

Redmond's Citizen Academy

# Natural Resources Division

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## NR Staff



Mission: To Preserve, Protect and Enhance the Land and Water Resources of the City of Redmond and Support Regional Efforts to do the Same.



# Redmond Comprehensive Plan

- Citywide Goals
  - To conserve agricultural lands and rural areas, and to protect and enhance the quality of the natural environment.
- Frame Work Policies 5 to 8:
  - ...enhance the quality of the natural environment by protecting and restoring important critical areas, such as streams, wetlands, shorelines, and aquifer recharge areas and by retaining and protecting significant trees and other natural resources....  
Leads by example in the conservation of natural resources such as energy, water and trees and avoidance of adverse environmental impacts.



## Core Services: Surface Water and Habitat Protection/Enhancement

- Critical areas are protected and provide the maximum practical habitat value.
- Surface waters are safe, healthy for fish and wildlife, regulatory compliant, and aesthetically pleasing



## Core Services: Stormwater Management

- Minimizes runoff quantity and quality issues at the source
- Provides system capacity to minimize flooding
- Provides runoff controls to reduce hydrologic disruption
- Provides runoff treatment to reduce pollution impacts



## Core Services : Groundwater Protection

- Maintains or improves groundwater quality and quantity to maintain suitability of our drinking water source

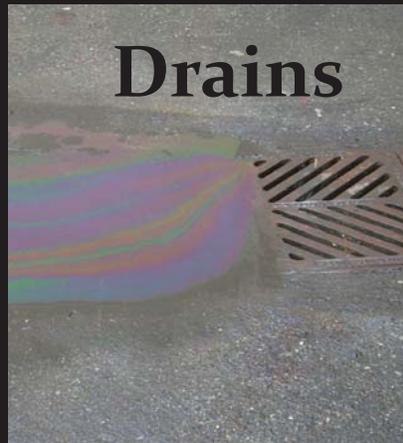


## Core Services : Solid Waste Management

- Minimize the solid waste stream, maximize recycling and have the remaining waste be as benign as practical



## Stormwater & Streams



Anything that flows off a road, goes into a storm drain, and flows—mostly without treatment or flow control—to our lakes, rivers, and streams, and eventually to Puget Sound



# Our lake, river, and streams....

- Too warm
- Too much bacteria
- Not enough Oxygen
- Too many metals and oil-related products
- Flashy flows that erode banks and harm habitat



Pre-spawn mortality



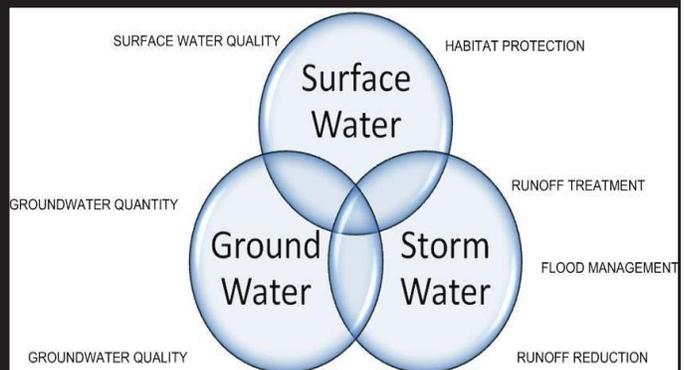
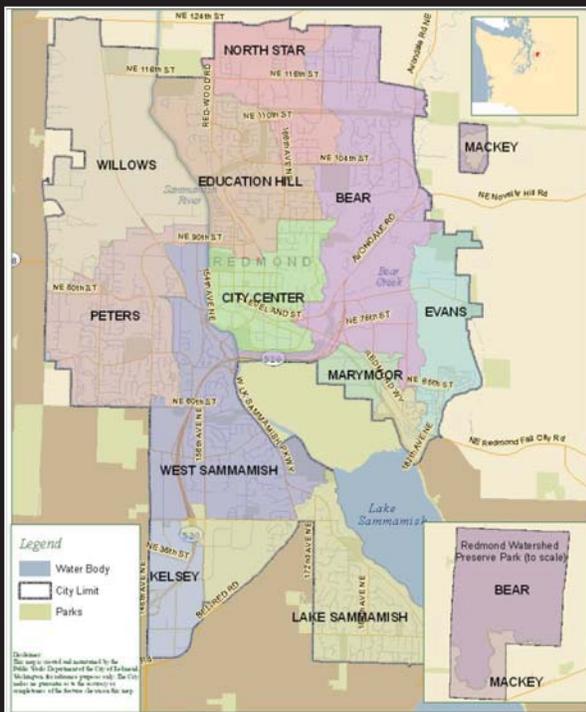
Stream erosion



