



Stormwater Action Monitoring Quarterly Report January 1 through March 31, 2018

SAM accomplishments and key decisions reported for the quarter

- SAM contracted a new effectiveness study and a new source identification project this quarter. Two more are anticipated next quarter.
- Based on the findings, the SAM Streams scientists recommend making a number of strategic adjustments to the design and parameter lists to improve trend detection power and make the studies more stormwater-relevant. These adjustments should be made in coordination with the other Status and Trends lead scientists.

SAM budget for the previous quarter and anticipated in the coming quarter

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

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

Reported and projected income and expenditures	Status and trends (*5-year total: \$4,530,880)		Effectiveness studies (*5-year project total: \$7,874,040)		SIDIR (*5-year project total: \$846,570)		SAM total (*5-year project total: \$13,251,670)		
	Jan-Mar 2018	Apr-June 2018 <i>(anticipated)</i>	Jan-Mar 2018	Apr-June 2018 <i>(anticipated)</i>	Jan-Mar 2018	Apr-June 2018 <i>(anticipated)</i>	Ecology's Jul-Sept expenses	Jan-Mar 2018	Apr-June 2018 <i>(anticipated)</i>
Balance at start of quarter	\$1,038,190	\$872,141	\$4,087,694	\$3,420,919	\$553,840	\$553,440	-	\$5,478,488	\$4,587,080
Revenues	\$0	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0
Expenditures	\$166,049	\$168,985	\$666,775	\$325,004	\$400	\$659	\$58,184	\$891,408	\$559,648
Balance at end of quarter	\$872,141	\$703,156	\$3,420,919	\$3,095,915	\$553,440	\$552,781	-	\$4,587,080	\$4,027,432
Encumbrances	\$356,781	\$222,517	\$2,396,834	\$2,571,738	\$174,000	\$183,205	-	\$2,927,615	\$2,977,460

*The permit extension year revenue is anticipated in August 2018, therefore these column headings reflect 5-year account totals (previous quarterly reports indicated 4-year totals). The Pooled Resources Oversight Committee approved encumbrance of these funds.

SAM contracting activities

Contract scopes of work reviewed and approved by the SAM Coordinator are posted online. Two new SAM contracts with King County were signed: the bioretention soil media blends evaluation for \$388,450, and Illicit Connection & Illicit Discharge (ICID) field screening and source tracing guidance manual update for \$174,000.

SAM issues being resolved or for which stakeholder input is desired

SAM websites at Ecology are still being updated, see ecology.wa.gov/SAM. Please continue to report any broken links or missing documentation to the help email address on each website.

SAM summary by topic

Communications project

Association of Washington Cities (AWC) completed three more SAM fact sheets for the round 1 mussel findings, illicit discharge detection and elimination data evaluation, and paired watershed study. Three more factsheets are expected next quarter (Highway 99 retrofits at Echo Lake, business inspection source control survey, and Puget lowland streams findings).

The SAM Coordinator presented on the SAM program at Northwest Environmental Business Council (NEBC) “Managing Stormwater” conference in Tacoma. Results for two other SAM projects: bioretention hydrologic performance, and preliminary results on the catch basin cleaning survey were also given by study partners. Several SAM project presentations are planned for next quarter at the international Salish Sea Conference.

The PRO-C approved an extension to the Association of Washington Cities (AWC) grant to add \$105,214 to update the communication strategy, support additional workshops, and produce more fact sheets and videos. This effort is funded proportionately from all three SAM accounts.

Receiving water projects

SAM is monitoring and assessing the impacts of stormwater runoff in urban and urbanizing areas in the Puget Sound nearshore and small stream environments. This quarter the Puget lowland stream team shared findings and recommendations with the PSEMP Freshwater Workgroup (FWG) and SWG. The final report is anticipated next quarter. The USGS final report on nearshore sediments is expected next quarter. The King County contract for nearshore sediments was completed, and \$3,643 in unspent funds returned to the SAM Status and Trends account. The SAM Scientist is working on additional spatial analyses for the urban Puget Sound nearshore sediment data. Round 2 mussel cages were retrieved in February. One of the 41 SAM cages was lost. WA Department of Fish and Wildlife (WDFW) staff are processing mussels for shipment to laboratories next quarter.

The scientists that lead the SAM Status and Trends studies are meeting to share individual recommendations from each study with each other next quarter. They will prepare a unified study design to SWG for future SAM trends monitoring, hopefully by the end of this calendar year.

