THURSTON COUNTY
WASHINGTON
SINCE 1852

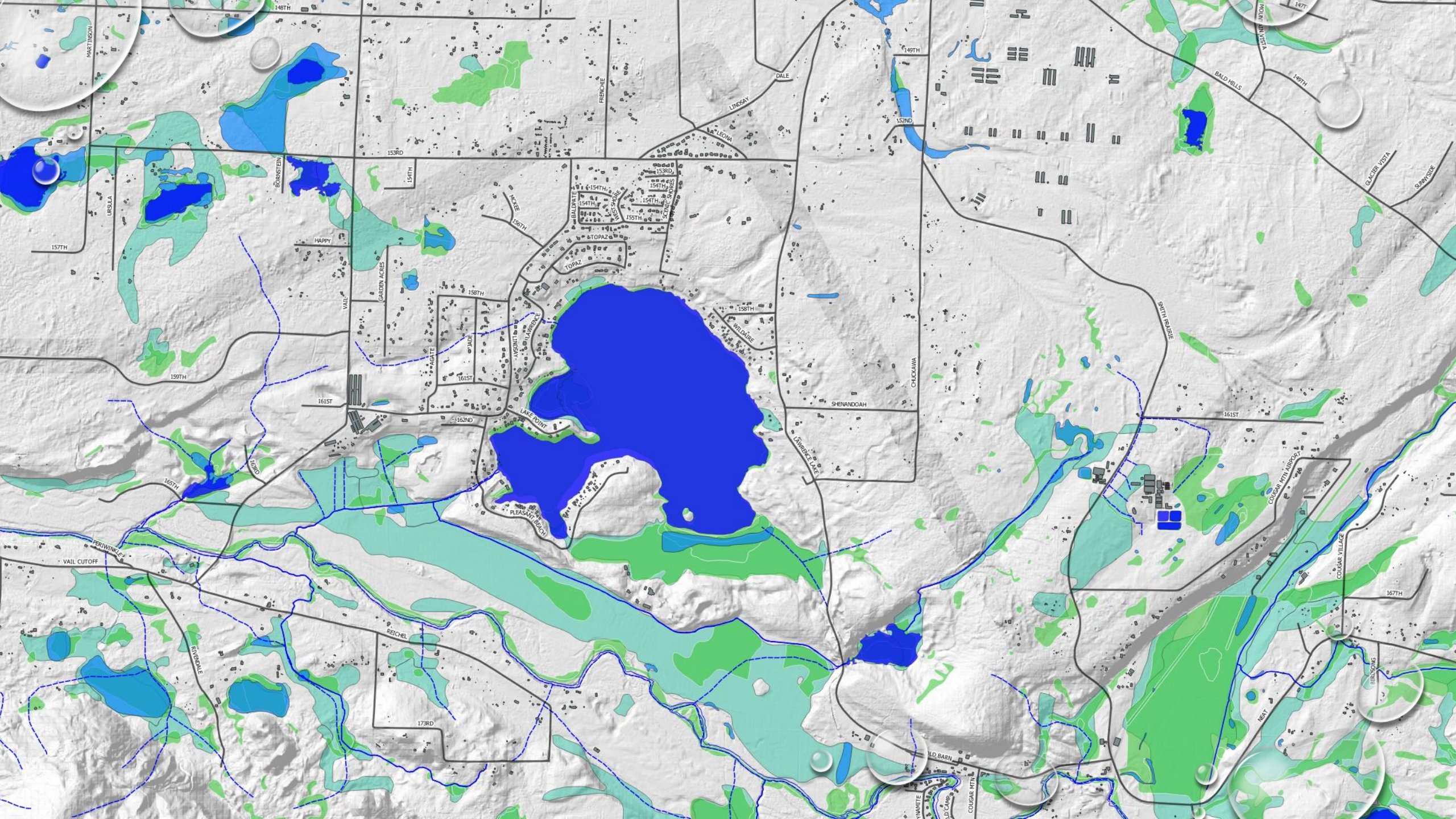
Lake Lawrence Hydrology

Lake Lawrence LMD

September 24th, 2026

Kevin Hansen, LHg.

