



South Lake Cascade Community Meeting

EPA's Closing America's Wastewater Access Gap

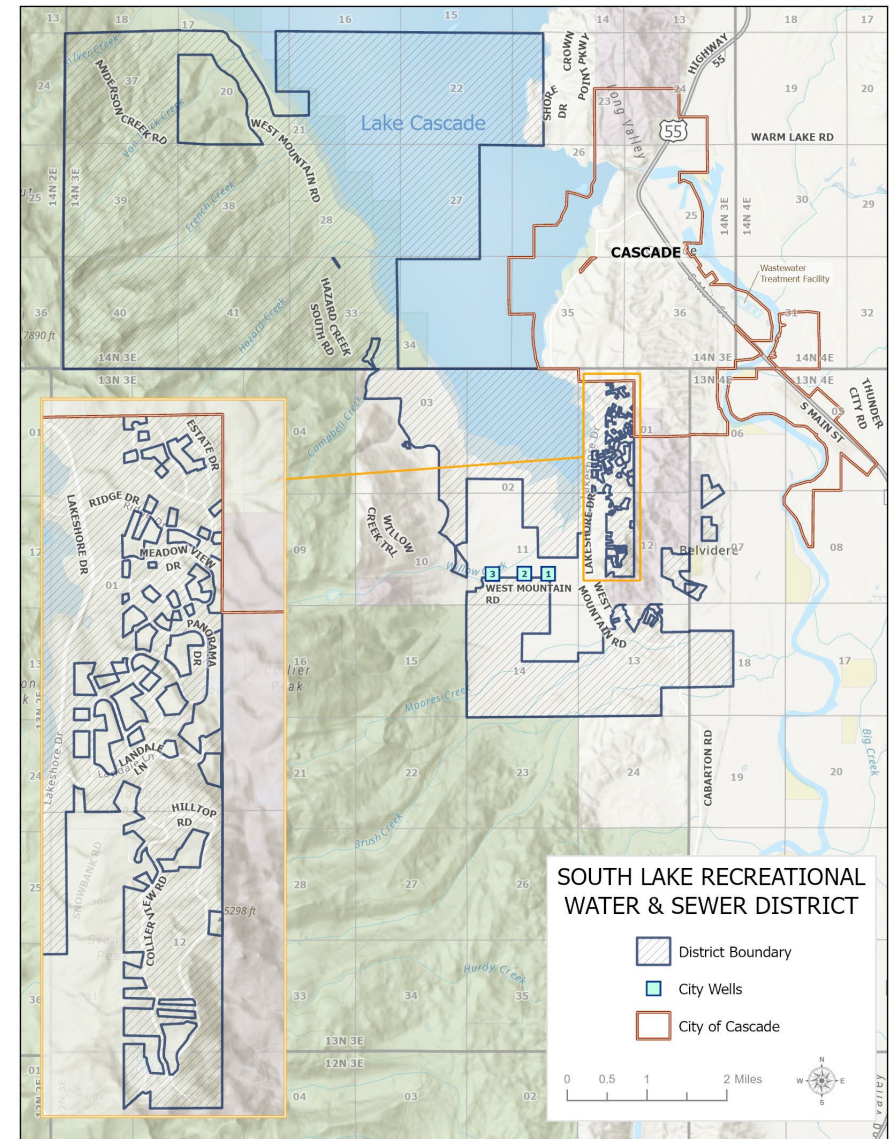
June 20, 2025

Meeting Objectives

- **Understand water quality challenges** in Lake Cascade
- **Recognize past efforts by stakeholders** and 2005 Facilities Study where a regional wastewater system was proposed between South Lake Recreational Water and Sewer District and City of Cascade
- **Explore options with all stakeholders** to address the lack of or substandard onsite wastewater systems around southern portion of Lake Cascade within South Lake Recreational Water and Sewer District boundary

Community input will inform the next steps for this project

Project will focus on properties within South Lake Recreational Water and Sewer District boundary



Project Partners

- South Lake Recreational Water and Sewer District (SLRWSD)
- Valley Soil and Water Conservation District (VSWCD)
- Valley County Board of Commissioners
- Valley County Planning and Zoning Department
- City of Cascade
- Idaho Central District Health
- Idaho Department of Environmental Quality
- Rural Community Assistance Corporation (RCAC)
- U.S. Environmental Protection Agency (EPA)
- EPA Contractors: ERG and MDB, Inc.



Agenda

1. Background on Lake Cascade Water Quality Concerns
2. EPA's Closing America's Wastewater Access Gap Technical Assistance
3. Comments and Updates from Project Partners
4. Efforts Underway to Evaluate Options for properties within the South Lake Recreational Water and Sewer District
5. Next Steps
6. Comments/Questions

Water Quality Concerns in Lake Cascade

Why We Are Here

- Many homes along Lake Cascade have outdated or failing septic systems that need repair or replacement
- Lake Cascade has high levels of nutrients, fueling toxic algae blooms and water quality limits
- Private drinking water wells are at risk of contamination



LAKE CASCADE

A CITIZEN SCIENCE PERSPECTIVE

By: Lenard Long
Retired Engineer
Associate Supervisor VSWCD



PRESENTATION TOPICS

1. Lake Cascade overview.
2. Cyanobacteria characteristics.
3. Challenges of septic wastewater pollution.



MAN-MADE RESERVOIR

- ▶ **Dam Complete: 1948, 77 years ago**
- ▶ **4th largest lake in Idaho**
- ▶ **Length: ~21 miles (N-S)**
- ▶ **Average Depth: varies 26 to ~14 ft**
- ▶ **Max Depth: ~65 ft (old river bed)**
- ▶ **Full Volume: ~229 billion gallons**
- ▶ **Surface area: 47 square miles**
- ▶ **Shoreline: 86 miles**
- ▶ **Water is the largest export from the Valley County.**



DESIGNATED WATER USES

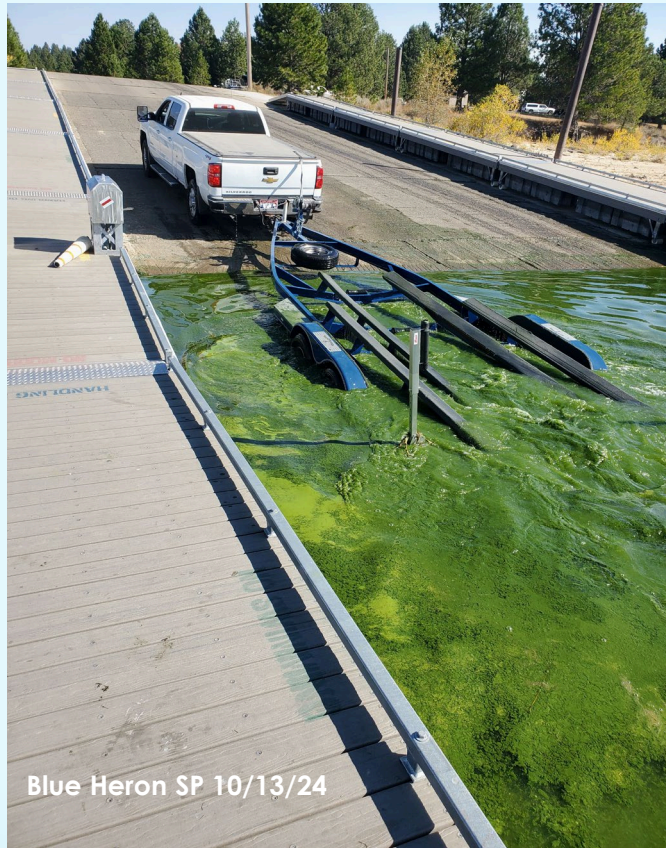
- **Irrigation**
- **Power generation**
- **Flood control**
- **Drinking water supply**
- **Recreational use**
- **Cold water aquatic life**
- **Salmonoid augmentation flow**



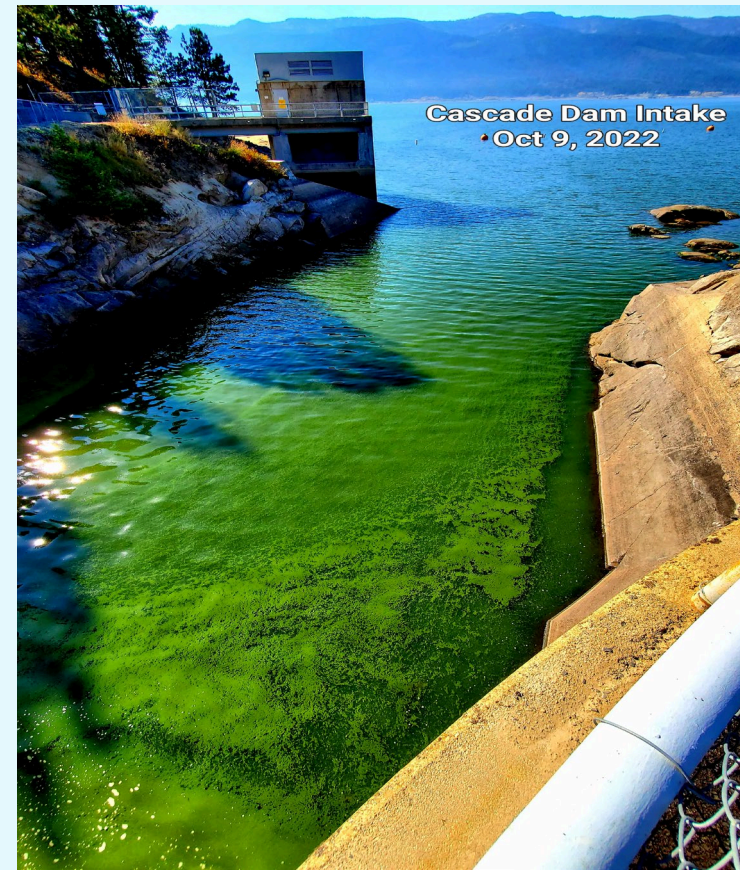
Photo: Looking North over Cascade Golf Course.

Source: DEQ & USBR

Picturesque lake and mountains inspire people from across the country.



