Additional Source Control Related Studies

Debra Williston

Science Section

KC Water and Land Resources Division

King County Science Seminar
Oct 24, 2013

Green River Basin Studies
Water Sampling: Kanaskat-Palmer

- Sampling Location
  - Green River at Kanaskat-Palmer State Park

- Study Goal
  - to provide additional water quality data for Green River location further removed from development and urbanization

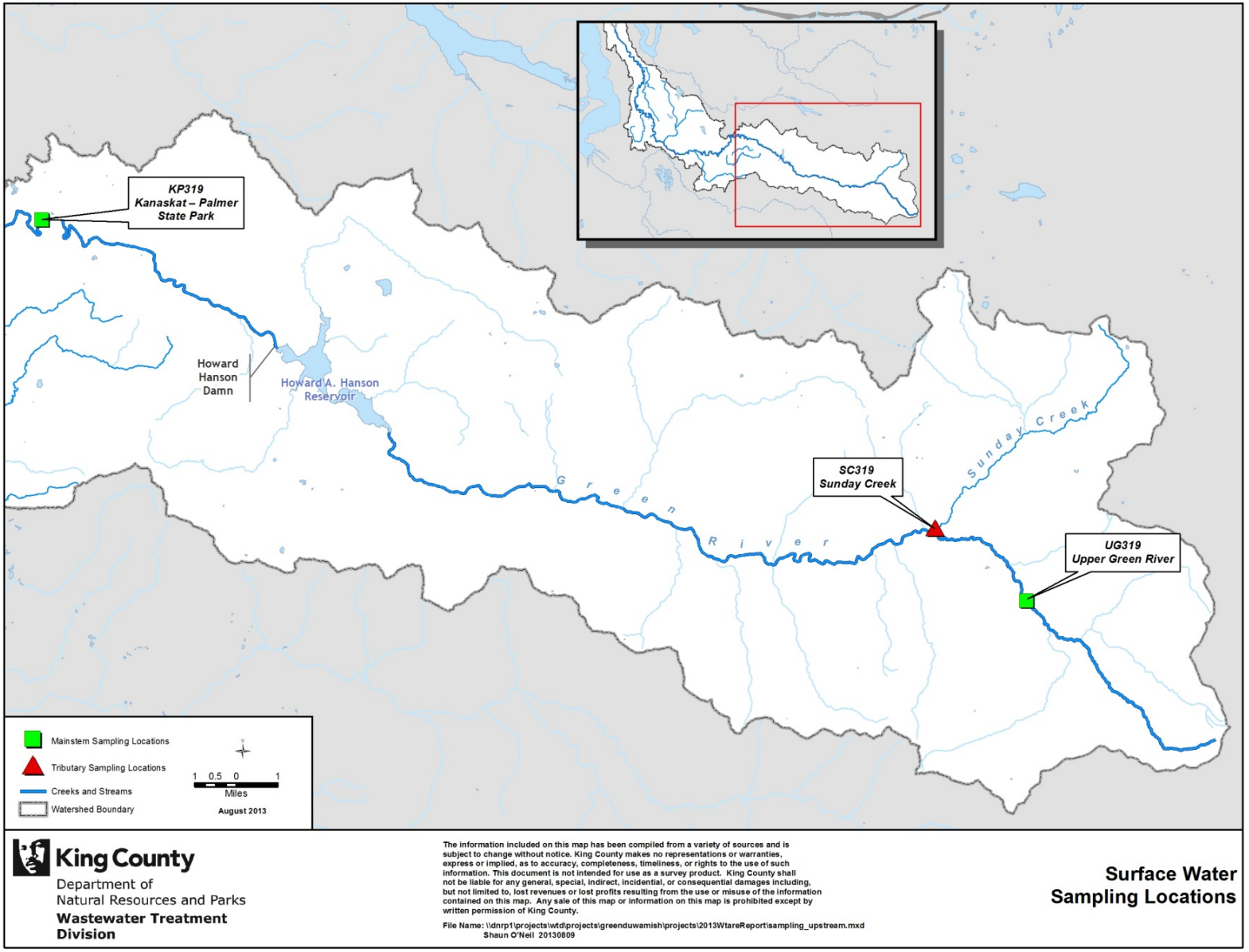
Green River Basin Studies
Water Sampling: Kanaskat-Palmer

- Collecting Composite Samples
  - 3 dry season/baseflow
  - 6 storm/wet season conditions
- Samples analyzed for PCB congeners, PAHs, arsenic, total & dissolved organic carbon, total suspended solids
- Samples collected to date:
  - 3 storms and 3 dry season/baseflow

Green River Basin Studies
Water Sampling: Upper Green River

- Sampling Locations
  - ~ 20 miles upstream of Howard Hansen Dam
  - Green River
  - Sunday Creek
- Study objective is to provide additional water quality information from a site that has
  - Limited chemical sources (largely atmospheric and geologic)
  - No anadromous fish (e.g., salmon)

Green River Water Sampling Locations



Green River Basin Studies
Water Sampling: Upper Green River

- Collecting Composite Samples
  - 2 hours with 2-L aliquot every 20-30 minutes
  - 3 dry season/baseflow
  - 3 storm/wet season conditions
- Samples analyzed for PCB congeners, PAHs, arsenic, total & dissolved organic carbon, total suspended solids
- Samples collected to date:
  - 1 storm and 2 dry season/baseflow

Sunday Creek-baseflow vs. storm flow

Green River-baseflow vs. storm flow

Bulk Atmospheric Deposition

- To fill a spatial gap in Georgetown and to collect supplementary data for PCBs and dioxins/furans in the Lower Duwamish Valley
- Sampling Locations
  - Georgetown at South Seattle Community College
  - Beacon Hill (as regional reference site)
  - Duwamish and South Park for additional PCB and dioxin/furan data

Bulk Atmospheric Deposition

- Sampling Period: April – December 2013
  - Georgetown and Beacon Hill: continuous sampling
  - Duwamish and South Park: 5 sampling periods
- Laboratory Analysis
  - Georgetown and Beacon Hill: all samples analyzed for metals, mercury and PAHs
  - Georgetown: subset of samples analyzed for PCB and dioxin/furan congeners
  - Duwamish, and South Park: all samples analyzed for PCB and dioxin/furan congeners

CSO Basin Study

- Michigan CSO Basin
- Same objectives and approach as Brandon CSO Basin Pilot Study
- Sampling three locations within basin
- Sampling schedule Sept 2013-July 2014

Continued CSO Source Tracing

- Targeted Duwamish CSOs with current uncontrolled discharges
  - Brandon
  - Michigan
  - W. Michigan
  - Hanford #2
  - Lander

- Characterize chemical concentrations: in-line solids and suspended solids (2009 to present)
- Assist in source control efforts to both Lower Duwamish Waterway and East Waterway Superfund Sites; sampling triggered cleaning of CSO lines and regulator structures

Source Control Studies

- Provide information to assist in understanding sources to the Lower Duwamish Waterway
- Help prioritize source control actions
- Identify data gaps for future studies

Thank You

- Many dedicated County staff working on projects
  - Environmental Laboratory & Field Sciences Unit
  - Science Section
  - Wastewater Treatment Division
    - Sediment Management Plan
    - Industrial Waste Group
    - Facilities Group
- Look for future briefings, reports and presentations (e.g., 2014 Salish Sea Conference)
- All final reports will be posted to KC web site