

Stormwater Retrofit Planning Project for WRIA 9

a project funded by an
USEPA Watershed Management
Assistance Grant

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Jim Simmonds

King County

Jim.Simmonds@KingCounty.gov

What Are Stormwater Retrofits

- Construction projects to control stormwater
- Locations that have previously been developed
- Sited where existing stormwater controls are inadequate
- Not part of redevelopment

Why are Retrofits Important?

- Stormwater causes major damage to streams
- Improve fish habitat
- Recover Puget Sound ecosystem
- Large portions of developed areas have no or inadequate controls
- Flow and water quality are important



Expanded Ambaum stormwater detention pond in Burien

December 3, 2007

With funding support



Washington State Department of Transportation

2/10/2011



More Stormwater Ponds



2/10/2011



Bioswales



2/10/2011

Pervious Pavement



Rain Barrels and Rain Gardens



Check Dams



Green Roofs



Status of Stormwater Retrofit Programs

- No comprehensive program exists
- Some projects under construction
- Can include Low-Impact-Development (LID)
- Increased requirements in future municipal stormwater permits are likely
- No overall cost estimates, prioritization, etc

Project Objectives

- To assess stormwater retrofit needs
- To establish approaches that minimizes costs while meeting needs
- To develop prioritization approach
- To present plan to WRIA 9 Watershed Ecosystem Forum for consideration
- To extrapolate costs to rest of Puget Sound to establish sound-wide retrofit cost estimate

Project Area

- WRIA 9; Green-Duwamish Watershed and direct drainages to Puget Sound
- Excluding headwaters upstream of Howard Hanson Dam (forested) and the City of Seattle (combined system)



Primary Streams Addressed

- Newaukum Creek
- Soos Creek
- Crisp Creek
- Mill Creek – Auburn
- Mill Creek – Kent
- Springbrook Creek
- Des Moines Creek
- Miller / Walker Creeks
- Joes Creek
- Plus other small streams



Project Team and Funding

Organization	EPA Funding	Local Match
USEPA*		
King County	\$707k	\$300k
University of Washington	\$243k	\$20k
Department of Ecology**		
City of Auburn	0	\$5k
City of Covington	0	\$5k
City of SeaTac	0	\$5k
Kellogg Consulting	\$50k	0

* USEPA contributing \$1M in grant funding, and staff time to project management team

** Ecology contributing staff time to project management team and updating retrofit database

Project Benefits

- Knowledge is power
- Understand trade offs
 - Cost of retrofits vs. amount of improvement in stream flow and water quality
- Basis for estimating future funding needs and requests
- Basis for future capital projects
- Influence future permit requirements

Relationship to Salmon Habitat Plan

➤ Address Policy WQ4

- Local governments should assess current surface water management standards, facilities, and programs and strengthen them where necessary to reduce entry of sediment and other pollutants to salmon streams

Project Approach

- Measurements
 - weather, streamflow, water quality
- Watershed modeling
 - streamflow and water quality under past, current, and future scenarios
- In-stream goal setting
- Modeling and optimization of retrofit needs and costs to meet goals
- Prioritization and plan development
- Extrapolation of costs to rest of Puget Sound

Schedule

➤ 2010

- begin data collection

➤ 2011

- finish data collection
- set in-stream goals
- watershed modeling

➤ 2012

- retrofit modeling

➤ 2013

- prioritization
- plan development
- extrapolation to rest of Puget Sound

Opportunities for Participation

- Annual stakeholder meetings
- Annual briefings at WRIA 9 Watershed Ecosystem Forum
- One-on-one outreach
- Quarterly e-mail updates and requests for feedback
- Review and comment on draft reports and results

Questions?

- Key issues to address?
 - Climate change
 - Population growth
 - Funding
 - Public vs. private
 - Stormwater permits