Addressing Threats from Increasing Development in the McKenzie Watershed

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Outline

- EWEB's Source Protection Program
- Overview of development trends & threats
- Non-regulatory approaches for long-term mitigation and protection

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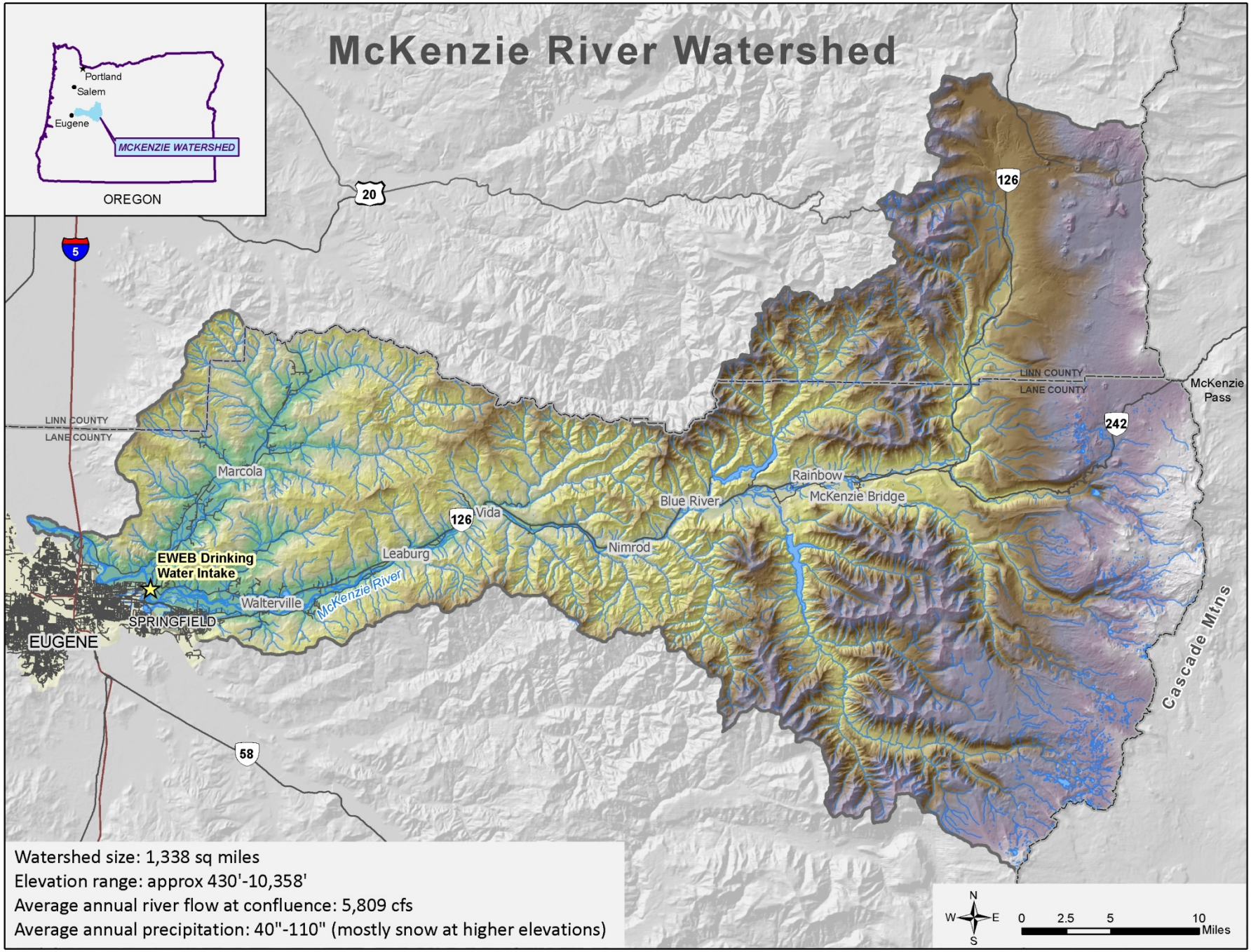
Columbia River
Washington
Willamette Watershed
McKenzie Watershed
McKenzie River
Portland
Willamette River
Salem
Eugene
Springfield
Pacific Ocean
Oregon
Idaho
California


McKenzie River Watershed
Portland
Salem
Eugene
MCKENZIE WATERSHED
OREGON
20
126
5
LINN COUNTY
LANE COUNTY
McKenzie Pass
242
Marcola
Rainbow
McKenzie Bridge
Blue River
Vida
126
Nimrod
Leaburg
EWEB Drinking Water Intake
McKenzie River
Walterville
SPRINGFIELD
EUGENE
58
Cascade Mtns
Watershed size: 1,338 sq miles
Elevation range: approx 430'-10,358'
Average annual river flow at confluence: 5,809 cfs
Average annual precipitation: 40"-110" (mostly snow at higher elevations)
N
W
E
S
0
2.5
5
10
Miles

Eugene Water & Electric Board (EWEB)

- Publically-owned utility (1911)
- Electric Side:
  - EWEB-owned generation (hydroelectric, wind, solar, co-generation facilities)
- Water Side:
  - McKenzie River is the sole source of drinking water for ~200,000 people

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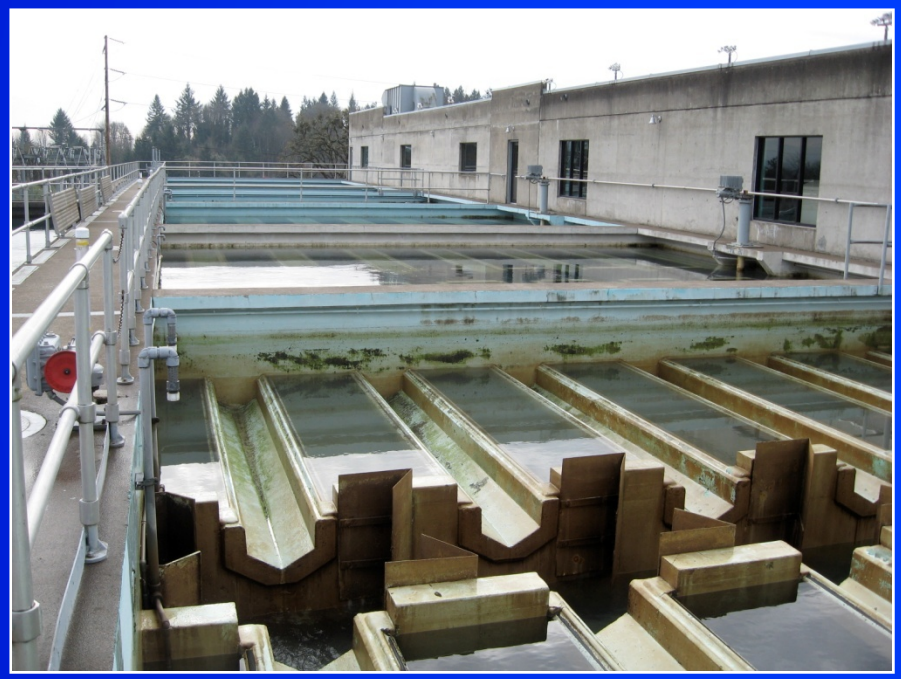
EWEB's Drinking Water Source Protection Program



