

**Liberty Bay Fecal Coliform TMDL**  
*Introductory Meeting*

**The Clean Water Act: How we get  
to clean water**

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DEPARTMENT OF  
**ECOLOGY**  
State of Washington











# Ecology's authority

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- List polluted waters (“303d list”)
- Develop plans (TMDLs) to clean up waters
- Manage NPDES permits & state discharge permits
- Enforcement under RCW 90.48.080

# **TMDLs defined**

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**Total Maximum Daily Load = the maximum input of a pollutant that still allows water body to meet standards**

**TMDL = Waste load allocations + Load allocations + Safety Factor**

# The two TMDL tasks

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Quantify -- How much bacteria can these two marine inlets accept and still meet state standards?

Implement – What approaches will be successful in achieving bacteria reductions?

...and **delegate to local authorities**

# TMDLs in Washington state

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1-year study confirms pollution, reviews land uses, points to locations & types of sources

Implementation plan

- Local, state, tribal, federal stakeholders
- Assigns responsibility to point sources/permit holders
- Tasks & schedule to meet state WQ standards



# Liberty Bay 303d Listings

## Category 5 Fecal Coliform Bacteria

- 10 marine areas
- 7 stream segments/5 streams

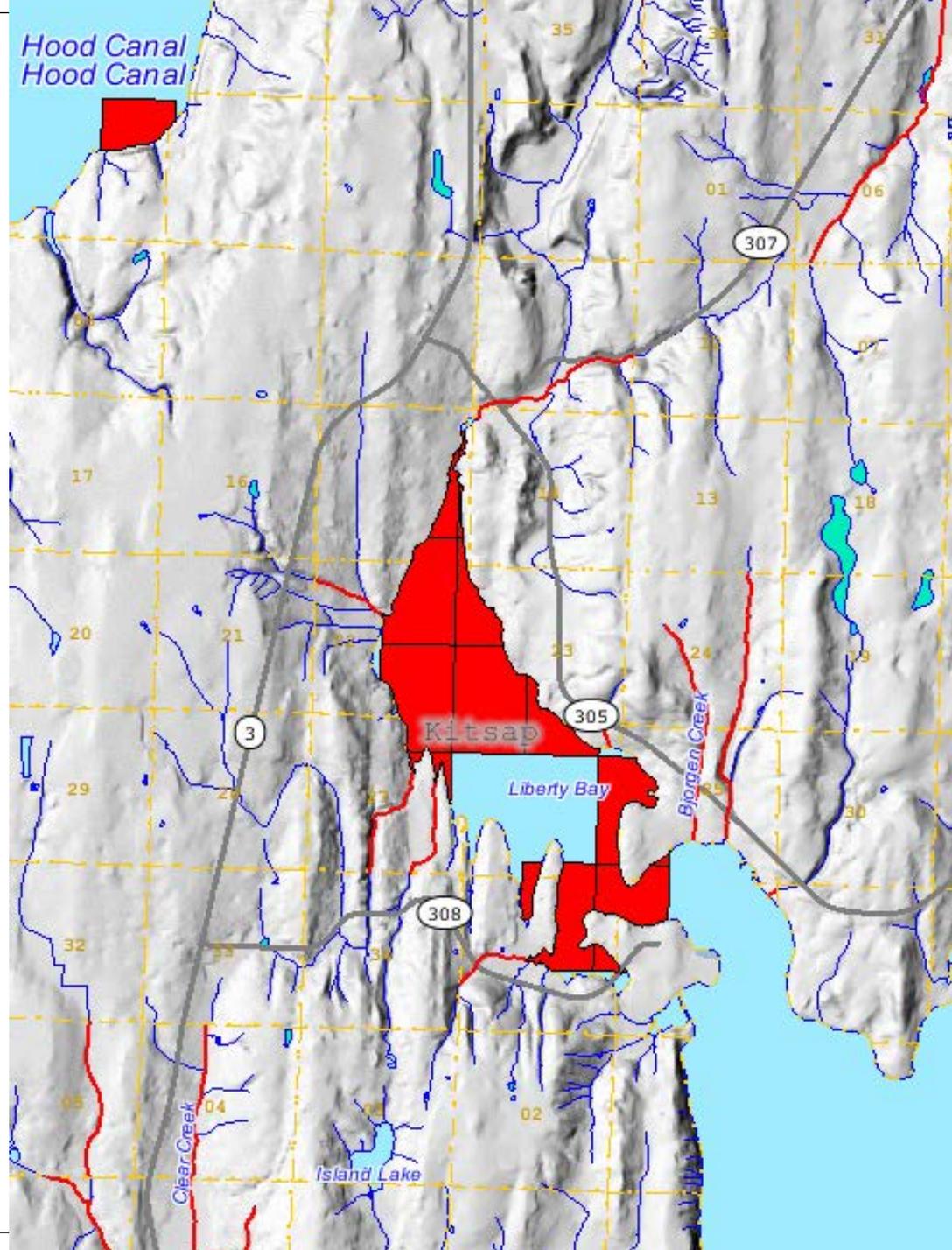
## Category 5 Dissolved Oxygen

- 4 marine areas
- 11 stream segments/9 streams

## Category 4B

10 listings/2 streams

## Other Contaminants



# What kind of watershed is Liberty Bay?

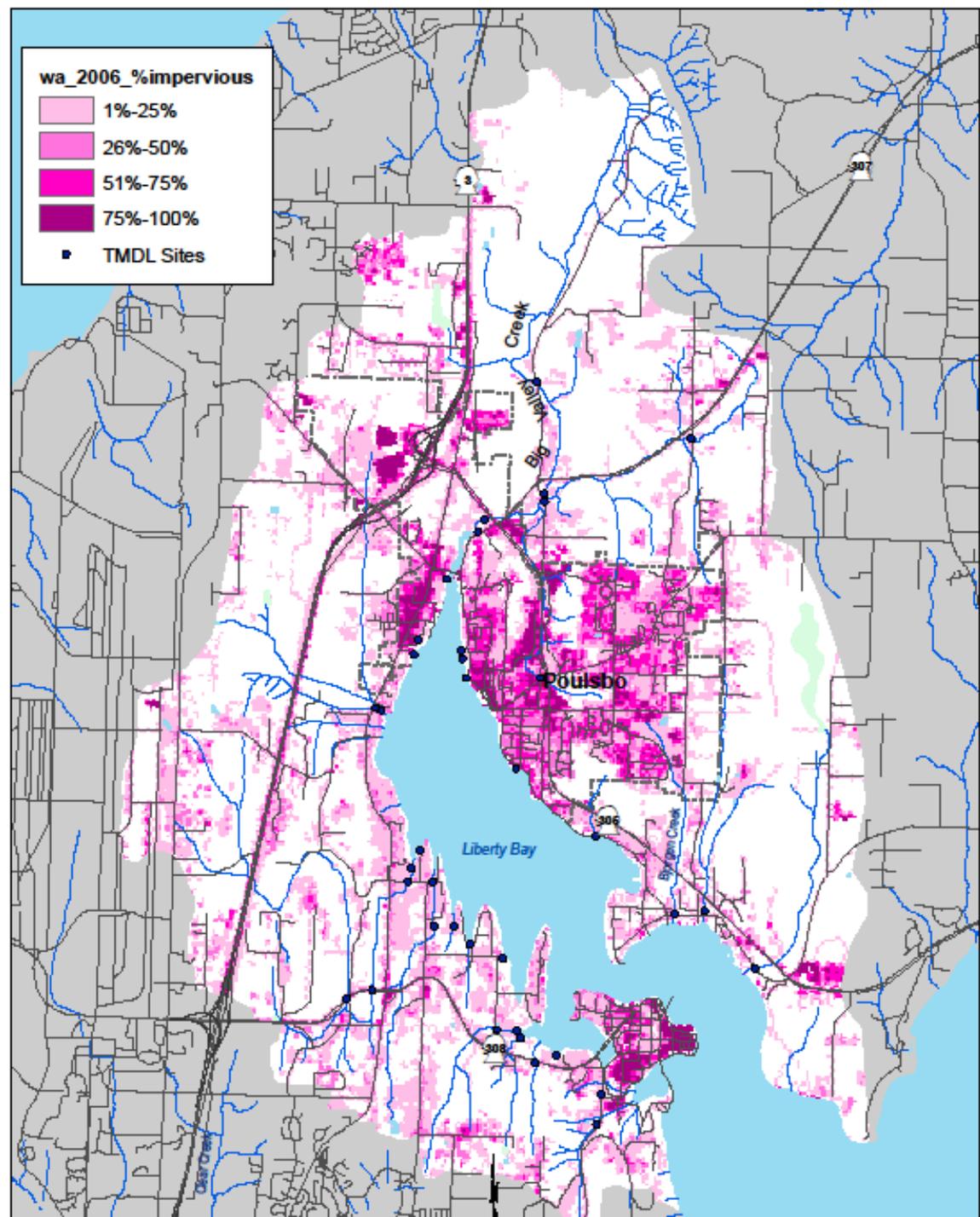
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## Land Uses