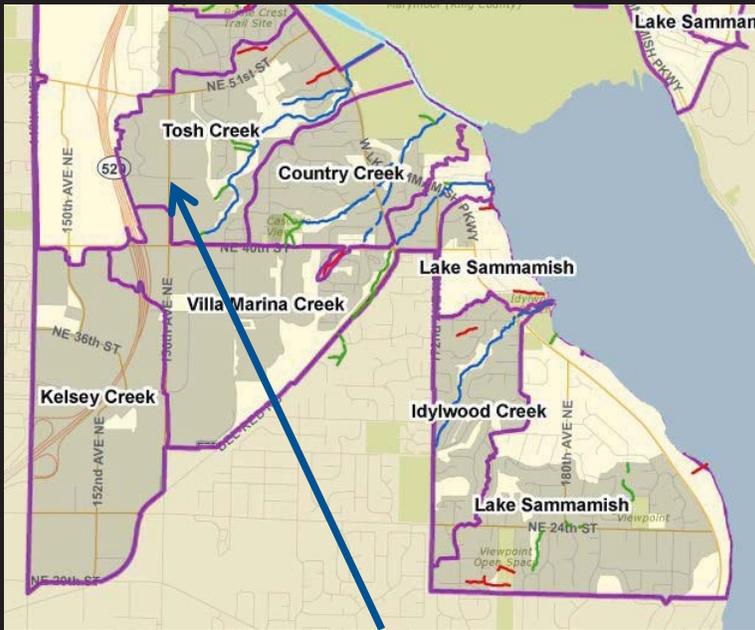
Roads can create barriers for Salmon going upstream