Thurston County Hydrogeologist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BORNSTEIN
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HAPPY
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AGATE
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FRENCHIE
DALE
LINDSAY
LEONA
149TH
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BALDMTE
WESTSHORE
SCENIC SHORES
155TH
MCKEE
156TH
TOPAZ
158TH
LAWRENCE
VIRGINIA
JADE
WILDAIRE
CHUCKAWA
SHENANDOAH
LAKE POINT
PLEASANT BEACH
LAWRENCE LAKE
BALD HILLS
MOUNTAIN VISTA
GLACIER VISTA
SUNNYSIDE
SMITH PRAIRIE
COUGAR MTN AIRPORT
COUGAR VILLAGE
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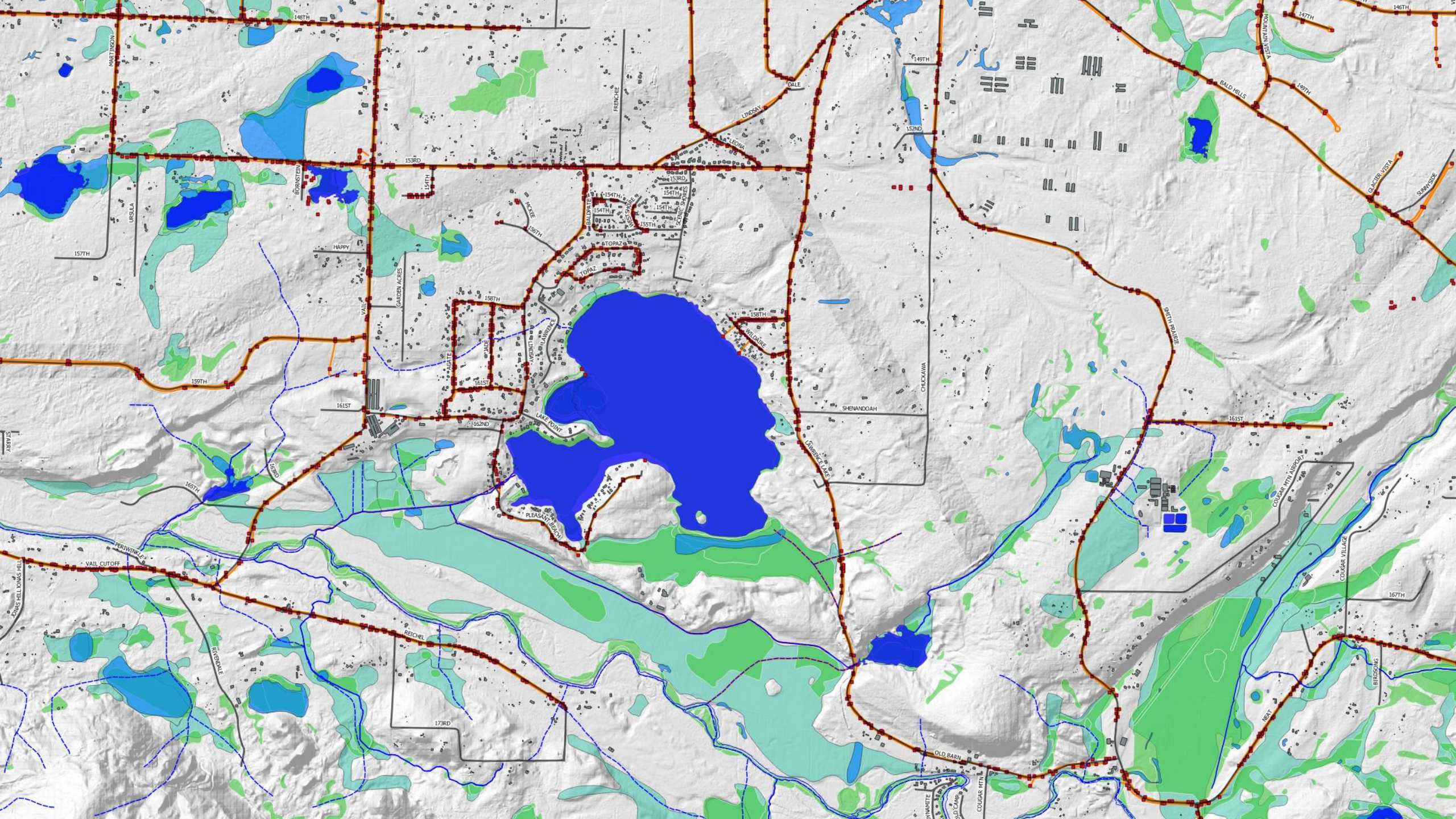
PERIWINKLE
VAIL CUTOFF
REICHEL
RIVERDALE
173RD
NEAT
BIRDSONG
COUGAR MTN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GARDEN ACRES
VAIL
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MCKEE
155TH
BALDPATE
NEVADA SHORE
SCENIC SHORES
TOPAZ
AGATE
JADE
AMETHYST
FLAMINGO
WILDFIRE
CHICKAWA
SHENANDOAH