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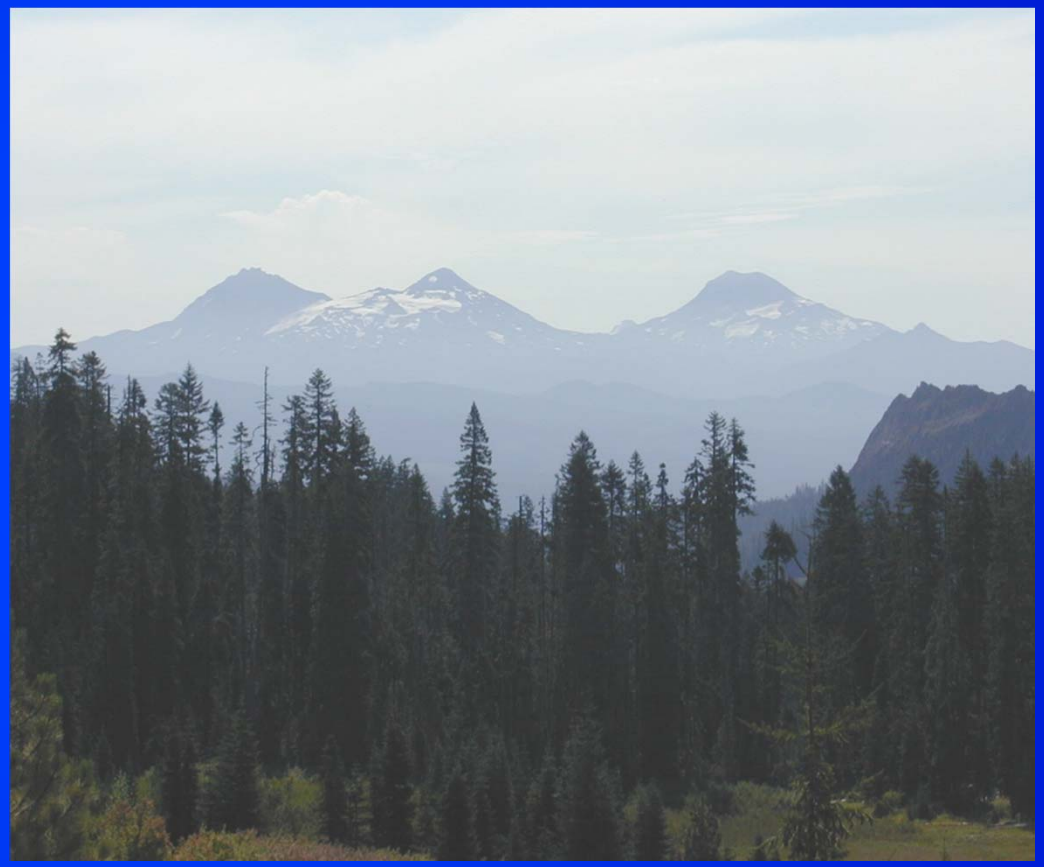
Source Protection Program Objective

To measure the balance between watershed health and human use over time and to implement actions that maintain a healthy balance for production of exceptional water quality.



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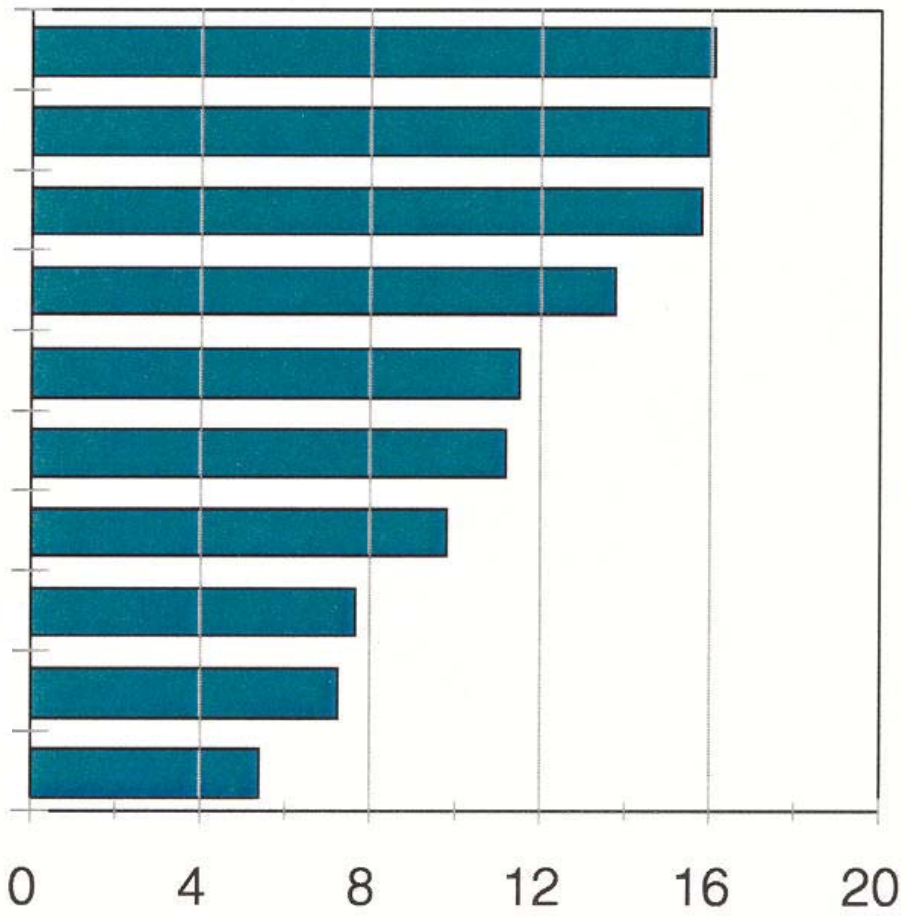
RISK CATEGORIES RANKED BY AVERAGE SCORE

Urban Stormwater Runoff
Development/Septics
HazMat Transport Spills
Industrial Facilities
Road Herbicide Spraying
Agricultural Activities
Forestry Activities
Camp Grounds/Recreation
Fish Hatcheries
Dams & Powerhouses



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Elements of Source Protection Program

- Comprehensive Monitoring
- Disaster Preparedness and Response
- Point Source Evaluation and Mitigation
- Nonpoint Source Evaluation and Mitigation
- Education and Research Assistance
- Land Acquisition/Conservation Easements
- Watershed Land Use Tracking and Management
- Public Outreach and Information Sharing

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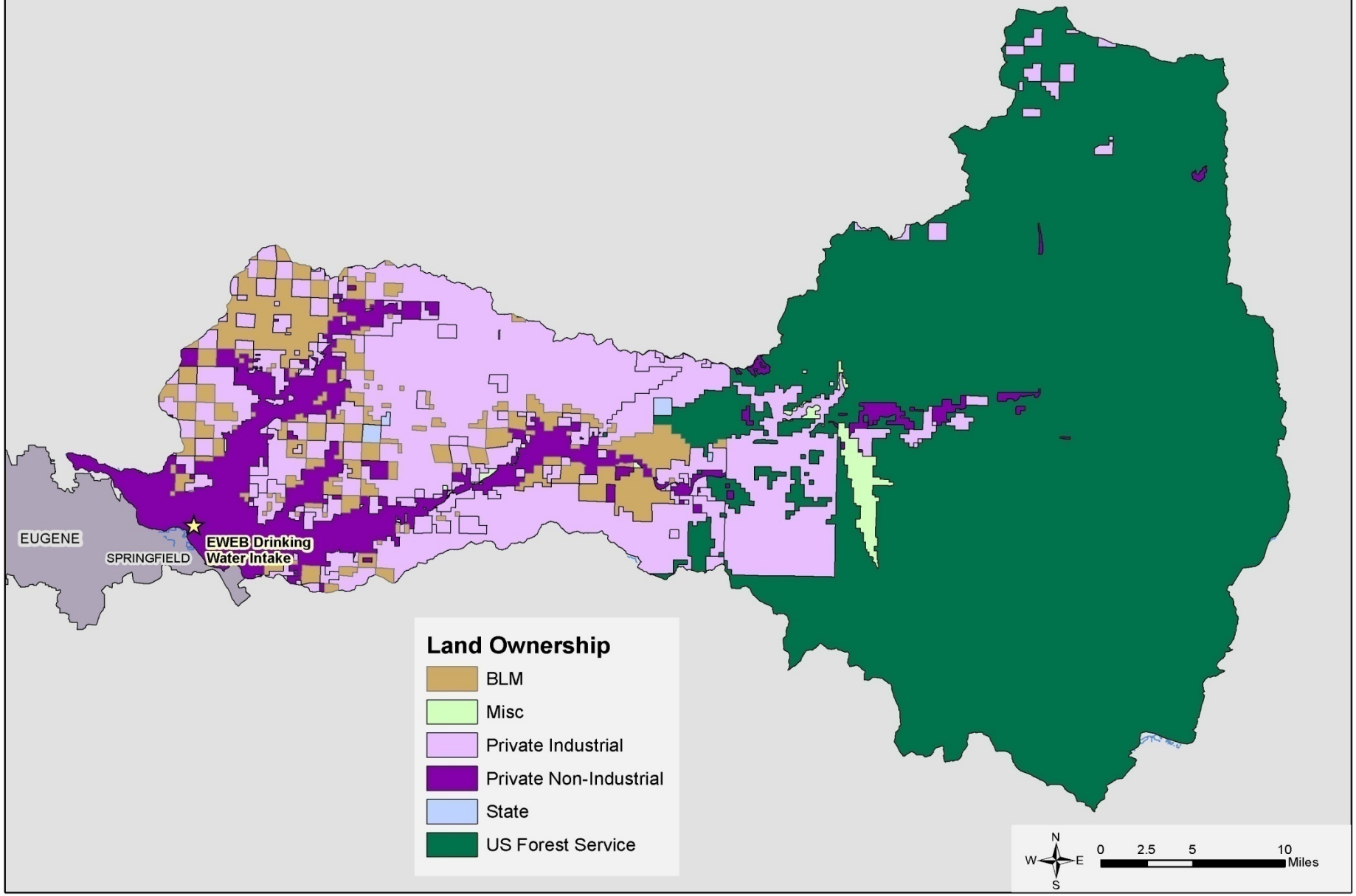
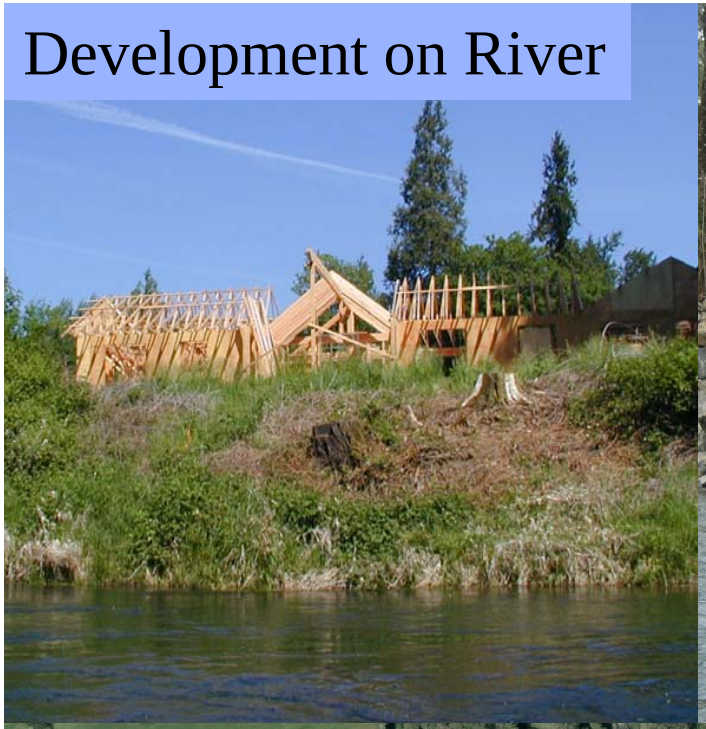
Land Ownership in the McKenzie River Watershed