# Watershed Planning



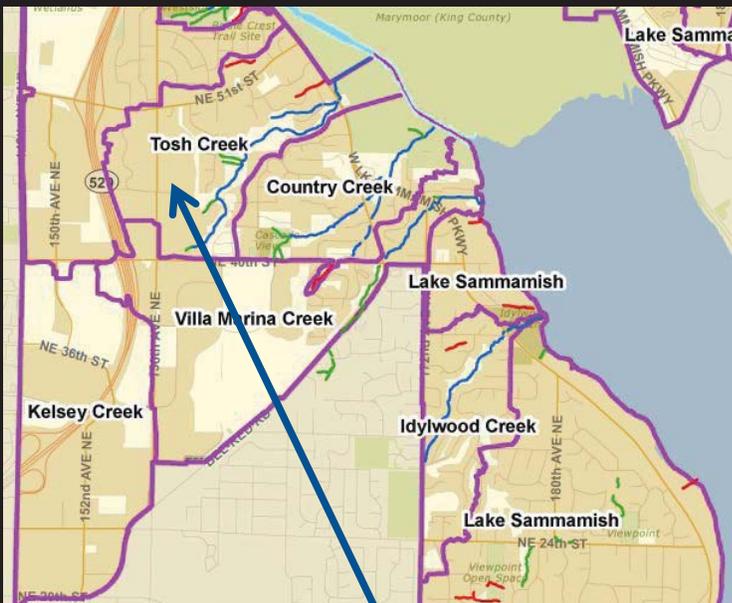
# Stormwater Flow Control



Gray areas have inadequate flow control



# Stormwater Treatment



Tan areas have inadequate runoff treatment

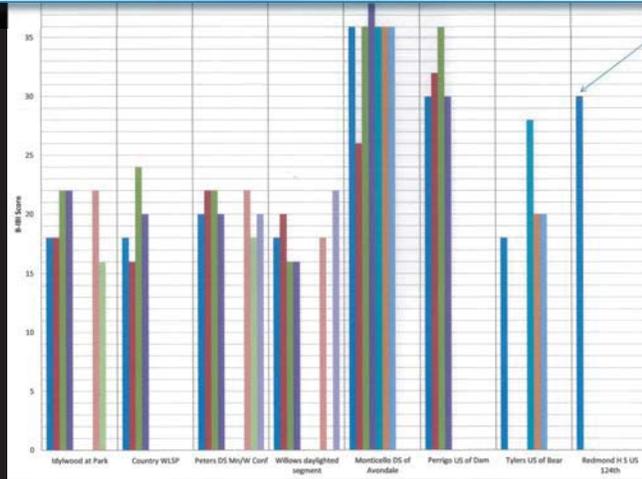


# What do the bugs tell us?

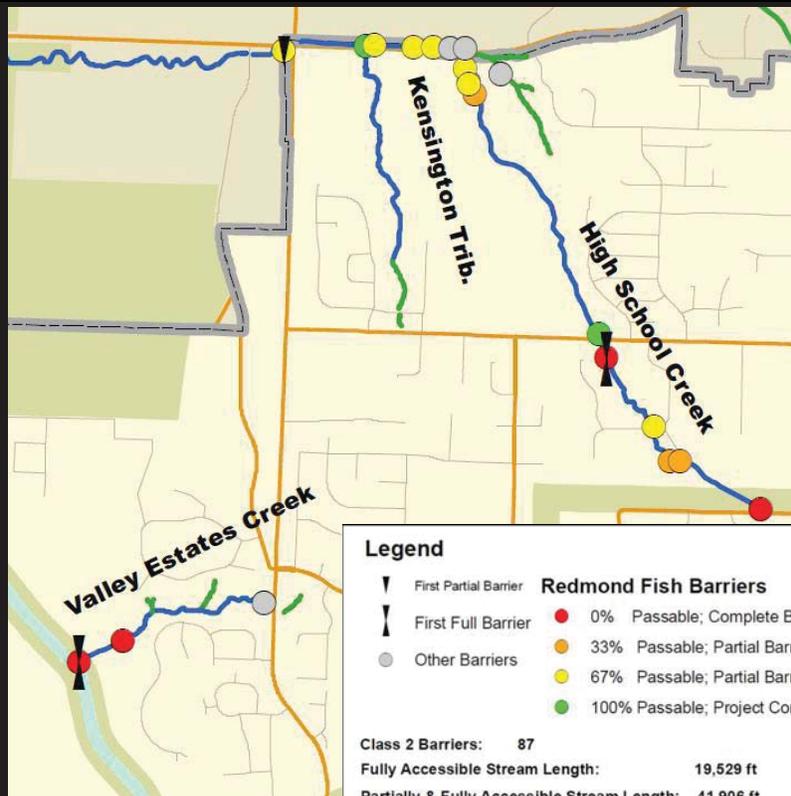


The numbers (density), diversity, and health of stream bugs provide a repeatable measurement of "overall stream condition" by integrating the effects of constantly changing stream water quality

