Letter of Intent to Submit an NPDES Effectiveness Study Proposal

All fields must be completed

1. Proposed Study Title: Coho Prespawn Mortality Retrofit Feasibility Study

2. Short Description of Proposed Study:

Highway/arterial runoff is toxic to salmon. Bioinfiltration methods are not feasible for use in existing detention facilities. We want to evaluate the efficacy of horizontal flow through rolls of bioretention media to reduce the biotoxicity of highway/arterial runoff. This project would 1) construct a model facility, 2) test the facility, 3) evaluate the efficacy of various thickness of bioretention rolls and develop a simple design, 4) test the design with stormwater maintenance crews on an existing facility, and 5) utilize the strength of WSU Stormwater Center, USFWS, and NOAA Fisheries to broadly inform stormwater managers and operations crews.

2. What specific Stormwater Management Program condition(s) or other permit condition(s) in the NPDES W. WA. Phase I and/or Phase II Municipal Stormwater Permit does your study address?

Phase I Permit: S5.C.6 Structural Stormwater Controls

Phase II Permit:

3. How will this study inform, assess effectiveness and/or support implementation of the specified NPDES permit conditions (e.g., project goal) and future permit conditions?

Research has focused on treating runoff using a vertical infiltration process. This approach won't work in older detention facilities since they weren't designed to infiltrate runoff. Highway techniques, such as compost amended bioswales, are just being studied to identify the size necessary to achieve results and often have significant constraints with other utilities in city right of ways. Given the public ownership of existing detention ponds, finding simple management practices that could be installed during maintenance to retrofit their function for improving water quality would make it easier to show results sooner than waiting to fund and install new bioinfiltration facilities.

4. What are the anticipated measurable outcomes or deliverables of this proposed study?

1) Build a model detention facility; 2) Test the model facility and effectiveness of various thickness of biofiltration rolls, 3) Conduct biotoxicity tests of highway runoff before and after flowing through various size rolls of bioretention media, 4) Retrofit an existing detention facility in Bellevue and monitor arterial stormwater runoff before and after exposure to the biofiltration rolls, and 5) Share outcomes broadly with stormwater managers, maintenance staff, and the public using the extensive capabilities of the WSU Stormwater Center, US Fish & Wildlife, NOAA Fisheries and local governments.

5. How does this study advance regional understanding for stormwater management?

This project will evaluate the ability of adding simple biofiltration berms/rolls to existing detention ponds to reduce toxics that affect salmon and other aquatic life. If the project shows positive results, then many jurisdictions can implement these techniques in their detention ponds, achieving results more quickly than waiting to fund and install new bioinfiltration systems, such as Filterra or Modular Linear Wetlands. This project will provide simple, inexpensive methods for implementing retrofit options in existing stormwater facilities.

6. Applicant(s) Contact Information:

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7. Permittees you are coordinating with (Provide contact information):

Partners include: WSU Puyallup - Washington Stormwater Center, NOAA Fisheries - NW Fisheries Science Center, and U.S. Fish & Wildlife Service - Environmental Contaminants.

8. Select Stormwater Work Group study category (select all that apply):

☐ Source Control	☑ Retrofits	☑ Education & Outreach
☑ LID	☑ O&M	☑ Other: Water Quality - Biotoxicity

Submit LOI to Brandi Lubliner (WA Department of Ecology) via email at Brandi.Lubliner@ecy.wa.gov