



Stormwater Action Monitoring Quarterly Report April 1 through June 30, 2019 Revised

Purpose of Revision

The SAM budget (Table 1) is revised to reflect the close of the State Fiscal Year 2019 (FY19). Ecology's quarterly reports to the Pooled Resources Oversight Committee (PRO-C) include SAM management staff time expenses accrued quarterly. Indirect charges are applied to each account quarterly, but SAM staff expenses are deducted from each account at the end of each state fiscal year. This revised Quarterly Report applies the accrued SAM staff expenses proportionally to the individual accounts per PRO-C recommendation.

This quarterly report shows the status of the SAM accounts at the end of the 2013-2019 permit term and the beginning of the next permit term. This report also applies the SAM staff administration costs from the entire 2013-2019 term as part of the expenditures to reconcile reporting to PRO-C on the account balances. All end of quarter balances and current encumbrances roll forward into the new fiscal year and permit term.

SAM accomplishments and key decisions reported for the quarter

- Closed the Watershed Health Monitoring (WHM) database agreement with Ecology's Environmental Assessment Program. The remaining \$2,434 unspent funds were unencumbered from the Status and Trends account.
- Encumbered two new contracts; Mulch Choices for bioretention effectiveness study with WSU Puyallup, and Watershed delineation for SAM status and trends (streams and nearshore) sites with USGS.
- Amended two contracts: King County fungal study for bioretention, and WDFW for a third round of mussel monitoring.
- The SAM Coordinator and several SAM study leads presented on projects at MuniCon in April.
- Published the 2018 Annual Report by Ecology on SAM administration.
- Built a new SAM Communication webpage to find all SAM communication products including the factsheets, videos, pictures, About SAM presentation, and an interactive story map on bioretention.
- Received the prioritized list of topics from SWG for SAM studies in the 2019-2024 permit term.

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

Table 1 shows the SAM budget for each account and totals for the whole program. In 2019, revenue is expected in December instead of August for the first year of the new permit (2019), and Ecology will not know the 4-year account totals until permittees send their letters of commitment in December 2019. The PRO-C approves encumbrance of these funds. Encumbrances in excess of projected revenues are due to projects that span multiple years. Projected expenditures for the next quarter are based on anticipated approved deliverables and invoices and an estimate of Ecology's expenses. Indirect charges are applied quarterly to the individual accounts while SAM management staff costs are applied proportionally at the end of each fiscal year.

Table 1. Quarterly summary of revenues, expenditures, encumbrances, and available funds for each SAM account.

Reported and projected income and expenditures	Status and trends (*5-year total: \$4,530,880)		Effectiveness studies (*5-year total: \$7,874,040)		SIDIR (*5-year total: \$846,570)		Admin Costs (Qtr)	SAM total (*5-year total: \$13,251,490)	
	Apr-Jun 2019	Jul-Sept 2019 <i>(anticipated)</i>	Apr-Jun 2019	Jul-Sept 2019 <i>(anticipated)</i>	Apr-Jun 2019	Jul-Sept 2019 <i>(anticipated)</i>	Ecology Apr-Jun expenses	Apr-Jun 2019	Jul-Sept 2019 <i>(anticipated)</i>
Balance at start of quarter	\$1,610,603	\$1,142,105	\$3,894,979	\$2,824,732	\$710,380	\$654,551	-	\$6,215,963	\$4,621,388
Revenues	\$0	\$0	\$0	\$0	\$0	\$0	-	\$0	\$0
Expenditures	\$468,498	\$20,950	\$1,070,247	\$552,608	\$55,829	\$28,380	\$61,385	\$1,594,574	\$666,938
Balance at end of quarter	\$1,142,105	\$1,121,155	\$2,824,732	\$2,272,124	\$654,551	\$626,171	-	\$4,621,388	\$3,954,451
Encumbrances	\$354,129	\$458,040	\$2,452,310	\$2,127,384	\$326,997	\$300,158	-	\$3,133,437	\$2,885,582

*These column headings reflect 5-year account totals for the 2013-2019 permit cycle. 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. Two amendments were approved by PRO-C and the contracts signed this quarter. The USFWS study on fungal amendments in bioretention due date was extended one year to allow for sampling this spring and complete the final report, no addition costs incurred. Also, the mussel monitoring contract with WDFW was amended to add the third round monitoring for winter 2019-2020 for \$279,858.

PRO-C approved two new scopes of work this quarter. One effectiveness study on mulch choices for bioretention for \$191,497 and contracting is complete. The second was for the SAM streams study with USGS for \$32,000 to delineate the watersheds around the random sites for both the Puget lowland stream sites and the Puget nearshore sites. Two effectiveness studies were completed and contracts closed this quarter: catch basin cleaning effectiveness study by King County and the Rain garden and bioretention assessment protocol development by the City of Puyallup. The catch basin project had \$1,787.18 in unspent funds that returned to the SAM Effectiveness studies account. The Ecology WHM database editor update was completed this quarter. SAM contributed a total of \$40,096 from the Status and Trends account, as a user-based fair share of the update costs.

Next quarter, the SAM Coordinator will begin developing the request for study proposals based on the SWG's recommended list of priority topics for SAM studies and projects.

