

The wake-up call

“Hidden Wells, Dirty Water”





Power of Partnerships: Lower Yakima Valley

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Overview

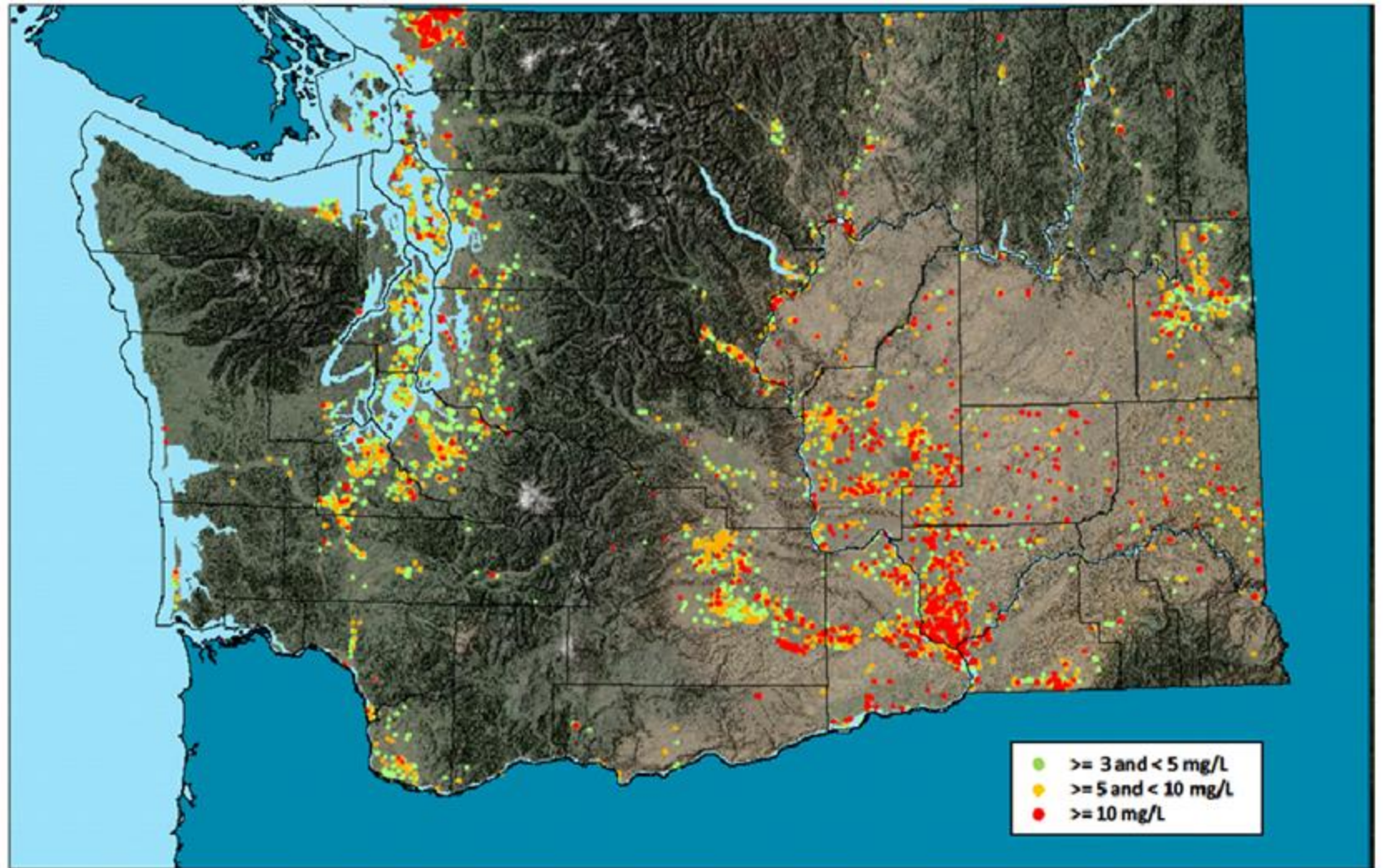
You will learn:

- The sources of nitrate in groundwater
- The science and findings behind extensive nitrate sampling
- Why saying “no” to agriculture is not the answer
- How to build a meaningful community & agency partnerships
- Why a community-based plan is your best friend

Our Promise:

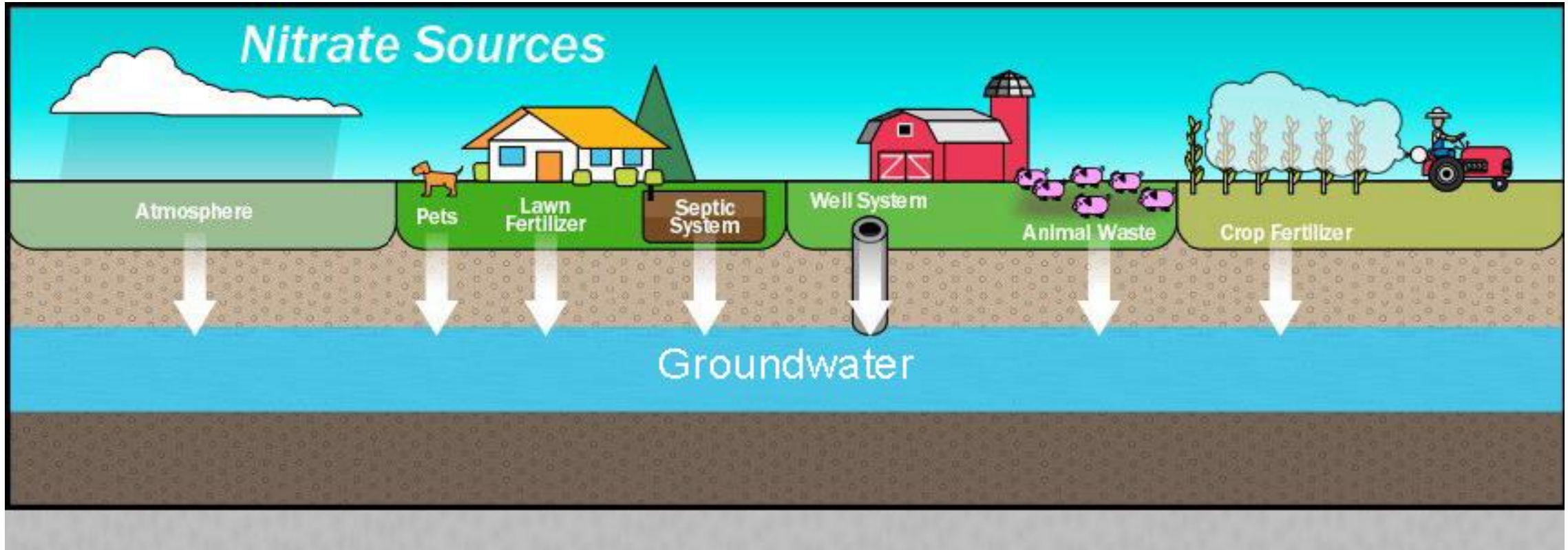
When you leave here today, you will have our partnership playbook that can help you develop your own response plan to a local issue so when you're on the front page, it's a success story.

