

# Regional Stormwater Monitoring Program Quarterly Report

For July 1 through September 30, 2016

## RSMP accomplishments and key decisions reported for the quarter

- Results and findings of the compilation of bacteria data collected at urban Puget Sound beaches from 2010-2015 were presented at the September Stormwater Work Group (SWG) meeting. The project identified gaps in coverage and is developing recommendations for future RSMP marine bacteria monitoring and analyses.
- Sediment samples were collected at the majority of the RSMP marine nearshore sediment monitoring sites.
- The 2014 Illicit Discharge Data Detection and Elimination (IDDE) incident data submitted in permittees' Annual Reports to Ecology were compiled and analyzed. A draft report were discussed by the SWG Source Identification Subgroup. Recommendations for future data and analysis needs are under consideration.
- The effectiveness studies continue to produce study designs, progress reports, and monitoring results.

## RSMP budget for the previous quarter and anticipated for the coming quarter

Table 1 shows detail for each RSMP component and for the whole program. Encumbrances in excess of projected revenues are for projects spanning multiple years. Ecology's program administration expenses are limited to 5% of the total RSMP revenue and are not separately accounted for by the three RSMP components; indirect charges are applied quarterly. The total balance and anticipated expenditures for the coming quarter include Ecology's administrative expenses. Revenue is expected in the 3<sup>rd</sup> quarter (August) of each calendar year.

Table 1. Summary of revenues, expenditures, encumbrances, and available funds for each RSMP component

Reported and projected income and expenditures	Status and trends (4-year project total: \$3,638,710)		Effectiveness studies (4-year project total: \$6,299,238)		SIDIR (4-year project total: \$677,250)		RSMP total (4-year project total: \$10,615,198)		
	July-Sept 2016	Oct-Dec 2016 <i>(anticipated)</i>	July-Sept 2016	Oct-Dec 2016 <i>(anticipated)</i>	July-Sept 2016	Oct-Dec 2016 <i>(anticipated)</i>	Ecology's July-Sept administration expenses	July-Sept 2016	Oct-Dec 2016 <i>(anticipated)</i>
Balance at start of quarter	\$560,984	\$715,269	\$3,653,018	\$3,984,262	\$414,548	\$439,720	-	\$4,708,258	\$5,190,638
Revenues	\$299,176	\$90	\$489,580	\$0	\$53,198	(\$90)	-	\$841,954	\$0
Expenditures	\$144,891	\$466,251	\$158,336	\$696,845	\$28,025	\$44,344	\$28,320	\$359,574	\$1,227,440
Balance at end of quarter	\$715,269	\$249,108	\$3,984,262	\$3,287,417	\$439,720	\$395,287	-	\$5,190,638	\$3,963,199
Encumbrances	\$841,432	\$402,367	\$3,548,032	\$2,905,559	\$38,943	\$5,437	-	\$4,433,807	\$3,313,363

## RSMP Activities

### Status and Trends Monitoring

King County is leading the multi-agency team of scientists at U.S. Geological Survey (USGS), Ecology, and Puget Sound Partnership to analyze the streams data. Washington State Department of Fish and Wildlife (WDFW) is managing the nearshore marine monitoring project. USGS is leading the nearshore sediment monitoring project. The Beach Environmental Assessment Communication and Health (BEACH) Program Manager with the WA State Departments of Ecology and Health is leading the marine nearshore bacteria data compilation project.

### ***Small streams water quality and watershed health***

The RSMP stream analysis team held multiple conference calls to coordinate data analysis. This quarter, the thresholds for comparison of water quality, sediment quality and benthic macroinvertebrate scores were identified and discussed with the PSEMP Toxics Workgroup. A combination of available state water quality criteria, literature values, and reference site data will be used to provide meaningful comparison of stream results.

### ***Marine mussel contaminant monitoring***

WDFW mussel samples are being analyzed at NOAA and King County laboratories for metals, persistent organic pollutants and a variety of conventional tissue parameters.

### ***Marine nearshore sediment chemistry***

The marine sediment team finished the Quality Assurance Project Plan (QAPP) and conducted the majority of the sediment sampling this quarter.

### ***Nearshore bacteria***

The presentation to the SWG highlighted the breadth of bacterial data collected in the Puget Sound nearshore as well as the data gaps. Study questions for future monitoring and analysis will be featured in a final technical report anticipated next quarter.

## **Effectiveness Studies**

The SWG Effectiveness Studies Subgroup met in September to review and comment on the 21 Letters of Interest (LOIs) that were received for a second round of RSMP funded studies. All 21 studies were given advice on how to shape a full proposal for consideration for funding by the RSMP. Full proposals are due to the RSMP Coordinator in December.

All of the first round RSMP Effectiveness Studies are active on tasks such as site preparation, monitoring, QAPP development, or literature reviews.

