goal.**

*The overall goal of this strategy and protection program is to restore and protect the water quality and beneficial uses of water in the Burley Lagoon watershed. Beneficial uses of water include issues related to public health, recreational use, property values, and natural resources including shellfish and salmon.<sup>2</sup>*

Taylor Shellfish is the primary purveyor of shellfish in the Pacific Northwest and they operate the Burley Lagoon fishery. Based on their input, the fishery is currently worth \$913,000 and is anticipated to increase to \$3,752,000 by 2021. Additionally, Taylor Shellfish has applied for a permit with Pierce County to harvest geoducks out of this lagoon. These large clams are much sought after in the Asian markets and it is anticipated that this fishery will increase considerably in value as it is developed.

#### **Transportation**

The county's Traffic Division staff developed a Design Report in January, 2012. In general, the roadway segments in this corridor do not meet current AASHTO standards. Staff analyzed operations and accident data between Spruce and Fenton Roads and noted the following: "According to AASHTO, the clear zones along Bethel Burley Road for a design speed of 55 mph and an ADT of 2,997 should be at least 22 feet. The identified hazards within the clear zone are one utility pole 12 feet from the traveled way on the west side of the road, *the stream which has greater than 2 feet of water for much of the year*, and critical embankments on both sides of the road".

#### **Environment**

As stated in the introduction, the outlet for the basin is Burley Lagoon, which is listed as "Conservancy" per the Kitsap County Shoreline Master Plan and High Quality Habitat by the Washington State Department of Fish and Wildlife (WDFW). WDFW has also identified several crossings as fish barriers and designated a Priority Index (PI) number, which ranks the barrier in order of fish passage. As a reminder, two of the species, Chinook and Steelhead are listed in the Endangered Species Act. All of these designations highlight the environmentally sensitive nature of the Burley Creek/Lagoon system. In addition, this study aligns with the rehabilitative efforts outlined within Kitsap County Code Section 18.18 that addresses the shellfish closure in Burley Lagoon.



<sup>2</sup><http://www.codepublishing.com/wa/kitsapcounty/html/Kitsap18/Kitsap1818.html>

A large portion of the Burley Creek Basin is listed as either a Category One or Category Two Critical Aquifer Recharge area, particularly in the lower half of the basin. The main channel of Burley Creek (from Burley Lagoon to Mullenix Rd) is also listed as a “Shoreline of the State” by the Department of Natural Resources and as a 100-yr floodplain zone by FEMA.

**National Economy or Security interests of the Nation**

Bethel Burley Road is an Urban Minor Arterial road that parallels SR16, which is a Principal Arterial. As such, it is a low-traffic alternative to SR16, but the project does not contribute significantly to the National Economy or Security interests of the Nation with the following caveat: SR16 is the major corridor for employees who work at Naval Base Kitsap – Bremerton Shipyard, the largest employer in the county and the second largest shipyard in the United States. Many of the employees of the shipyard and other Naval facilities travel from Pierce County to the south, Gig Harbor, a city just south of the Kitsap County border and south Kitsap County.

SR16 is also the corridor that is used to deliver all fuel for Navy and Army operations from Joint Base Lewis-McChord located in south Pierce County to the Indian Island arsenal located in Jefferson county. This Burley Creek corridor offers a viable alternative to SR16 when backups occur.

Describe if local support exists for the proposal.

Residents of the area have often expressed concern over the flooding and loss of property value that occurs in this area. Floodplains often create safety hazards for motorists and in this rural area there are few options to avoid the flooding.

The county has aggressively addressed flooding issues nearby on an individual project basis. However for this project the county has decided to pursue a more robust watershed analysis for the Burley Creek basin. Replacement of culverts upstream will affect downstream flows and it was decided to approach the basin planning holistically rather than piecemeal. The feasibility study will analyze the impact of four bridges and culverts in the immediate area including addressing fish passage issues. One of the culverts is ranked #6 on the county’s fish barrier list and anadromous fish species (salmon) have been seen in this stream. The local tribal fisheries staff support all efforts to improve fish passage in the basin and strongly support this approach.



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In addition to the county public works and tribes, a consortium of health, conservation and private firms established the Burley Lagoon Water Quality Team which is an action-oriented coalition that has been tasked to develop Best Management Practices (BMPs) with landowners, inspect and repair septic systems, and find hot spots along the shoreline.