Nitrate Concentrations in Groundwater



Above 3 mg/L indicates a human source
Above 5 mg/L increases monitoring and work for Public Water Supplies
Above 10 mg/L, exceeds the health limit (EPA MCL)

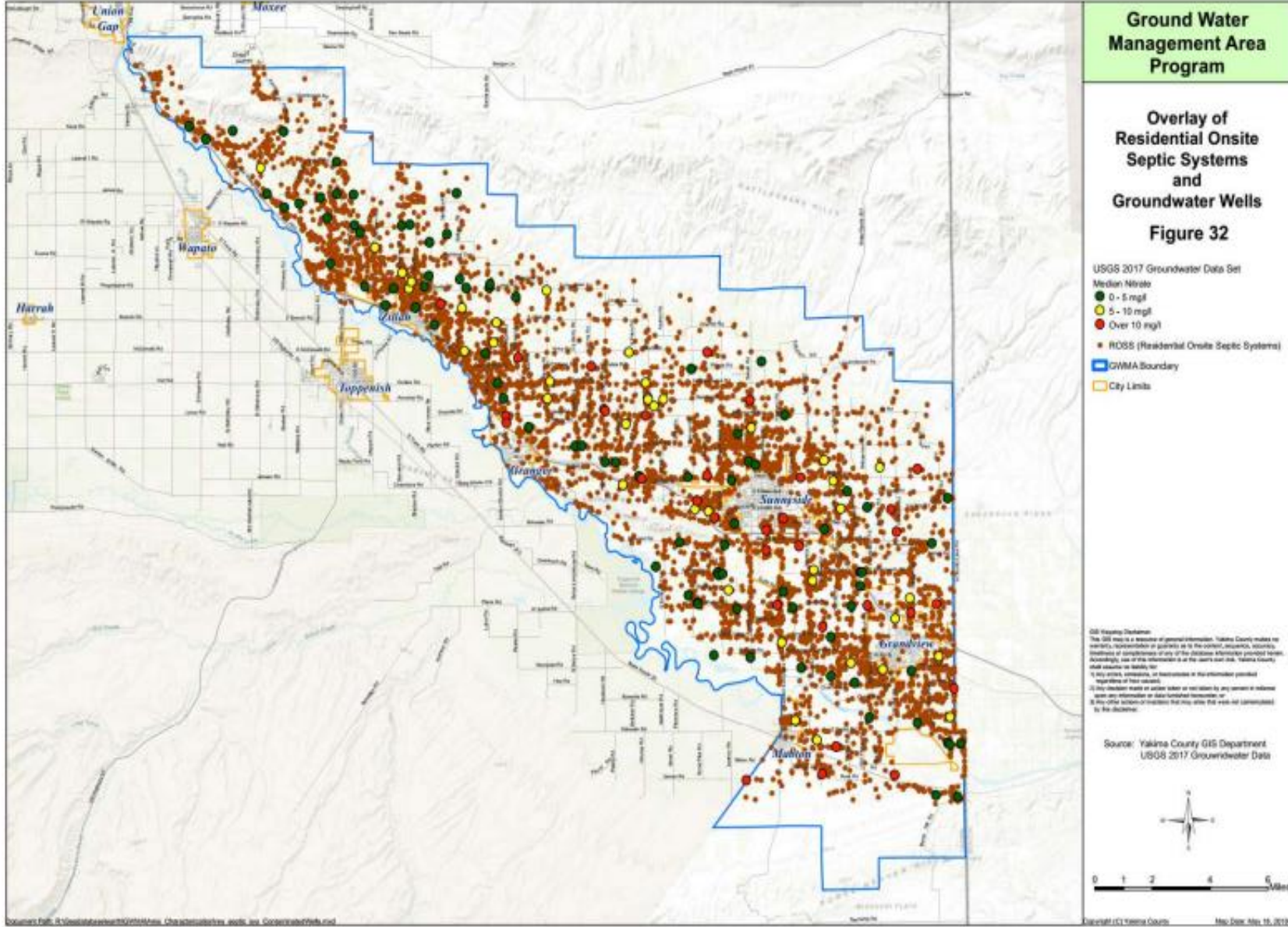
Common sources of nitrogen in groundwater





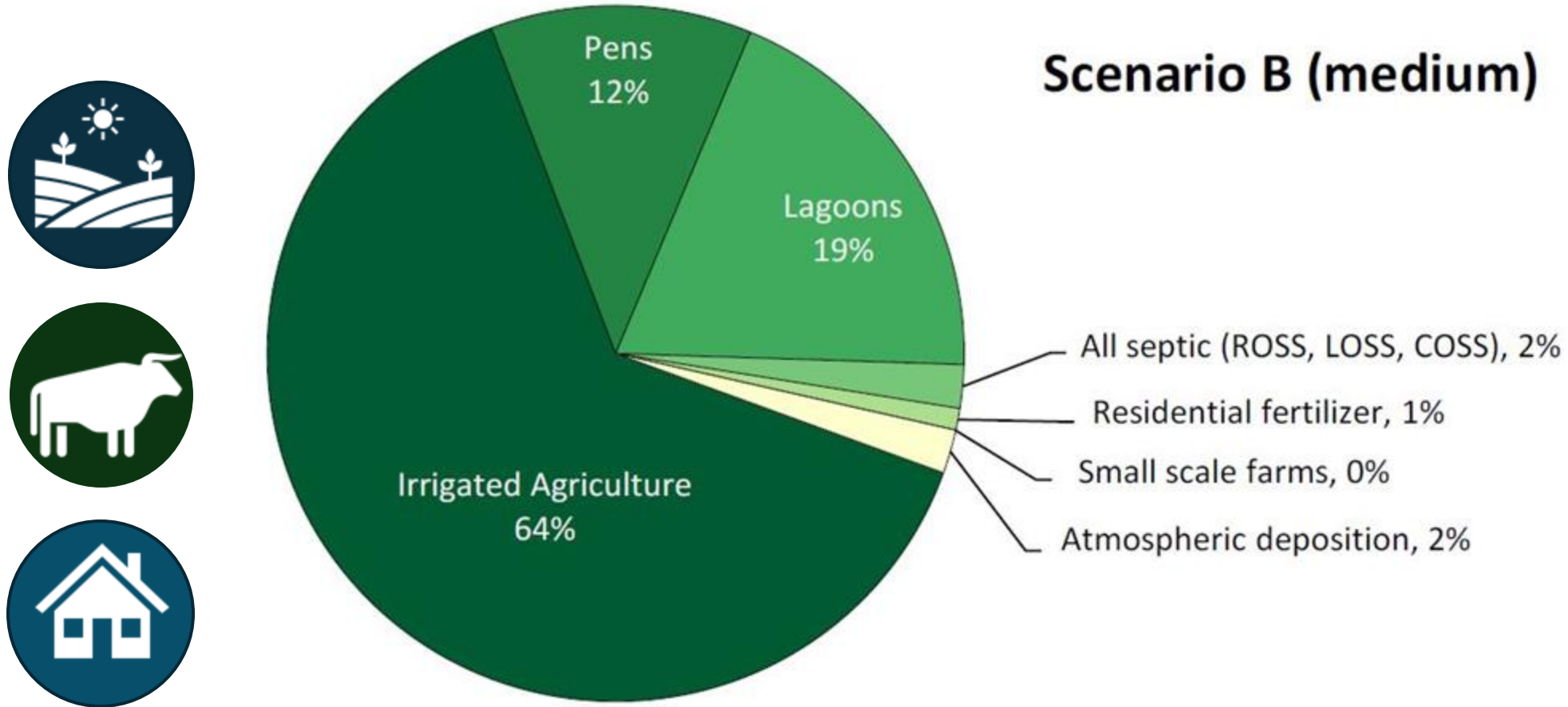
Washington
 State Department of
 Agriculture

