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Washington State Phase I county watershed-scale stormwater planning studies: a long term plan to identify stormwater management strategies to improve receiving waters

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Watershed Studies from Phase I Municipalities

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Salish Sea Ecosystem Conference

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Path to long-term SW planning

Watershed Planning as an Essential Tool

2013-2018 MS4 Permits

Phase I Counties

Next Steps

Phase I County Studies

- Contributing to the Salish Sea:
  - Little Bear Creek Watershed (Snohomish County)
  - Bear Creek Watershed (King County)
  - Spanaway Lake Watershed (Pierce County)
- 10+ square mile watersheds
- Watersheds under pressure of development, not fully developed

Little Bear Creek Watershed Plan

Source: Snohomish County

Conditions Studied

- Existing Conditions
  - Monitored
- Modeled forested
  - Used as target
- Modeled build out
  - with Permit Requirements for new and redevelopment
  - With additional strategies to meet beneficial uses

Monitoring
Spanaway Lake Watershed Plan

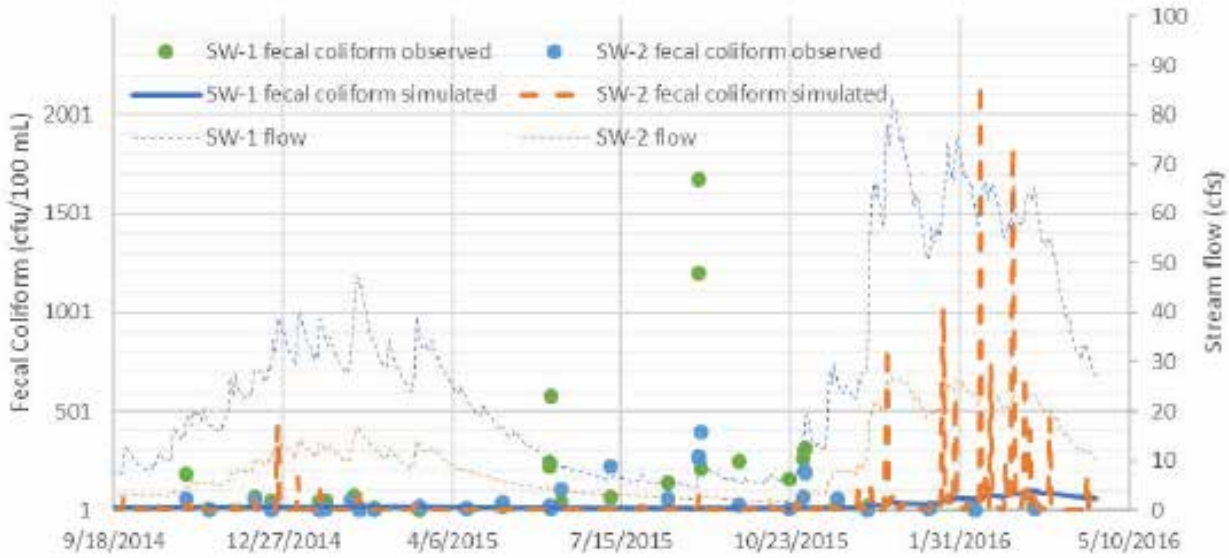

Figure 6-1. Time series of calibrated fecal coliform for Spanaway Creek Outlet (SW-1) and Coffee Creek Inlet (SW-2)

Source: Pierce County

Basis of Study Modeling

- Continuous modeling (HSPF/SUSTAIN)
- Calibrated to flow and quality monitoring
- Used flow metrics to tie to stream health

Modeling and Optimzation Bear Creek Watershed Plan

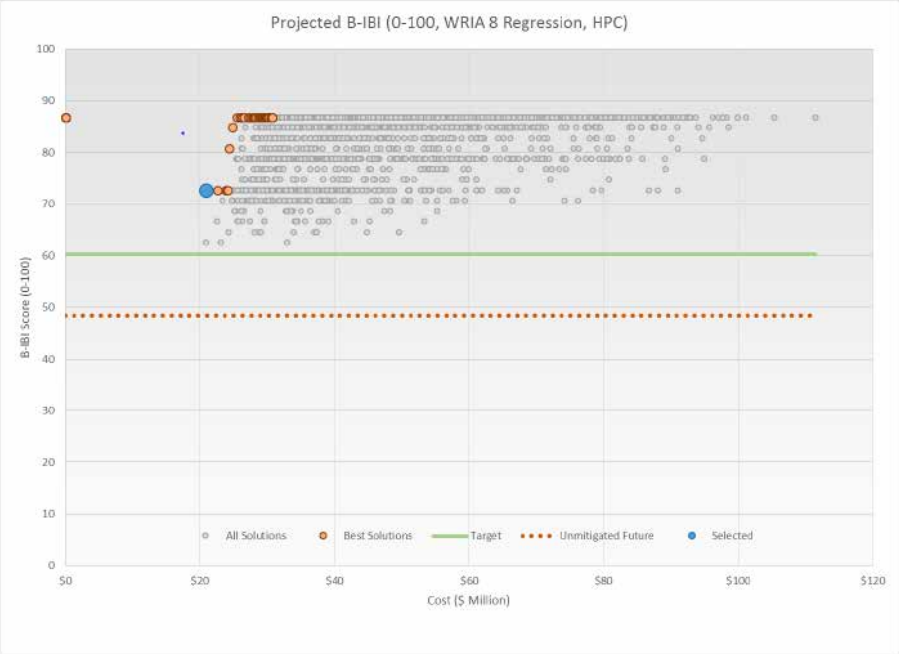

Figure 174 Cost-Effectiveness Curve for BEA270

Source: King County

Study take-aways

- Current conditions are impaired
- Future conditions remain impaired
  - Even all feasible LID measures were not sufficient to restore beneficial uses
- Consistent with messages from SWMMWW – additional measures are required

Study proposed measures

- Proposed actions are unfunded
  - Costs per acre are much lower for these basins than for more developed basins
- Riparian restoration and large amounts of detention are needed to improve conditions
- Fecal coliform seems difficult to work with as a target variable
- Similar suite of supplemental strategies were considered despite unquantified benefits

Questions and Discussion

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