Development on River



Increased Development in Riparian Areas can lead to...

- Increase in ***pesticide and fertilizer use close to water***
- ***Loss of riparian vegetation***
- Increased ***use of revetment***
- ***Loss of floodplain function***
- Increased ***use of chemicals to treat decks, protect roof and home exterior, maintain equipment***
- Higher density/clusters of ***septic systems***

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Healthy Riparian Areas

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Healthy riparian areas and floodplains provide critical water quality functions:

- Filter sediment
- Buffer chemical runoff from farms, forests, and residences
- Slow floodwaters and control erosion
- Water storage/aquifer recharge
- Decrease stream temperatures by providing shade
- Provide habitat for fish and wildlife

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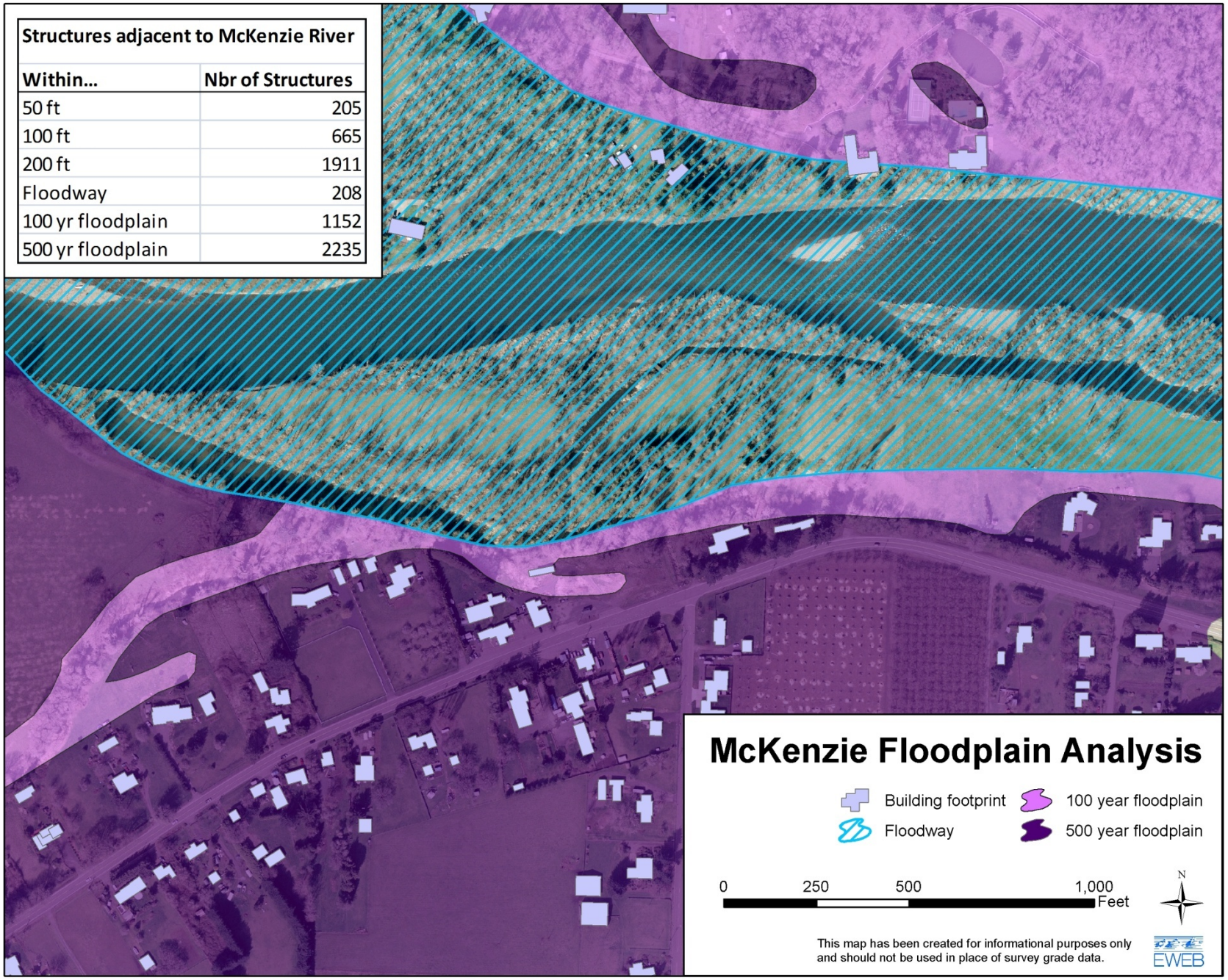
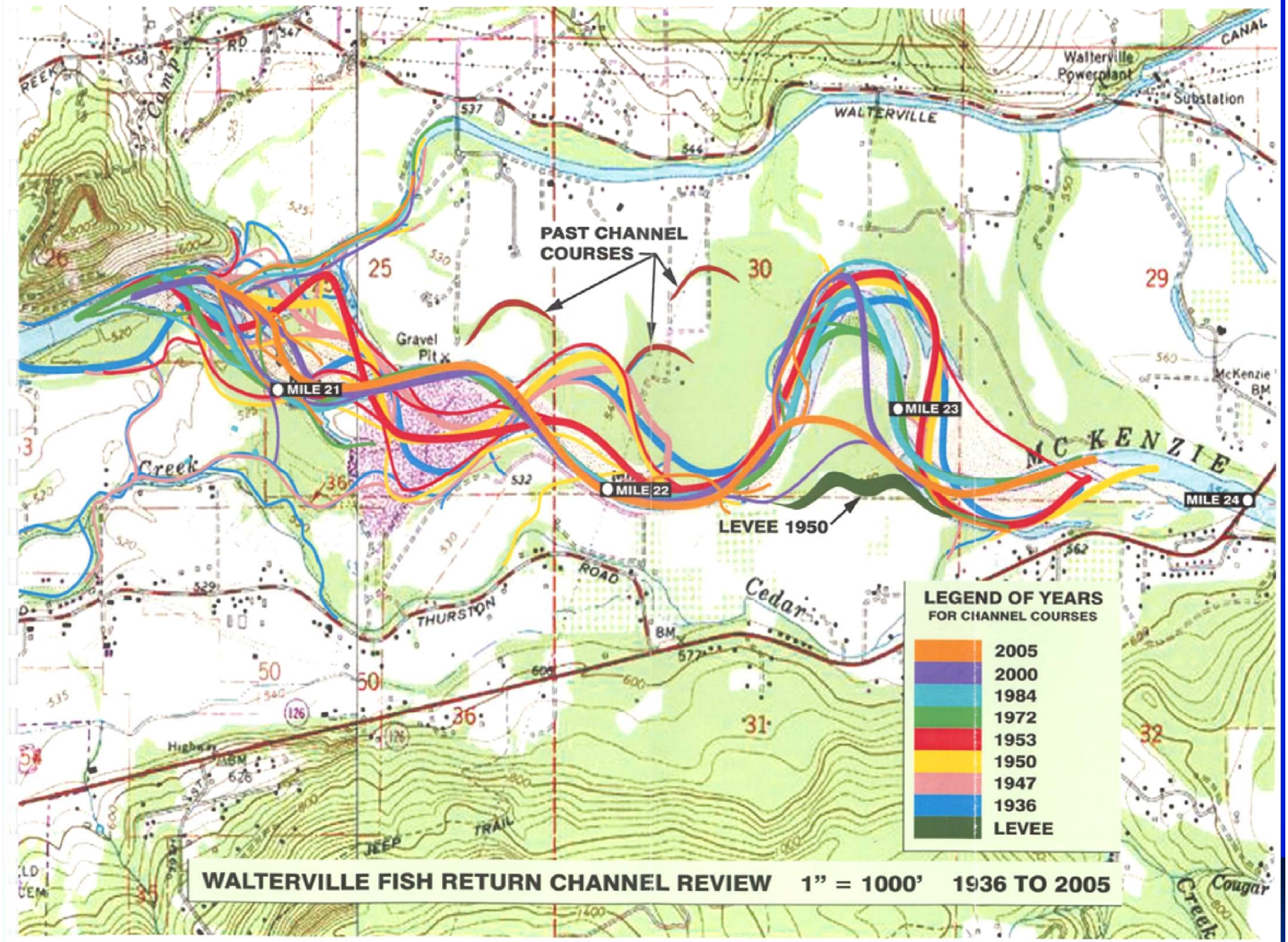
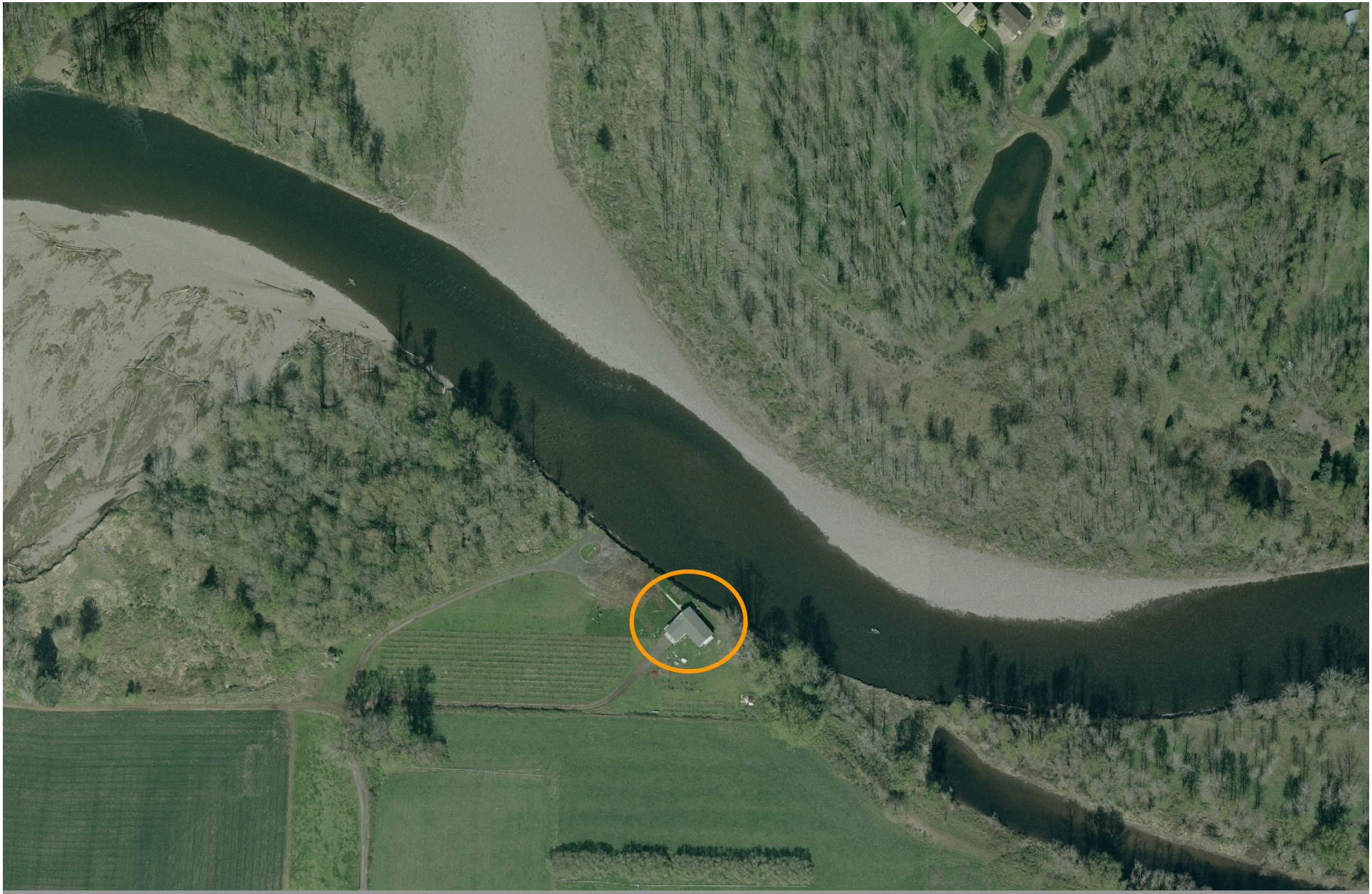
Structures adjacent to McKenzie River	
Within…	**Nbr of Structures**
50 ft	205
100 ft	665
200 ft	1911
Floodway	208
100 yr floodplain	1152
500 yr floodplain	2235



620 homes or 1,152 structures are located within the 100 year floodplain


PAST CHANNEL COURSES
MILE 21
MILE 22
MILE 23
MILE 24
LEVEE 1950
Gravel Pit
Walterville Powerplant
Substation
CANAL
WALTERVILLE
McKENZIE
Creek
THURSTON
ROAD
Cedar
Cougar
TRAIL
JEEP
LEGEND OF YEARS
FOR CHANNEL COURSES
2005
2000
1984
1972
1953
1950
1947
1936
LEVEE
