

Designing and Implementing a Stormwater Monitoring Program

Washington State Municipal Stormwater Conference
Roads and Highways Program
November 2014



Summary

- WSDOT's municipal permit (2009 and 2014)
- WSDOT's BMP design
- How we are monitoring
- Lessons learned



Past and present monitoring sites

2009 permit map

- Facilities characterization
- Highways characterization
- BMPs



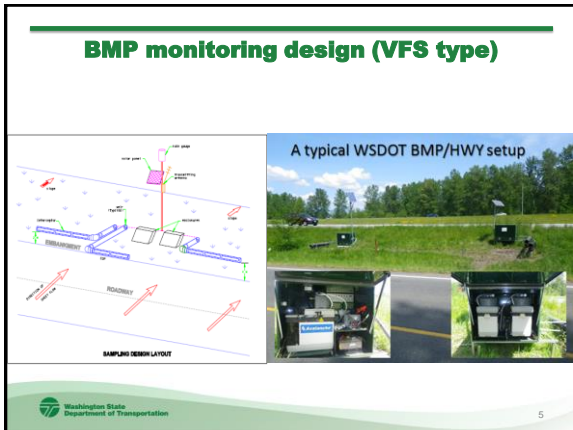
2014 permit map

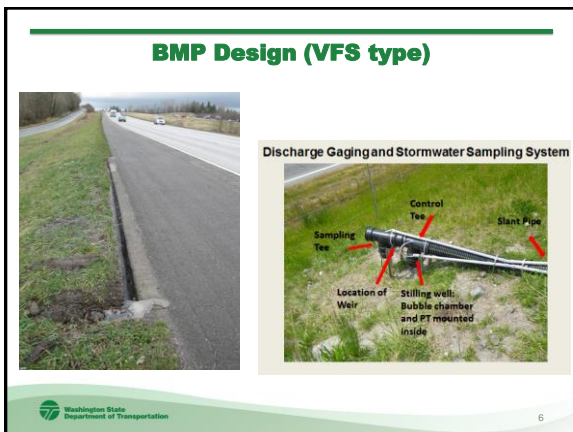
- BMPs for highways
- BMPs for facilities

- Non-permit
- SR-518 bioswale









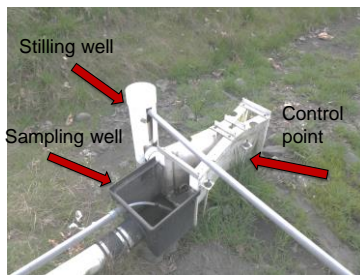
BMP monitoring design (bioswale type)

SR-518
Bioswale
study site



BMP monitoring design (bioswale type)

SR-518 Bioswale
study site



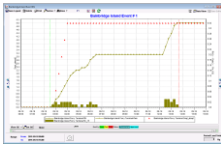
BMP monitoring design (bioinfiltration swale type)

Geiger MF swale
study (Spokane)




Managing our data


StreamTrac[®]




EQuIS



SERF






Lessons learned - planning


1. Research>Plan>Coordinate>prepare for unexpected
 - Site selection
 - Database needs
 - Parameters to sample/storm criteria
2. Budget and buy
 - Enlist the help of experts and make it your own!
 - Data management (What do you want to get from your data?)
 - Choosing an equipment/database vendor
 - Installing and construction of sites and infrastructure
 - (Most equipment and most databases are not made for stormwater monitoring so customization time is necessary.)
 - Implementation of monitoring

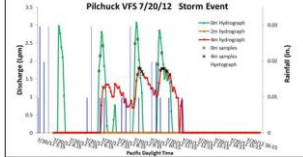
Ask the Experts!




Lessons learned – getting good data

3. Work WITH your labs!
4. Data Verification/Validation is MANDATORY!
5. Data analysis and reporting takes TIME!
6. Most equipment and databases are not designed for stormwater







WSDOT lessons learned

Cars can inhibit your monitoring plans!

Smokey point rest area SR-09 site



Safety is more important than samples





Acknowledgements