Effectiveness studies

SAM is monitoring the effectiveness of BMPs and management actions to reduce stormwater runoff destructive flow and transport of pollutants to receiving waters. A new contract for \$388,450 with King County was added this quarter to continue work on developing a bioretention blend that does not export phosphorus and still meets basic and enhanced treatment goals.

There are ten active effectiveness studies. The Lakewood contract was closed this quarter and \$9,253.44 unspent funds were returned to the SAM effectiveness studies account. The Hwy 99 Echo Lake retrofit study completed work under that King County contract. The PRO-C approved a new effectiveness study scopes of work this quarter with U.S. Fish and Wildlife Service (USFWS) to test the longevity of bioretention toxicity prevention by sending approximately 20 water years of flow thru the test columns in 2 years. Water and biological protection will be evaluated.

Source Identification Projects

A new contract with King County for \$174,000 was signed this quarter to gather updates to the Illicit Connection & Illicit Discharge (ICID) field screening and source tracing guidance manual and provide trainings.

The PRO-C approved two new scopes of work this quarter. King County will lead a group to explore the feasibility of a regional spill hotline. Seattle Public Utilities (SPU) will evaluate a risk-based business source control approach. SPU later asked for project to be delayed for one year to allow SPU to replace staff.

SAM contract deliverable activity

Jan – Mar 2018

Project activities, contracting actions and meetings are summarized under each SAM category in this section.

Communications	Deliverables approved Q1 2018	Anticipated deliverables Q2 2018
AWC	3 SAM factsheets, 4 th newsletter, survey to assess knowledge of SAM after first year of communication strategy	3 more SAM factsheets, GIS story map outline, 5 th SAM newsletter, updated communication strategy, “communications kit”
Receiving water agreements	Deliverables approved Q1 2018	Anticipated deliverables Q2 2018
Streams – King Co	Presentation of recommendations to FWG and SWG, and nested basins memoranda (USGS)	Publication of final report (King Co)
Streams – USGS		
Streams – Ecology EAP		
Nearshore sediment - USGS		Publication of final report on the status of nearshore sediment chemistry (USGS). Memo on microplastics in sediment samples (USGS). SAM staff will write a follow-up memo incorporating Option 2 results in the probabilistic framework.
Nearshore sediment - WDNR		
Nearshore sediment – King Co		
Marine mussels - WDFW	Mussel cages retrieval in February	Complete field data sheets and sample delivery to laboratory
Source ID Contract		Anticipated deliverables Q2 2018
ICID Manual Update – King Co	NA	Two ICID feedback workshops in western WA (dates and locations TBD)

SAM contract deliverable activity

Jan – Mar 2018

Effectiveness studies contracts	Deliverables approved Q1 2018	Anticipated deliverables Q2 2018
Catch basin (CB) inspection and maintenance	Presentation at NEBC. October TAC meeting notes, CB data analysis plan	CB cleaning cost analysis, final TAC meeting notes, and draft report.
Paired urban watershed restoration	Progress reports for WY2017 October - December.	All remaining WY 2017 data deliverables and draft WY2017 report.
Hylebos Creek in Federal Way, regional bioretention retrofit	Semi-annual progress report	None expected.
LID Retrofit of Hwy 99 at Echo Lake	Study final report, posting to KC website, and final progress report.	Completed.
LID bioretention hydrology performance – older facilities	Last 2017 quarterly progress report.	Memo and WWHM models on expected vs modeled hydrologic performance, and quarterly progress report.
LID bioretention hydrology performance – current design (2012+) facilities	First progress report.	Site selection checklist and progress report.
Effectiveness of bioretention soil to capture and treat PCBs	Monitoring progress for July-Dec 2017.	Validation memo on first year of monitoring data and draft database.
Field test of plants and fungi on bioretention performance	Revised soil chemistry results for bioretention set up.	All baseline analyses (micro, chemistry, and toxicity) using conditioning water. Year 1 report on hydraulic, water quality, and toxicity monitoring.
Rain Garden and bioretention protocol and survey	None received.	Version 2 training materials, tech memo, results V2 survey, plan for data, TAC meeting, social science survey, and V3 final protocol.
Bioretention Blends Study - King County	NA	TAC meeting, semi-annual progress report, and draft QAPP