scores >36 are needed for self-sustaining salmon populations



## Fish Barriers



# Fish Barrier Projects



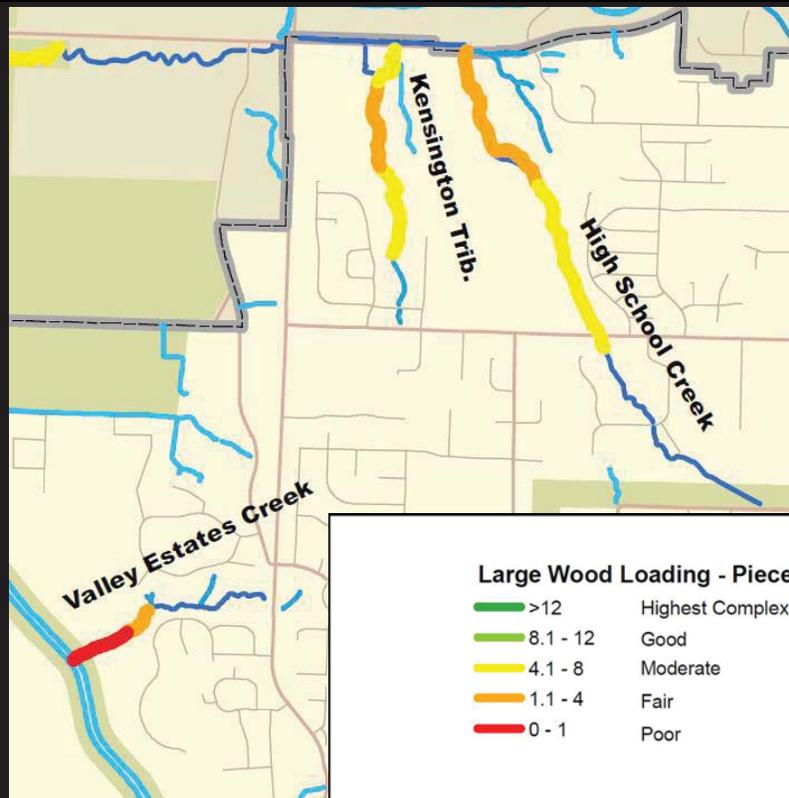
Valley Estates  
2011



NE 116<sup>th</sup> Street  
at North Star  
2007



# Stream Complexity





Valley Estates  
2011



Reference reach



# Stream Complexity Projects

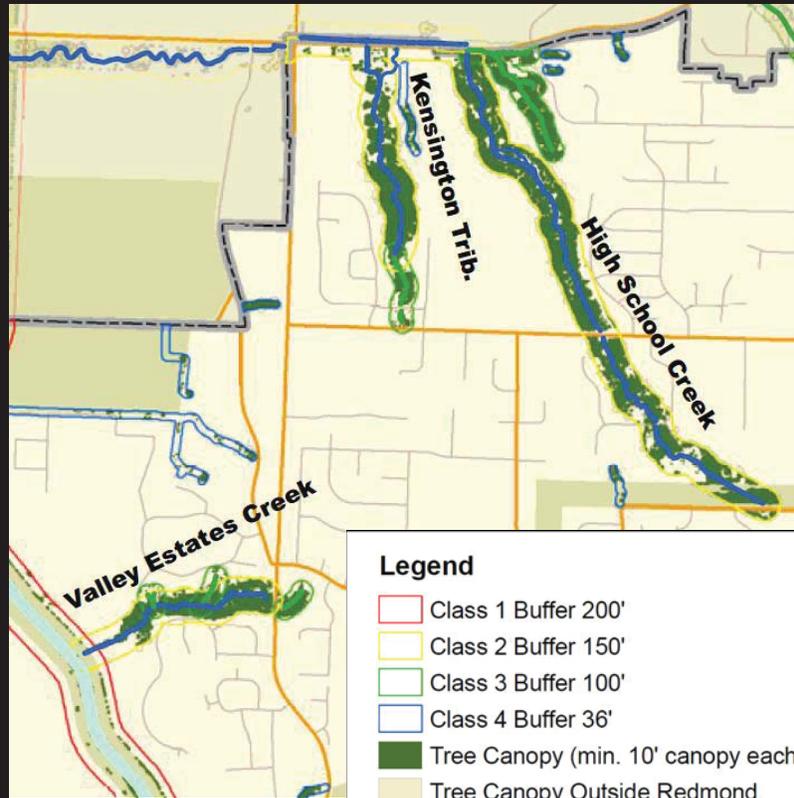


Upper Willows  
Creek 2010/2011



Different scales  
Of complexity





## Buffer Restoration



1997

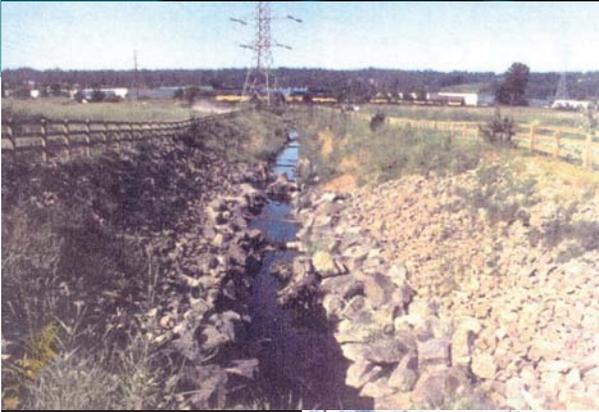
RiverWalk I on the Sammamish River



2010

Our long term goal is tree canopy over 90% of regulatory buffers.