WALTERVILLE FISH RETURN CHANNEL REVIEW 1" = 1000' 1936 TO 2005



Structures within meander zones are also at risk

2004 Aerial Photo

2006 Aerial Photo

How do we mitigate for development?

Regulatory vs. Non-Regulatory

Current political climate:

- No new taxes…no new regulations
- Less government
- Private property rights
- Urban vs. rural

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LAND USE

A river of discontent

A decision to put new riverside development restrictions on a fast track left landowners feeling sidelined

BY MATT COOPER
The Register-Guard

Appeared in print: Sunday, Nov. 14, 2010, page A1

On Oct. 4, John Sullivan could see the storm coming.

Three days earlier, Lane County had sent letters to 9,000 property owners notifying them of plans to protect public drinking water by dramatically expanding riverside development restrictions. One of the proposals: a 200-foot buffer between water sources and development — four times the current setback.

Sullivan, a Lane County Planning Commission member, was worried. People didn't seem to understand the proposals; misinformation was spreading. Property owners were talking about hiring attorneys and challenging the proposals.

Even worse, Sullivan wasn't sure the people were wrong. The county had been working on the proposals for months with the Eugene Water & Electric Board, watershed councils and environmentalists — but not with property owners. Sullivan wasn't sure the public would get a chance for full input before the county Board of Commissioners voted on the changes.