SAM summary by topic

Communications project

Association of Washington Cities (AWC) completed three more Fact Sheets, an adaptable PowerPoint presentation explaining SAM, and a comprehensive interactive data story summarizing SAM bioretention study findings. Next quarter the communications assistance contract with AWC will be extended one year to provide continued support on SAM products for \$22,003. Also next quarter, SAM will publish a "booklet" that includes all the fact sheets from completed studies during this 2014-2019 permit term in one document. SAM Newsletter #8 will cover a variety of communication products on SAM including those that were completed this quarter and are now available on the new SAM communications webpage. The SAM Communication Advisory Committee will meet to discuss a fall 2019 survey of stormwater managers about their communication needs and the types of products that will be most helpful to them in communicating with the public and elected officials.

Effectiveness studies

SAM is monitoring the effectiveness of BMPs and management actions to reduce stormwater runoff destructive flows and transportation of pollutants to receiving waters. There are nine active effectiveness studies. Four studies are wrapping up their sampling phases this spring and summer: two bioretention studies on fungal amendments and capture of PCBs, the bioretention blends alternative for no phosphorus, and the bioretention hydrology evaluation on cells designed after the 2012 stormwater manual update. Four other studies are preparing for their sampling phase in the upcoming wet season: bioretention longevity, mulch options for bioretention, oyster shell retrofits in catch basins, and the individual tree hydrology-monitoring project. The Redmond paired watershed study is ongoing, wrapping up the third year's report.

Source Identification Projects

SAM projects on source control and source identification will improve detection and adaption of our management solutions for pollutant sources in stormwater runoff. There are two active source identification projects. King County's project to host a stakeholder process for the Spill Hotline Feasibility Study formed a Technical Advisory Committee from members of the SWG Source Identification subgroup, spill response staff from state and local levels and other key stakeholders. Regional knowledge and recommendations were collected via a survey sent April 8, 2019 on the SAM listserv and 10 interviews conducted of municipal and state spill report/response staff in consideration of a new spill hotline. Next quarter will involve systems research on existing hotlines. King County's Illicit Connection and Illicit detection (IC/ID) Manual will present to the SWG Source Identification subgroup next quarter on proposed updates to the ICID manual based on feedback from the two workshops and online survey results.

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. A second round of mussel sampling is ongoing, conducting data and statistical analysis, and the third round volunteer coordination will begin next quarter for winter 2019-2020 sampling. Ecology's Watershed Health Monitoring (WHM) Editor Rebuild project was completed this quarter. PRO-C approved contributing one-time to the database improvement effort about 4 years ago, \$2,434 in unspent funds were returned to the Status and Trends account.

USGS is delineating the watershed to the approximately 25,000 GRTS generated random sites in the Puget Nearshore and Puget lowland streams study frames. The deliverables are anticipated next quarter. SAM staff are working to implement the SAM streams monitoring of the next 35 sites in the new design. This involves selecting and evaluating sampling sites and getting water level data roughly one year in advance of the WHM sampling summer. An amendment to the USGS scopes of work to conduct site evaluation and deploy water level loggers at the 35 stream sites will undergo PRO-C review next quarter.

SAM contract deliverable activity

Apr – Jun 2019

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

Communications	Deliverables approved Q2 2019	Anticipated deliverables Q3 2019
AWC	3 SAM factsheets (Regional facility effectiveness, Rain garden Protocol, & Catch basin cleaning), Bioretention story map, and presentation	8 th SAM newsletter and final SAM booklet with 2019 permit term accomplishments; draft survey of stormwater managers' communication needs

Receiving water agreements	Deliverables approved Q2 2019	Anticipated deliverables Q3 2019
Marine mussels – WDFW	Copy of invoices for chemical analysis, QA/QC checked chemistry data file, and progress report-presentation	Data submittal to EIM
Source ID Contracts	Deliverables approved Q2 2019	Anticipated deliverables Q3 2019
ICID Manual Update – King Co	None received	Semi-annual report, tech memo(s) summarizing workshops and survey, 2014 IDDE query, and subgroup meeting
Feasibility of regional spill hotline – King Co	Biannual progress report and draft questionnaire	Completed interviews and surveys
Effectiveness study contracts	Deliverables approved Q2 2019	Anticipated deliverables Q3 2019
Paired watershed study – Redmond	All remaining WY2018 data deliverables and draft report	Final WY2018 report
LID bioretention hydrology performance (current >2012 facilities) – Olympia	Site condition geotechnical memo	Site condition memo for vegetation and interim project meeting
Effectiveness of bioretention soil to capture and treat PCBs – King County	None expected	Semi-annual progress report and validation memo on all monitoring data
Field test of plants and fungi on bioretention performance – USFWS	Baseline toxicity of column conditioning	Year 1 report on hydraulic, water quality, and toxicity monitoring
Bioretention Blends Study – King County	Semi-annual progress report	Project Advisor Group meeting notes, 3 tech memos describing tests of the media blends (Task 4), acute toxicity tests, and chemistry matrix for developing specifications with QC for max 6 media components
Longevity of bioretention toxicity prevention – USFWS	Final QAPP	Report on chemistry and toxicology of bioretention soil media components
Hydrologic benefits of individual trees - WDNR	Draft QAPP	Final QAPP, Progress report
Oyster shell catch basin retrofits – King County	Final QAPP, Post QAPP to KC project website	Equipment purchases, Preliminary flow data, semi-annual project report
Mulch choices for bioretention - WSU Puyallup	NA	Draft QAPP and installation photos