On-site sewage systems



Estimated total potential nitrate impact by source within the GWMA (2018)

Scenario B (medium)



How contaminants get into groundwater

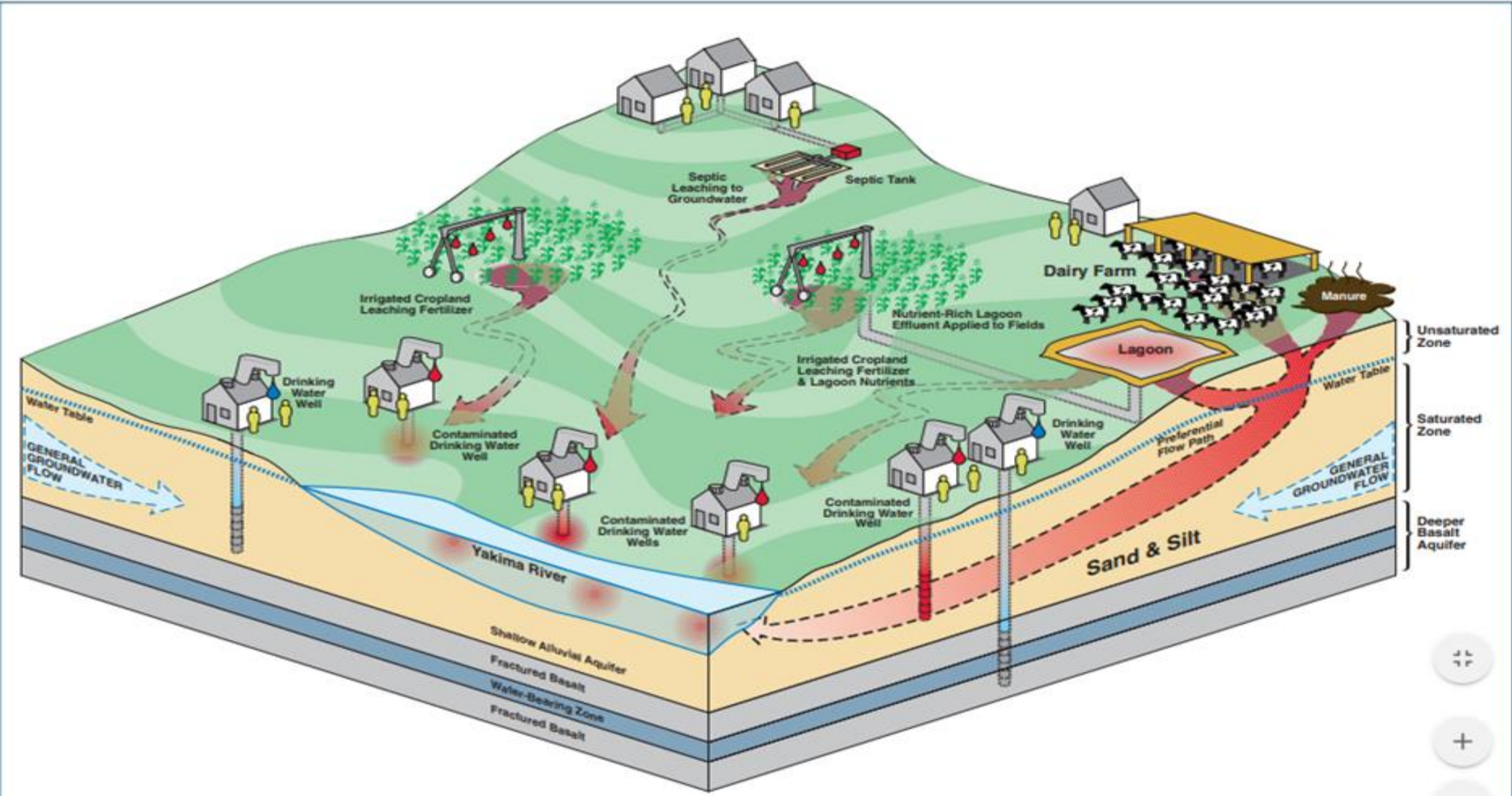
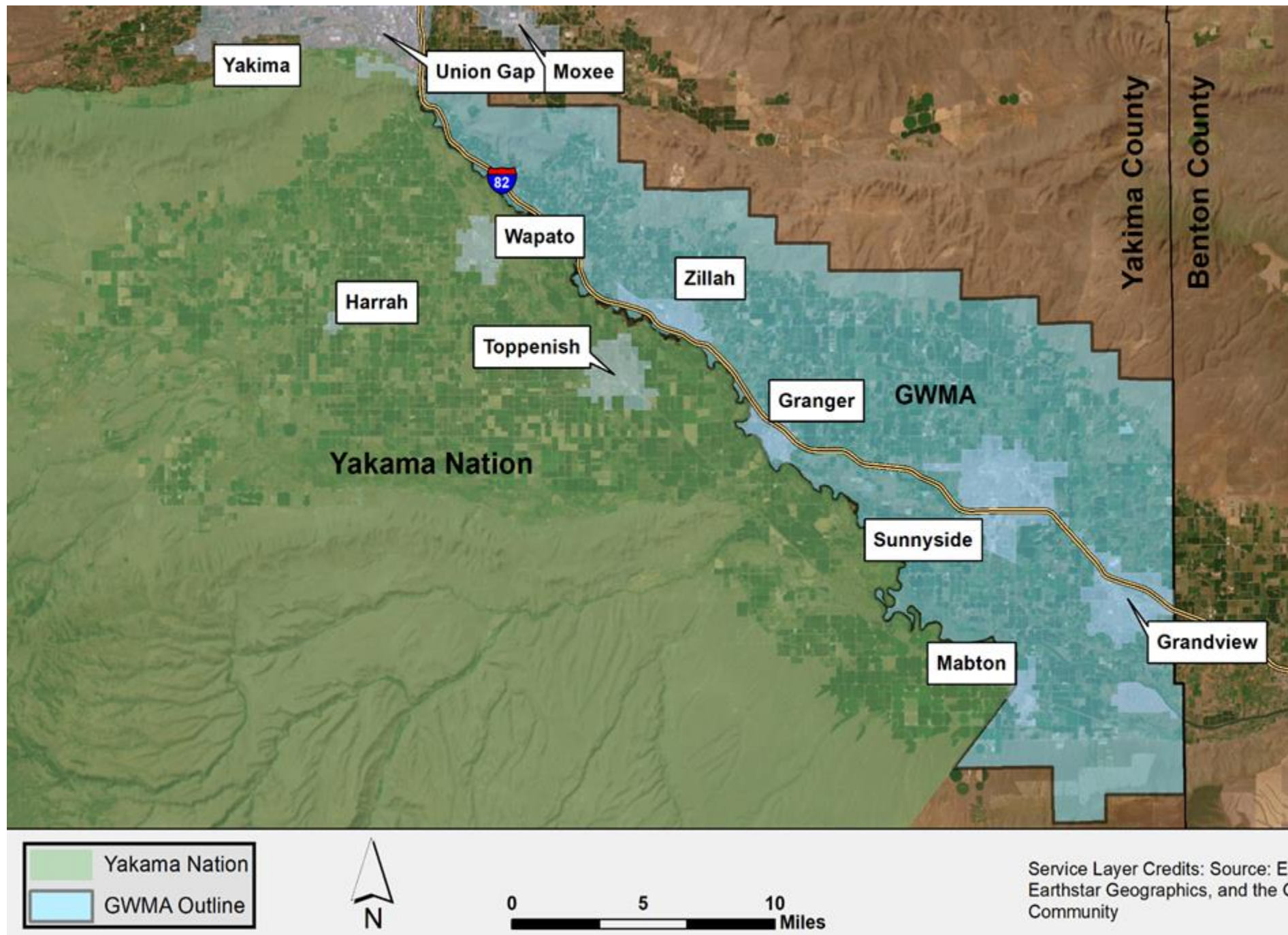


Figure 1: Conceptual Site Model for Lower Yakima Valley Project



Lower Yakima Valley



How we started and how we got it done



Developing the GWMA Program



The goal of the Lower Yakima Valley GWMA is to reduce nitrate concentrations in groundwater to below state drinking water standards.

