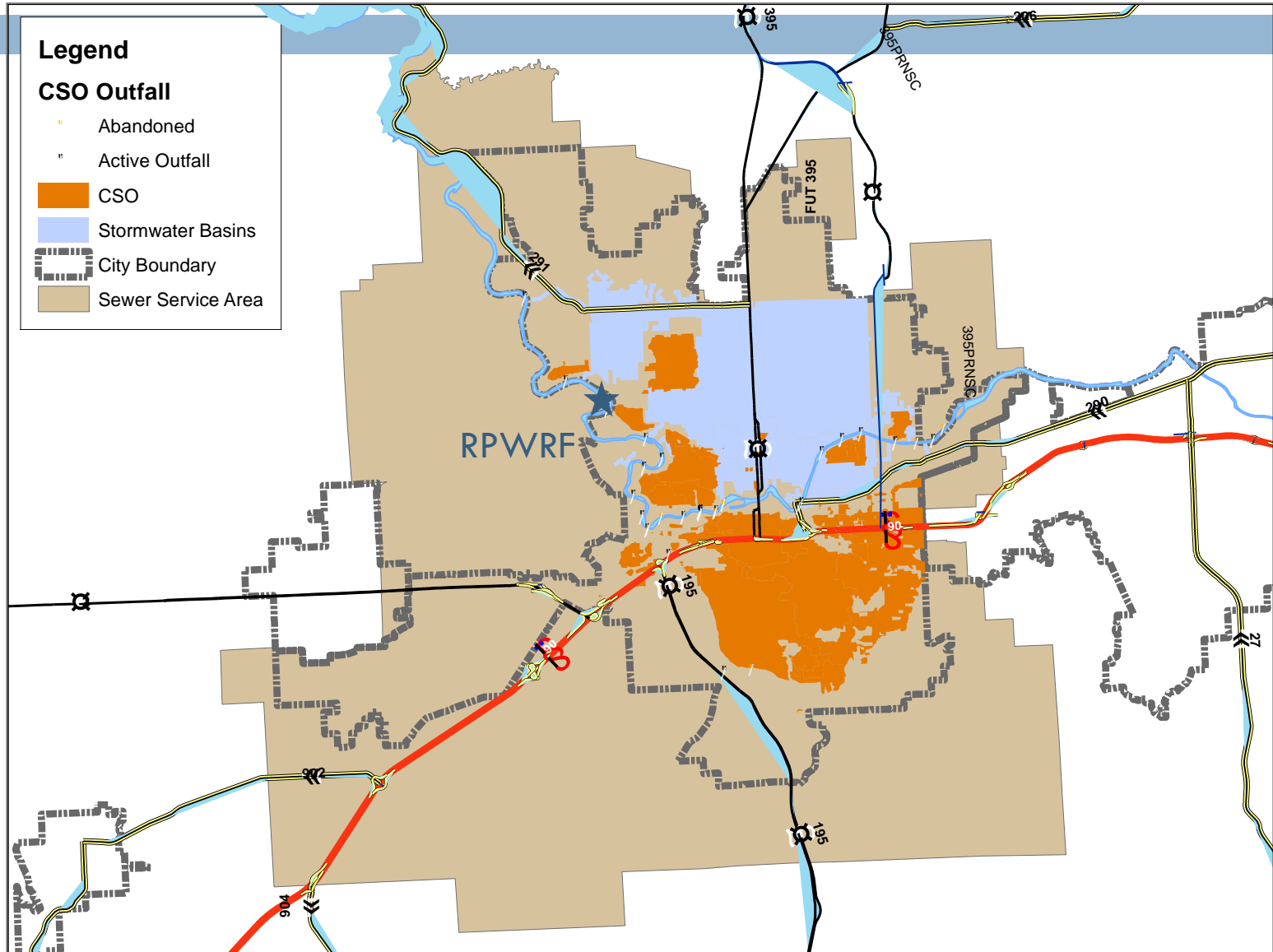


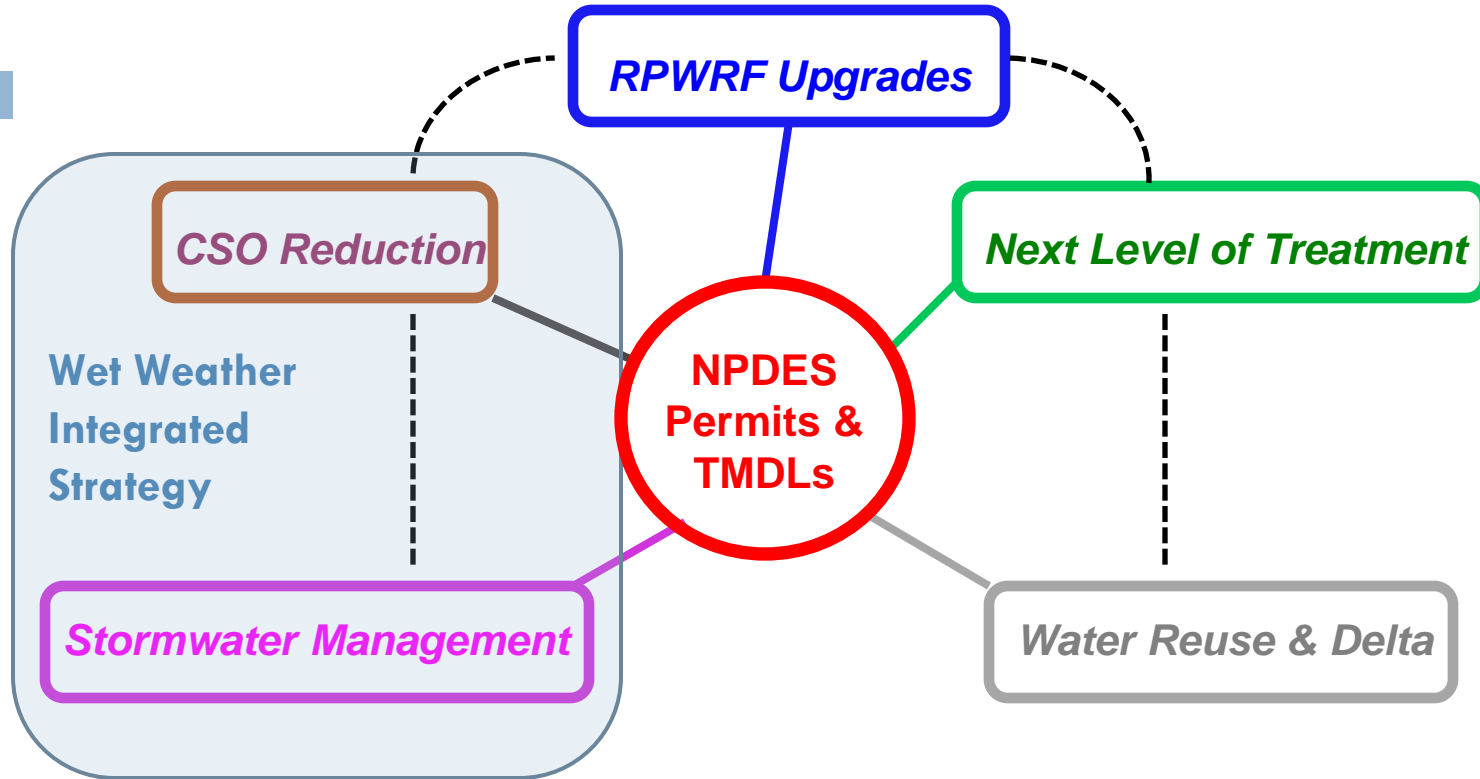
CITY OF SPOKANE
RIVERSIDE PARK WATER
RECLAMATION FACILITY
DO TMDL PROGRESS UPDATE

December 18, 2012

City of Spokane Sewer Service Area



Integrated Clean Water Plan



Regulations

Federal Clean Water Act
 Revised Code of WA
 WA Administrative Code
 Shoreline Master Plan