State if the non-Federal interest has the financial ability to provide for the required cost share. Kitsap County Public Works has the financial ability to provide the required cost share. The county has an annual budget between \$5-6 million for the Transportation Improvement Program and an additional \$3-4 million in the storm water utility. A majority of the projects that have scored well in the Transportation Prioritization Process are road preservation projects such as culvert replacement with new bridges, or fish passage barrier projects that restore habitat and stream viability.

Sincerely,

Andrew B. Nelson, PE

Public Works Director

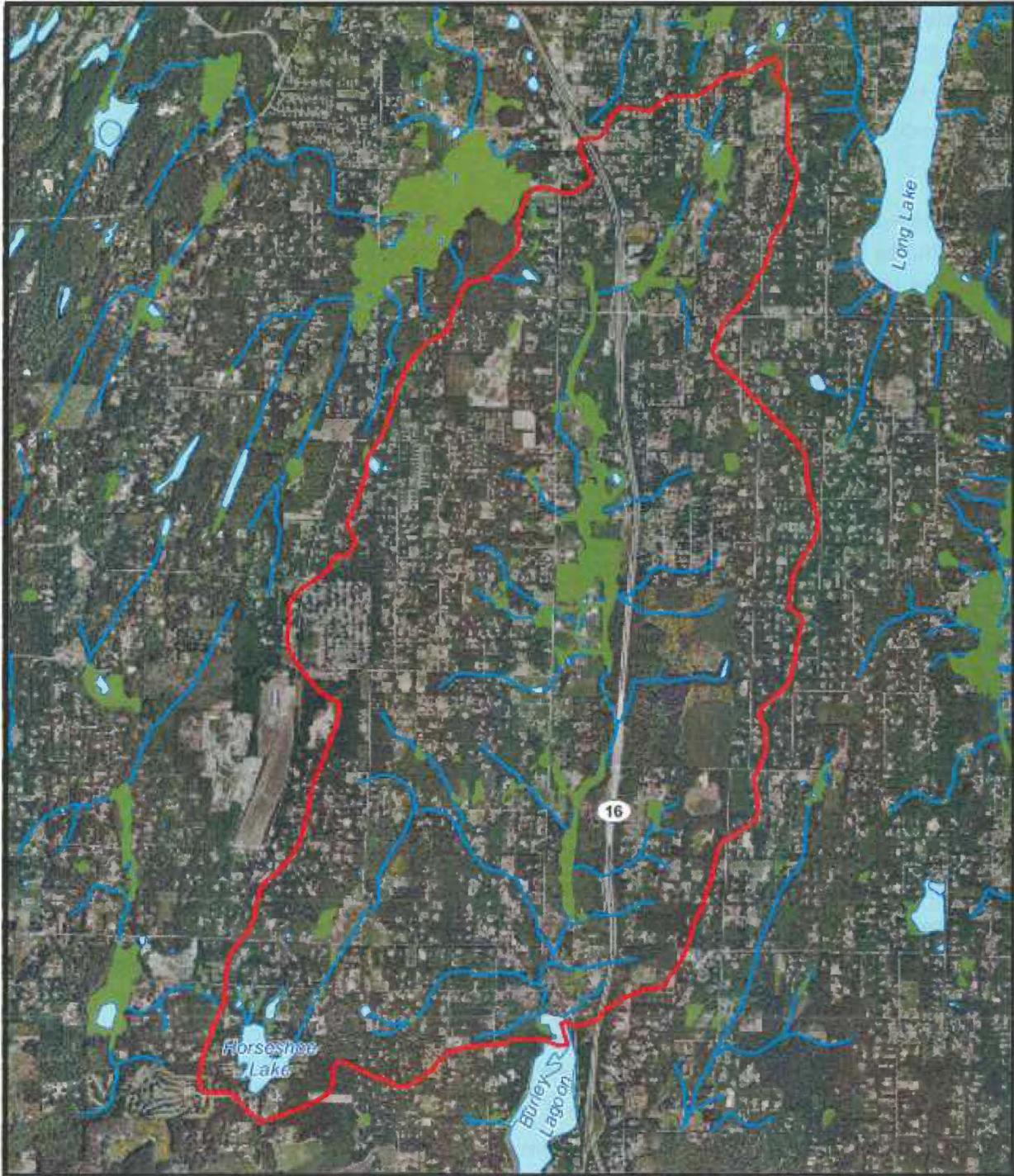
Kitsap County

Cc: Kitsap County Board of County Commissioners  
Larry Keeton, Community Development Director  
Jon Brand, PE, Kitsap County Road Engineer  
Kevin Dayton, PE, Washington State Department of Transportation, Olympic Region  
Stephan A. Kalinowski, Regional Habitat Program Manager, Washington Department of Fish and Wildlife Region 6  
Leonard Forsman, Chair, Suquamish Tribe  
Jeromy Sullivan, Chair, Port Gamble S'Klallam Tribe  
Jeff Dickinson, Chair, Squaxin Tribe  
Keith Grellner, Director of Environmental Health, KPHD  
Joy Garitone, District Manager, Kitsap Conservation District