Groundwater Advisory Committee

- Yakima County Board of Commissioners
- Yakima County Public Services
- Yakama Nation
- Yakima County Farm Bureau
- Yakima Dairy Federation
- Agronomist
- Friends of Toppenish Creek
- Concerned Citizens of the Yakama Reservation
- South Yakima Conservation District
- Port of Sunnyside
- Yakima Health District
- Irrigation districts

- Hispanic community representative
- Lower Yakima Valley representatives
- Heritage University
- CARE
- Benton-Franklin Health District
- Benton Conservation District
- WA Dept of Agriculture
- WA Dept of Health
- Wa Dept of Ecology
- WSU Irrigated Agricultural Research
- USGS
- US EPA

Local
State
Federal

What did the GWAC Accomplish?



- Analysis of existing water quality data and studies
- Groundwater Monitoring Options
- Groundwater Monitoring plan
- Installation of 30 groundwater monitoring wells
- Extensive public education and outreach
 - door-to-door surveys;
 - billboards;
 - Website
- High Risk well assessment surveys
- Deep Soil Sampling
- Nitrogen Availability Assessment
- Drinking water quality assessment
- ❖ Produced a GWMA Program
 - 64 recommended actions
 - Unanimously approved

Regulatory Authority for Groundwater Protection



- **GWMA designation** (RCW 90.44.400, Chapter 173-100 WAC)
 - Process for local government to manage groundwater issues.
 - *Purpose of identifying groundwater management procedures that are consistent with both local needs and state water resource policies and management objectives; including the protection of water quality...*
 - *Ecology shall establish rule, standards, and process for designating specific groundwater areas...which provide Ecology, local governments or groundwater users of the area to initiate development of a groundwater management program.*

Implementation of the GWMA Plan

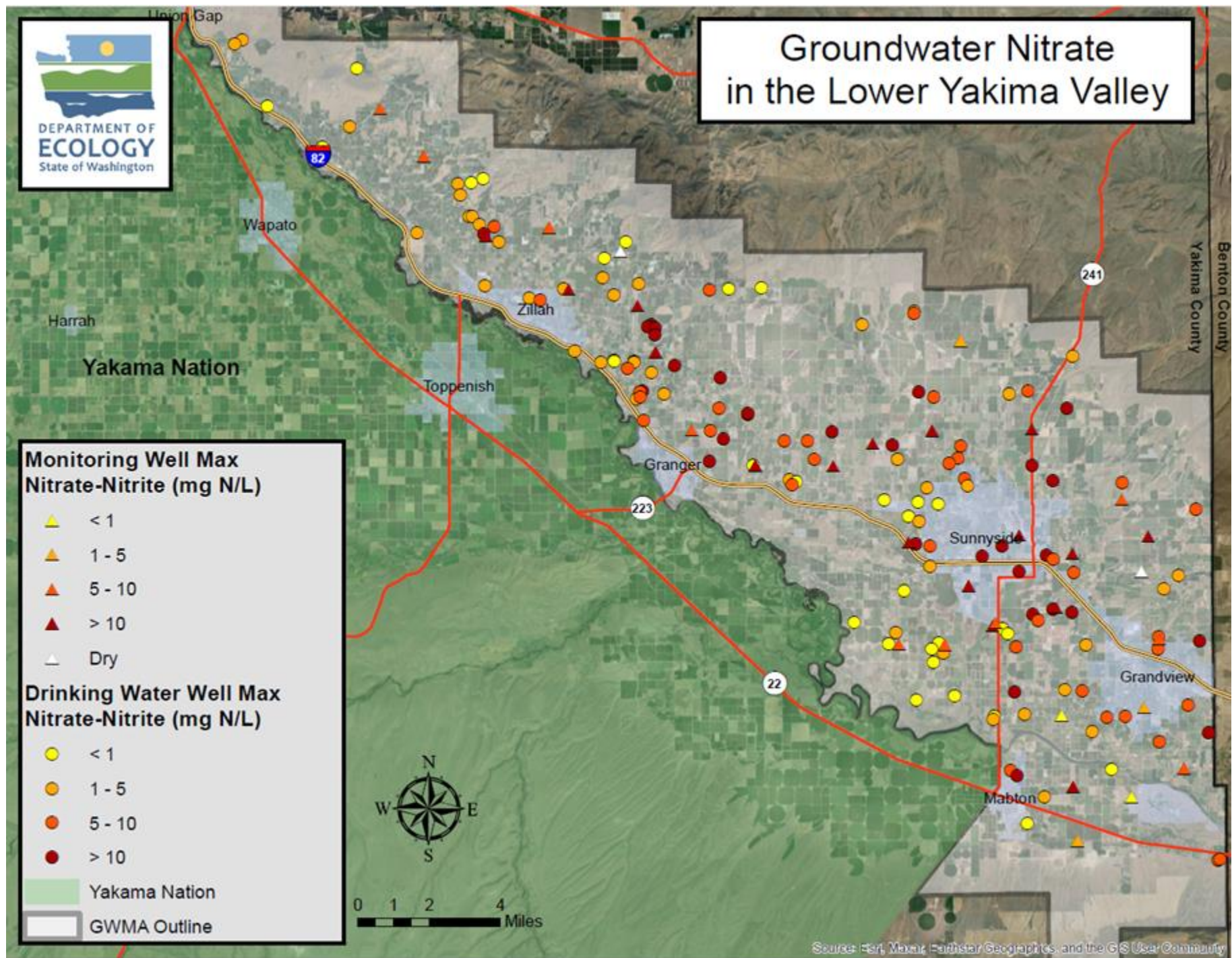


GWMA Implementation Committee

- South Yakima Conservation District
- Department of Agriculture
- Dairy Federation
- Department of Ecology
- Department of Health
- Yakima County
- Yakima Health District



Ambient Groundwater Monitoring Network



What this tells us

- Health of the aquifer over time
- Hotspots
- Trends
- Correlations
 - Well depth and nitrate
- Groundwater flow direction
- Subsurface hydrogeology
- Seasonal variability



Why sample quarterly?