1992



1996

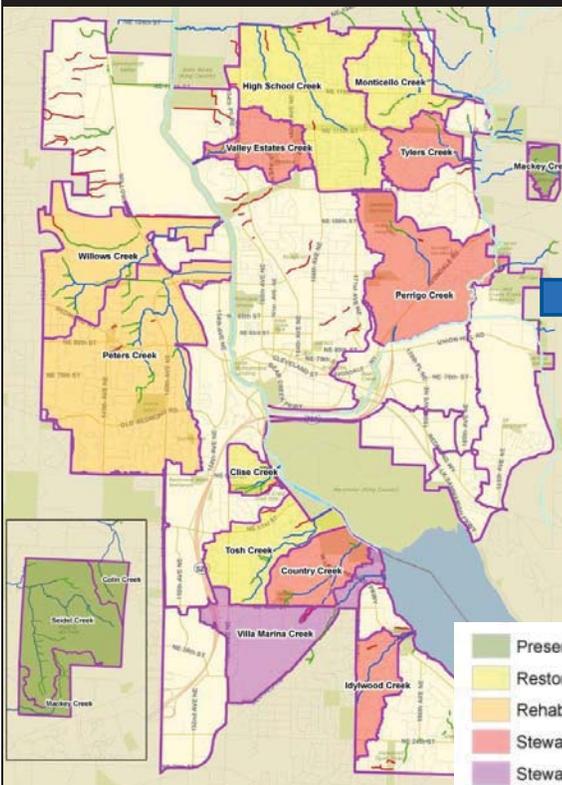


2001



Willows Creek at Overlake Church

# What to do with all this good info...



Tosh Creek Study starts 2012

- Preserve
- Restore
- Rehabilitate
- Stewardship
- Stewardship

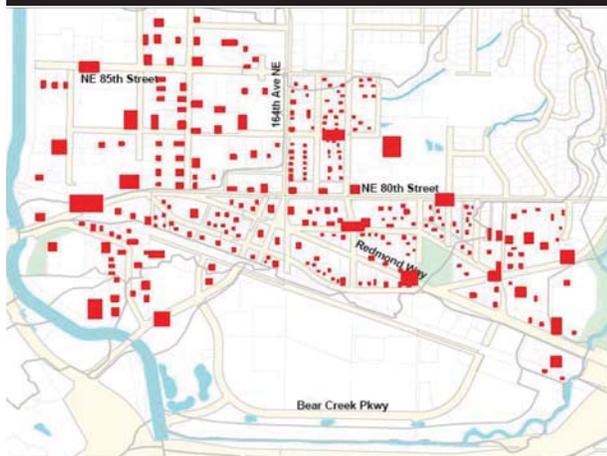
# Hot Topics – Flow Control & Treatment

- Prevent/Minimize impacts through Low Impact Development techniques
  - Porous sidewalks
  - Raingardens/Bioretention



# Hot Topics – Regional Facilities

- Regional Facilities for the Urban Centers that handle flow control and water quality - meets needs of new development and retrofits existing areas



# Future Projects

## Overlake Regional Facilities

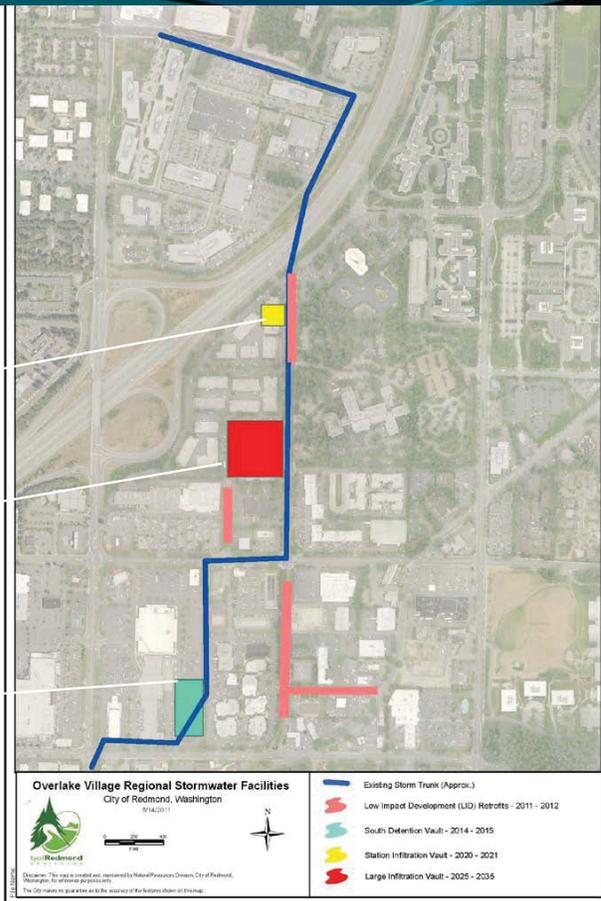
### Station vault (future)