"I have suggested to citizens not to hire attorneys yet, but am concerned things will move along without citizens full engagement," Sullivan wrote in an e-mail to county Commissioner Faye Stewart. "So maybe they should be hiring attorneys."

The storm hit Oct. 26: More than 400 people flooded the county building in Eugene for a hearing on the

Voluntary Solutions for Mitigating Development Impacts

- ***Assistance*** for maintenance and repair of ***septic systems***
- ***Educational series*** on sustainable landscaping for landowners
- ***Voluntary Incentives Program*** that rewards good stewardship along river and tributaries (i.e., protect healthy riparian forests and floodplain areas)

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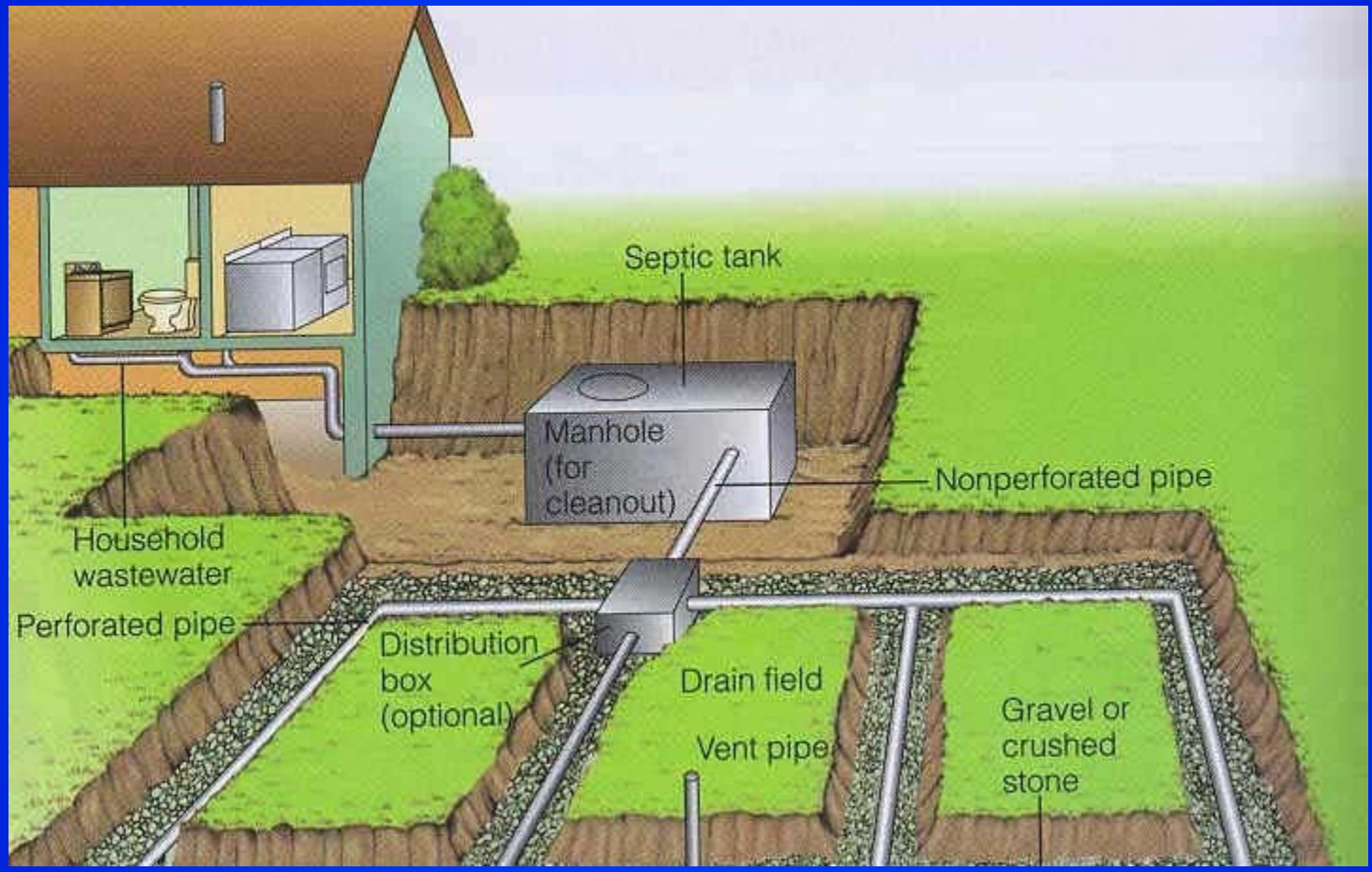
Septic System Assistance



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McKenzie Watershed Septics

- Over 4,000 septic systems in the McKenzie Watershed upstream of EWEB's intake.
- Septic systems in McKenzie release approx. 900,000 gallons/day (330 million/yr).

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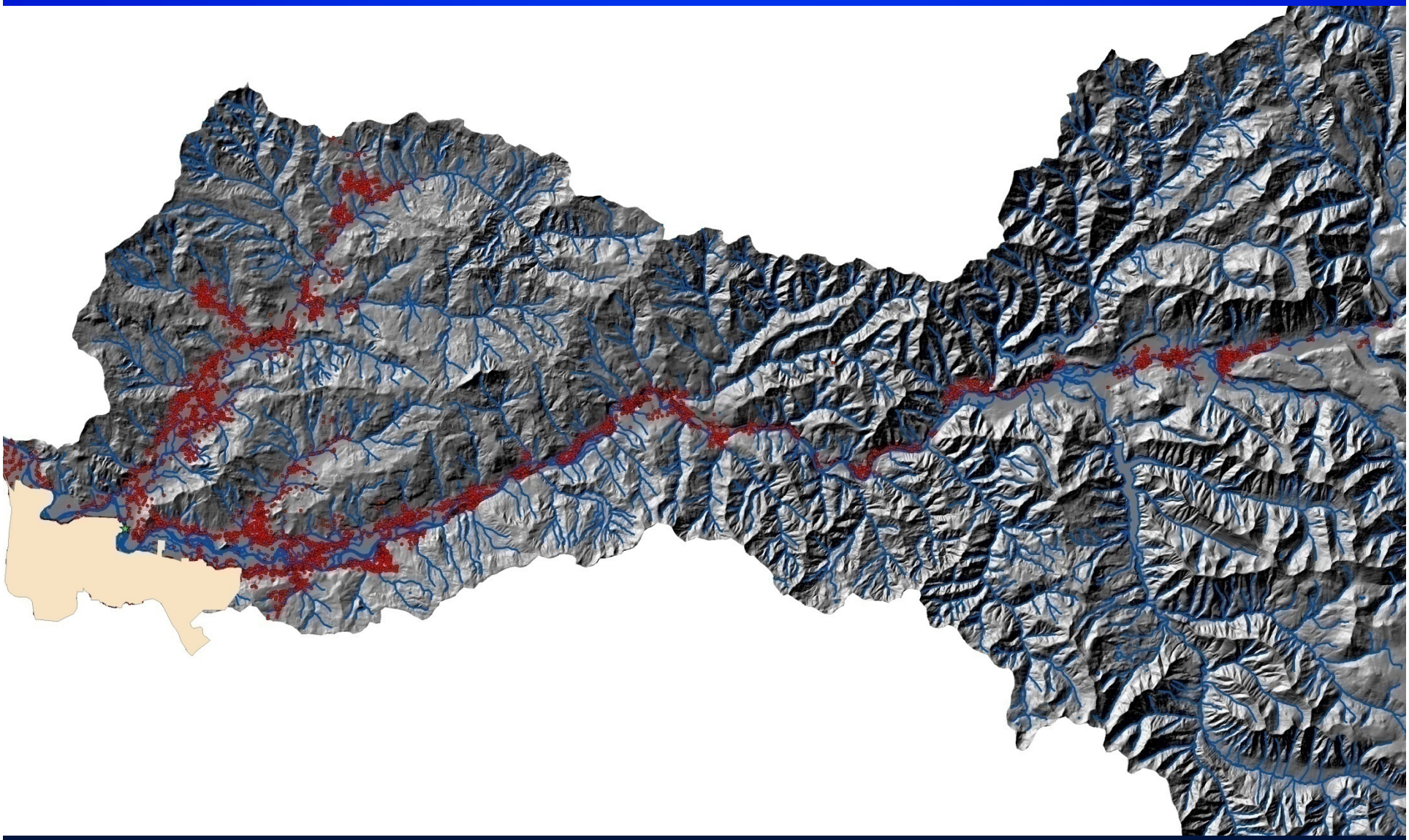
Septic Systems in McKenzie Watershed