Important to assess seasonal variability

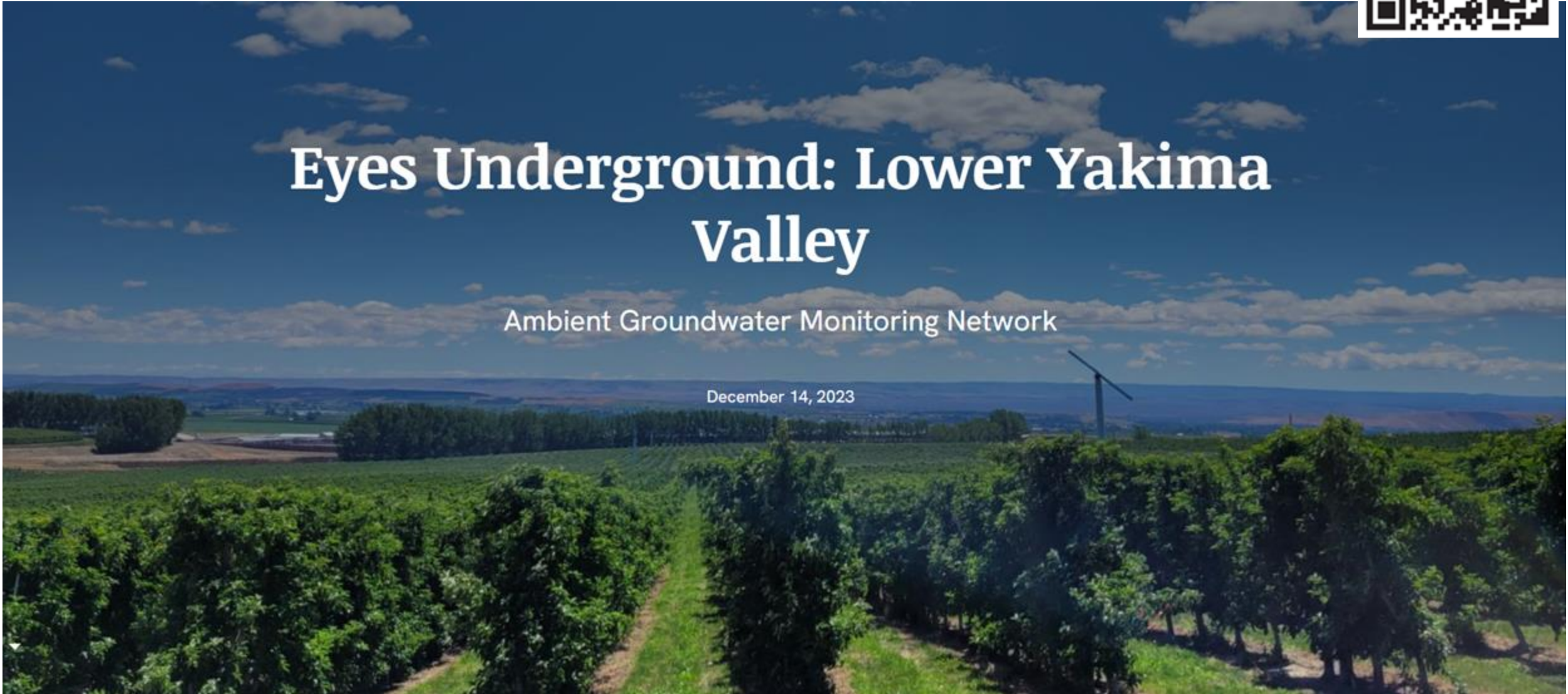
StoryMap



Eyes Underground: Lower Yakima Valley

Ambient Groundwater Monitoring Network

December 14, 2023



Drinking Water Source



For many, groundwater is drinking water

Mission

Protect the health of the people of Washington by ensuring safe and reliable drinking water.

- More than 6.2 million Washington residents get their drinking water from a Group A or Group B public water system. That's 85 percent of the state's population.
- About 725,000 Washington residents get their drinking water from individual private wells and are regulated by local health jurisdictions.

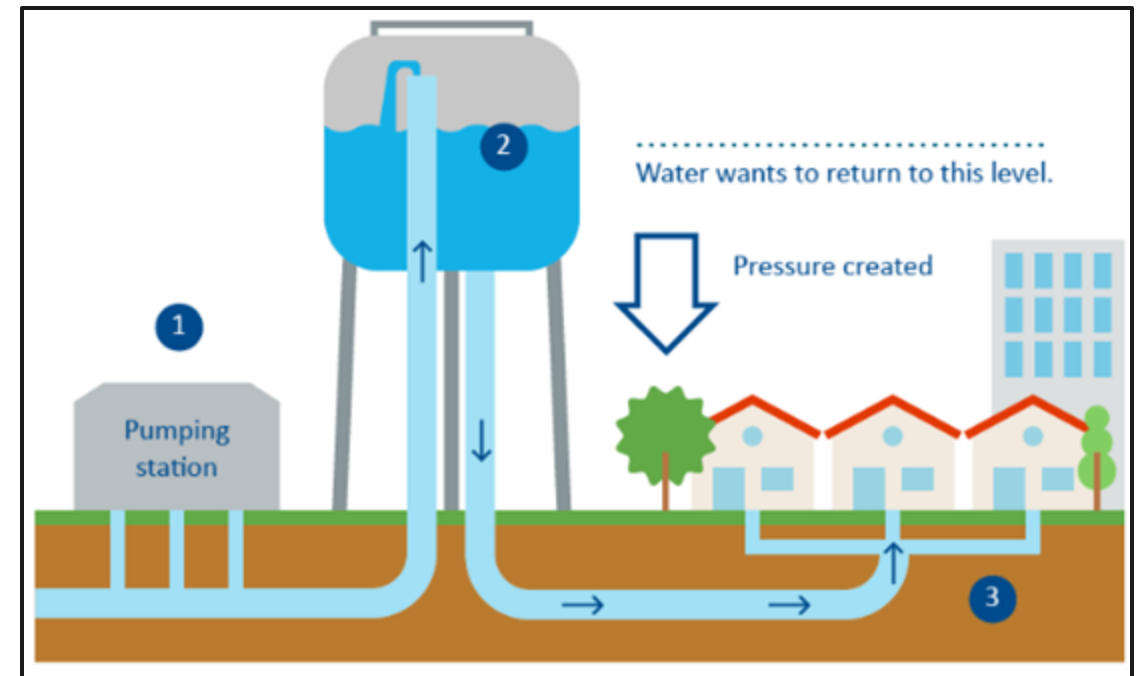


Group A - Large water systems

DOH-ODW regulates **Group A** public water systems under state law and a formal agreement with the U.S. Environmental Protection Agency (EPA) for carrying out the federal Safe Drinking Water Act.