*Flow Control (infiltration) and water quality*

### North vault (future)

*Flow Control (infiltration) and water quality*

### South Detention Facility (in design)



# Future Projects

- Major Stream Rehabilitation Projects
  - Lower Bear Creek Rehabilitation – Town Center to the River (constr 2012,2013)
  - Evans Creek Relocation – SE Redmond (constr 2015-16)
  - Sammamish River Restoration – NE 90<sup>th</sup> to Willows Creek (constr 2019)
- ~13 barrier removals (2012-2016)



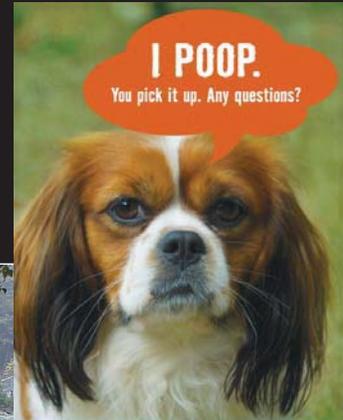
# How Can I Help? Prevent pollution at the source



**Spill Response Line  
(425) 556-2868**



- Wash cars at the car wash
- Maintain vehicles – fix leaks
- Properly dispose of wastes



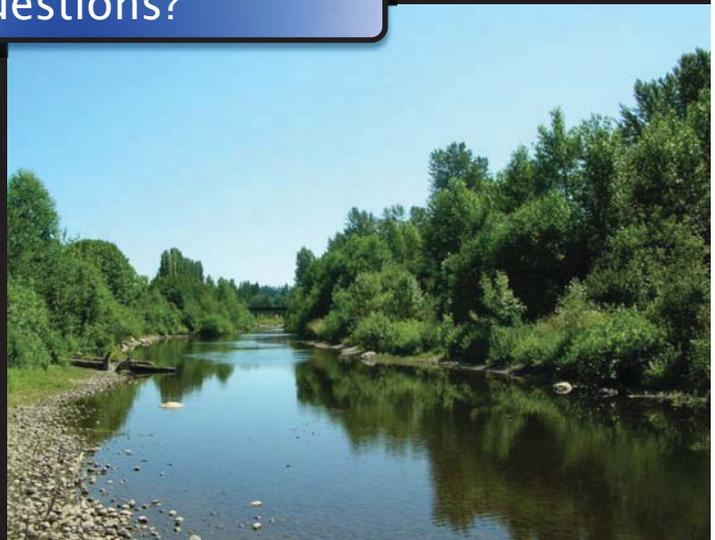
Use pervious surfaces for patios and paths



Let the rain soak in, build soil with mulch and compost. Limit use of chemicals.

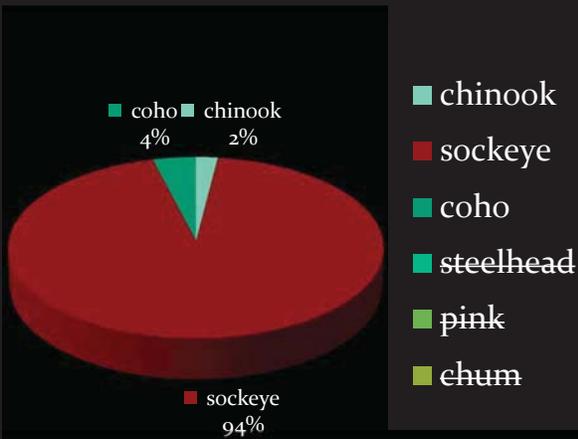


Questions?





# Redmond's Salmon



- Chinook "threatened" 1999
- Coho "species of concern" 2004
- Steelhead "threatened" 2007



# Buffer Restoration

