

Round 5 Study Summaries



Heading TBD

LOI Number	Project Title and Applicant	Project Goal
LOI 1	Floating Treatment Wetland/Biomedica Module Field Installation & Monitoring Dr. Lizbeth Seebacher with University of Washington	This project will retrofit 5-6 stormwater ponds across the state with floating treatment wetlands and evaluate their effectiveness in reducing pollutants including CECs. Results derived from this work may be utilized to establish design specifications for the BMP retrofit.
LOI 2	Managing Polluted Pressure Washing Runoff Ondrej Sklenar with Port of Seattle	This study will evaluate current and new pressure washing BMPs utilized by stormwater communities through surveys and literature reviews. The information developed may be used to update Ecology's stormwater manuals and other guidance documents.
LOI 3	BMP Effectiveness Evaluation & Guidance for Treating Contaminants of Emerging Concern (CEC) Brandi Wallace Lubliner with City of Tacoma	This project will perform a qualitative analysis of all BMPs listed in Ecology's Stormwater Manuals for their effectiveness in CEC reduction. The project's findings may help update design guidance and align future research on reducing CECs in stormwater.
LOI 4	Effect of Biochar Characteristics on Pollutant Removal and Hydraulic Performance in Stormwater Applications Dr. John Stark with Washington Stormwater Center	Lab testing will evaluate physical and chemical properties of commercially produced biochars. The study will test sorption properties of available biochars and hydraulic properties when biochars are mixed with other media. This project aims to recommend specifications for biochar.
LOI 5	Examining the treatment potential of road runoff by stormwater ponds Dr. Ani Jayakaran with Washington Stormwater Center	Field testing the treatment capability of existing stormwater ponds to remove 6PPDQ and other stormwater pollutants. This study will provide recommendations on how pond retrofit or maintenance practices could improve treatment of 6PPDQ and co-occurring pollutants.
LOI 6	Review and recommendations on public engagement, awareness and behavior change impact on stormwater pollution Mary Rabourn with King County	A regional survey to collect data on communities' awareness, attitudes, norms, behaviors, etc., related knowledge and actions to prevent point and non-point source pollution. The goal of this study is to identify most effective outreach strategies and messages that can be implemented across all regions for stormwater pollution prevention.
LOI 7	Biochar Specification for Stormwater Treatment Jennifer Lanksbury with King County	Develop a biochar specification through lab testing of various biochar feedstocks, pyrolysis processes, and chemical modifications for effective pollutant reduction. This study may also field test the lab study's best performing biochars.
LOI 8	Review, Develop, and Update Municipal Training Curriculum Laurie Larson-Pugh with Washington Stormwater Center	Through survey and literature reviews identify current available trainings and fill gaps by developing additional trainings to comply with permit requirements.
LOI 9	Toward a Procurement Ready Biochar Specification for 6PPDQ Removal from Stormwater Dr. Ruth M. Sofield with Western Washington University	Lab testing aimed at identifying a biochar specification best suited to remove 6PPDQ. This study will translate measurable material properties such as feedstock type, pyrolysis conditions, and surface characteristics into performance expectations for stormwater treatment.
LOI 10	Evaluation of TAPE's Definition of Qualifying Storms and Guidance for Eastern Washington (EWA) Climatic Conditions Trey George with City of Spokane	The purpose of this study is to develop guidance for collecting data from storms representative of EWA climatic conditions. Recommendations may inform the TAPE Guidance Manual for Eastern Washington BMP studies.

LOI 11	Retrofitting Stormwater Ponds with Floating Treatment Wetlands to Reduce Contaminants in Highway Runoff. Nicholas Hehemann with Washington Dept. of Transportation	Field study of the effectiveness of a floating treatment wetland added to an existing wet pond. Findings intend to inform whether basic wet ponds with floating treatment wetlands could be an effective BMP for phosphorus, metals, and 6PPDQ reduction and provide thermal mitigation.
LOI 12	Using low-cost sensors to determine tree water use under drought conditions Abby Barnes with Washington Dept. of Natural Resources	Field study extending the previous SAM tree water-use and stormwater benefits study to drought-tolerant trees in eastern and western Washington. The project will provide guidance on tree species' capacity to conserve water in the dry season and contribute to stormwater mitigation during rain events.
LOI 13	Characterizing pollutants of concern in roadway runoff at different traffic volumes Brad Archbold with Washington Dept. of Transportation	Highway runoff characterization study focusing on CECs. The study question will focus on effects of annual average daily traffic (AADT) volumes and runoff characteristics.
LOI 14	Effectiveness of PCB removal by deployable runoff treatment devices Eli Mackiewicz with City of Bellingham	Review existing deployable runoff treatment devices available for PCB capture and field test a selection of the devices. The project intends to develop guidance for permittees responding to active washing of buildings that may contain PCBs.
LOI 15	Understanding 6PPD-Quinone Dynamics in Roadway Runoff Outfalls, Treatment BMPs, and Associated Materials Dr. Edward Kolodziej with University of Washington	A three-part environmental study covering high-frequency composite sampling for 6PPDQ at stormwater outfalls, detention basin performance for 6PPDQ capture, and lab and field testing of 6PPDQ sequestration in soil media. The project intends to inform BMP optimization and management, and source control strategies for 6PPDQ.
LOI 16	Testing Efficacy and Feasibility of Tire Particle Collectors to Mitigate Tire Wear Emissions from Fleet Vehicles Chelsea Mitchell and Carly Greyell with King County	Pilot retrofit devices for fleet vehicles that capture tire wear particles. Assess the effectiveness and feasibility of the technology. This pilot will also provide locally relevant tire wear emissions rates which feed into models that estimate 6PPDQ hotspots and help prioritize treatment.
LOI 17	Green Stormwater Infrastructure and Bioretention Monitoring for Maintenance Jennifer Arthur with Seattle Public Utilities	Contaminant concentrations will be measured in stormwater at bioretention inflow and outflow points, in sediments collected from sedimentation structures, and from soil cores collected from bioretention cells. The findings will inform potential bioretention design enhancements and operations and maintenance practices.
LOI 18	Study of Box of Rain Technology for Effective Removal of 6PPDQ Tatiana Dreisbach with Washington Dept. of Transportation	Field testing the effectiveness of Box of Rain technology in removing 6PPDQ from stormwater collected from bridges and other elevated structures. Researchers will investigate how the pretreatment mulch and biochar-amended layers influence performance.
LOI 19	Identifying effective methods for capturing PCBs in stormwater and washwater from exterior building materials Jessica Huybregts with Seattle Public Utilities	Field testing structural and operational BMPs used for minimizing PCBs in runoff from buildings. The findings will help Permittees and building owners know what BMPs to install around buildings and near MS4 infrastructure, like catch basins, when they suspect that the exterior of a building contains PCBs.
LOI 20	Field Testing High and Medium Priority BMPs for 6PPD-q Removal Dr. Mary Engels with University of Idaho	Field testing of BMPs categorized as high and medium priority for potential 6PPDQ reduction at Western and Eastern Washington sites. Field verified information will provide guidance to update design manuals and improve future BMP selection and implementation.