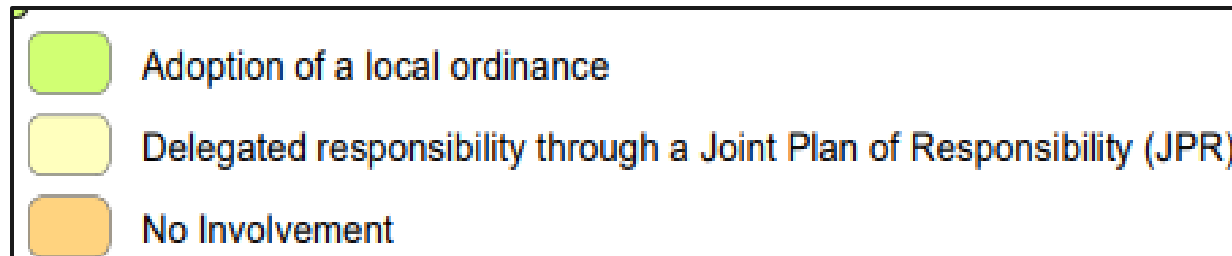
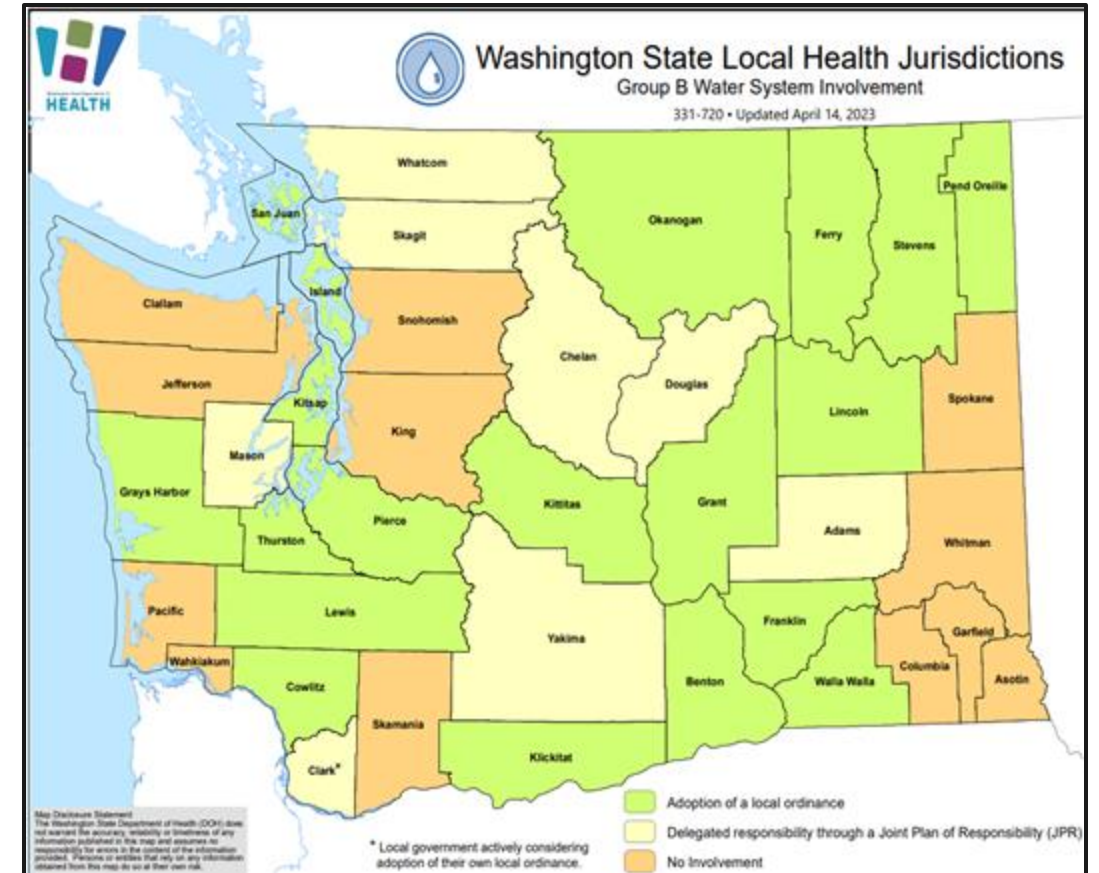
- The agreement establishes minimum standards for drinking water quality.
- [Read more about the formal agreement on EPA's webpage.](#)

Maximum Contaminant Level (MCL)
Nitrate 10 mg/L



Group B - Small water systems

- Who regulates Group B Systems
 - GroupBStateMap.ai



Private Domestic Wells

Not regulated by DOH

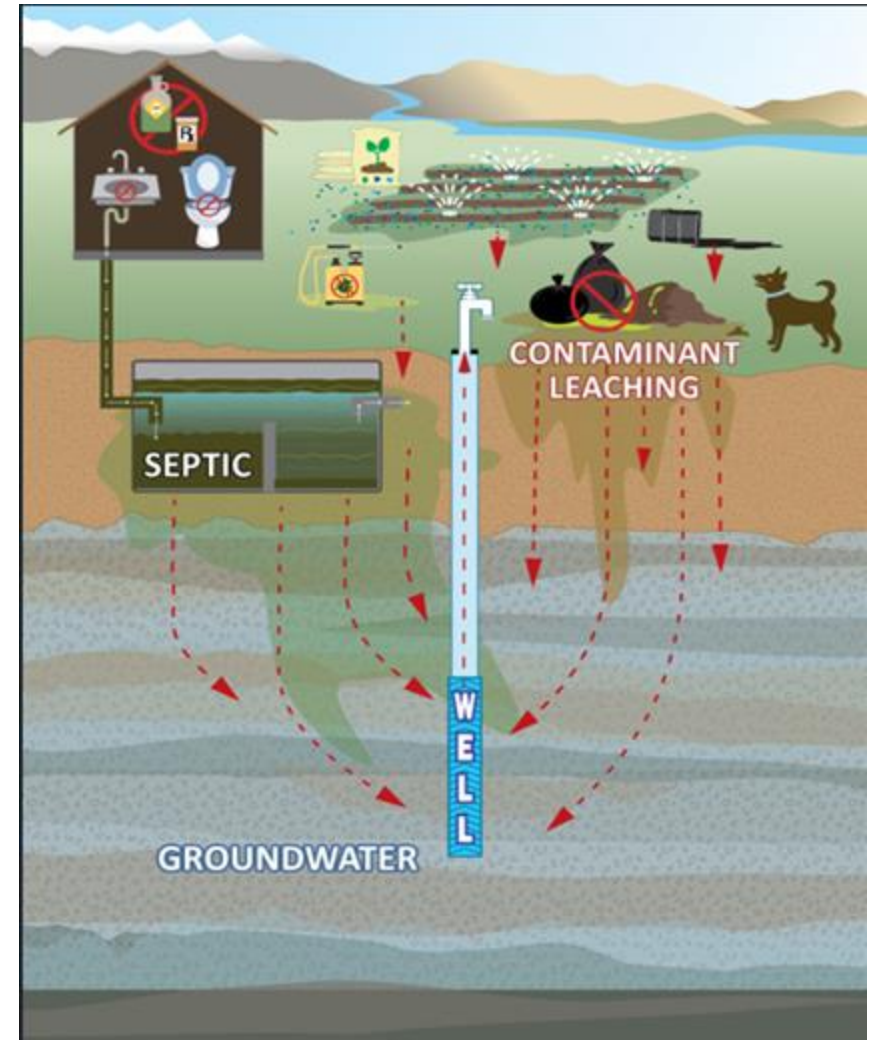
Not regulated by EPA

● [Read more about private wells 331-349 \(PDF\).](#)

Considered **Private Property**

It is up to the homeowner to maintain:

- the integrity of the well
- the quality of the water



Safe Drinking Water Initiative

Goal:

1. Offer free well testing to the 5600 + households in the LYV GWMA on a private well.

For households testing above the MCL for nitrate:

1. Offer free short-term bottled water until a free RO system can be installed.

Timeline: July 2023-June 2025

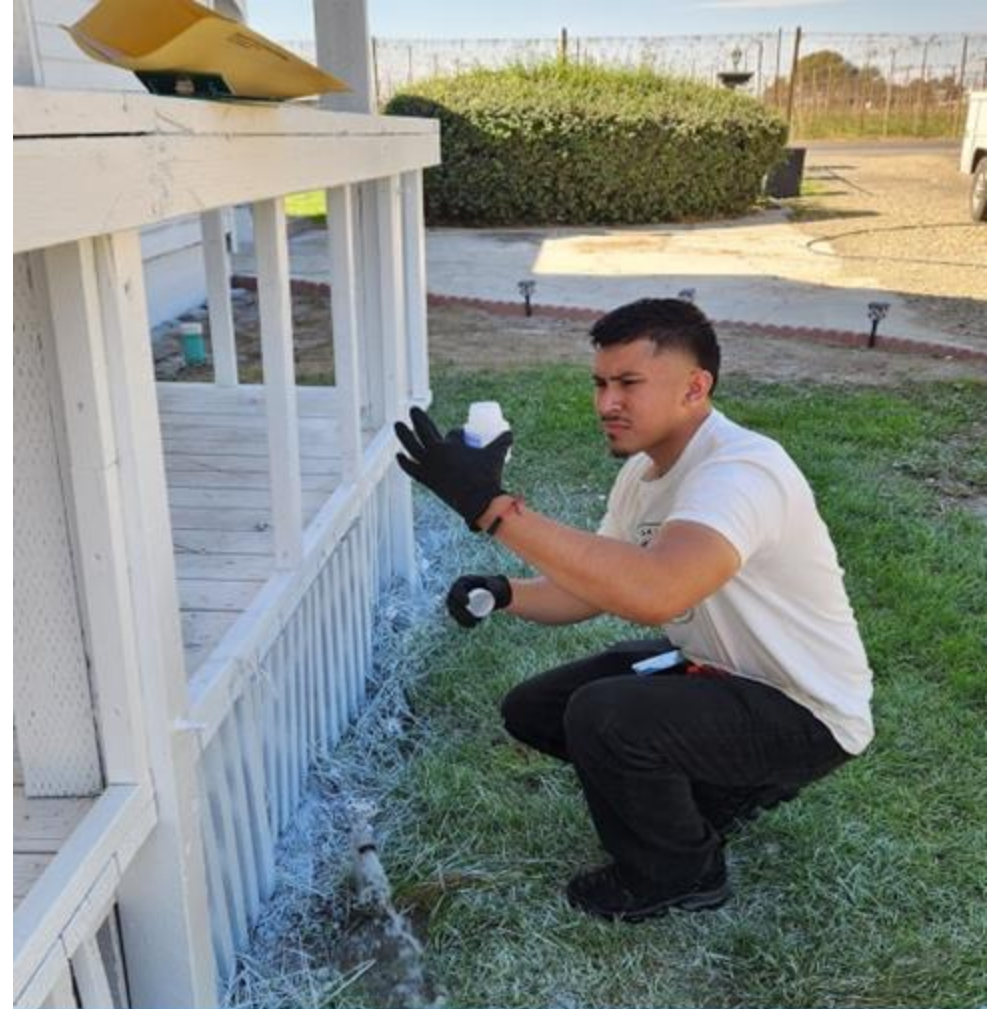
Funding: \$1.19M in legislative & DOH funding

Partners: DOH, Yakima County, Yakima Health District

Safe Drinking Water Initiative

Strategy

1. Targeted monthly mailings
2. Households invited to participate in well testing
3. Yakima Health District & Yakima County conducting well testing
4. Qualifying households are offered a treatment system
5. Limited-time bottled water delivery available



Safe Drinking Water Initiative

Accomplishments

1. Mailed 3,399 outreach materials
2. Door-to-door canvassing – over 1,000 homes reached
3. Called non-responders
4. 473 certified lab tests
5. 53 reverse osmosis systems installed
6. 173 households signed up for bottled water



Safe Drinking Water Initiative

Challenges

- Health effects of nitrate are difficult to convey - it's odorless, tasteless, and you can't see it
- A lack of interest or concern from the public. No local reports of nitrate-related health problems.

“I've been drinking this water for 60 years and have never gotten sick.”

“It's my landlord's problem – not mine.”

Even at “free”, treatment systems are a tough sell

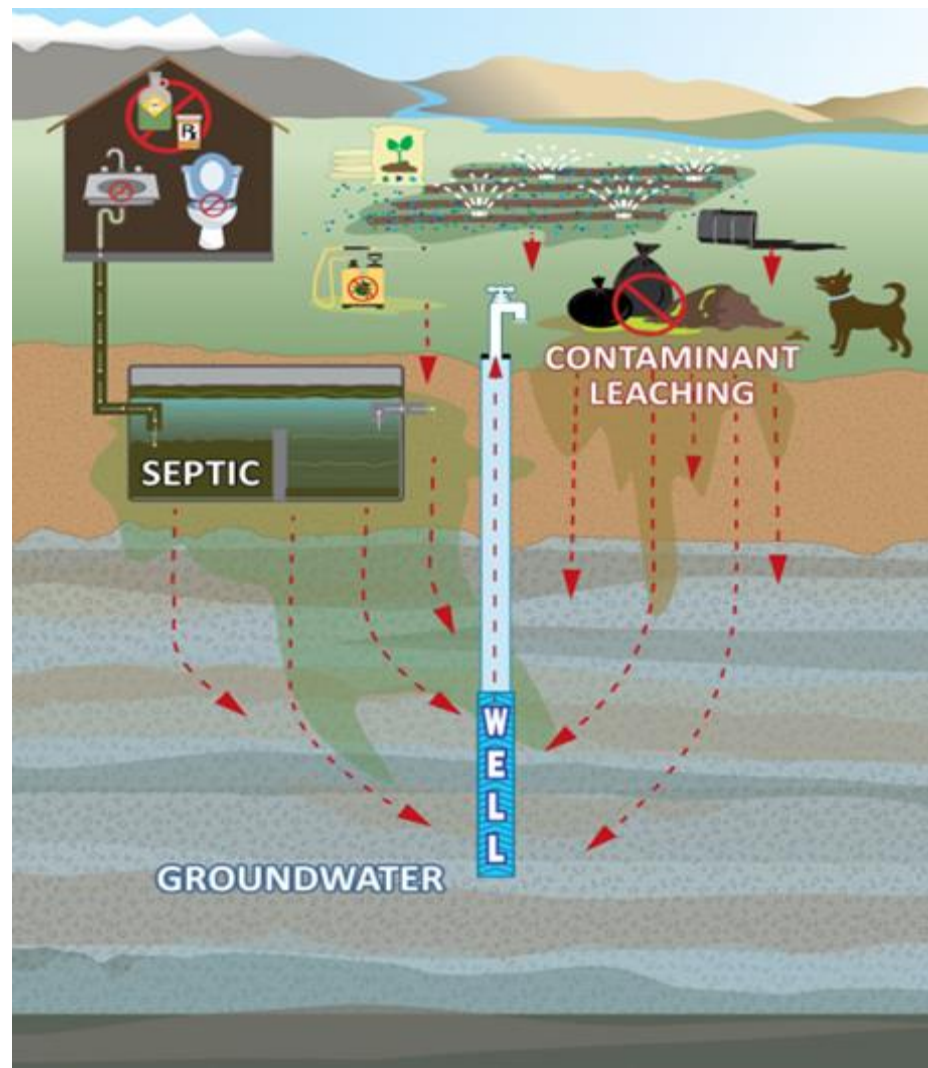


Nitrate in Drinking Water

Questions & Answers
for Private Well Users



Nitrate Source Control



Yakima Valley, a \$2.2 billion agricultural economy

- Almost 3,000 farms
- Over 100,000 acres of irrigated farmland
- 44,000 farm workers

