



Stormwater Action Monitoring Quarterly Report April 1 through June 30, 2018

SAM accomplishments and key decisions reported for the quarter

- SAM contracted for a new source identification project and extended the communications agreement this quarter. Three new effectiveness study contracts are anticipated to be signed next quarter.
- King County published the final report providing a 2015 Puget Lowland stream status assessment and recommendations on adjustments to the design and parameter lists to improve trend detection power and make the studies more stormwater-relevant.
- USGS published the final report providing a 2016 marine nearshore status assessment and recommendations on adjustments to the design to improve stressor identification.
- Ecology published the third SAM annual report covering implementation of the regional monitoring program during 2017.

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)		
	Apr-June 2018	Jul-Sept 2018 <i>(anticipated)</i>	Apr-June 2018	Jul-Sept 2018 <i>(anticipated)</i>	Apr-June 2018	Jul-Sept 2018 <i>(anticipated)</i>	Ecology's Apr-June expenses	Apr-June 2018	Jul-Sept 2018 <i>(anticipated)</i>
Balance at start of quarter	\$872,141	\$1,403,119	\$3,420,919	\$4,502,681	\$553,440	\$671,835	-	\$4,587,080	\$6,259,963
Revenues	\$619,084	\$273,092	\$1,155,569	\$419,239	\$118,886	\$50,428	-	\$1,893,539	\$742,759
Expenditures	\$88,106	\$6,512	\$73,808	\$300,754	\$491	\$4,400	\$58,252	\$220,656	\$376,666
Balance at end of quarter	\$1,403,119	\$1669,699	\$4,502,681	\$4,621,166	\$671,835	\$717,863	-	\$6,259,963	\$6,626,056
Encumbrances	\$216,278	\$209,766	\$2,224,842	\$2,511,659	\$356,715	\$352,315	-	\$2,797,835	\$3,073,740

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

SAM contracting activities

Contract scopes of work reviewed and approved by the PRO-C and Ecology are posted online. This quarter the regional spill hotline feasibility study got started for \$175,840.50 with King County, and the agreement to provide SAM communications support was extended to June 2019 for \$105,214 with the Association of Washington Cities (AWC).

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 listed on each website.

SAM summary by topic

Communications project

Association of Washington Cities (AWC) completed two more SAM fact sheets for Highway 99 retrofits at Echo Lake and the Business Inspection Source Control effectiveness studies. Two more fact sheets are expected next quarter for the two Status and Trends study reports: Puget lowland streams and Puget Sound nearshore sediments.

Several SAM projects were presented at the international Salish Sea Conference in Seattle: mussels (Mariko Langness), Puget lowland streams (Rich Sheibley), nearshore sediment (Robert Black), comparison of SAM mussels to sediments (Kathy Conn), several bioretention media projects (Alex Taylor, Jenifer McIntyre, Curtis Hinman), and a retrofit study (Carly Greyell).

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 final report was published by King County. The King County and USGS contracts for data analysis are completed, and \$87,118 in unspent funds was returned to the SAM status and Trends account. USGS published the final report on urban nearshore sediments.

The SAM Scientist is working on additional spatial analyses for the urban Puget Sound nearshore sediment data. The scientists that lead the SAM Status and Trends studies continue to discuss how to best shape a unified study design for future SAM trends monitoring. Plans are being made for a workshop early in 2019.

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. There are ten active effectiveness studies. The Hwy 99 Echo Lake retrofit study contract was closed this quarter and \$161,313 in unspent funds was returned to the SAM effectiveness studies account.

The PRO-C approved new effectiveness study scopes of work this quarter with: 1) the Washington Department of Natural Resources (WDNR) to study individual tree hydrology, 2) US Fish and Wildlife Service to study the longevity of toxicity prevention by the bioretention media, and 3) King County to study treatment of stormwater using oyster shell retrofits in catch basins.

Source Identification Projects

The project to explore the feasibility of a regional spill hotline was contracted with King County. Work on this project will begin in late 2018.

SAM contract deliverable activity

Apr – Jun 2018

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

Communications	Deliverables approved Q2 2018	Anticipated deliverables Q3 2018
AWC	2 SAM factsheets, updated communication strategy	2 SAM factsheets, GIS story map outline, “communications kit”, video, booklet of SAM factsheets, 5 th SAM newsletter
Receiving water agreements	Deliverables approved Q2 2018	Anticipated deliverables Q3 2018
Streams – King Co	Publication of final report (King Co) and closed agreements	
Streams – USGS		
Streams – Ecology EAP		
WHM Database – Ecology EAP	None	WHM Data Editor Work Plan
Nearshore sediment – USGS	Publication of final report (USGS), which includes the micro-plastics pilot project summary	SAM staff will write a follow-up memo incorporating Option 2 results in the probabilistic framework
Nearshore sediment – WDNR	Closed agreement	
Nearshore sediment – King Co	Closed agreement	
Marine mussels – WDFW	Complete data sheets with biological metrics	Copy of invoices for chemical analysis, QA/QC checked chemistry data file
Source ID Contract	Deliverables approved Q2 2018	Anticipated deliverables Q3 2018
ICID Manual Update – King Co	None	Two ICID feedback workshops to be planned in western WA (dates and locations TBD)
Feasibility of regional spill hotline – King Co	NA	None

SAM contract deliverable activity

Apr – Jun 2018

Effectiveness studies contracts	Deliverables approved Q2 2018	Anticipated deliverables Q3 2018
Catch basin (CB) inspection and maintenance – King Co	None	CB cleaning cost analysis, final TAC meeting notes, and draft report
Paired watershed study – Redmond	All remaining WY 2017 data deliverables and draft WY2017 report	None expected
Hylebos Creek in Federal Way, regional bioretention retrofit – King Co	None expected	Semi-annual report and draft report
LID bioretention hydrology performance (pre2012 facilities) – Bellingham	Memo and WWHM models on expected vs modeled hydrologic performance, and quarterly progress report. Presentation and materials for SWG	Draft and final report
LID bioretention hydrology performance (current 2012+ facilities) – Olympia	None	Site selection checklist and progress report, and quarterly progress report
Effectiveness of bioretention soil to capture and treat PCBs – King Co	None	Monitoring progress for Jan-Jun 2018. Validation memo on first year of monitoring data and draft database
Field test of plants and fungi on bioretention performance – USFWS	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 – Puyallup	None received, TAC meeting	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	TAC meeting	Draft QAPP
Longevity of bioretention soil media – USFWS	NA	Draft QAPP
Hydrologic performance of individual trees – WDNR	NA	Draft QAPP
Oyster shell treatment performance – King Co	NA	Draft QAPP