Process

Facility Plans
 Preliminary Designs
 Real Estate
 Final Designs
 Construction

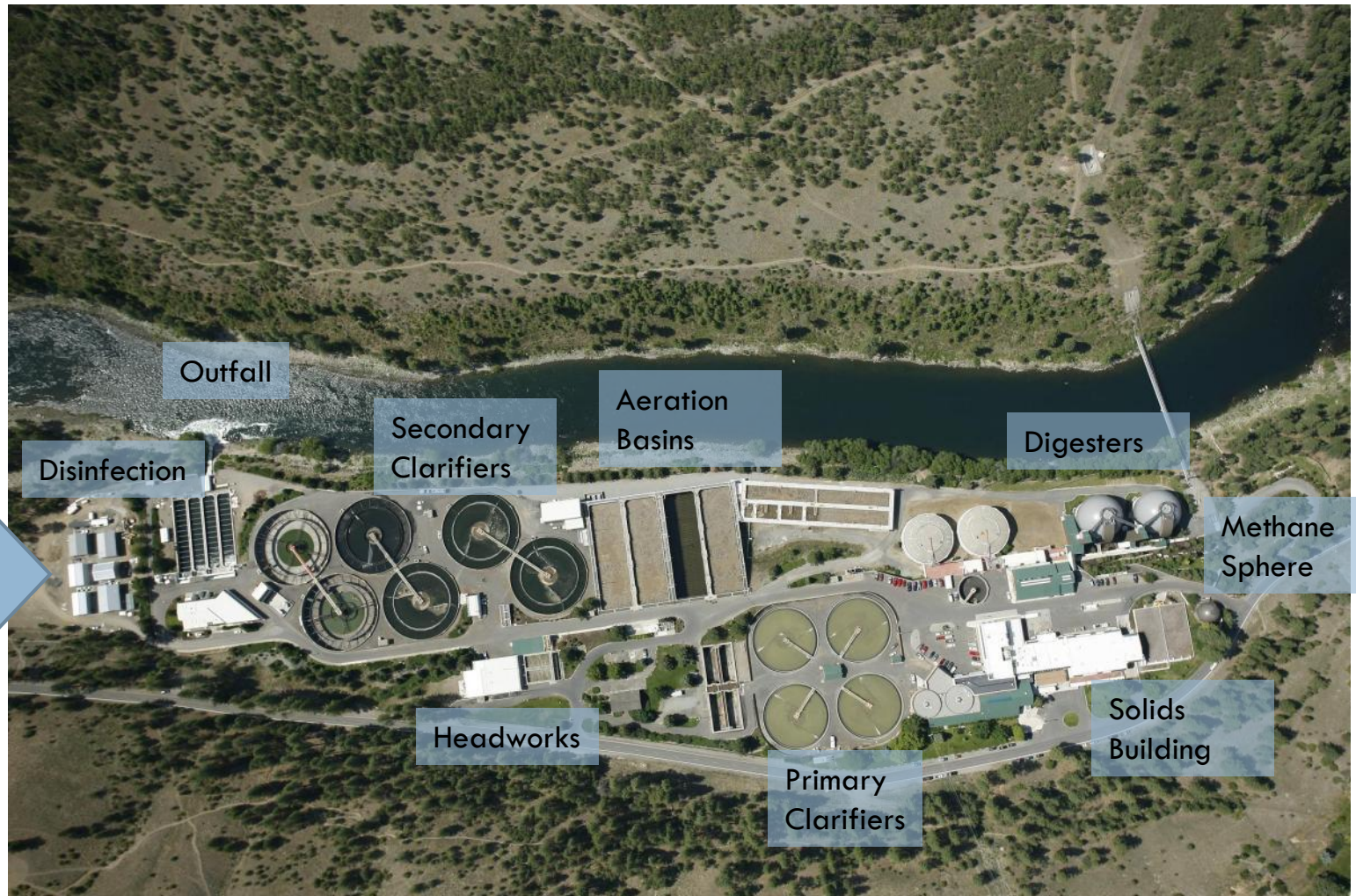
Funding

Rates & Reserves
 Spokane County
 PWTF & SRF Loans
 Bonding

NPDES = National Pollutant Discharge Elimination System (Federal EPA)
 TMDL = Total Maximum Daily Load (WA State Dept of Ecology)
 RPWRF = Riverside Park Water Reclamation Facility (treatment plant)
 CSO = Combined Sewer Overflow (sewage mixed with rain or snowmelt)
 Delta = any "gap" between plant performance and the Permit Requirements

PWTF = Public Works Trust Fund
 SRF = State Revolving Fund

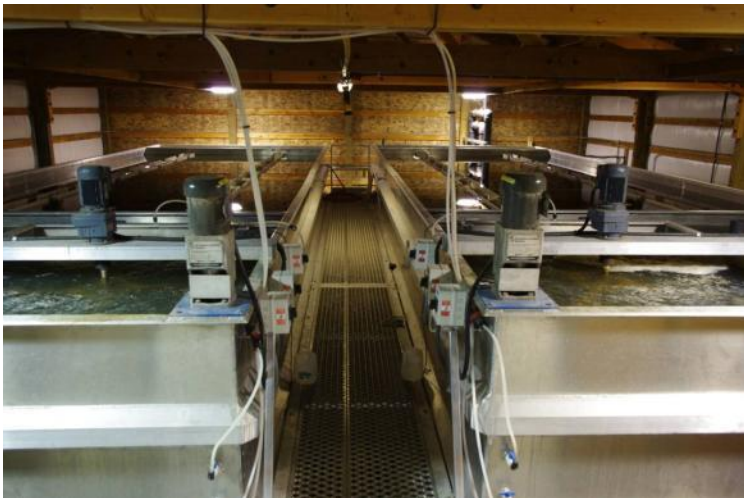
RPWRF: Riverside Park Water Reclamation Facility