Blue Heron SP 10/13/24



Cascade Dam Intake
• Oct 9, 2022

THE CONCERN: TOXIC OUTBREAKS FROM SEVERE CYANOBACTERIA BLOOMS

(AKA:
TOXIC ALGAE
HARMFUL ALGAL BLOOM {HAB},
BLUE-GREEN ALGAE)

The lake is a biologically rich water body and is constantly changing in water quality.



Lake Cascade, Offshore of
Golf Course; October 2024

Lake Cascade June 2022



-SOUTH END-

**LOCALLY KNOWN: MORE STAGNANT
AND HIGHER RISK LEVEL**

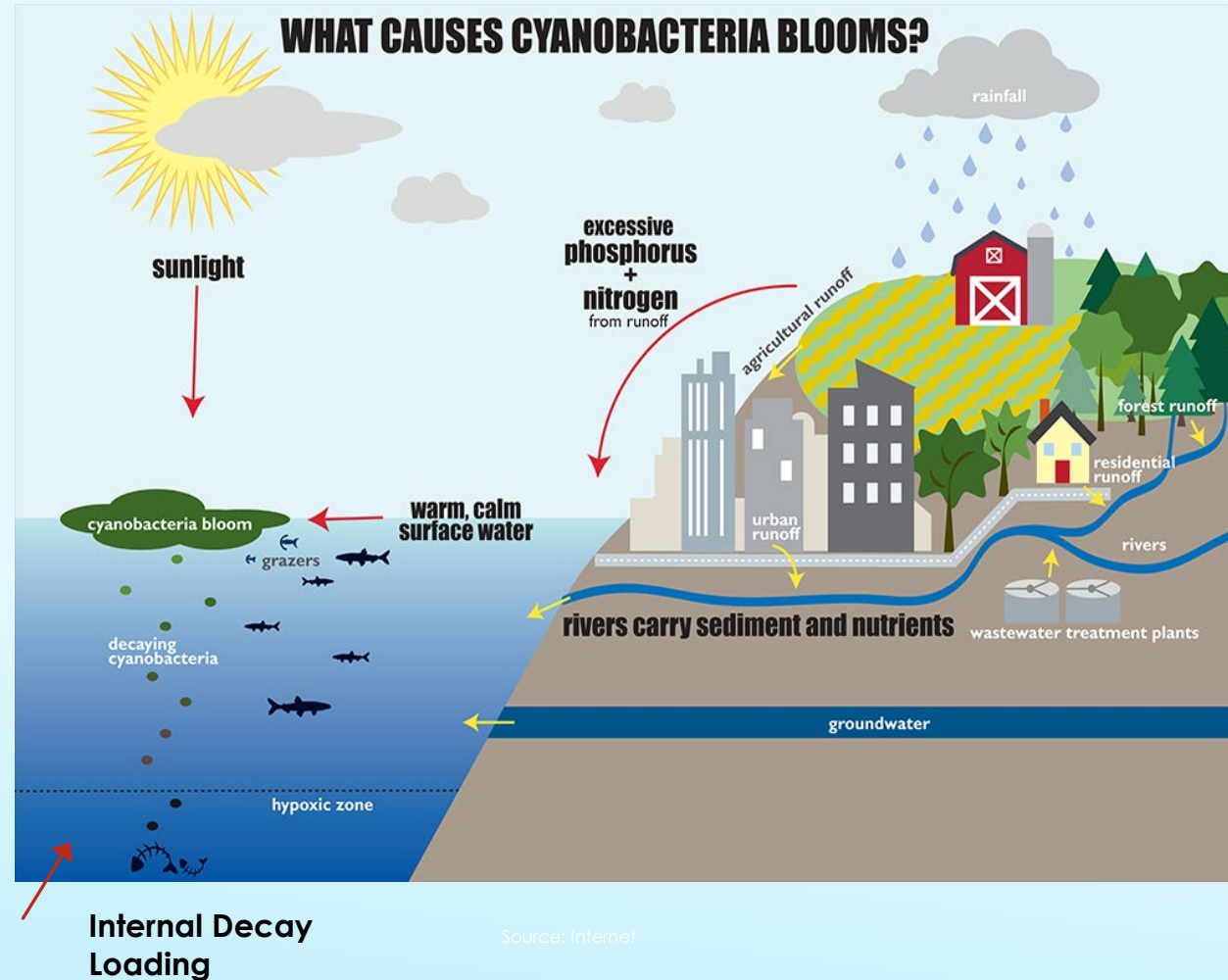
“Ecosystem out of Balance”

Campbell Ck
10/19



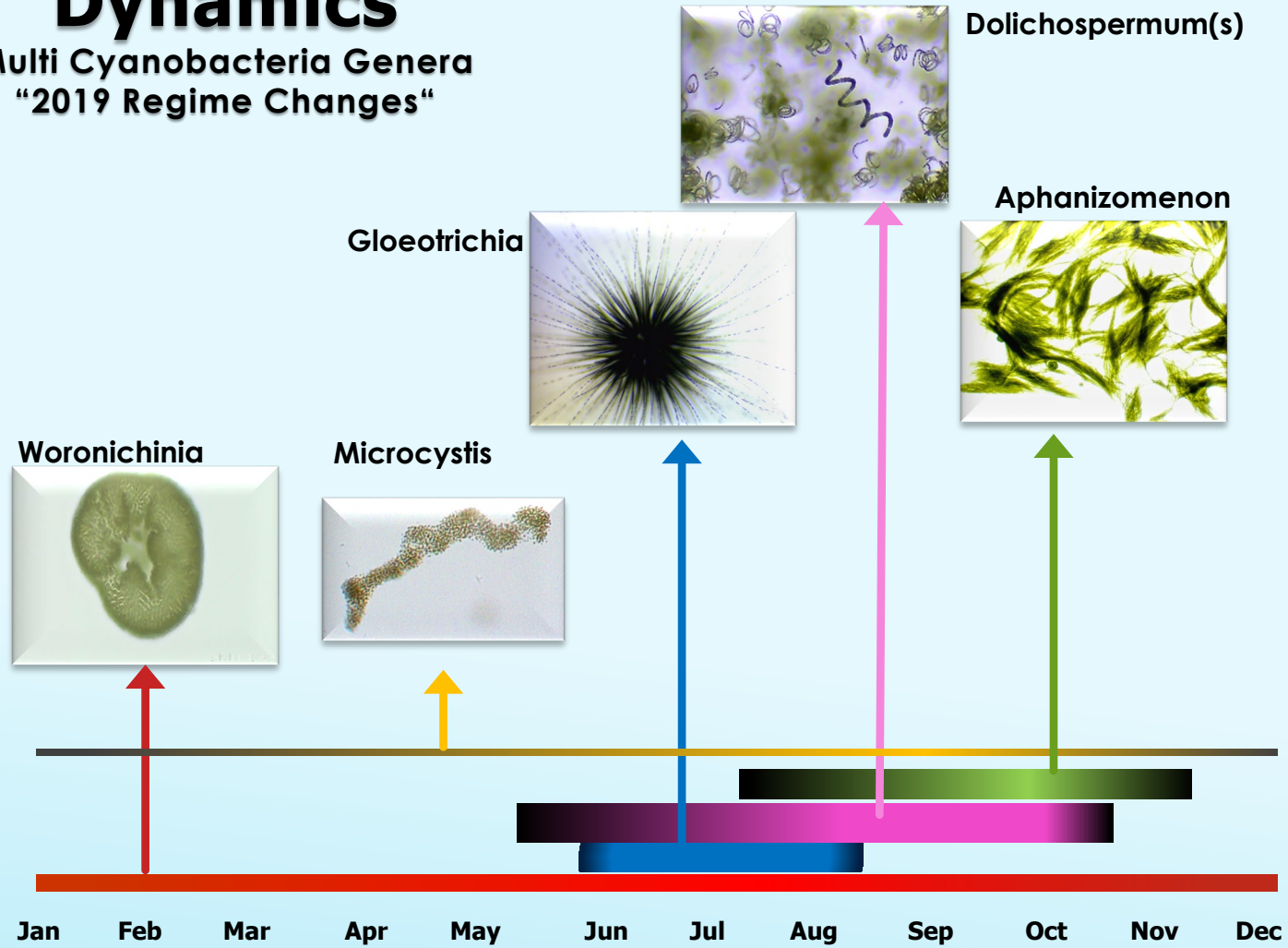
CYANOBACTERIA THRIVE ON:

- ✓ Sunlight
(photosynthesis)
- ✓ **Nutrients**
(nitrogen (N) and phosphorus (P))
- ✓ Warm Temperature
- ✓ Stagnant water
flow, and
- ✓ Higher pH



Rise and Decline Dynamics

Multi Cyanobacteria Genera
"2019 Regime Changes"



Source:
Microscopic
observations

CYANOBACTERIA CAN AFFECT US ALL

- **Health risks (neurotoxins, hepatoxins, and dermatoxins).**
- **Threatens drinking water supply.**
- **Wildlife, pets, fish, and cattle threatened.**
- **Stigma from pea-soup aesthetics and foul odors.**
- **Untold economic losses.**
- **Legacy for future generations?**

From an ethical standpoint, ensuring that communities have access to clean water and a healthy environment is fundamental to public health, environmental protection, and community well-being.



- 2018, September 7th
- 2019, September 6th
- 2020, October 6th
- 2021, August 13th
- 2022, June 24th & October 14th HAB warnings (Not Advisory)
- 2024, October 18th

Lake Cascade State Park

★ Favorites · 50m ·

Stay safe!

WARNING

*Cyanotoxin PRESENT

This water is unsafe for people and pets

ADVERTENCIA - HAY CYANOBACTERIA TÓXICAS EN EL LAGO - El lago es peligroso para personas y mascotas

- **Do not swim or water ski.**
No nade ni practique esquí acuático.
- **Do not drink lake water.**
No beba agua del lago.
- **Keep pets and livestock away.**
Mantenga a las mascotas y al ganado alejados.

- **Clean fish well, discard guts.**
Limpe bien el pescado y deseche las tripas.
- **Avoid areas of scum when boating.**
Evite las zonas con verdin al navegar.

ЦІАНОБАКТЕРІЇ ШКОДИТЬ
ЛЮДЬМ ТАС ДІВІТЬСЯ ДОМАШНІХ
ТВАРИН

警告湖中发现有毒藻类：
湖面对人类和宠物不安全

경고: 독성 시아노박테리아가 호수에서
자랍니다. 이 호수는 사람과 애완동물에게
안전하지 않습니다.

