

## 72 - Stormwater Monitoring or Stormwater-Related Studies

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In accordance with S8.A, this summary provides a brief description of the stormwater monitoring or related monitoring studies conducted during 2016 by or for the City outside of the permit required monitoring.

### **Water Quality**

**Pollutant Source Control Sampling.** This monitoring was conducted by SPU in support of and associated with the Water Quality Hotline, IDDE, and business inspections for source control from existing development.

**Lower Duwamish source sediment samples.** In 2016, SPU continued to collect source sediment samples (i.e., catch basins, inline sediment traps, and inline grab samples) to support the source control program for the Lower Duwamish Waterway superfund site. In 2016, SPU took samples which were analyzed for the LDW contaminants of concern, including TOC, SVOC's, TPH-Dx, select Metals, PCB's, Grain Size and occasionally site specific parameters, such as pH, additional metals, VOC's.

### **Street Sweeping**

The objective of the Street Sweeping for Water Quality Program (SS4WQP) is to cost-effectively reduce the pollutant load carried by stormwater runoff from Seattle's streets to receiving water bodies. The purpose of the monitoring program is to collect & evaluate performance metric data in order to (A) provide information for regulatory requirements for solids disposal, (B) to track program performance, and (C) for developing a baseline for future effectiveness studies. Performance metrics currently being collected include mileage swept (street curb miles within a combined [sanitary] basin, and miles within an MS4 basin), sweeping velocity, solids load removed, cost, and sweeping solids chemistry (metals, SVOCs, PCBs, BTEX, grain size, total solids, Nutrients (Tot Phosphorous, TKN), total organic carbon, pH, NWTPH-Dx/Gx, BOD/COD, Fecal coliform).

### **Thornton Creek**

Several concurrent efforts were conducted as part of the on-going SPU Thornton Creek Bacteria Investigation (TCBI) to locate and address sources of bacteria in Thornton Creek. Continuation of focused in-stream *E.coli* sampling has identified the South Fork of Thornton Creek as the section of stream where most of the bacteria load originates, and it is, therefore, the section of stream where most of the source identification efforts are focused. The source identification efforts are testing for *E. coli*, conductivity, temperature, and *Bacteroides*.

### **Structural Controls**

Monitoring occurred at three Structural Source Control Projects in 2016: South Park Water Quality Treatment Facility, Venema Natural Drainage System, and the Capitol Hill Water Quality Project. Monitoring activities are described below.

**South Park Water Quality Treatment Facility.** In 2016, SPU completed bench-scale testing of candidate coagulant chemicals to narrow down the number of chemicals to be used during pilot testing. Pilot testing began in the Fall of 2016 using two treatment technologies (chemically enhanced sand filtration and ballasted flocculation) using actual stormwater from the basin and several coagulants.

Venema Natural Drainage System. Monthly influent and effluent grab water quality samples were collected from the raingarden cells along NW 120th Ave to monitor the nutrient export from the bioretention soil media (BSM) to: 1) monitor flushing of BSM, 2) assist in determining when BSM was conditioned enough to send treated stormwater to Underground Injection Control (UIC).

Capitol Hill Water Quality Project (AKA the Swale on Yale). One swale (Swale 2 on Yale Ave N) was monitored for post-construction performance by collecting continuous flow data and composite stormwater water quality samples during nine events at the following three locations: inlet, surface pathway outlet, and underdrain outlet.