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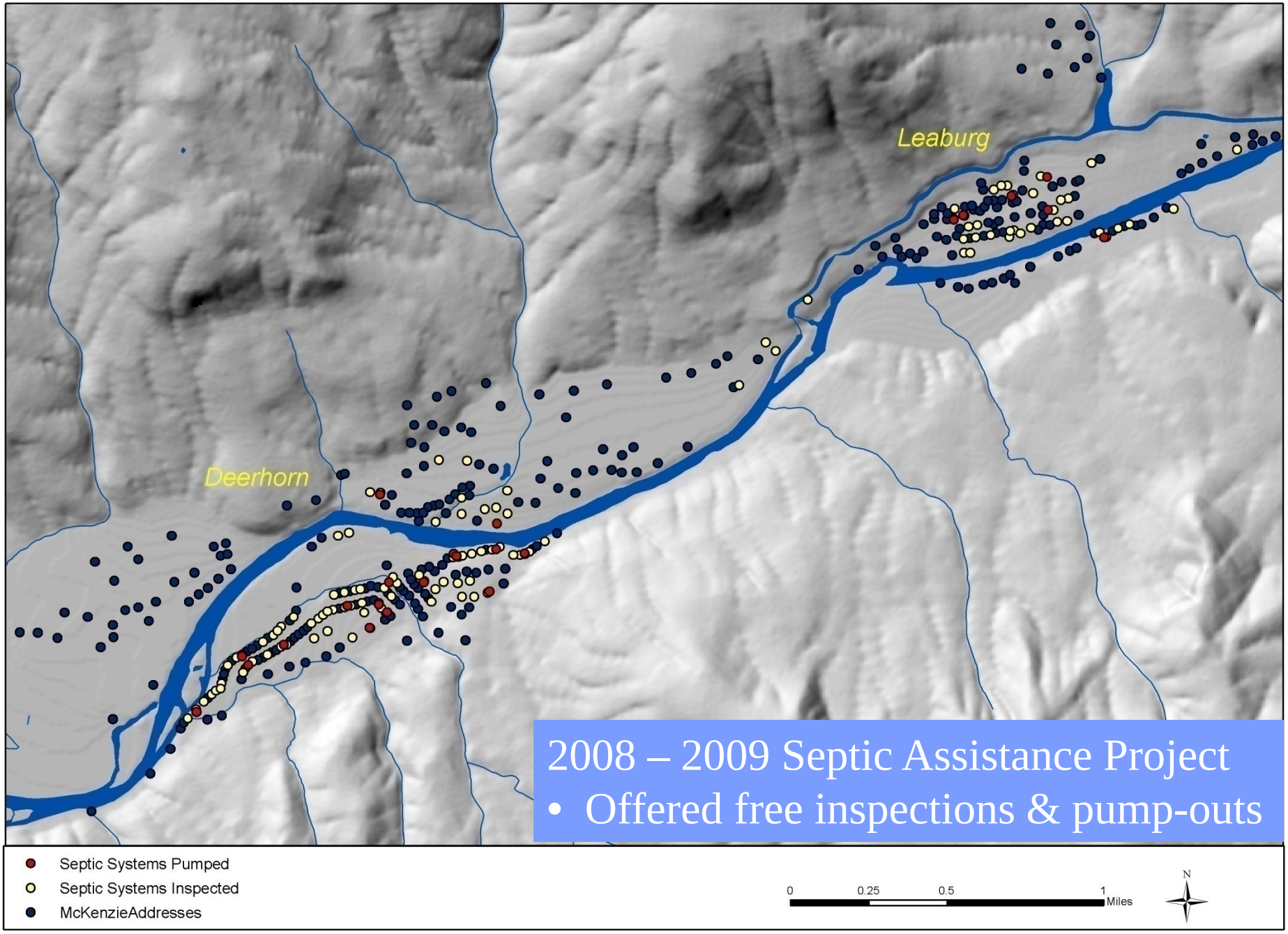
Threats from Septic Systems

- 10-25% of septic systems fail (EPA)
- On-site systems may release high concentrations of organic matter, nutrients, bacteria, viruses, synthetic organics, metals, and pharmaceuticals to the groundwater

Figure 4-2. Deerhorn and Leaburg Inspections and Pump-Outs



Septic System Assistance Grant: Results

- 363 participants (~33% of 1092 targeted)
- 439 septic systems inspected:
  - 108 tanks needed pumping
  - 55 septic systems “failing” – need repairs or replacement
  - Average age of systems - ~24 years

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Septic System Loan Program

- For homeowners above drinking water intake
- Initial investment of $100,000 (revolving loan)
- Zero-interest loan up to $7,000
- Limited grant funding available for low income homeowners

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http://www.eweb.org/septic/assistance

Septic System Cost-Share Program

- EWEB will provide 50% reimbursement for homeowners who have their systems inspected and pumped (if necessary)
- Must use a Dept of Environmental Quality approved contractor and provide documentation of inspection and work completed
- Over 70 homeowners have participated since August 2011

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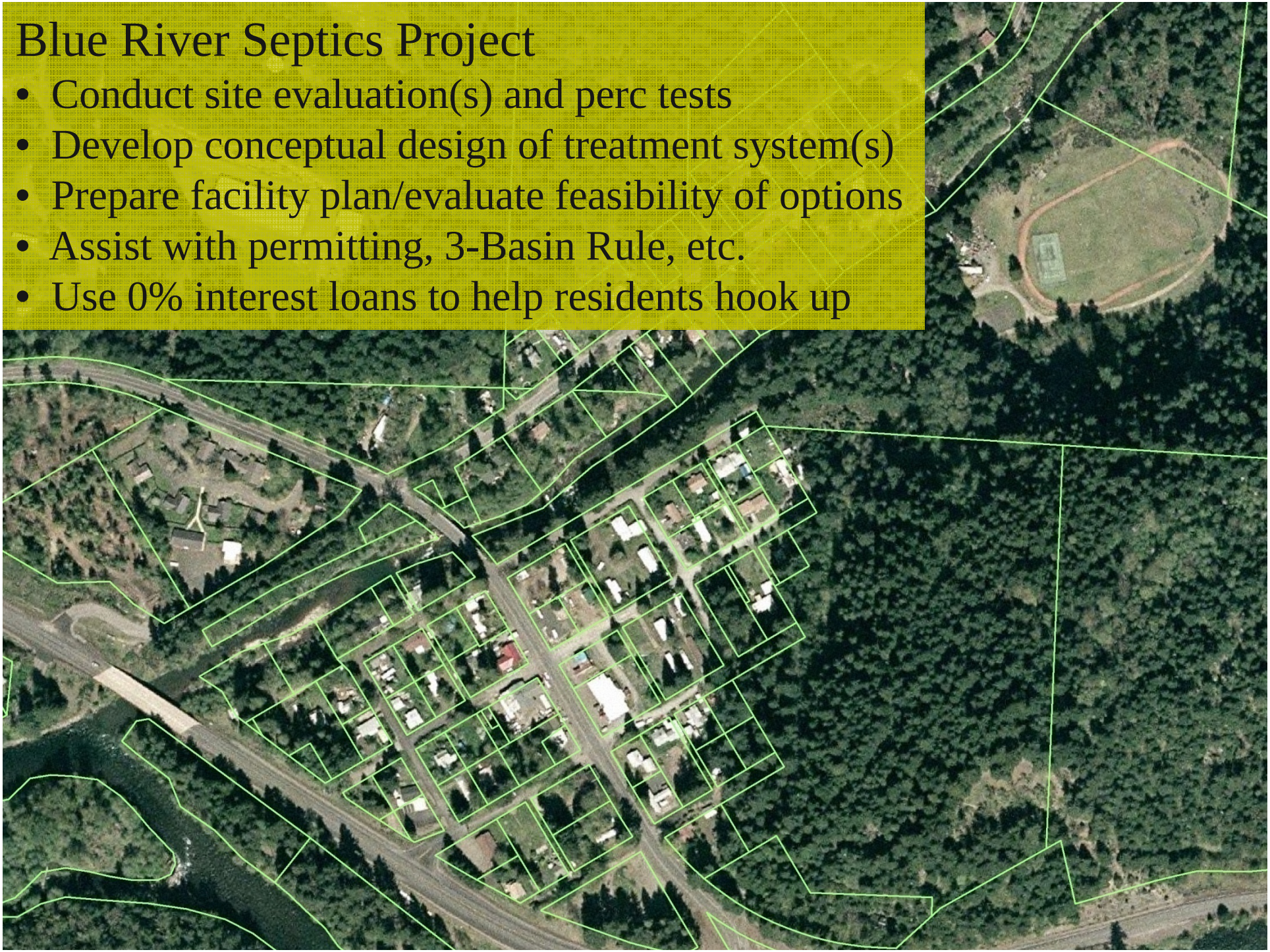
http://www.eweb.org/septic/assistance