ВНИМАНИЕ! ТОКСИЧНЫЕ
ЦИАНОБАКТЕРИИ В ОЗЕРЕ. Озеро
небезопасно для людей и домашних
животных.

УВАГА ТОКСИЧНІ ЦІАНОБАКТЕРІЇ В ОЗЕРІ
Озеро небезпечно для людей і домашніх
тварин

CẢNH BÁO VI KHIỂN LAM ĐỘC HẠI HIỆN DIỆN
Nước không an toàn cho người và vật nuôi

Call your doctor or veterinarian if you or your animals have sudden or unexplained sickness or signs of poisoning. Contact the APSCA Animal Poison Control Center at (800) 435-4425

For more information or to report a bloom:
algae@deq.idaho.gov
866-671-5385

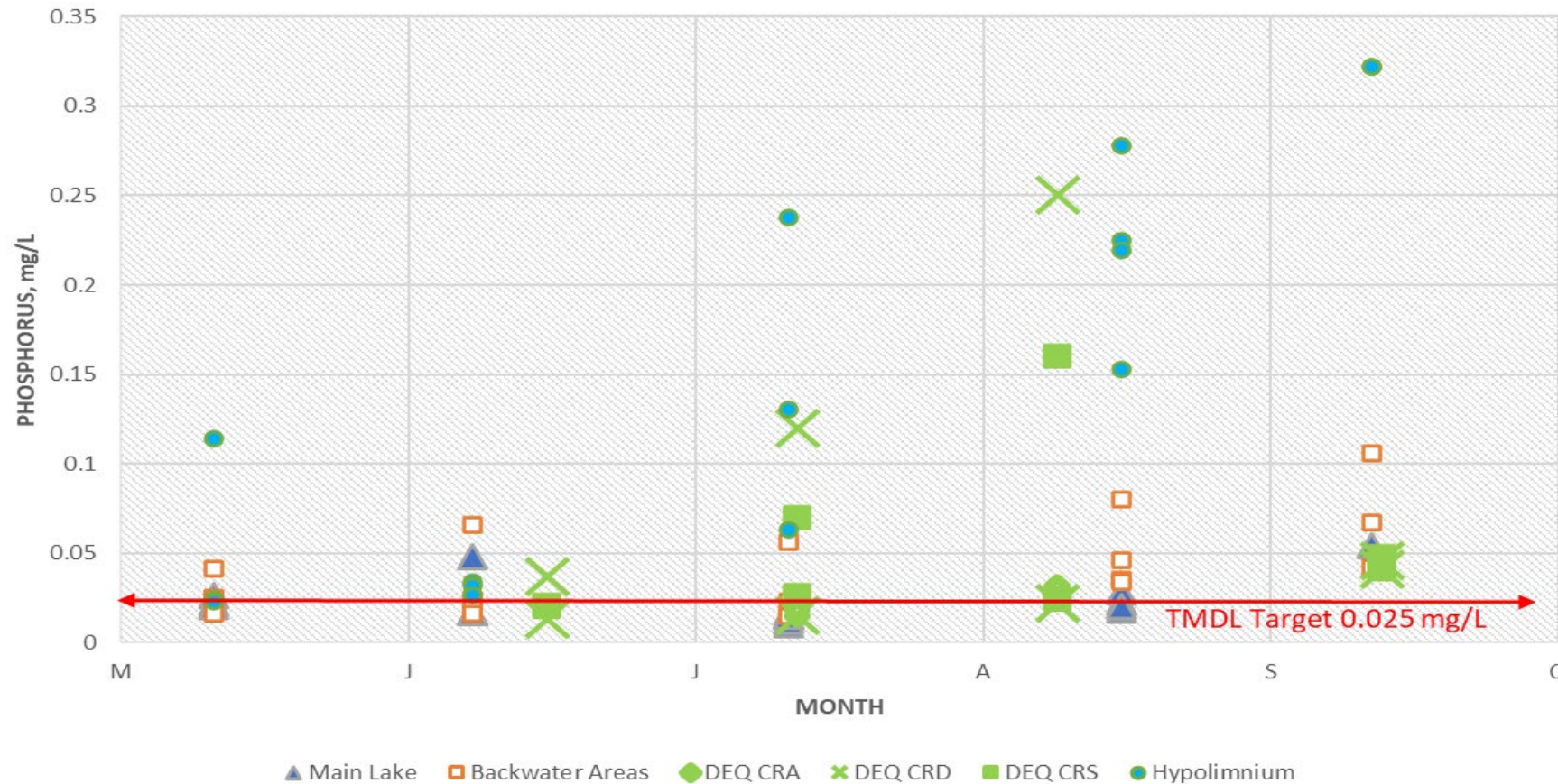
*Cyanobacteria/Harmful Algae Bloom (cyanobacteria)

July 2023

Lake Cascade State Park

Send message

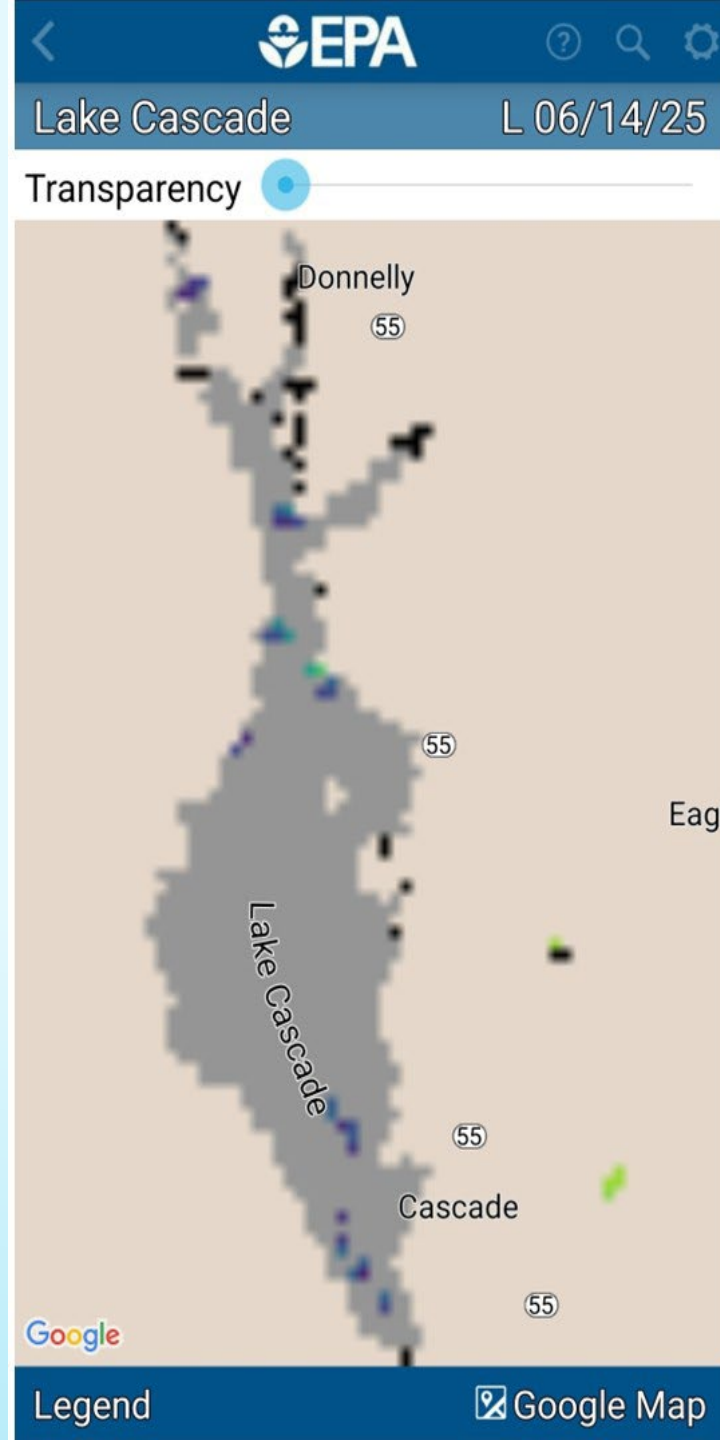
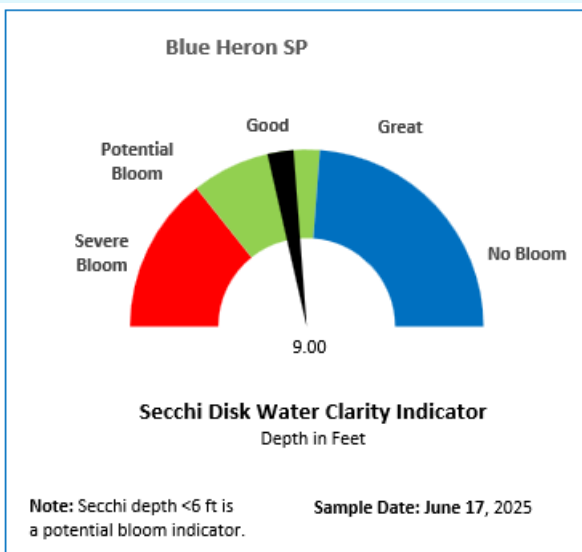
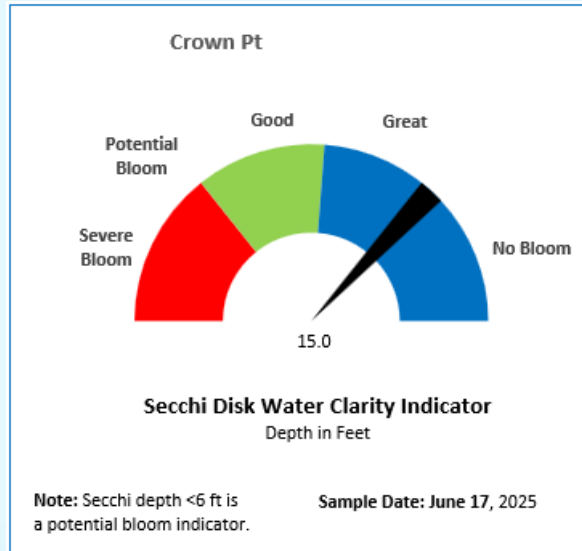
2024 Lake Cascade Water Sampling All Data - Total Phosphorus