An Ag community



Key strategies for reducing nitrate pollution



Build and
Maintain
Partnerships



Pursue More
Research



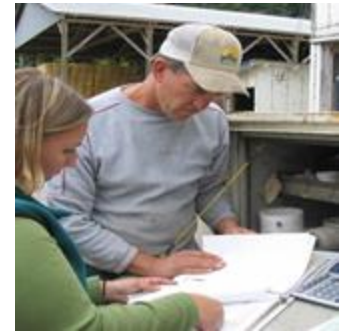
Create
Decision
Support
Tools



Educate
Nitrogen
Managers



Provide
Technical
Assistance



Enforce
Regulations

Regulatory programs with a role in nitrate source control



Dairy Nutrient
Management Program

WSDA



CAFO Permit, Water
Quality Permitting, &
Nonpoint Program

Ecology



Solid Waste
Permitting

Ecology and JHD



Septic Programs

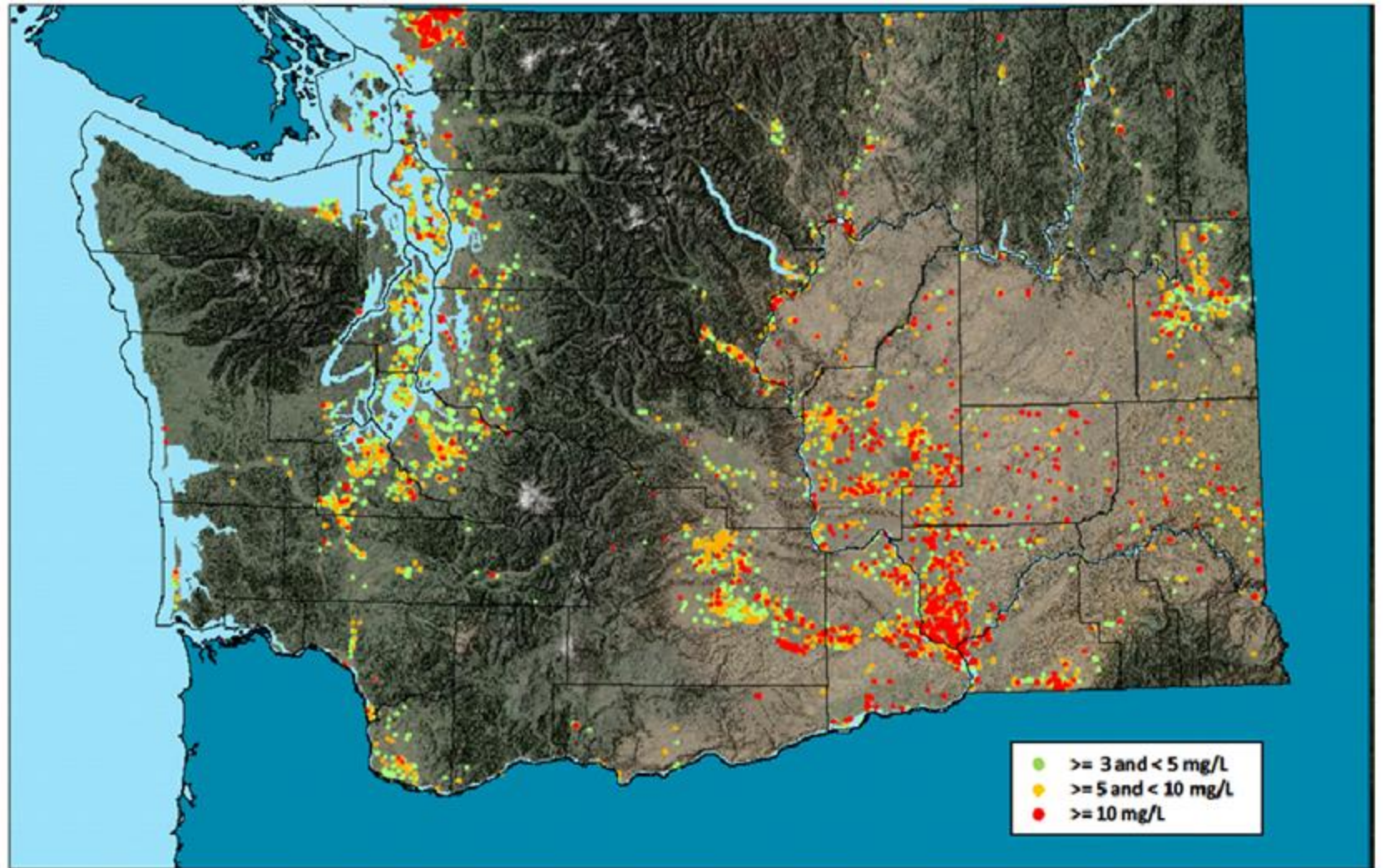
DOH and JHD

Growing technical assistance programs

- Improved nutrient and irrigation water management planning for farms
- Deep soil sampling to see what's happening under fields
- Soil moisture monitoring to improve irrigation efficiency
- Development of decision support tools to help farmers improve practices



Pressure to achieve results



Above 3 mg/L indicates a human source
Above 5 mg/L increases monitoring and work for Public Water Supplies
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EPA - What's been happening lately

- Safe Drinking Water Initiative
 - <https://www.epa.gov/system/files/documents/2021-08/complianceadvisory-reducingnoncompliancewithdrinkingwaterstandards.pdf>
- National Enforcement and Compliance Initiative
 - [National Enforcement and Compliance Initiative: Increasing Compliance with Drinking Water Standards at Community Water Systems | US EPA](#)
- Water system compliance with the Safe Drinking Water Act.
 - New Rules
 - Water Quality Monitoring
- Jurisdiction / Regulatory Authority with tribal, territory, and federal water systems.
- What meets the definition of a Public Water System.

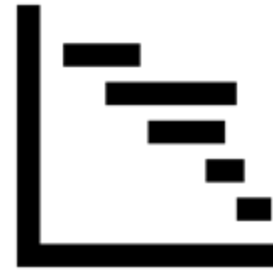
EPA - What's been happening lately

- Site Surveys
 - Administrative
 - Keeping track of paperwork
 - Plans
 - Managerial
 - Structure
 - Decision makers and staff
 - Facility Components
 - Deficiencies
 - Minor
 - Major
- Water system compliance with the Safe Drinking Water Act
 - Compliance issues with
 - SDWIS
 - SENTRY
 - Design Standards
 - Documents submitted and certified by staff

What's
Next....



Doubling down for clean water



Power of Partnerships Conclusions



Keys to Our Success



Community led process

- One goal
- Consensus decisions
- Comprehensive plan



Legitimate WA State Program

- Funding and resources,
- Requires community participation



Outreach

- Health concerns
- Everyone needs to do better



Committed partners

- Holistic approach
- Involves multiple agencies and committed community

Power of Partnerships

Everything you've heard today speaks to the power of our partnerships.

Our ability to establish meaningful goals, to create plans, communicate them and carry them out, all lies in successful partnerships.

Now more than ever, Local Government must leverage partnerships within our community, with groups we may not always agree with, and with our state agency partners, to get the job done.

We can do this!

Thank you.