Blue River Septics Project

- Conduct site evaluation(s) and perc tests
- Develop conceptual design of treatment system(s)
- Prepare facility plan/evaluate feasibility of options
- Assist with permitting, 3-Basin Rule, etc.
- Use 0% interest loans to help residents hook up



Landowner Education Series

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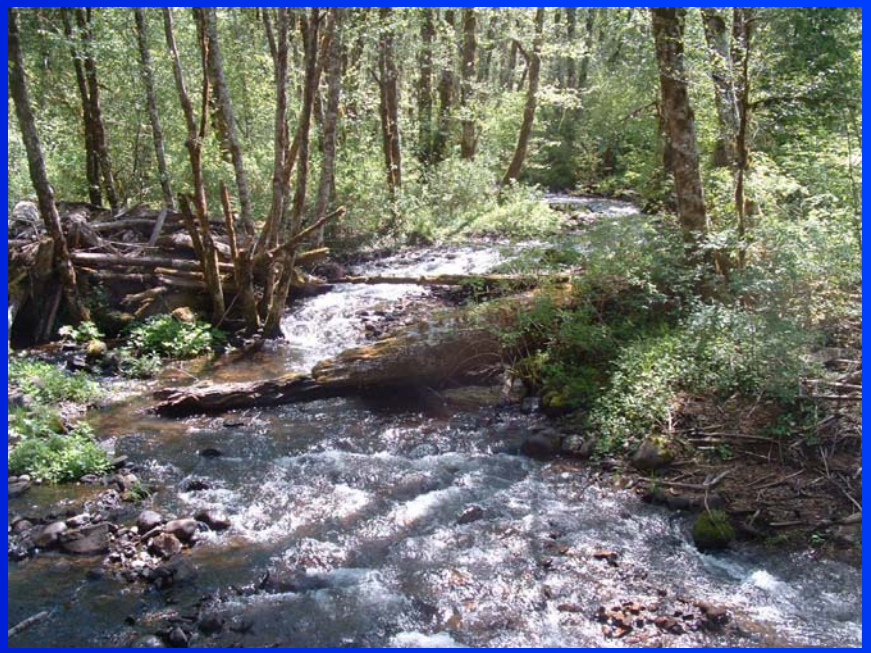
Landowners have the potential to influence water quality through their day-to-day activities and longer-term actions.



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Sustainable Landscaping Classes

- Modeled after Oregon State University Extension Service Sustainable Landscaping class
- Modified to address topics relevant to upriver rural residents

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Purpose of the classes:

Emphasize the connection between landowner activities and the health of the river

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Topics

- Creating Healthy Riparian Areas
- Healthy Lawns; Weed & Pest Management
- Home Maintenance, Septic Systems, & Household Hazardous Waste Disposal

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Resources & Incentives

- McKenzie Watershed Council: assist homeowners with invasive species removal, small planting projects
- OSU Extension Service: technical assistance with soil & nutrient management
- NCAP: information on alternatives to pesticides
- EWEB: financial incentives to plant natives, maintain septic systems

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Voluntary Incentives Program

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Voluntary Incentives Program: What is it?

- Payments for ecosystem services (PES) concept
- Rewards good land stewardship: annual dividend payments for long-term protection of healthy riparian areas
- Locally defined - McKenzie Watershed
- Water quality focus

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How does it work?

- Use GIS and LiDAR to identify riparian areas of interest (marketplace boundary)
- Develop criteria that landowners must meet in order to be eligible for the market
- Use existing local entities for market infrastructure
- Design VIP with landowners & partners
- Use efficient monitoring for compliance

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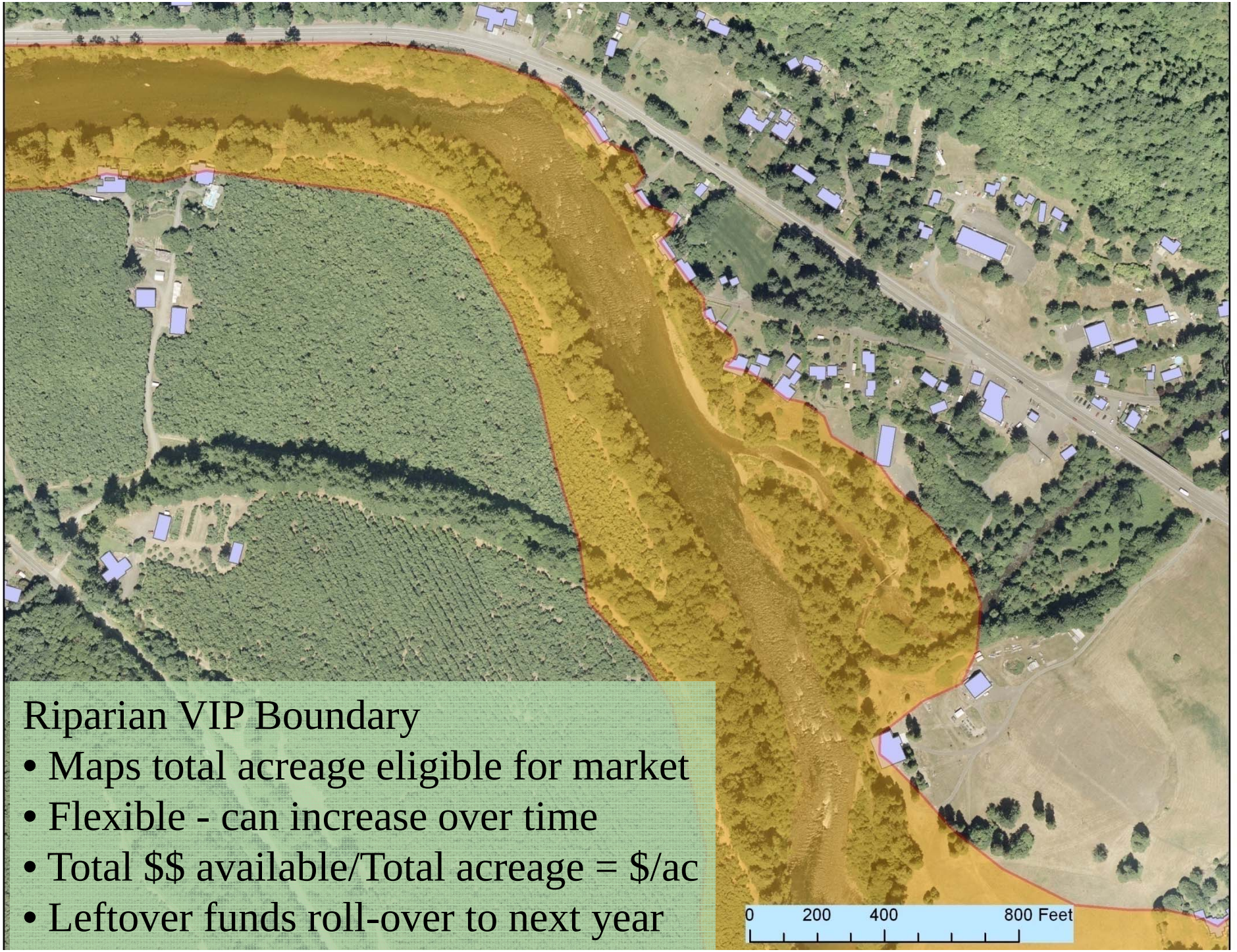
Riparian VIP Boundary
• Maps total acreage eligible for market
• Flexible - can increase over time
• Total $$ available/Total acreage = $/ac
• Leftover funds roll-over to next year
0
200
400
800 Feet

Potential Funding

- Water rate increase
- Source protection funds (move from other programs)
- Grants
- Corporate sponsorship
- Mitigation funds (county)
- Tax base from SWCD

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Next Steps

- Continue to brainstorm with partner agencies/ organizations
- Refine marketplace boundary
- Define ‘healthy riparian’ criteria
- Develop partner capacity to conduct site evaluations
- Education/outreach to landowners
- Obtain funding!!

