



STORMWATER WORK GROUP

RECOMMENDATIONS FOR REGIONAL STORMWATER MONITORING, JUNE 11, 2014

By consensus, with a single exception noted below, the Stormwater Work Group submits these recommendations for Regional Stormwater Monitoring Program (RSMP) Effectiveness Studies and Status and Trends monitoring to the Washington State Department of Ecology (Ecology).

Implement RSMP Effectiveness Studies as follows:

1. The following ten studies should comprise the initial round of RSMP Effectiveness Studies. The majority (all but two) of the work group members recommend that all ten studies move forward for the Ecology contracting process.
 - i. Mining the existing Western Washington catch basin inspection and maintenance data for maintenance needs and cost-efficiencies
 - ii. Paired Urban Small Stream Watershed Restoration Effectiveness Study
 - iii. Effectiveness of Bioretention in Reducing Stormwater Flows, Pollutants and Toxicity
 - iv. Stormwater Source Control at Small Businesses
 - v. Bioretention Hydrologic Performance Study
 - vi. Can bioretention prevent toxicity to coho salmon exposed to road runoff?
 - vii. Field test of plants and fungi on bioretention performance over time
 - viii. Effectiveness of treating highway runoff to Echo Lake with LID retrofits
 - ix. Quantifying the Impact of Voluntary Private Property Rain Gardens across Puget Sound
 - x. Efficacy of current rain garden installations at interrupting PCB cycling

Of the two work group members in the minority, one recommended that only the top eight move forward, and the second recommended that only the top seven move forward. These two members were concerned that some permittees are not convinced that the other studies would be as beneficial or regionally applicable and that perhaps the funding should be saved for the next round of proposals. However, there was not strong opposition to those other studies moving forward.

2. Funding of each study will be contingent upon the review and approval of the scope, schedule, list of deliverables, and budget by the Pooled Resources Oversight Committee (PRO-Committee).
3. These four proposals should move forward this summer:
 - i. Paired Urban Small Stream Watershed Restoration Effectiveness Study. A steering committee will be convened to inform the streamflow monitoring design and approach, and identify the best indicators.
 - ii. Effectiveness of Bioretention in Reducing Stormwater Flows, Pollutants and Toxicity. An Ecology engineer reviewed this proposal and the project proponents will respond to the comments as part of developing the QAPP.
 - iii. Effectiveness of treating highway runoff to Echo Lake with LID retrofits. An Ecology engineer should review this study as soon as possible.
 - iv. Can bioretention prevent toxicity to coho salmon exposed to road runoff? An Ecology engineer should review this study as soon as possible.
4. PRO-Committee members should review a detailed scope of work for these first four studies, focusing on the proposed deliverables. The RSMP Coordinator will facilitate this process. The purposes of the reviews are to discern:
 - i. What are the study feasibility, chance of success, and potential value of study results?
 - ii. Do the deliverables clearly accomplish/support the intent of the proposal?
 - iii. Is the budget reasonable given the level of effort and resources proposed?
 - iv. Are the schedule, approach, and key assumptions reasonable?
5. The RSMP Coordinator and PRO-Committee should do a close inspection of estimated costs in each proposal, including contracting processes and overhead rates on pass-through funding; consider

appropriate contingency funding; and find opportunities for equipment sharing or rental in lieu of purchase.

6. A gap analysis is needed in advance of requesting another round of proposals to allocate the remainder of the funds. This should be done in about 2 years.
7. A third party technical and scientific review of the remaining study proposals should be sought to identify fatal flaws and improve the projects. Consider having previous funding recipients review future proposals.
8. The following project-specific suggestions should be considered further:
 - i. Include as-built information/documentation as part of bioinfiltration study QAPPs.
 - ii. Disposal costs for catch basin maintenance would require substantial additional data evaluation and should be considered as a separate, future project.
 - iii. Consider adding funding for the substantial staff time that will be required to collect data for the catch basin and source controls studies.
 - iv. Add an additional year of monitoring and evaluation of the wet pond in the bioretention effectiveness study.
 - v. For the hydrologic performance study, articulate what would happen if the full desired number of facilities could not be found. How would that affect the study?
 - vi. For rain gardens, articulate process and early deliverable of what info the project would continue to gather. Have a steering committee of local jurisdictions help define this.

Implement RSMP Status and Trends monitoring as follows:

1. Maintain a budget buffer of 10-15% for RSMP cost overruns.
2. All of the site numbers in the recommendations below are inclusive of opt-out sites in the referenced list. (The RSMP will sample the recommended number of sites, less sites on the list that will be sampled by the permittees who elected to conduct their own status and trends monitoring.)
 - i. Keep stream benthos and sediment chemistry monitoring at all 100 small streams sites.
 - ii. Reduce periphyton sampling from 100 small streams sites to 30 sites inside the UGA.
 - iii. Reduce the number of small streams Water Quality Index (WQI) sampling sites from 50 inside and 50 outside Urban Growth Areas (UGAs) to no fewer than 30 inside and 30 outside UGAs.
 - iv. Add metals (copper, chromium, zinc, lead, cadmium, silver, and arsenic), polycyclic aromatic hydrocarbons (PAHs), calcium, magnesium, and hardness to the WQI sites.
 - v. Monitor nearshore sediment chemistry and mussels at a total of 40 nearshore sites.
 - vi. Eliminate the nearshore bacteria sampling. Instead, conduct an analysis of local government (including monitoring conducted by the permittees who chose to conduct their own individual monitoring under the permit rather than contribute to the RSMP Pooled Resources Account for status and trends monitoring), the Washington Department of Health, and other data to recommend future monitoring for this indicator.
3. Begin work on contracting for the small streams monitoring as soon as possible. When sites are confirmed, get estimates of travel and labor costs from entities interested in conducting the monitoring.
4. Continue to develop the budget with additional detailed information. Continue to refine the cost estimates and bring decisions to the PRO-Committee.
5. Continue to explore opportunities to coordinate with U.S. Geological Survey's National Water Quality Assessment study and cooperative funding program.