- Impervious area
- Waterfront homes
- Marinas & water recreation
- Pets
- Livestock
- Roads
- Lawn fertilizers



# Liberty Bay watershed impervious area



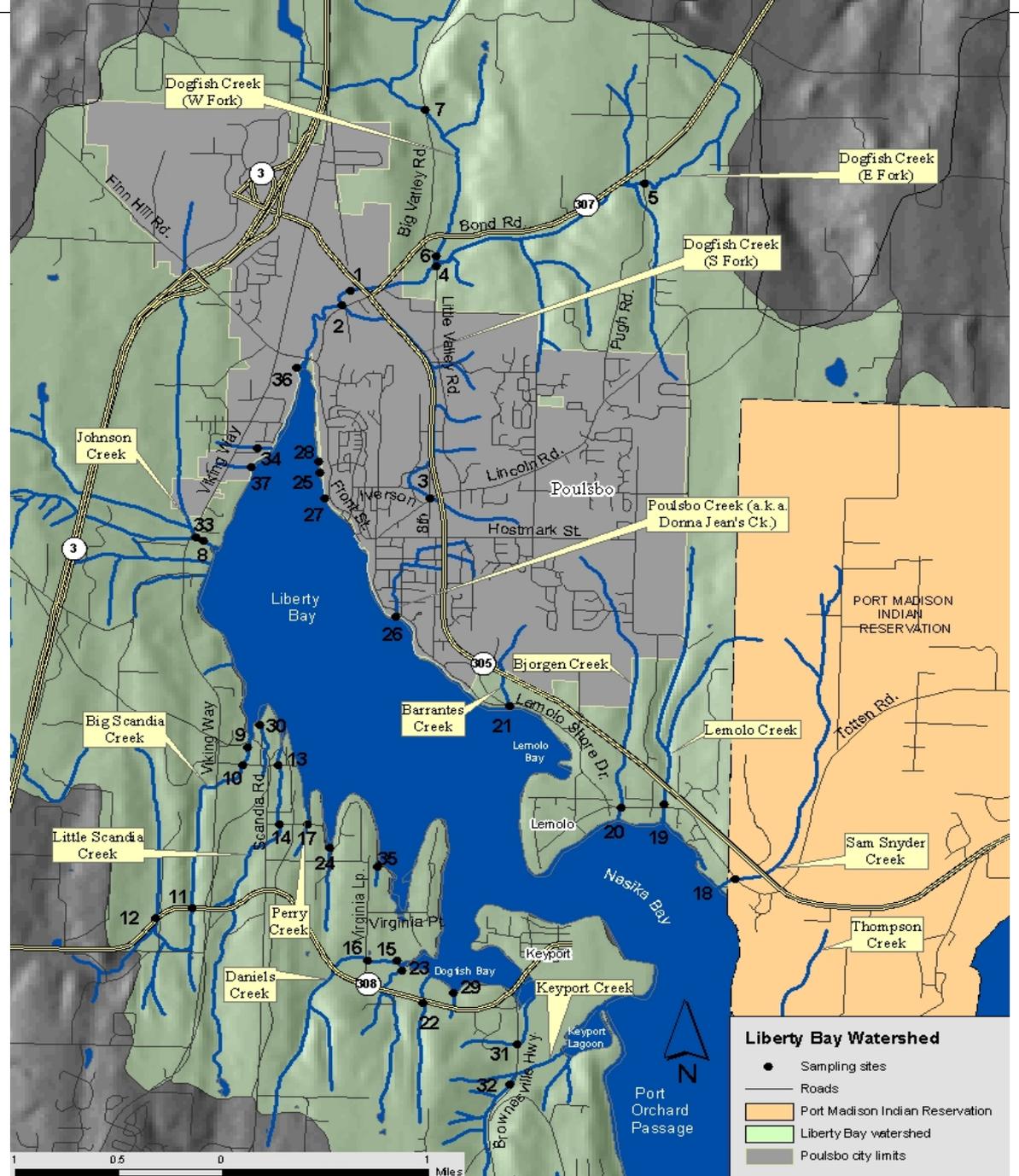
# Assigning responsibility – point sources

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- Municipal stormwater permittees
- State highways (WSDOT)
- Industrial facilities
- Naval Base Kitsap at Keyport
- Farms with CAFO permits
- Municipal sewer treatment facilities – sewer collection pipelines