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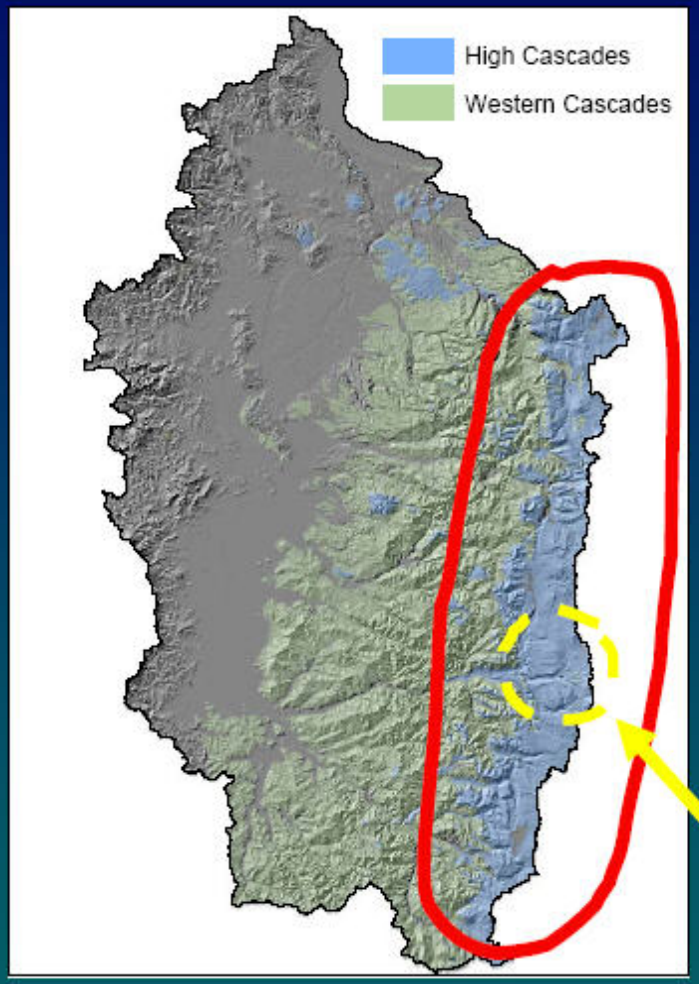
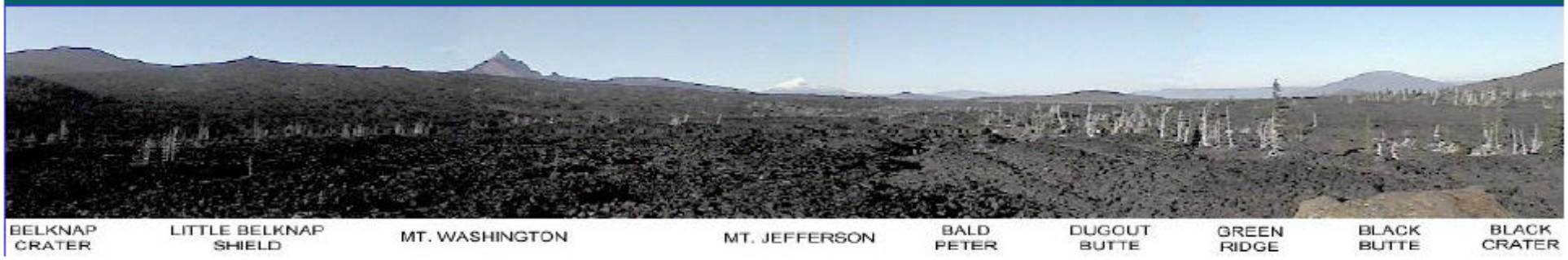


High Cascades

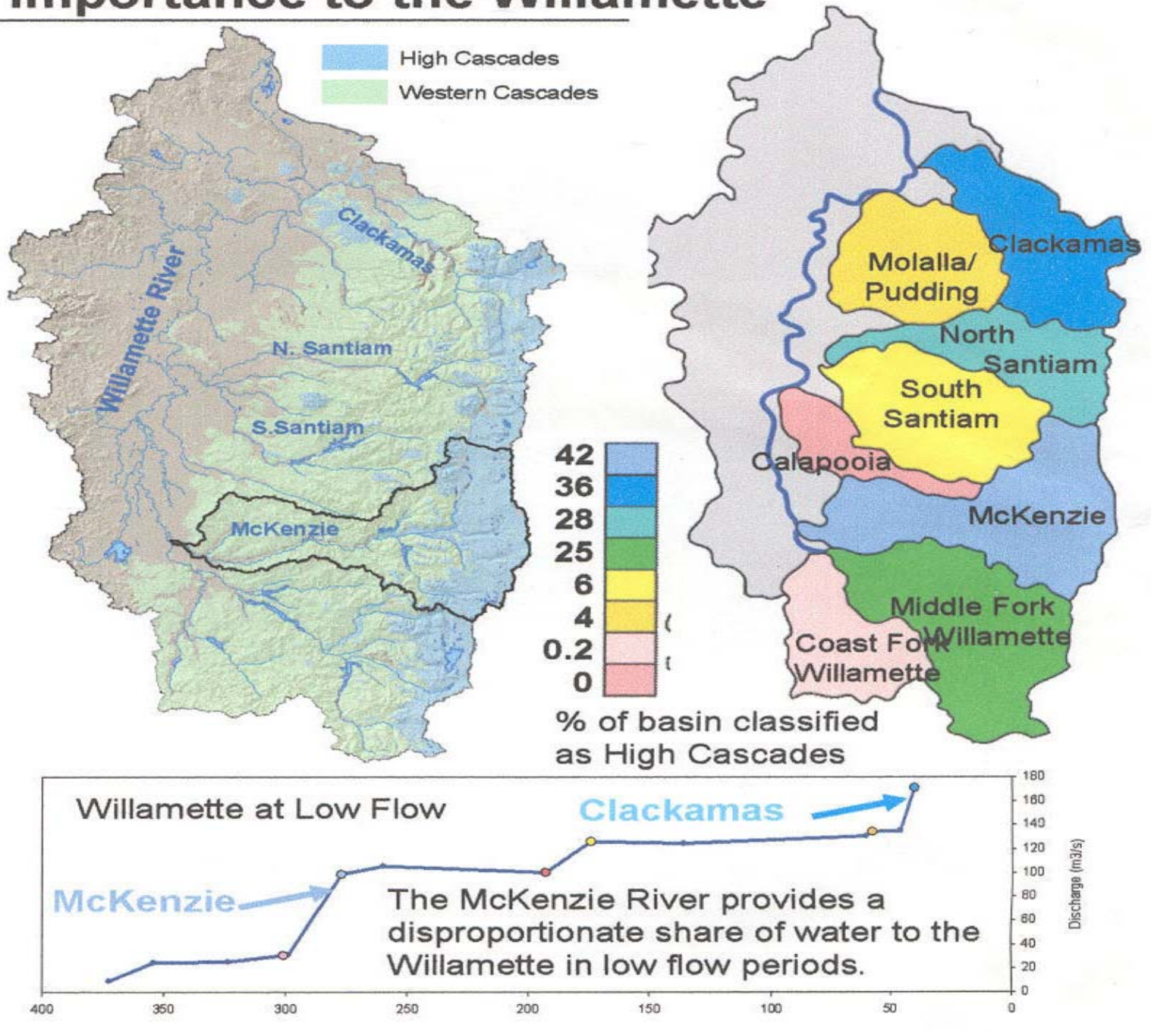
Young basalts, basaltic andesites, andesites, pumice, and ash < 7 million years old

Youngest Mckenzie Pass lava flows (≤ 3000 years old)



Cascade Springs - GUSHERS!

Importance to the Willamette



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Climate Impact Summary

- Loss of snow pack
- Precipitation amounts about the same, but coming as rain rather than snow.
- Earlier spring runoff...longer dry summers
- Volatile weather patterns...droughts & floods
- Increased disease/infestations...increased forest fires.

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Three Classes:

- Creating Healthy Riparian Areas

  (controlling invasive species, planting native species, creating wildlife habitat)
- Healthy Lawns; Weed & Pest Management

  (reducing pesticide use, creating ecolawns, watering efficiently, composting)
- Home Maintenance, Septic Systems, & Household Hazardous Waste Disposal

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