

# Letter of intent (LOI)

Interested parties should submit a Letter of Intent (LOI) on or before February 28, 2023 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.

The respondent's email (**lizbetha@uw.edu**) was recorded on submission of this form.

## Applicant contact information

Applicant Full Name \*

Lizbeth Seebacher

Organization \*

University of Washington

Phone number \*

206-351-3008

## Proposed Study Information

1. Proposed Study Title \*

Biomedica mix analysis for stormwater contaminant reduction with a focus on 6PPD quinone

## 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

Study existing BMPs to verify capture or treatment of 6PPD Q and Identify new BMPs that effectively reduce 6PPD-Q

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## 3. Select type of project being proposed \*

- Survey
- Literature Review & Synthesis
- 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

Past mesocosms studies with the floating treatment wetland (FTW)/biomedia module provided excellent results with 100% survival of the juvenile coho and 79% reduction of 6PPD quinone. This type of insitu treatment is imperative for those sites where treatment with traditional green infrastructure, such as bioswales is not feasible. The FTW/biomedia modules are also intended for increasing stormwater contaminant reduction within traditional green infrastructure such as stormwater ponds, where only partial treatment if any at all, have been recognized.

This project will test each of the six media from the mesocosm study to determine which of the media is adsorbing stormwater contaminants, focusing on 6PPD quinone and determine if all media are necessary for future projects in the field. We will establish the most effective ratio of the media used in the mesocosm study for 6PPD quinone removal in the field.

Most of the media tested for stormwater contaminant removal is composed of organic materials that tend to leach nutrients into the resulting treated stormwater. We will test four media for phosphorus and nitrogen reduction intended to "polish off" the treated stormwater. The media we intend to test are: Leca Filtralite, Argex, zeolite and volcanic rock.

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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.

- 1) Stormwater contaminant (focus on 6PPD-Q) reduction for each of the six media used in the 2021 FTW/Biomeia module mesocosm study.
  - 2) What contaminants do each of the six media adsorb? What purpose does each of the six media serve?
  - 3) Are all six media necessary to obtain the 79% reduction in 6PPD quinone?
  - 4) What nutrient reduction media is the most efficient for future stormwater contaminant reduction field projects?
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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? \*

- 1) Most efficient biomeia mix for future module installations for insitu treatment of stormwater contaminants focusing on 6PPD quinone.
  - 2) Most efficient nutrient reduction media for use after stormwater treatment via organic material in the biomeia and prior to release into waterbodies.
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7. Permittees or agencies you are proposing to coordinate with (provide staff names and contact information, if known) \*

Enter "NA" if not applicable.

NA

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