Urban Watershed Strategy

Watershed Forum
June 8, 2011
Presentation Overview

• Urban Watershed Vision

• Goals and Strategies
  – Stream Flow/
    Rainfall Runoff
  – Water Quality
  – Physical Habitat

• What is next?
Vision: **Improve the health** of Seattle's creeks, wetlands, lakes, the Duwamish River and Puget Sound, including **improvements to water and sediment quality, stream flow, and habitat** for the protection of **public health and aquatic life**.

- **Stream Flow/Rainfall Runoff**
- **Water Quality**
- **Physical Habitat**
Goals and Strategies

Stream Flow/Rainfall Runoff

Water Quality

Physical Habitat
Stream Flow and Rainfall Runoff

Goal:
Preserve public health and aquatic life by creating a more natural, habitat-promoting stream flow pattern.
Show problem – graph with rainfall versus stream flow.

Natural Ground Cover
- 40% evapotranspiration
- 25% shallow infiltration
- 25% deep infiltration
- 10% runoff

10%-20% Impervious Surface
- 38% evapotranspiration
- 21% shallow infiltration
- 21% deep infiltration
- 20% runoff

35%-50% Impervious Surface
- 35% evapotranspiration
- 20% shallow infiltration
- 15% deep infiltration
- 30% runoff

75%-100% Impervious Surface
- 30% evapotranspiration
- 10% shallow infiltration
- 5% deep infiltration
- 55% runoff
Stream Flow/Rainfall Runoff Strategies

- Capturing rainfall
- Trees
- Reduce your footprint
- Trap/infiltrate rainfall runoff
- Maintain the drainage system
- Cistern
- Porous pavement
- Rain garden
- Green Roof
Goal: Protect and improve the water quality of Seattle’s lakes, creek, the Duwamish River and Puget Sound.
Some Pollutant Pathways

- Atmospheric deposition
- Road Runoff
- Home and yard products
- Auto care products
- Spills
- Paints, solvents, etc. used in businesses
Pollutant “Cocktail”

- Pathogens
- Metals
- Petroleum Hydrocarbons
- Pesticides
- Other Organics

- Nutrients
- Sediments
- Temperature
- Organic Matter (DO)
- pH
Water Quality Strategies

Prevent pollution

Clean up our waters

Reduce/remove pollutants

Product Stewardship

Safe chemical storage

Catch basin cleaning

Plant buffers

Filters

Rain garden
Projects

Stormwater Facility

3–3.5 million gallons

2:1 slope

El: 221

Shelf

3:1 slope

El: 214

El: 217

Flow

Midvale Treatment

CSO Storage

Swale on Yale

CSO Retrofit
Goal:
Protect and improve physical habitat to promote sustainable aquatic communities and public health in Seattle’s waters.
Physical Habitat Strategies

- Protect/manage floodplains
- Repair/replace stream culverts
- Improve stream/shoreline habitat
  - Install habitat structures like logs
  - Natural bank protection
- Riparian buffers
- Re-create room for streams
Capture rainfall

Reduce your footprint

Reduce/replace stream culverts

Maintain the drainage system

Prevent pollution

Clean up our waters

Repair/replace stream culverts

Improve stream/shoreline habitat

Trap/infiltrate rainfall runoff
Reduce/remove pollutants
Prevent pollution
Repair/replace stream culverts
Improve stream/shoreline habitat
Protect/manage floodplains
Clean up our waters
Capture rainfall
Reduce your footprint
Trap/infiltrate rainfall runoff
Maintain the drainage system
Questions?