NLT: Next Level of Treatment

NLT: Next Level of Treatment

- Pilot testing for six technologies
 - ▣ 1st Stage: Sedimentation
 - Conventional, Sand Ballasted, Magnetite Ballasted
 - ▣ 2nd Stage: Filtration
 - Dual Media Granular Filter, Upflow Sand Filter, Membrane Filter



NLT: Next Level of Treatment

- TMDL seasonal average limit for TP: 17.8 lb/day (42 ug/l at 50 MGD \pm)
 - ▣ Goal: 10 ug/l to 20 ug/l TP
 - ▣ Correlated reduction in CBOD
- Approaching finish of pilot data collection/analysis
 - ▣ State of the industry research: 2 stage process
 - ▣ Will single stage be effective enough?
 - Tertiary membrane filtration: met limits
 - Downflow dual-media filtration borderline
 - Split Train?
 - ▣ Performance – Constructability – O&M and Replacement Costs

NLT Engineering Report

- Expand to include AKART analysis
 - ▣ Land application
- Delay design onset
- NLT installed within permit deadline
 - ▣ March 1, 2018
 - ▣ Assuming AKART Analysis reveals NLT is best option



CEPT: Chemically Enhanced Primary Treatment

- Nutrient removal in Primary Clarifiers
 - ▣ Polymer
 - ▣ Increase removal of TP and BOD from 30% to 70-80%
- Defers need for additional aeration basin capacity
- 30% less alum needed in secondary clarifiers
- >90% TP and BOD removal in effluent