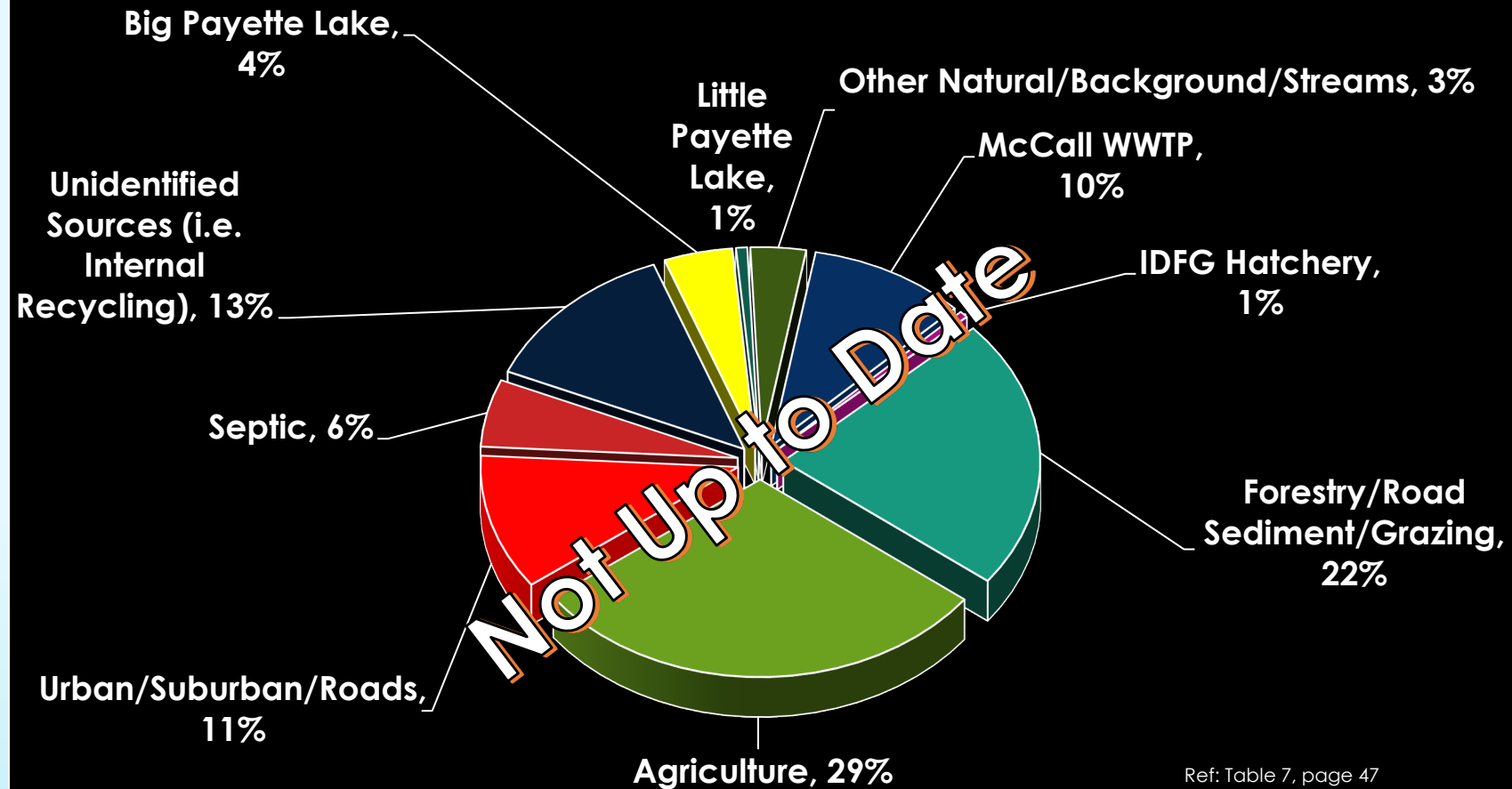
1. "Total Maximum Daily Level (TMDL) target for phosphorus is not being met."
2. "Cyanobacteria blooms occur often on Cascade Reservoir, posing health risk to people, animals, and wildlife."
3. Warming trends will worsen lake health conditions.

Quotes from IDEQ 2022 Monitoring Report

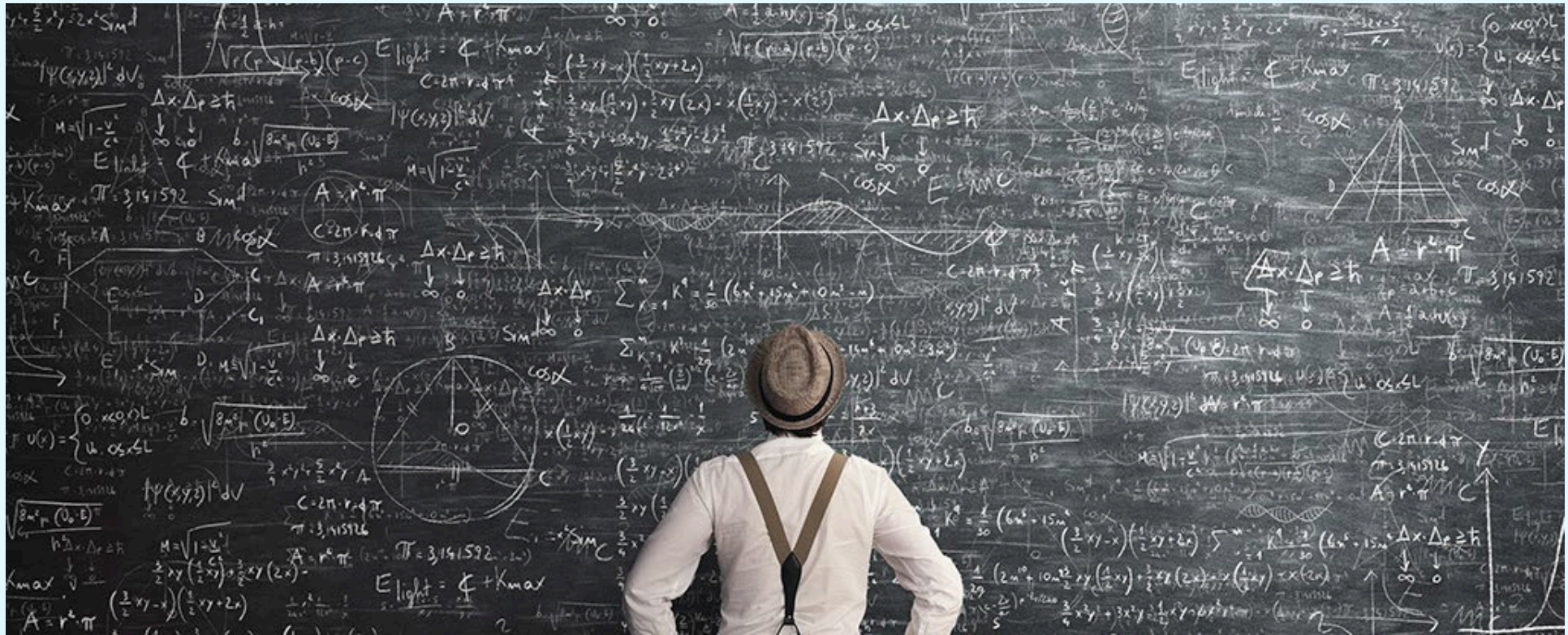
CURRENT CONDITION: EPA CyAN Satellite Imagery



2000 DEQ Implementation Plan Phosphorus Sources

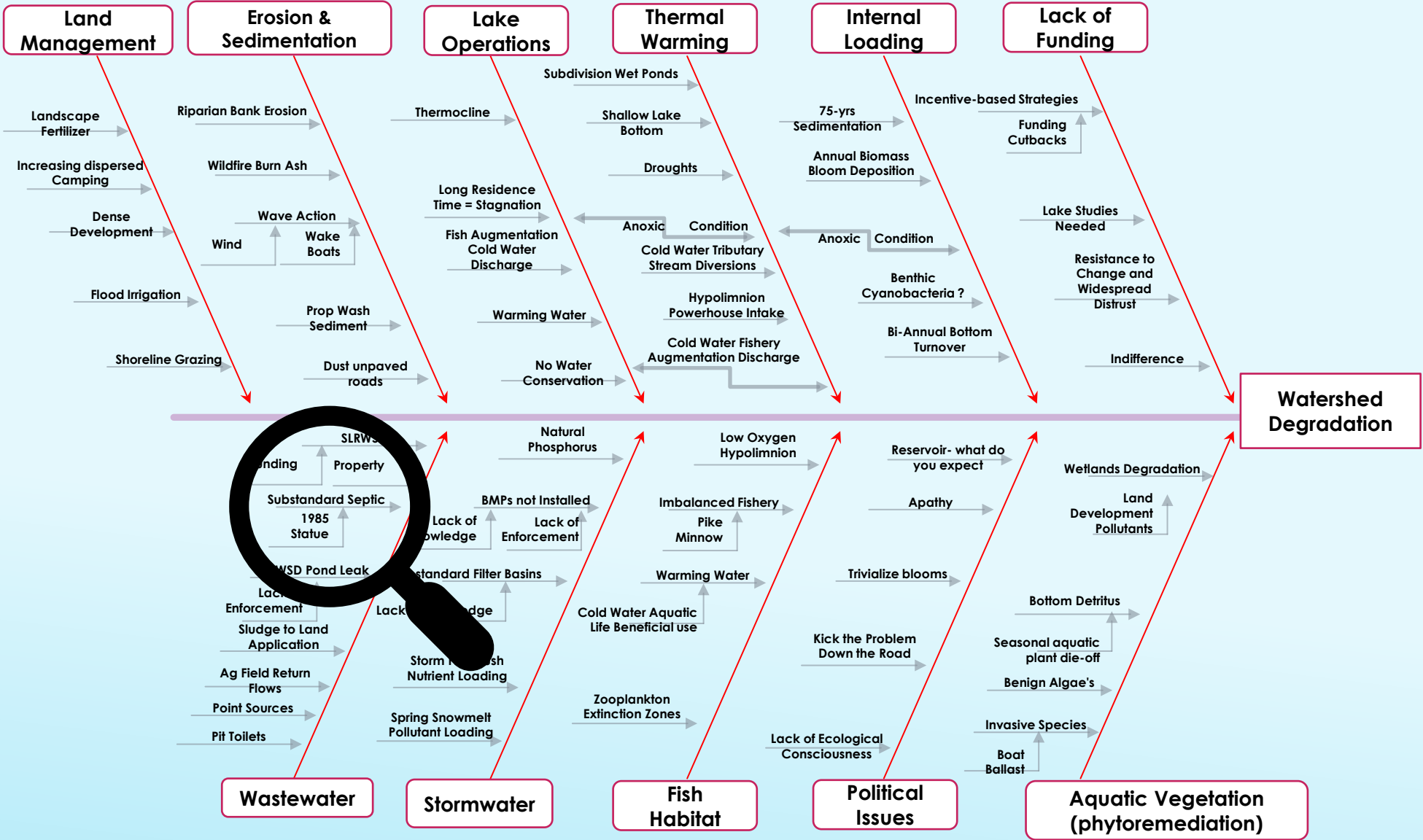


This chart is not up-to-date and the actual percentages likely differ today, but it gives a reasonable visual distribution indicating that the problem is complex and associated with multiple sources, not just one industry.