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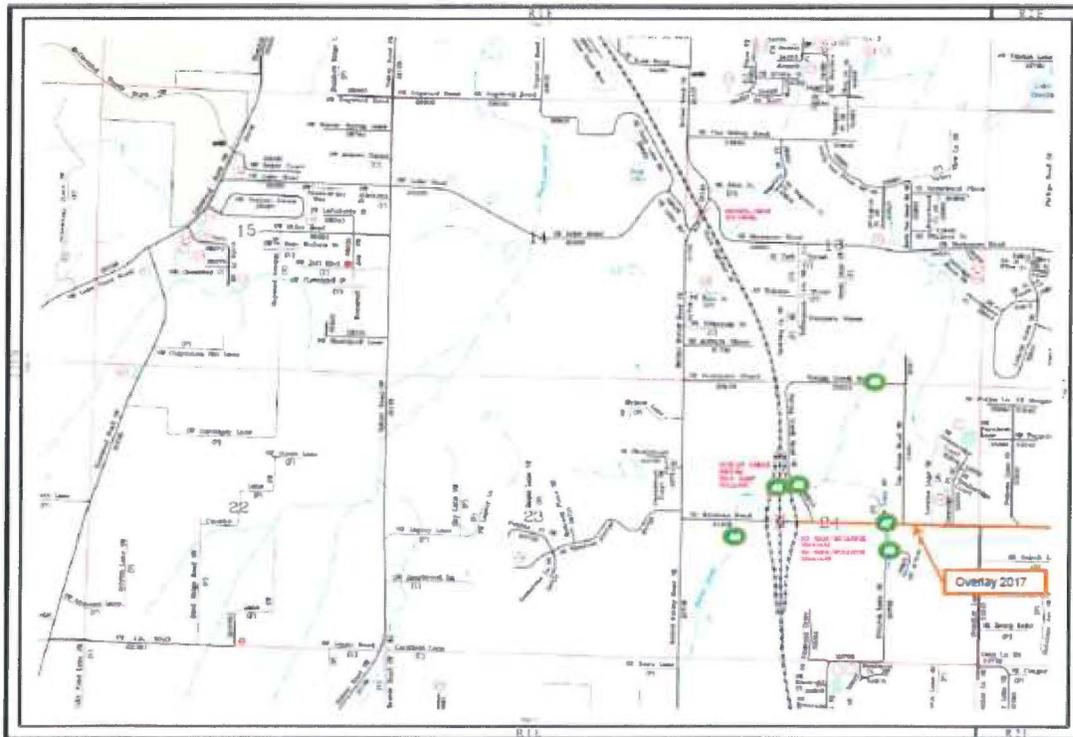
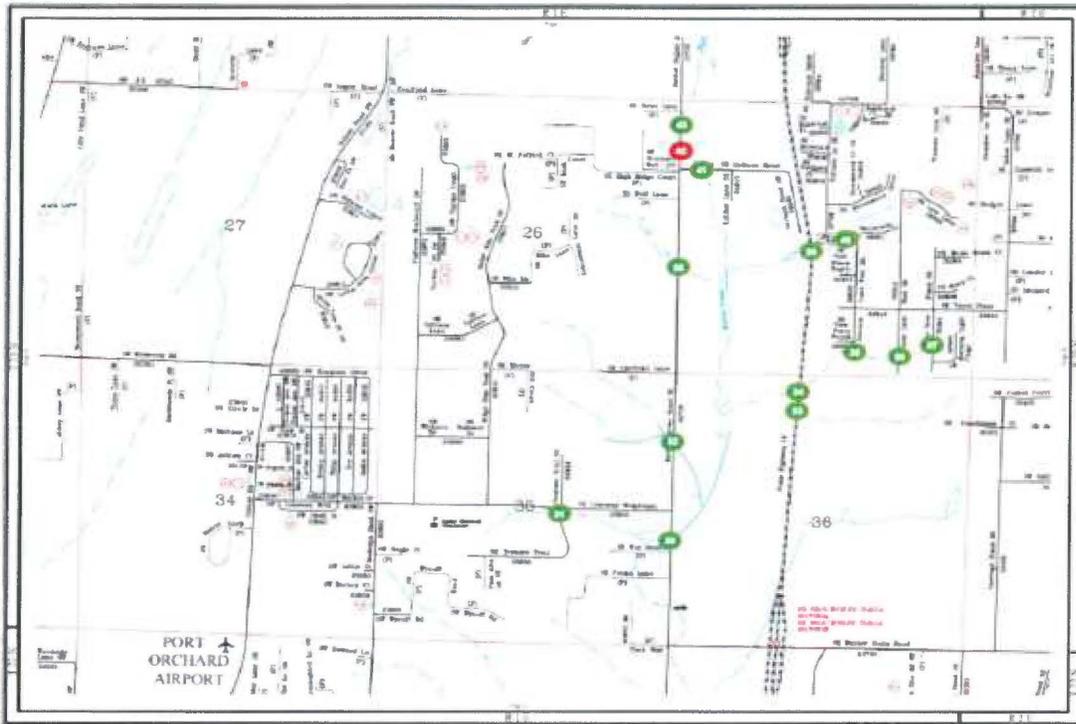
**Burley Creek Basin, south Kitsap County**

