

**Letter of Intent to  
Submit an NPDES Effectiveness Study Proposal**

*All fields must be completed*

1. Proposed Study Title: Insitu field performance of permeable pavements in poorly infiltrating soils.

2. Short Description of Proposed Study:

As part of a project to improve road and pedestrian traffic conditions in the City of Puyallup as well as support water quality improvements in a TMDL-affected stream, new installations of permeable sidewalks and permeable road surface on an arterial street around the Washington State University's Puyallup campus are slated for construction in late fall 2017. As part of an agreement with the Washington Stormwater Center, the newly constructed facilities will incorporate water quantity quality monitoring amenities. We seek RSMP funds to fund the cost of the water quality and quantity monitoring of stormwater through these systems. We propose to carry out a multi-year study (based on funding availability) with a minimum of 6 years of monitoring to track water quality and quantity changes from time of installation through a period of 6 years.

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.5: "Controlling Runoff from New Development, Redevelopment & Construction Sites"; S5.C.6: "Structural Stormwater Controls"; S5.C.7: "Source Control Program for Existing Development"; S5.C.9: "Operations & Maintenance Program"; S5.C.10 "Education & Outreach Program"

Phase II Permit: S5.C.4: "Controlling Runoff from New Development, Redevelopment and Construction Sites" AND S5.C.5 "Municipal Operations and Maintenance"

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?

Data measured through this monitoring would provide critical insight into how these systems perform right after construction and how performance changes over a period of several years. The rates of stormwater inflows and outflows will be measured, allowing for the inference of peak runoff mitigation as well as infiltration into the underlying soil matrix. Local water table will be monitored to track groundwater mounding associated with infiltration, and the seasonal variability of infiltration rates with varying soil moisture and water table regime. Operations and maintenance of the system will also be tracked using traffic sensors and pavement maintenance logs to determine how use and cleaning impact pavement performance over time.

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

Measurable outcomes are: A) long-term peak flow mitigation and runoff treatment efficiencies associated with a real-world installation of porous pavements in poorly draining soils; and B) a long term characterization of maintenance and vehicular traffic on the performance of porous pavement systems in Western Washington.

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

With a growing body of work that shows that permeable pavements can provide flow and water quality treatment, mostly of the data for these studies were obtained from test or laboratory facilities in partially artificial conditions. With this study, we propose to obtain rigorously collected information on how these systems actually perform in the field at a location in Western Washington. This work will also provide performance measures of porous pavement right after installation, and change over time based on traffic and maintenance.

6. Applicant(s) Contact Information:

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Organization: Washington State University - Puyallup, Washington Stormwater Center

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

Joy Rodriguez, <JRodriguez@ci.puyallup.wa.us>, City of Puyallup, 333 S Meridian · Puyallup, WA 98371, (253) 841-5549

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

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Source Control | <input type="checkbox"/> Retrofits      | <input type="checkbox"/> Education & Outreach |
| <input checked="" type="checkbox"/> LID | <input checked="" type="checkbox"/> O&M | <input type="checkbox"/> Other:               |

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