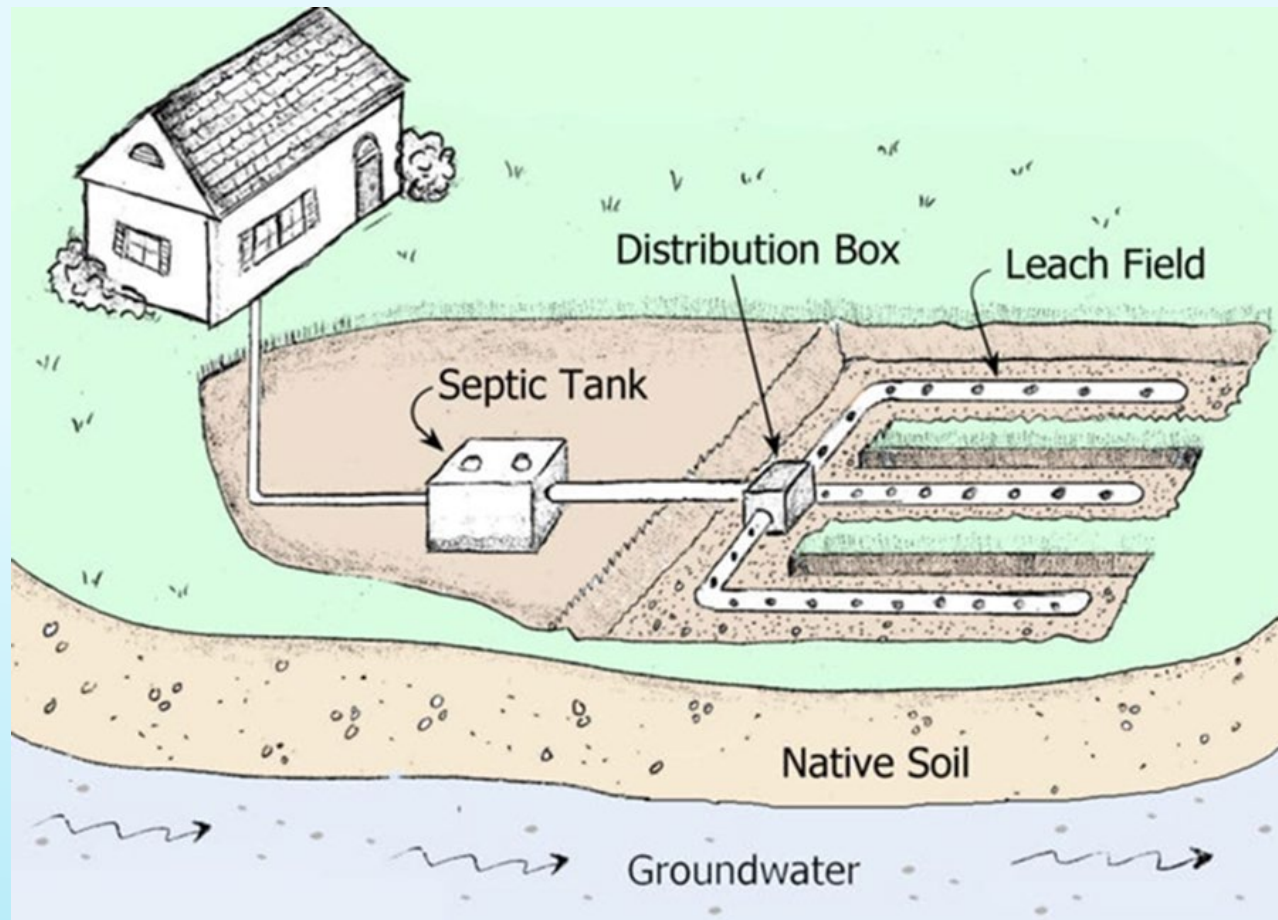
**COMPLEX PROBLEM
NEED SOLUTIONS**

Cause and Effect Analysis



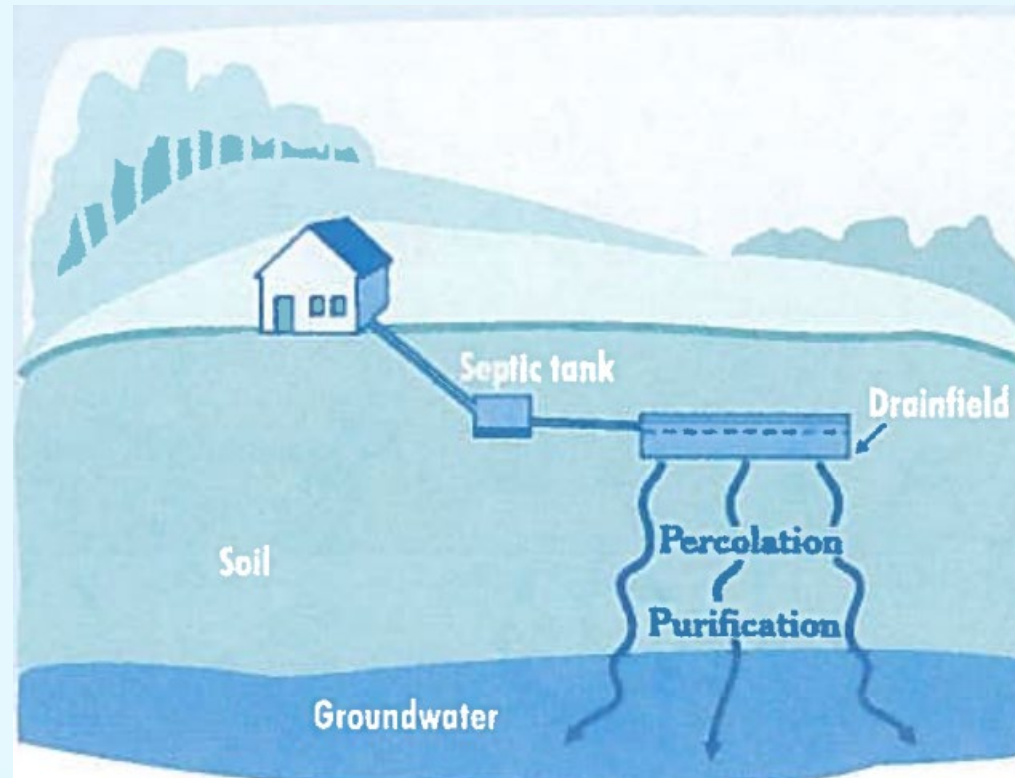
HIDDEN POLLUTION IN OUR BACKYARD?

LET'S EXPLORE OUR SEPTIC SYSTEM CHALLENGES



Typical Components

SUBSTANDARD OR POORLY MAINTAINED SEPTIC PATHWAYS



TYPICAL SEPTIC POLLUTANTS:

Pathogens: bacteria (e.g., *E. coli*, *Salmonella*), viruses, and protozoa.

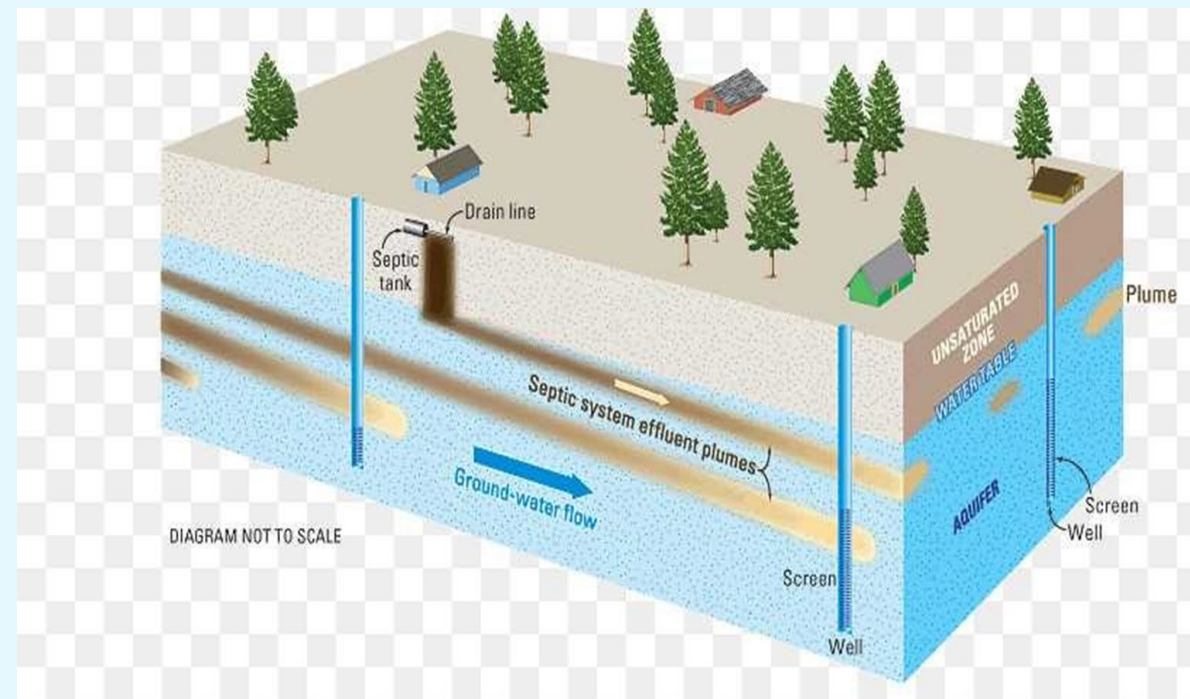
Nutrients: nitrogen and phosphorus compounds.