# NPDES Stormwater Permittees



# Timing – TMDLs & permits

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- TMDLs with WLAs and LAs – approved by EPA
- Next permit issuance – (2012): TMDL requirements incorporated by reference



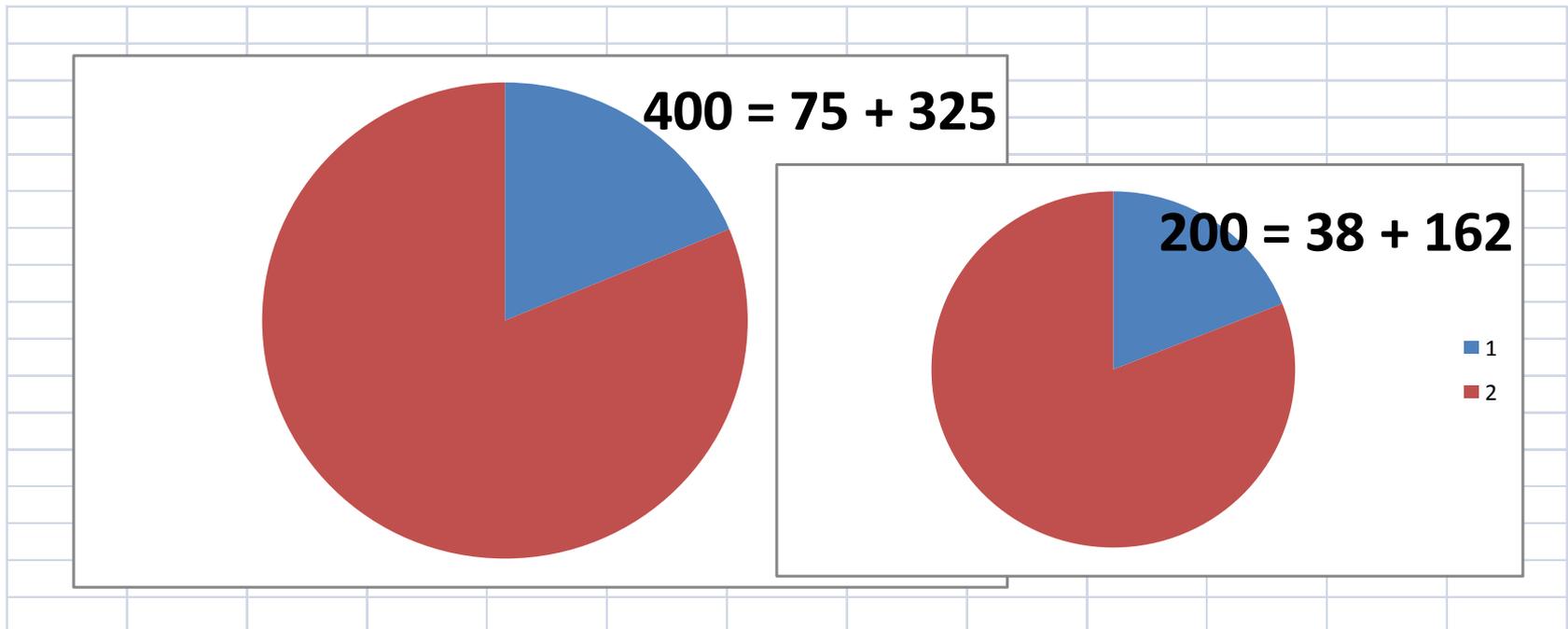
# Load & wasteload allocations

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Mucky Creek

FC concentrations need to be reduced by 50%  
(current GM = 121, 90<sup>th</sup> %ile = 400)

Percent reduction in FC applies to both (or all)  
permittees and any nonpoint sources



# Wasteload allocation (2 or more permittees)

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## EXAMPLE

Bjorgen Creek FC needs to be reduced by 95%

$$GM = 77$$

$$90^{\text{th}} \text{ \%ile} = 1070$$

### WLA:

- Kitsap County reduce FC inputs by 95%
- City of Poulsbo reduce FC inputs by 95%
- WSDOT implement permit at Highway 305

# How do NPDES stormwater permittees reduce FC?

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- TMDL assigns responsibility at a monitoring site
- Permittee
  - ❑ Reviews land uses & MS4 drainage system
  - ❑ Conducts illicit discharge investigation
  - ❑ Makes sure MS4 operation and maintenance meets standards, is in good repair
  - ❑ Interviews private property owners that discharge to the MS4/Pollution prevention & education
  - ❑ Looks for cross-connections