**Locations of Creek Crossings and Fish Barrier notations, Burley Creek Basin**



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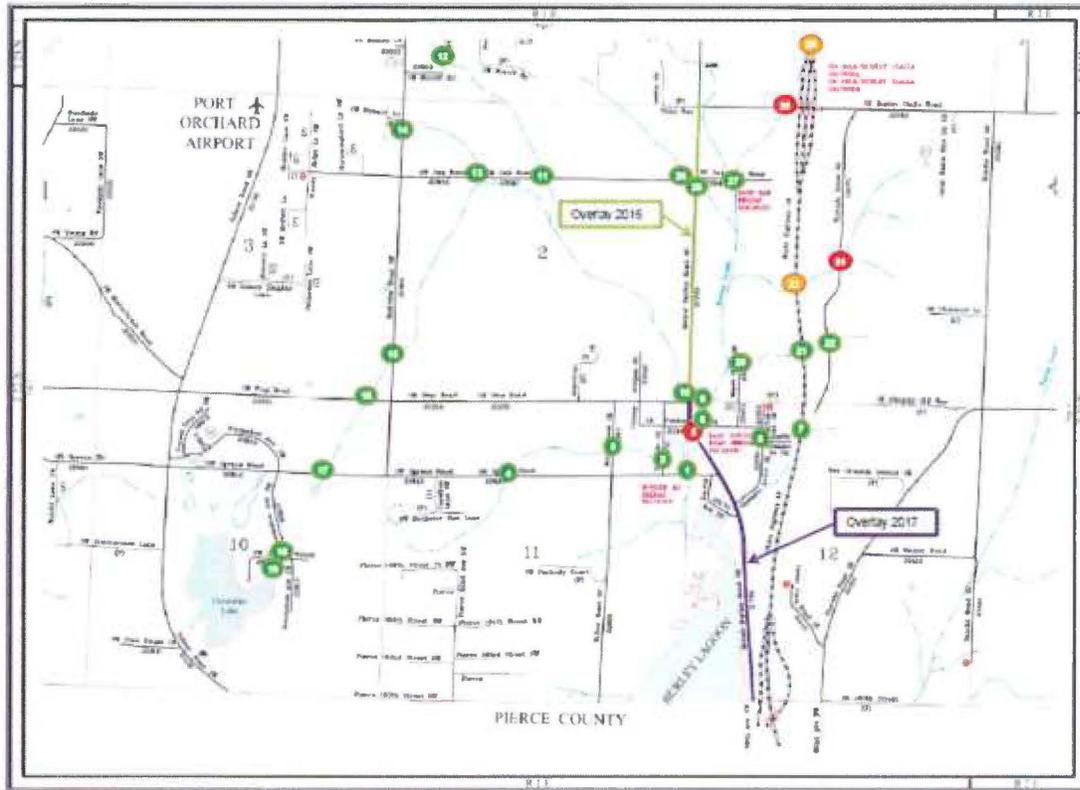
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Burley Creek



Burley Creek Flooding