Organics: increase the biochemical oxygen demand (BOD) in the water.

Household Chemicals: detergents, cleaning agents, and trace pharmaceuticals.

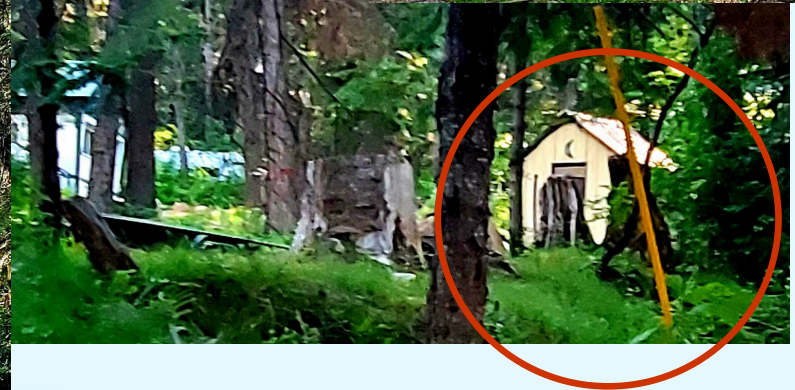
WEST MT. A RURAL RECREATIONAL SUBDIVISION

POOR SEPTIC CONDITIONS

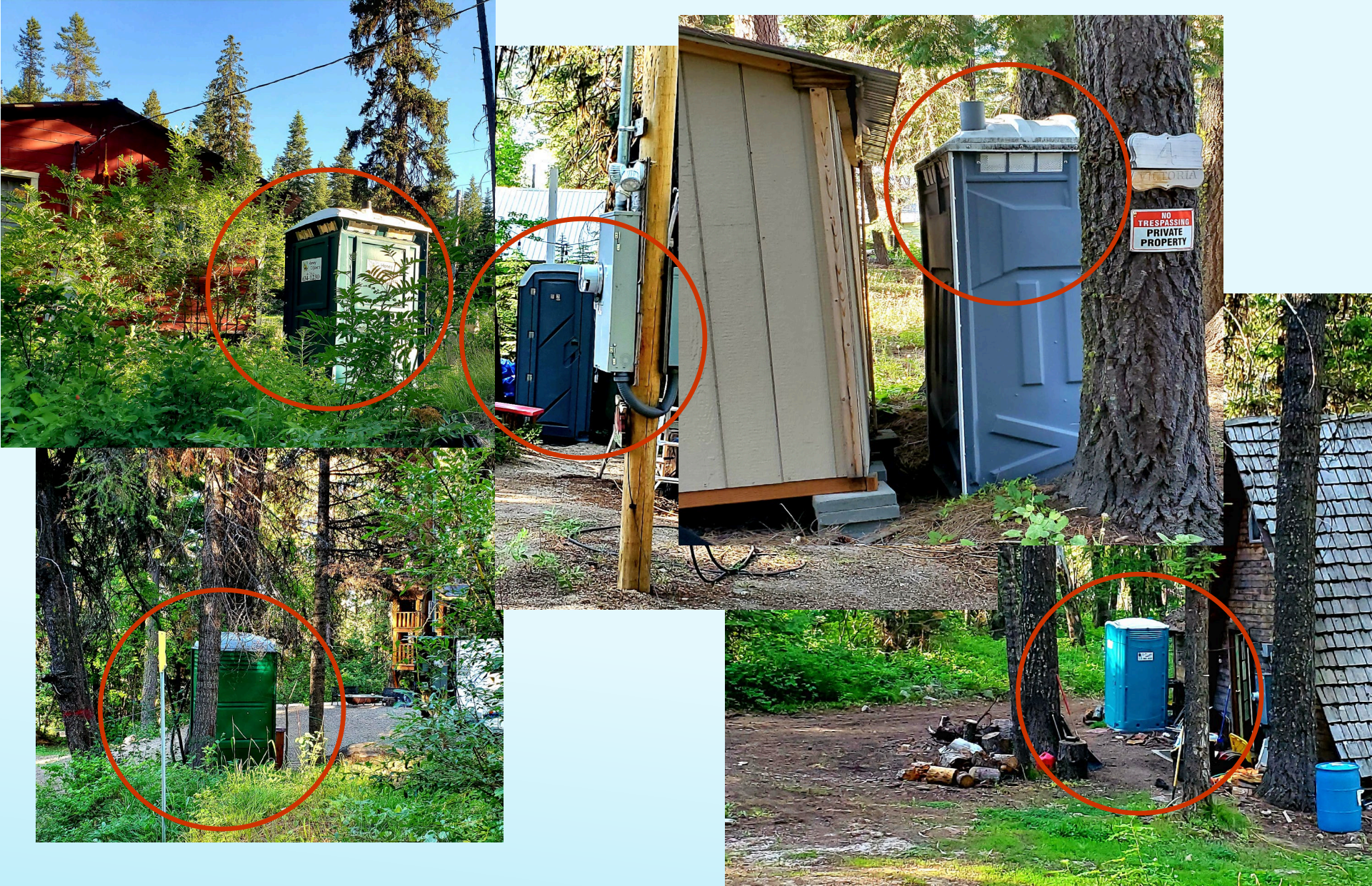


- High groundwater table.
- 1989 CHD Report; 70+% Substandard Privies (many grandfathered-in).
- Small lot sizes for septic systems.
- Mixed sanitation landscape.
- Large share of part-time vacation dwellings.

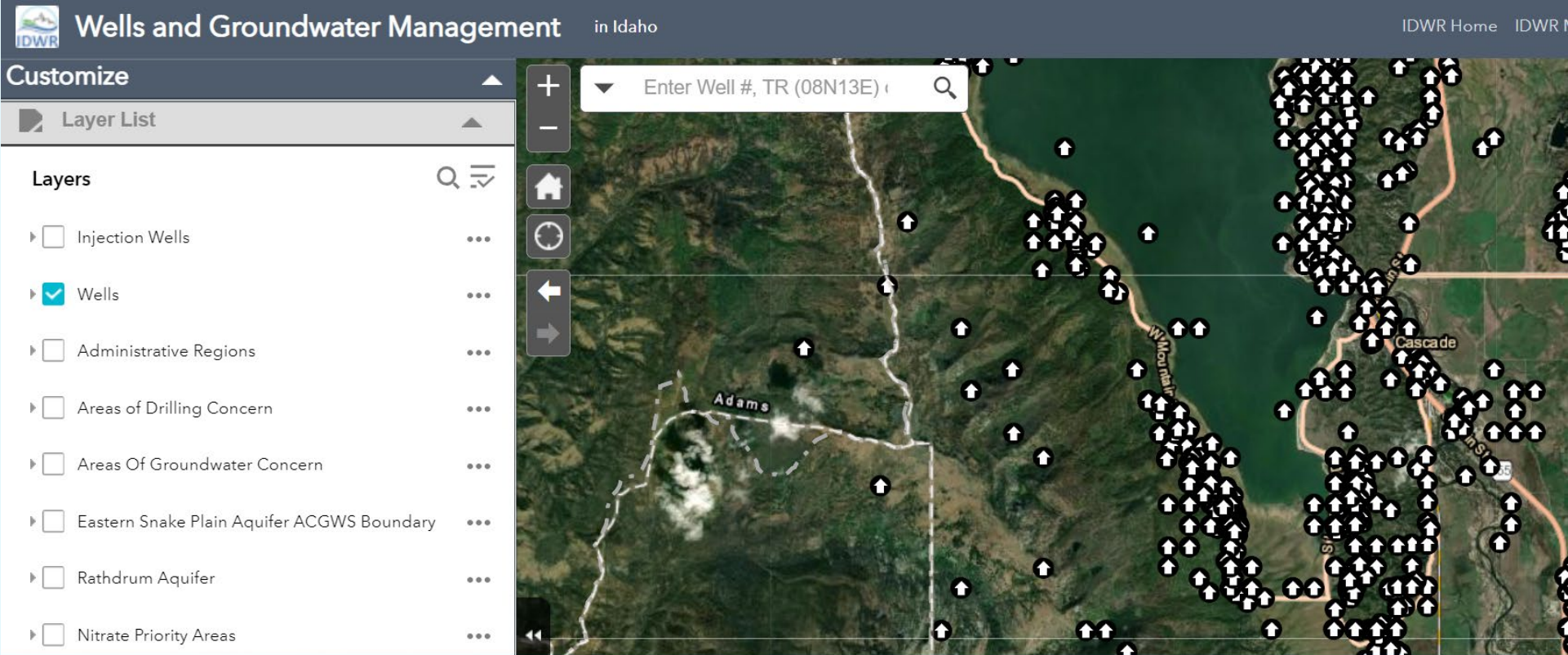
Substandard or poorly maintained Septic Systems do not remove nitrogen and phosphorus.



