Letter of intent (LOI)

Interested parties should submit a Letter of Intent (LOI) on or before February 28, 2020 for each individual proposal. Letter of intent should include applicant contact information and seven questions about proposed study. More details about SAM study selection process, eligibility and funding availability can be found in SAM REF guidelines in SAM Effectiveness webpage.

Email address *

alison.schweitzer@kingcounty.gov

Applicant contact information

Applicant Full Name *

Alison Schweitzer

Organization *

King County

Phone number *

206.263.6917

Proposed Study Information

1. Proposed Study Title *

The Efficacy of Street Sweeping as a Method for Bacteria Source Control

2. Which topic(s) from the SWG's priority list do you propose to address? *

The proposed study topic should be in the SWG's priority list

22. What are the most effective approaches to source control for bacteria? In what situations do E&O, IDDE, and O&M activities most effectively address bacteria problems?

3. Select type of project being proposed *

- [ ] Survey
- [ ] Literature Review & Synthesis
- [x] Environmental Sampling Study
- [ ] Other

4. Short Description of the Proposed Study *

250 word limit: describe how results will assess effectiveness and advance regional understanding and permittees' implementation of specific stormwater management approaches

Bacteria is a chronic pollutant throughout King County that has led to the impairment of several surface water segments. With the exception of bioinfiltration, there are no existing best management practices (BMPs) designed to effectively remove bacteria from stormwater runoff. Therefore, preventing bacteria from entering stormwater infrastructure is an important source control BMP. The proposed study will assess the efficacy of street sweeping with regards to bacteria removal from roads in developed, urban environments and provide a better understanding of street sweeping as a method for improving the quality of lowland streams in Puget Sound.

In partnership with the cities of Federal Way and Des Moines, watershed subbasins draining to Cold Creek, Redondo Creek, McSorley Creek, and Woodmont Creek will be divided into two groups within each subbasin, based on their size. One group will receive the regular amount of street sweeping as outlined in the cities' existing street sweeping contracts, and the second group will receive a more frequent level of street sweeping. The design will ensure that each city receives a mix of sweeping frequencies. Water quality samples will be collected at each stormwater outfall to the creeks and analyzed for fecal coliform and E. Coli to determine if street sweeping is effective at reducing the amount of bacteria being discharged to receiving waters.

This study may provide Permittees with source control recommendations for modifying street sweeping schedules to improve water quality. Results from this study may enhance discussions about Phase I Structural Stormwater Controls and Appendix 2.

5. What type information will be collected or analyzed for this proposed study? *

If existing permittees' data are needed, specify the type, and the expected timing of a request for existing information from Permittees

Both the City of Des Moines and Federal Way will need to provide data that allows for the delineation of their subbasins based on stormwater infrastructure in the drainage basins identified for this study. The City of Des Moines and the City of Federal Way will also need to provide details associated with current sweeping contracts, including but not limited to, the location, frequency, and how many miles of major arterials, minor arterials, collector roads, state routes, and residential roads are swept in each subbasin. It is also expected that these cities will provide information to help develop an accurate budget estimate for street sweeping efforts in this study. All information requested of the cities will be needed in advance of designing this study.

Throughout the study the number of miles swept and which roads are swept will need to be collected.

Water quality samples will be collected at each stormwater outfall to Cold Creek, Redondo Creek, McSorley Creek, and Woodmont Creek. These samples will be analyzed for fecal coliform and E. Coli at an accredited laboratory. Any existing water quality data that Permittees have for these drainage basins would be useful background data for this study.

6. What are the anticipated measurable outcomes and key deliverables that will be produced by the proposed study, and how will they be used by Permittees and the Washington State Department of Ecology? *

The primary anticipated measurable outcome is how effective street sweeping is at reducing bacteria in receiving waters. This study aims to help Permittees and Ecology better understand how to use street sweeping as a stormwater BMP in watersheds that experience water quality impairments due to bacterial contamination. For example, one deliverable could include guidance for Permittees related to street sweeping frequency in order to reduce downstream bacterial loading into surface waters.

The study area will be in the Des Moines/Federal Way watershed area. This area drains to Poverty Bay, which is an important area for both tribal and recreational shellfish harvesting. The Poverty Bay Shellfish District was downgraded from "approved" to "conditionally approved" in 2016 when two monitoring stations failed National Shellfish Sanitation Program water quality standards. This study will hopefully lead to a better understanding of the role street sweeping can play in improving receiving water quality and potentially benefit the commercial and recreational shellfish growing areas in Poverty Bay.

7. Permittees or agencies you are proposing to coordinate with (provide staff names and contact information, if known) *

Enter "NA" if not applicable.

City of Des Moines: Ben Stryker (206.870.6523, bstryker@desmoineswa.gov) and Tyler Beekley (206.870.6869, tbeekley@desmoineswa.gov)
City of Federal Way: Leah Myhre (253.835.2752, Leah.Myhre@cityoffederalway.com) and Theresa Thurlow (253.835.2750, Theresa.Thurlow@cityoffederalway.com)