

Attachment A

United States Geological Survey -Detailed Scope of Work

Project Summary: Measuring continuous stream stage in Puget Lowland Small Streams for the RSMP

The Stormwater Work Group (SWG) members recommended a specific NPDES municipal permittee-funded plan for monitoring the effects of stormwater under the permits in the Puget Sound region. The resulting program, a subset of the overall strategy, is called the Regional Stormwater Monitoring Program (RSMP). The RSMP has three main components; one of which is a status and trends monitoring in Puget ecoregion lowland streams and Puget Sound marine nearshore. For the Puget lowland streams the focus for monitoring is water quality and "watershed health" (physical habitat, sediment chemistry, and biological communities) of wadeable streams.

The RSMP Coordinator at Ecology has formed a small streams monitoring team made up of federal, state, and local government entities to conduct the small streams monitoring. These team members include; King County, Skagit County, San Juan Conservation District, and the United States Geological Survey (USGS) who will conduct the RSMP streams sampling. USGS is one of these entities (referred to as RSMP Contractors) and will conduct monitoring at RSMP small streams sites from January to December of 2015 in Whatcom, Snohomish, Pierce, Thurston, Mason, Kitsap, Jefferson and Clallam Counties.

In addition to this work already underway, the USGS will be measuring stream stage continuously at a subset of the water quality sites. This additional work is the subject of this brief proposal and summarized below.

Project Activities, Tasks, and Deliverables

Task 1: Purchase and installation of level loggers for measuring continuous stage at 15 RSMP sites (June through December, 2015)

Task 2: Compilation and processing continuous records of stage and calculation of flow metrics to analyze flow characteristics of the 15 small stream sites at the end of the measurement period (January-February, 2015)

Deliverable 1: Plots of finalized stage data for the 15 RSMP sites and a table of flow metrics from these data (Target Date: March 31 2015). This information can be included in the data analysis task that is being developed under a separate agreement.

Project Schedule

Calendar Year	2015				2016	
	1	2	3	4	1	2
1. Purchase and Install of sensors			■	■		
2. Processing of data and					■	■

Detailed Descriptions of Tasks and Deliverables

Task 1: Purchase and installation of level loggers for measuring continuous stage at 15 RSMP sites.

Level loggers designed for measuring continuous stage in small streams will be purchased, and installed at a subset of the 34 monthly water quality sites currently being monitored by the USGS for the small stream status and trends project for the RSMP. Sites will be chosen after USGS can determine which sites will have continuous flow for the remainder of the year.

USGS will email a letter to the RSMP Coordinator providing a final list of what sites were equipped with these sensors.

Task 2: Compilation and processing continuous records of stage and calculation of flow metrics to analyze flow characteristics

Stage records will be processed and analyzed for data quality following standard USGS protocols for continuous records management. From these final data, flow characteristics related to urbanization and storm runoff (Konrad and others, 2005) will be determined in order to help quantify the degree of flow alteration at the sites. Finalized stage records will be archived in the USGS NWIS database.

Final time series plots of stage and a table of calculated flow metrics will be provided to Ecology for inclusion in the RSMP small streams status and trends data analysis proposal which is currently being developed jointly by the USGS, Ecology, and King County.

USGS - Budget Detail by Task

	Task 1. Purchase and install of level loggers	Task 2. Data processing and calculation of flow metrics	Total cost
Total Task	\$25,000	\$35,000	\$60,000

Budget Detail by funding source

	FY2015
USGS cooperative water program	\$60,000
Ecology	\$0