# Municipal stormwater programs and BMPs needed to reduce FC

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- Illicit Discharge Detection - dry weather screening, following up problem WQ data
- Focus neighborhoods –inspect private storm systems that discharge to municipal system & educate owners
- Infrastructure repair
- Operations & maintenance – frequency of sweeping, vault cleanout

# Better site planning in development and redevelopment

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- Proposed (future) LID sections of Ecology Phase II stormwater permit

<http://www.ecy.wa.gov/programs/wq/forms/lidspubcomments.html>

- Review, coordinate with infrastructure improvements (including roads)



# Reducing bacteria and nutrients from nonpoint sources

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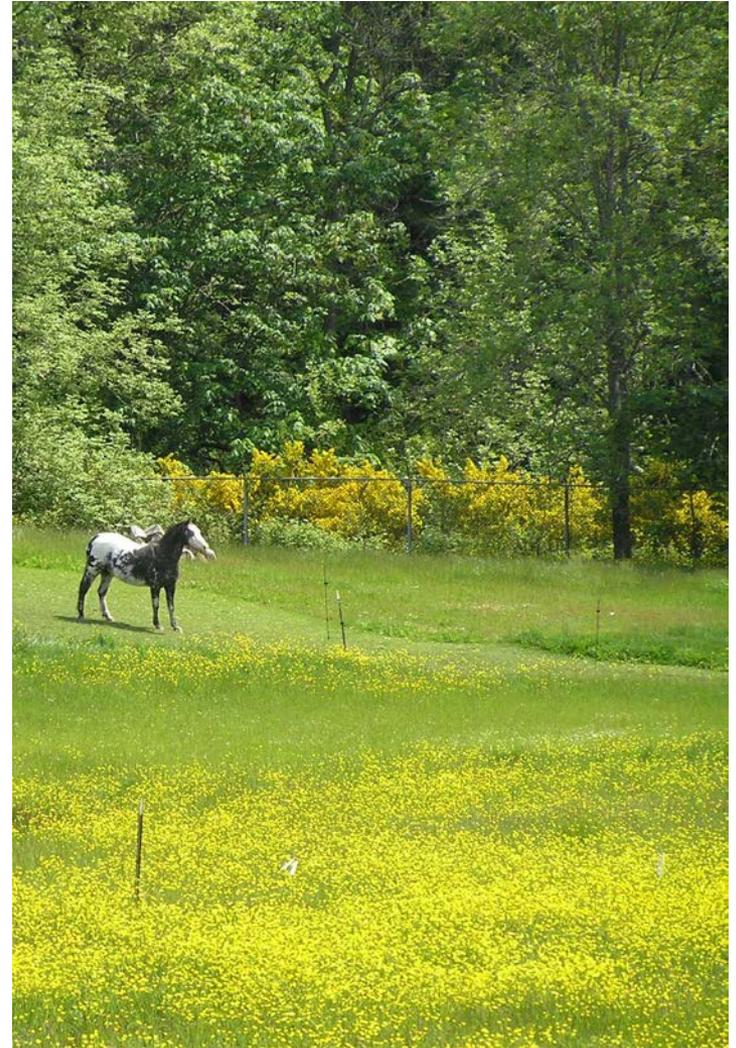


- Failing onsite septic systems
- Pet waste
- Livestock manure – mud management, watering areas
- Wildlife attracted to human sources of food
- Human recreation – boating, fishing

# Reducing bacteria from nonpoint sources

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- Education & outreach
- Additional monitoring
- Enforcement
  - Onsite sewage system required inspections/repair
  - Livestock site visits, referrals to Conservation District, Ecology enforcement under 90.48.080



# Engaging the public – 7 simple things

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- Inspect septic system
- Pick up pet waste
- Manage livestock manure & lawn chemicals
- Boaters – use marina pumpout stations
- Plant & protect riparian buffers
- Go Native along your waterfront



- Get involved – call **Kitsap1** if you see a water quality problem.

# Your ideas are needed...

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- Involving the public – residents who will “talk up” water quality issues
- Support a water quality theme for Poulsbo Park Days in fall 2011?
- Involve schools? Garden clubs, Rotary?
- Marine Science Center?
- Boaters & marinas

# Next steps

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- Draft TMDL Study and Implementation Plan – available online early September 2011
- Meeting to review Implementation Plan – early September

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