PRIVY'S



**ABUNDANT PORTABLE TOILETS –
APPROPRIATE ALTERNATIVE TO PIT TOILETS**



PROGRAM INTENT: SAFEGUARD WELLS IN THE SOUTH LAKE AREA

Ref: <https://idwr.idaho.gov/wells/find-a-well-map/>

Department of Environmental Quality
Source Water Assessment and Protection



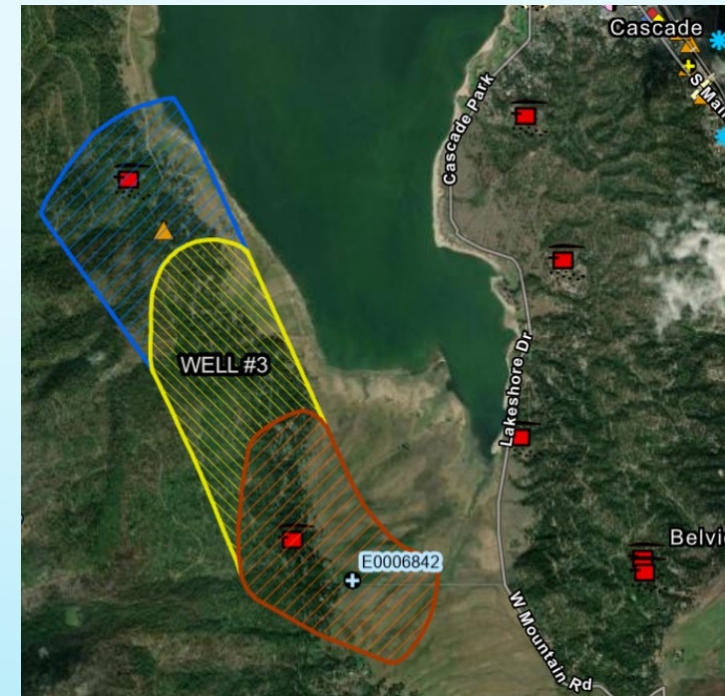
SRCID	PWS NO	PWS Name	Source Name	AQUIFER	ACRES	SWA Report
E0006842	4430012	CASCADE CITY OF	WELL #3	LONG VALLEY - ROUND VALLEY	1481	

PROGRAM INTENT: SAFEGUARD CITY WELLS

The Time-of-Travel (TOT) zones illustrate the number of years necessary for a particle of water or contaminant to move from a specific point in the aquifer to the well.

Ref:

<https://mapcase.deq.idaho.gov/swa/default.html?SRCID=E0006842>



CENTRALIZE SEWER - A SMART SOLUTION

Benefits of a centralized sewer:

- ✓ **Greater Public Safety (Neighborhood & Wells).**
- ✓ **Property Values Increase**
- ✓ **Preserves Lake Water Quality**
- ✓ **Removed building restrictions on some undevelopable lots.**
- ✓ **Average septic system lifespan 20–30 years.**
- ✓ **Freedom from costly maintenance pumping and replacement costs.**
- ✓ **Eliminate porta potty pumping, flies and privy odors.**
- ✓ **Fewer lifestyle wastewater discharge restrictions (i.e. garbage disposal, Clorox, laundry loads, etc.)**
- ✓ **Responsible Choice for Future Generations**

CONDITION...ITS ALL ABOUT PERSPECTIVE

**COMMON POLLUTERS RESPONSE:
“I FAIL TO BELIEVE WE’RE A SOURCE OF PROBLEM”**

Beautiful, Stunning Landscape



**Funky Musty Smelly
“Green Lagoon”**



LIKELY CONSEQUENCES OF POLLUTION INACTION

- The Do Nothing Alternative to Degradation Pressures -

**Toxic Algae Blooms -
more often and longer
duration**

**Increase in Waterborne
Illnesses -
especially for sensitive
children**

**Health Advisories -
more often**

STIGMA
**Unhealthy Environmental –
The risk of exposure is not
worth the benefits.**

**Decline in Tourism and
Lagging Property Values**

**More dog illnesses and
deaths**

**Loss of Biodiversity –
return of massive fish kills.
Polluted water disrupts
entire ecosystems.**

**Loss of Livelihoods and
Tax Revenues**

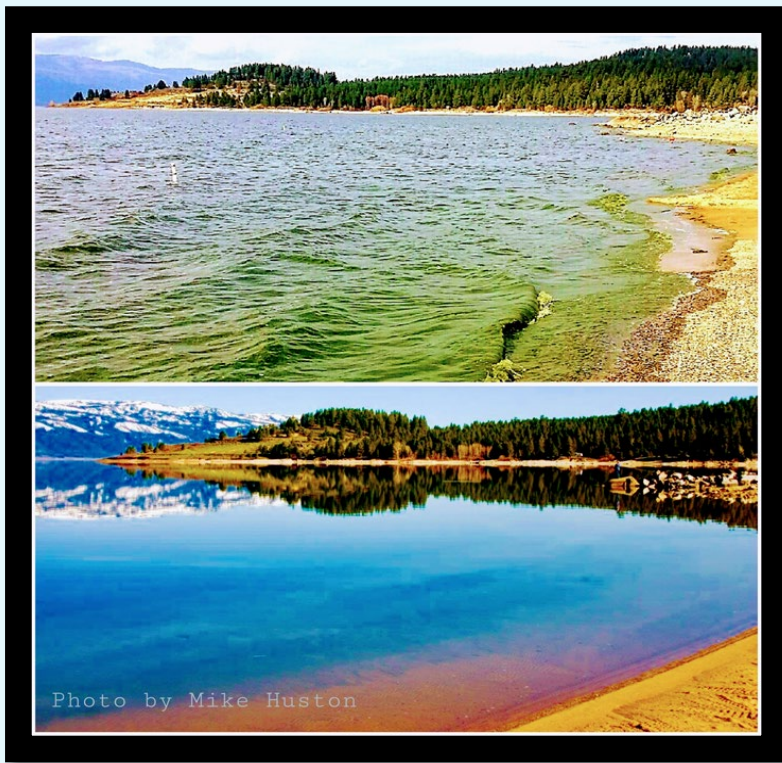


Photo: FoLC



CLEAN OR GREEN.....YOUR CHOICE

Report suspected blooms:

- Email algae@deq.idaho.gov
- Call the DEQ HABs Hotline at 1-866-671-5385.

“when in doubt, stay out”



Photos: FoLC

**FINAL THOUGHT:
OUR CHOICES TODAY... SHAPE THE
HEALTH OF LAKE CASCADE TOMORROW.**



VALLEY SOIL & WATER

CONSERVATION DISTRICT

Technical Assistance Application from Valley Soil and Water Conservation District

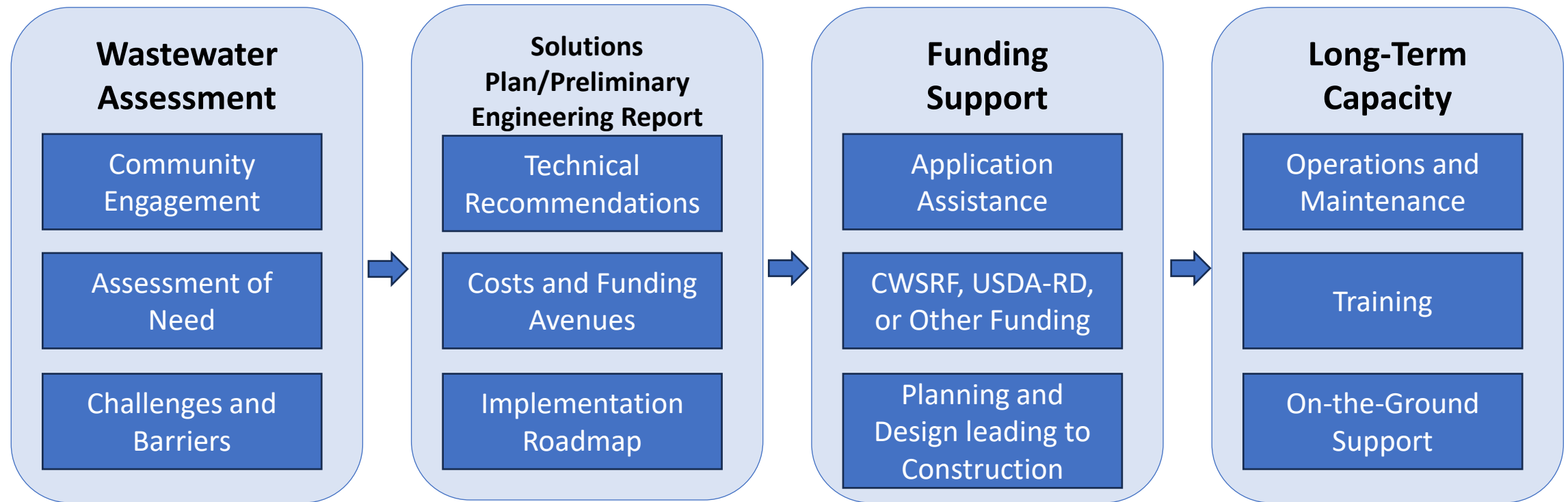
- Water TA Request submitted by the **VSWCD to study SLRWSD service area and identify alternatives**
- Technical assistance request cited:
 - Unpermitted, outdated (pit privies), or inadequate onsite wastewater systems in use around southern portion of Lake Cascade
 - Toxic algae blooms and nutrients exceed Lake Cascade's limits, with onsite wastewater systems a contributing factor
 - Concerns with impacts to local groundwater given high perched water table in West Mountain area
 - Potential contamination of private wells

EPA's Closing America's Wastewater Access Gap Initiative

- No-cost technical assistance to communities with failing septic systems.
- Began as a pilot for 11 communities in 2022 funded by the Infrastructure Investment and Jobs Act.
- In 2024, EPA expanded the initiative to serve 150 communities across the U.S. and territories.



