



Stormwater Action Monitoring Quarterly Report July 1 through September 30, 2023

SAM accomplishments and key decisions reported for the quarter

- The two SAM effectiveness studies were leveraged (work and funds added) by Ecology to gain knowledge on the chemical 6PPD-q. Funds come from the legislative proviso for Ecology’s WQ program to gather BMP treatment information on toxic chemicals in stormwater.
- Two effectiveness studies and one source control project wrapped up this quarter, see SAM fact sheets:
 - [#29 Stormwater Particle Size Distribution & Implications for BMP Effectiveness](#)
 - [#30 Evaluation of Hydraulic Control Approaches for Bioretention Systems](#)
 - [#31 Business Source Control & Inspection Program Guidance](#)

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

Table 1 shows the SAM budget for each account. Revenue is expected in August each year from 2020 thru 2024. The Pooled Resources Oversight Committee (PRO-C) approves encumbrance of SAM funds. Encumbrances in excess of projected revenues are due to projects that span multiple years. 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	Puget Sound status and trends Jul-Sept 2023	Lower Columbia status and trends Jul-Sept 2023	Effectiveness studies Jul-Sept 2023	Source ID projects Jul-Sept 2023	Admin Costs (Qtr) Ecology’s Jul-Sept expenses
Balance at start of quarter	2,728,034	174,336	6,068,120	29,327	
Revenues	0	0	0	0	
Expenditures	168,385	0	0	0	57,801
Balance at end of quarter	2,559,649	174,336	6,068,120	29,327	
Encumbrances	829,428*	98,146*	2,378,223*	13,891	

*These balances for encumbrances do not include obligations for ‘inside Ecology’ services done by Manchester Environmental Lab and Environmental Assessment Program. A method to better track the encumbrance balance is underway for 2024.

SAM contracting activities

All contract scopes of work are reviewed and approved by the PRO-C and Ecology are posted online. The following contracting activities occurred this quarter:

- Signed new or amended July-Sept
 - WSU’s Longevity of toxicity protection by bioretention soil mix study amendment #3 was approved by Ecology to add proviso funds to complete the work added by amendment #2.

- Redmond’s contract amendment #7 was approved by PRO-C to complete the street sweeping study evaluation started with amendment #6.
- King County’s Mobile Business contract amendment #1 was approved to add \$34,778 for new work to refine the spreadsheet tool for business listings.

SAM summary by topic

Communications

Routine deliverable and contracting updates to SAM websites. Other communications included:

1. [SAM Newsletter #15](#) – September 2023
2. Ecology featured SAM in a blog post on October 19th: [Stormwater research collaboration leads to cleaner water for all - Washington State Department of Ecology](#)

Receiving water projects

SAM monitors the impacts of stormwater runoff in urban and urbanizing areas in the Western Washington small streams and nearshore environments. There are two active stormwater receiving water monitoring in Puget Sound region and one stream monitoring in Lower Columbia region. Key updates:

- Puget Sound and Lower Columbia stream monitoring, led by USGS and Clark County respectively, completed sampling for water year 2023. Monitoring for water year 2024 started in October.
- Lower Columbia published their [annual report for Water Year 2022](#).
- Puget Sound mussel monitoring selected sites for winter 2023-2024. Mussel cages will be deployed in November.

Effectiveness studies

SAM studies determine the effectiveness of operational or structural BMPs, maintenance and management actions, and outreach efforts to reduce stormwater runoff and transport of pollutants to receiving waters. There are 8 active effectiveness studies at the end of this quarter. Milestones for these projects include:

- Two effectiveness studies finished up their deliverables and presented to SWG:
 - the WSU-led orifice control of bioretention evaluation, and
 - DNR completed a [literature review](#) of the size of particles in stormwater, bound contaminants, and the effectiveness of a range of treatment approaches for those particle sizes. Targeting clay and silt-sized particles may remove the highest amounts of metals, nutrients, and bacteria. Read more in [SAM Fact Sheet #29](#).

Source Identification Projects

SAM projects on source control and source identification will improve illicit discharge detection and adapt our management solutions for pollutant sources in stormwater runoff. Milestones for these projects include:

- The WSU-led project to build training and guidance for permittees business source control programs was completed this quarter.

SAM contract deliverable activity

Table 2: SAM’s contracts, end dates, and deliverable activity.

Receiving water agreements	Deliverables approved Q3 2023	Anticipated deliverables Q4 2023
Marine mussels – WDFW	Confirmed site list for 2023/24	Permits, volunteer groups, and equipment orders, Deploy mussels for

		2023/24, Data Upload for 2020/21, Draft and Final Reports for 2020/21
Puget small streams – USGS, Manchester lab, Rhithron lab	Quarterly Report	Quarterly Report, Data upload for 2022, Final 2020, 2021, 2022 reports
Lower Columbia urban streams -Clark County	Complete sampling for 2023, Data upload for 2022, Draft and Final 2022 Annual report, Semi-annual progress report, Equipment installation at 4 status sites	Semi-annual progress report
Source ID Contracts	Deliverables approved Q3 2023	Anticipated deliverables Q4 2023
Improving business source control programs – WSU (Sept 2023)	Quarterly report, final training video and complete online module, draft SAM fact sheet	Project closed
Mobile business source control – King Co (Dec 2023)	Quarterly report, TAC meeting, Pilot Program in King Co plan and outreach material	Quarterly report, TAC meeting
Effectiveness study contracts	Deliverables approved Q3 2023	Anticipated deliverables Q4 2023
Paired watershed study – City of Redmond (Sept 2025)	Contract extension. Final WY 2021 Report (Task D2), WY 2022 data complete and WY 2023 data started.	WY 2022 draft report (Task E1)
Longevity of bioretention toxicity prevention - WSU Puyallup (Nov 2024)	Contract extended	None expected
Hydrologic benefits of individual trees - WDNR (Aug 2024)	None expected	Bi-annual report
Orifice control for bioretention - WSU Puyallup (Dec 2022)	Draft and final project report, database, and draft SAM factsheet	Project closed
Improving ditches and maintenance - WSU Puyallup (Sep 2024)	None expected	Progress report, draft plant findings report
BMP maintenance condition - City of Bellevue (Apr 2024)	None received	Progress reports, draft and final lit memo on O&M, Ecology interview and responses
Hydraulic conditions of old bioretention facilities - City of Olympia (Jul 2023)	None received	Progress reports and draft technical memos for literature and interview findings
Lit review of particles in stormwater & treatment -WDNR (Nov 2023)	SWG Presentation, SAM Fact Sheet	Project closed