TO: Alan Rue, Director, Manchester Environmental Laboratory

FROM: Keunyea Song, Stormwater Action Monitoring Scientist, Water Quality Program, Washington Department of Ecology

SUBJECT: Chemical analyses request for SAM Puget Small Stream samples

This memo represents chemical analyses request for Stormwater Action Monitoring (SAM) Program- Puget Small Streams (PSS) study. PSS led by USGS will collect water and sediment samples for chemical analyses (listed below) from 35 sites every year from 2020 to 2024. Manchester Environmental Laboratory will conduct all chemical analyses except sediment grain size that will be subcontracted to other laboratory. Analyzed results including subcontracted results will be transferred in EIM compatible format, Electric Data Deliverable for EIM. Total estimated yearly cost is $59,250. This analysis will be repeated for 5 years from 2020 to 2025. The cost estimation don't reflect any analysis price increase over time.

Manchester Laboratory will communicate with USGS project lead, Rich Sheibley and PSS program manager, Keunyea Song for any issues related to sampling, analyses and reporting.

Chemical analyte list*

Water samples: Turbidity, Hardness CaCO3, Chl-a, TSS, DOC, Chloride, TN, NO2-NO3-N, NH3, TP, OP, Total metals (As, Cd, Cu, Cr, Pb, Zn), Dissolved metals (As, Cd, Cu, Cr, Pb, Zn), Fecal, Ecoli

Sediment samples: Grain size, Percent solids, TOC, Total metals (As, Cd, Cu, Cr, Pb, Zn), PAHs**, Phthalates**, PBDEs

*This list only covers the chemicals requiring annual analysis and reporting. Other chemicals can be added in the PSS study for less-frequent or one time analysis in the future. Those chemicals and related cost are not included in this memo.

**PAHs and Phthalates will be analyzed for Standard+NOAA list.