EPA's Closing America's Wastewater Access Gap Initiative Technical Assistance Process



EPA's Closing America's Wastewater Access Gap Initiative

- VSWCD request accepted into EPA's Closing America's Wastewater Access Gap Initiative
 - Supported by ERG (Janet Cherry) and MDB (Omid Barr)
 - RCAC (Nawang Sherpa) supporting SLRWSD
- **Can support project through February 2027.**





City of Cascade- Mayor Nissula

- The city is improving its wastewater system by installing aerators in the lagoons and reducing excess stormwater entering the system (Inflow & Infiltration)
- In January 2025, the City Council voted unanimously to explore a regional wastewater solution—at no cost to the city





Valley County Involvement- Commissioner Caldwell

- Desire for SLRWSD to address onsite systems
- Willingness to participate in cost sharing water quality sampling in wells and Lake Cascade for pharmaceuticals and personal care products



CENTRAL
DISTRICT
HEALTH

Central District Health (CDH)

- In 1989, Idaho CDH conducted a study to assess pit privies in the West Mountain area long Lake Cascade
 - 873 platted lots, 347 lots developed with a dwelling
 - Platted lots are 10,000 to 12,000 square feet
 - Of the 385 lots surveyed, 134 lots using pit privies in the West Mount area – roughly 1 in 3 lots.
 - Approximately 73% of the privies in violation of current code (in 1989) and represent a health risk
- These older systems can pose serious health risks and may contaminate soil and water

Central District Health (CDH)

- Number of permits recently issued and types of systems permitted
 - 14 permits for the southern West Mountain subdivision area since 2023
 - Most lots are very small
- Current permitting process
 - Property owner submits a subsurface sewage application, plot plan and floor plan and pays \$877 fee (current value)
 - CDH meets with excavator (provided by applicant) to dig a test hole
 - CDH writes permit based on soil type and # of bedrooms
 - After installation, CDH inspector conducts final inspection



SOUTH LAKE RECREATIONAL WATER AND SEWER DISTRICT

History of the South Lake Recreational Water and Sewer District

- Formed in 1995 to address water quality concerns in Lake Cascade due to current and future development around the southern portion of Lake Cascade and associated wastewater
- In 2005, the district explored alternatives to address existing onsite systems (privies, drainfields) and challenges with permitting onsite systems for the small platted lots
 - Approximately 1,380 lots within SLRWSD with 539 developed with dwelling units
 - Approximately 10% of properties deemed “undevelopable” due to steep terrain and rock

History of the South Lake Recreational Water and Sewer District

- 2005 Study recommended alternative was installing centralized sewer collection system, connecting to the City of Cascade's collection system and building a new regional wastewater treatment plant (membrane bioreactor) to serve both City of Cascade and SLRWSD
 - Costs provided for this option- see next slide
- SLRWSD also investigated installation of a lagoon
 - Could not obtain Valley County conditional use permit

2005 Study Costs

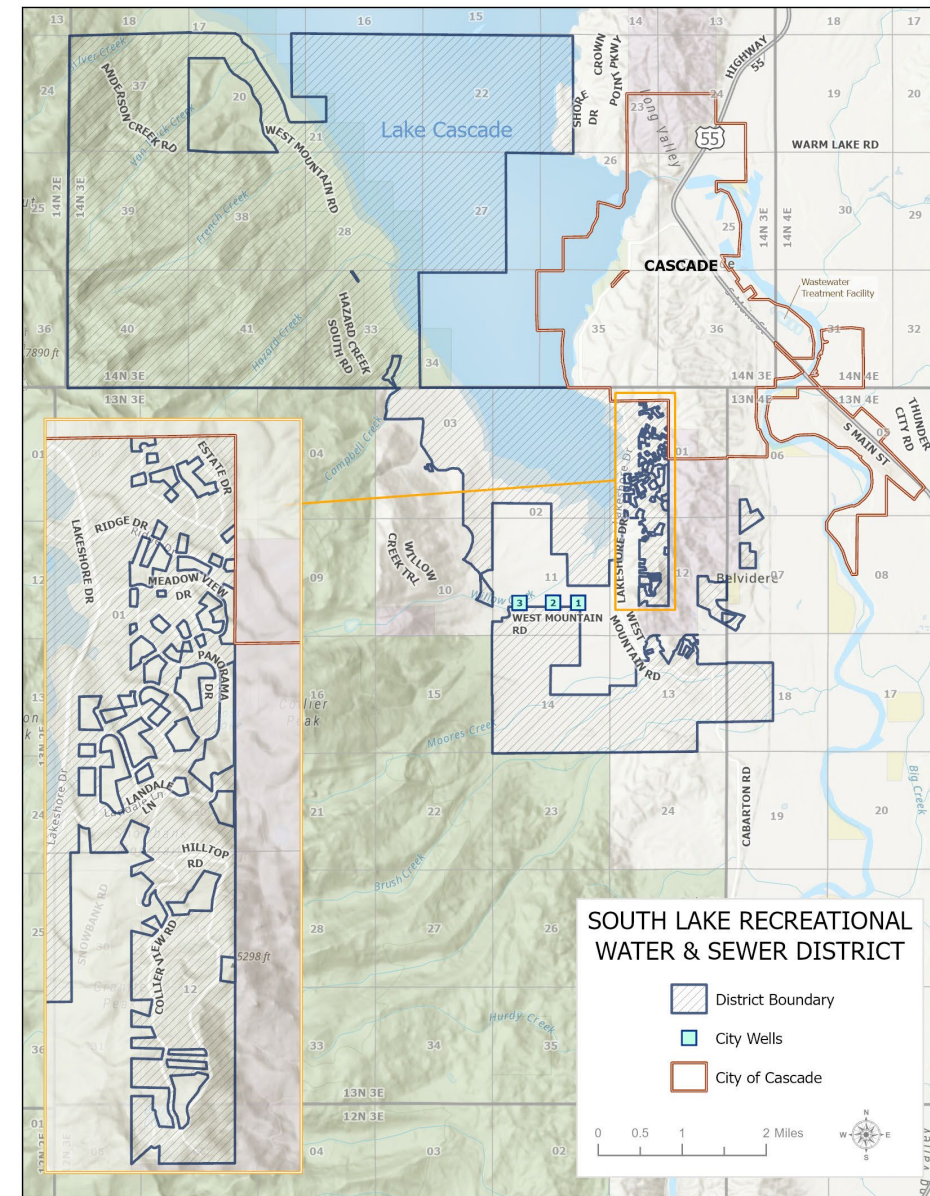
2005 Study provided the following capital costs (2003 dollars) and monthly rates for centralized sewer system and new regional wastewater treatment plant to serve City of Cascade and SLRWSD

Infrastructure	Total Cost	City of Cascade Share	SLRWSD Share
Wastewater Treatment Plant	\$4,700,000	\$1,900,000	\$2,800,000
Joint Collection System	\$3,600,000	\$1,400,000	\$2,200,000
SLRWSD Collection System	\$8,300,000		\$8,300,000
Total	\$16,600,000	\$3,300,000	\$13,300,000
Estimated monthly rate - O&M plus loan repayment		\$29/month	\$74/month

Efforts Underway to Evaluate Options for the South Lake Recreational Water and Sewer District

Project Area

- SLRWSD service area is very large
- Phase 1 effort: Assess West Mountain Subdivision Area
- Assessment of existing onsite systems through review of existing permits and site visits to properties with permission of homeowners



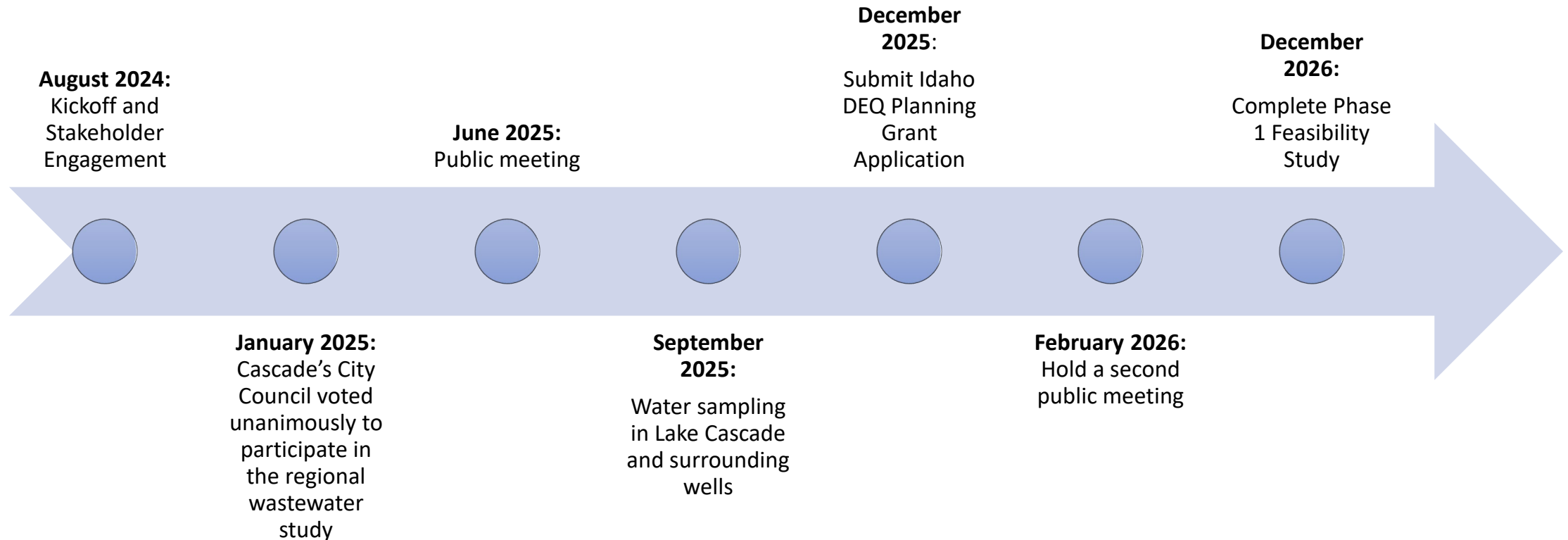
Scope of Work

- Evaluate extent of substandard onsite systems along Lake Cascade's southern half, initially focusing on West Mountain Subdivision Area
 - This area was identified as a top priority for sewer service in 2005 study – and remains a focus given current development.
- Obtain water quality samples from shallow wells within West Mountain Subdivision, City of Cascade well, and Lake Cascade
 - Sample for coliforms, nitrates, and pharmaceuticals and personal care products
 - Testing can help demonstrate current onsite systems providing inadequate wastewater treatment
 - Key to accessing federal funding with favorable financing terms for solutions

Scope of Work

- Explore solutions such as installing centralized collection and treatment for West Mountain Subdivision
 - Many options will be considered, some will be regional and involve City of Cascade
 - Work with the project partners and community members to choose the best solution
 - Understand rates are important and property owners want an affordable option
 - Also consider drinking water availability and potential impacts to water availability
- Obtain funding for evaluation of other areas within SLRWSD
- Develop a Preliminary Engineering Report to secure funding for the chosen solution.

Project Milestones



Next Steps

1. Create a Community Advisory Committee
2. For West Mountain Subdivision Area: Assess onsite wastewater systems, collect water quality samples, identify alternatives and costs
3. Pursue additional funding to support continued evaluation of entire SLRWSD service area
4. Provide frequent updates to the community
5. Complete Phase 1 Feasibility Study (for the West Mountain Subdivision) by December 31, 2026

COMENTS AND QUESTIONS

THANK YOU!!