- All sites were readied for fall sampling in the Bellingham Low Impact Development (LID) hydrologic performance study.
  - Orange County, California municipal stormwater permitting staff is interested in using the QAPP for the Bellingham Bioretention Hydrological Performance Study to develop a protocol for measuring the effectiveness of LID facilities in their municipalities.
- Puyallup submitted a draft literature review of monitoring metrics to use for developing a new bioretention monitoring protocol.
- USFWS in partnership with WSU will use the Washington Department of Transportation (WSDOT) Ship Canal site for the upcoming study on bioretention mesocosms with amendments of fungi. Equipment was purchased.

Agreements for the final 2 of the original 10 RSMP Effectiveness Studies were signed this quarter:

- King County's study to assess polychlorinated biphenyl (PCB) treatment/sequestration in bioretention soils. A QAPP for this study is expected to be approved next quarter. King County will coordinate the field effort with the another RSMP study, the U.S. Fish and Wildlife Service (USFWS) assessment of plant and fungi impacts of performance of bioretention soil mix, but the agreement is separate for the PCB sampling, analyses, and reporting.
- King County assessment of catch basin inspection effectiveness. A QAPP for this study is expected to be approved next quarter.

## Source Identification

Lakewood's consultant compiled and presented to the RSMP Source ID Subgroup in September on the 2014 IDDE data submitted by permittees for their Annual Reports to Ecology. A draft report was reviewed by the Source Identification Subgroup. The final report and database, and recommendations for future data fields and analyses are expected next quarter.

## Communication

The final scope of work for an RSMP communication strategy to share progress, results and findings from the RSMP studies with permittees, stormwater managers, and other stakeholders was approved by the Pooled Resources Oversight Committee. That project will begin next quarter. It is being funded proportionately from the three RSMP accounts for status and trends, effectiveness studies, and source identification.

## RSMP contracts and agreements

No new agreements or modifications were signed this quarter.

### *In the coming quarter, Ecology expects to complete/modify agreements with:*

- The Association of Washington Cities for the RSMP communication strategy, products and findings conference in 2017.
- Bellingham's bioretention project, King County's catch basin study, and Lakewood's business source control study for possible schedule changes due to recent subcontractor staffing changes.

## RSMP deliverables received in the previous quarter

All contract scopes of work and deliverables that have been reviewed and approved by the RSMP Coordinator are posted to the RSMP website: <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/rsmp/rsmp.html>

## Status and Trends

- Small streams interim deliverables for GIS landscape metrics, draft statistical plots, and prepare data for reporting. King County prepared a document listing the thresholds for comparing the RSMP data and presented it at the PSEMP Toxics Workgroup for other agencies' inputs and references.
- USGS finalized the marine nearshore sediment sampling QAPP. King County provided the list of equipment purchases. The RSMP Coordinator joined the team out on one sampling trip.
- WDFW provided laboratory invoices for mussel tissue analysis.

## Effectiveness Studies

- Semiannual and progress reports for King County's study monitoring BMP retrofits along Highway 99 at Echo Lake.
- Semiannual and progress reports for King County's study monitoring of the regional detention facility BMP retrofits in Federal Way at Hylebos Creek.
- Documentation of Bellingham's equipment procurement process for the LID hydrologic performance study.
- Lakewood's business source control study held a Technical Advisory Committee meeting and developed the permittee data request. They also submitted two monthly progress reports and draft survey responses.
- Puyallup's raingarden and bioretention protocol development project's first deliverable was a draft literature to identify needed metrics for the protocol.

## Source Identification

- Lakewood completed a draft report on the compiled 2015 Annual report IDDE incident data, and met with the SWG Source ID Subgroup.

## RSMP deliverables expected in the coming quarter

### Status and Trends

- RSMP small streams :
  - USGS: final GIS landscape metrics, compiled NAWQA data for comparison to RSMP, and a review of the site and parameter selection process used in the Lower Columbia HSTM.
  - King County: progress report and cumulative frequency curves for water parameters.
  - Ecology's EAP: technical memo summarizing work on probabilistic spatial weighting, habitat, benthic and periphyton quality assurance review, and metric calculation.
- Marine nearshore caged mussels chemistry results a quality assurance review.
- EIM spreadsheet of field site locations and field collected data for the marine nearshore sediment monitoring.
- Marine bacteria indicator data analysis final technical report.

### Effectiveness Studies

- Redmond paired basin retrofit study field site photos.
- Bellingham LID hydrologic study field site photos and preliminary field measurements.
- Lakewood business source control study Technical Advisory Committee meeting notes, survey response data, and progress reports.
- USFWS plant and fungi performance study in bioretention soil mix final QAPP.
- King County PCB treatment/sequestration in bioretention soil mix study draft and final QAPPs.
- Puyallup's final literature review and draft protocol for raingarden/bioretention sampling.
- King County catch basin cleaning effectiveness study Technical Advisory Committee meeting notes and survey.

### Source Identification

- Standardized IDDE incident database, final report, and recommendations for future data fields and analyses.

## RSMP issues that need to be resolved or for which stakeholder input is desired

No issues were identified this quarter.