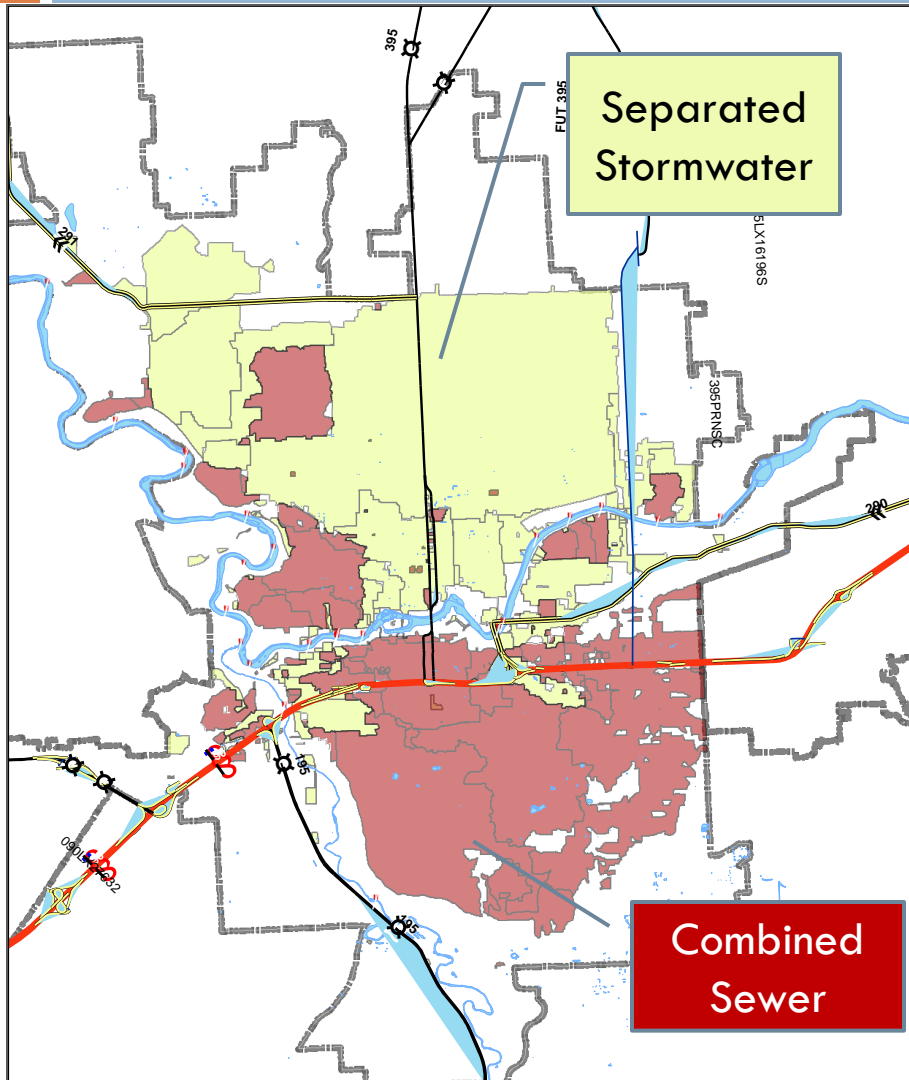
Interim Effluent Limits

- Current Permit Cycle
 - ▣ July, 2011 - June 2016
- No violations

- TP: 0.63 mg/L
- BOD: 30 mg/L
- NH₃: 8.5 ug/L
- Avg. monthly
Low-flow season



Integrated Strategy



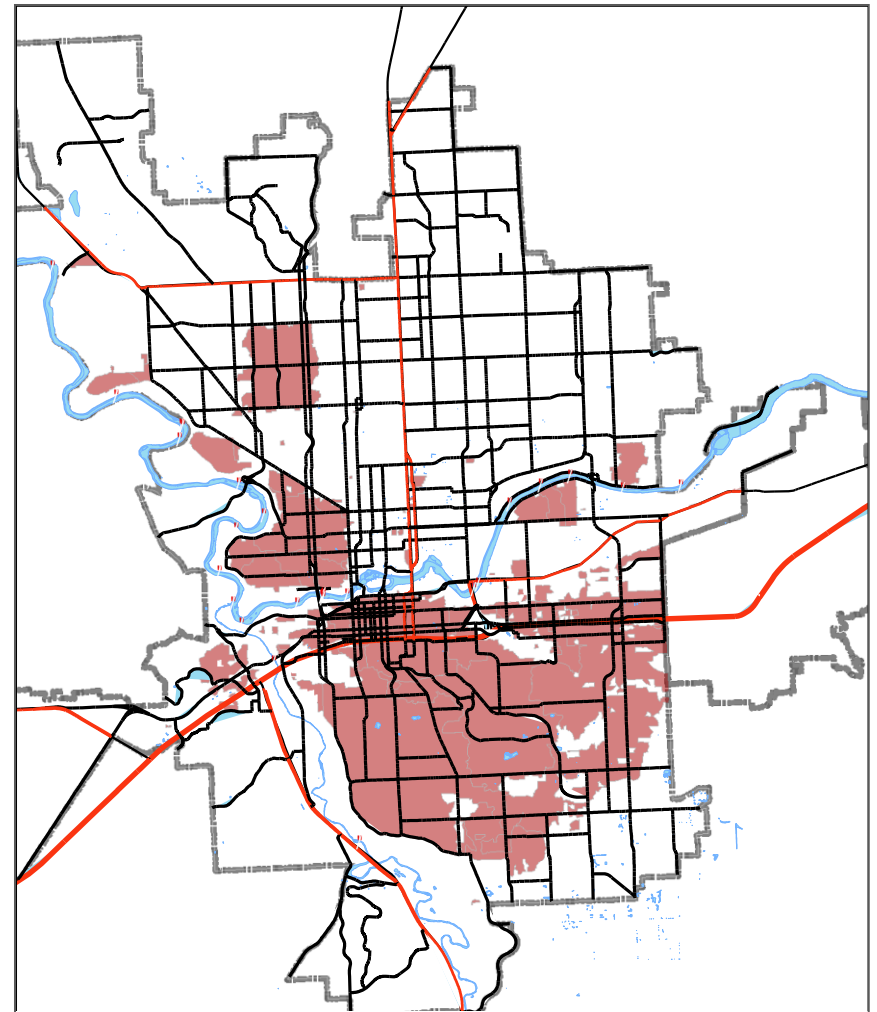
CSO and Stormwater Basins

- Intend to address Cochran stormwater basin in addition to CSO basins
- Three largest basins addressed first (550 MGY)
 - ▣ Cochran Basin
 - ▣ CSO 26
 - ▣ CSO 34

CSO: Combined Sewer Overflows

Accomplishments

- Final Goal: comply with WAC 173-245 and RCW 90.48.480
 - ▣ ≤ 1 overflow/outfall/year
- 2012: Constructed CSO 38/39/40 control facilities
- 0 dry weather overflows in 2012 (through Sept.)



Stormwater Sampling

Supports stormwater portion of TMDL

Minimal data exists

Monitoring for flow rate, total phosphorus, BOD, Ammonia (and others)