SMITH PRAIRIE
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162ND
LAKE POINT
LAWRENCE LAKE
COUGAR MTN AIRPORT
COUGAR VILLAGE
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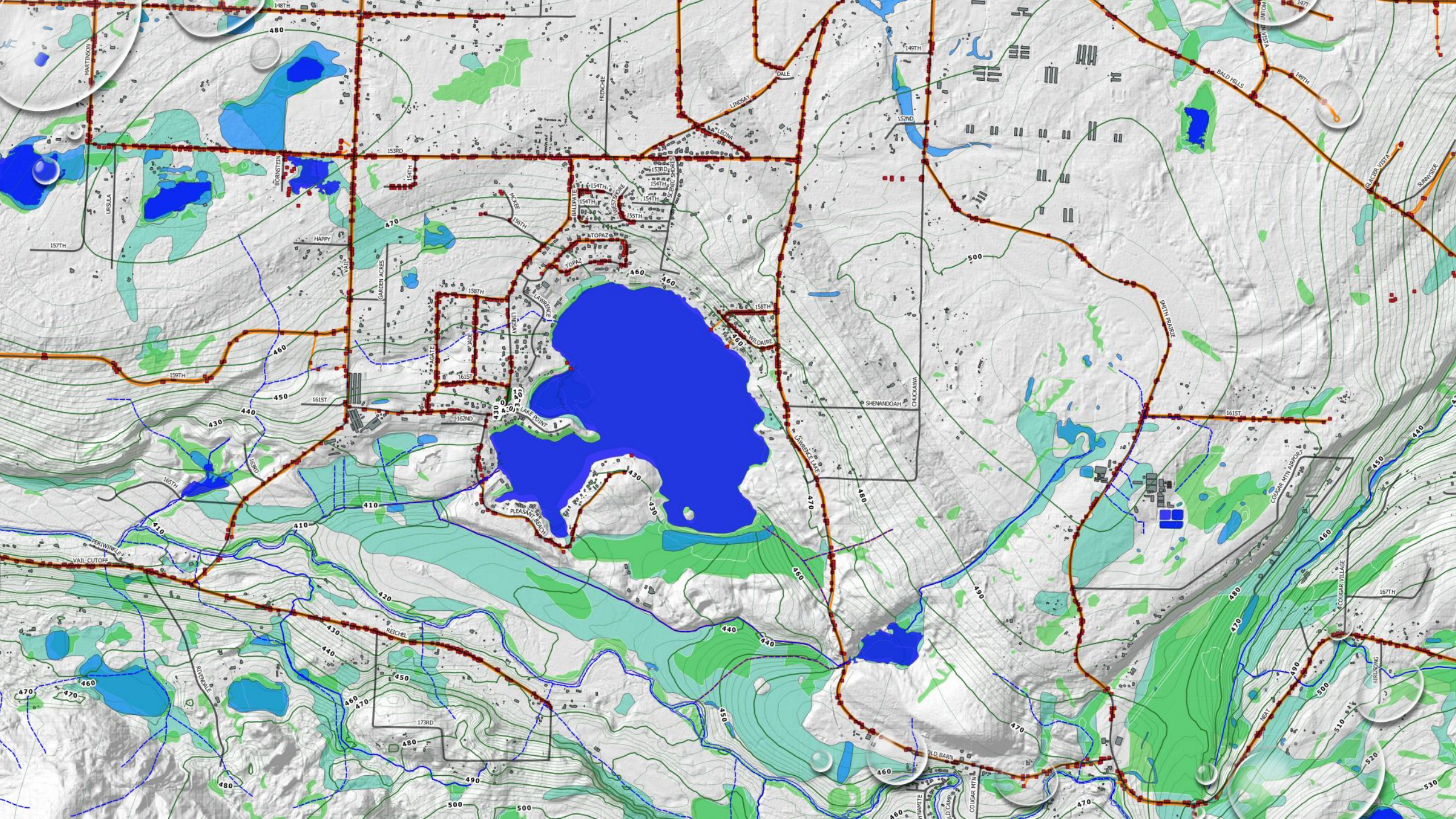
RIVERDALE
173RD
OLD BARN
COUGAR MTN
BIRDSONG
162ND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GLACIER VISTA
SUNNYSIDE
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BORNSTEIN
URSULA
151ST
154TH
MCKEE
155TH
BALDPATE
SANDSTROME
SCENIC SHORE
TOPAZ
157TH
HAPPY
VAIL
GARDEN ACRES
470
460
158TH
LAWRENCE
LINDSAY
WILDAIRE
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SMITH PRAIRIE
AGATE
JADE
159TH
161ST
450
440
430
LAKE POINT
162ND
SHENANDOAH
CHICKAWA
163RD
165TH
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PLEASANT BEACH
LAWRENCE LAKE
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COUGAR MTN AIRPORT
PERIWINKLE
VAIL CUTOFF
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NEAT
BIRLSONG
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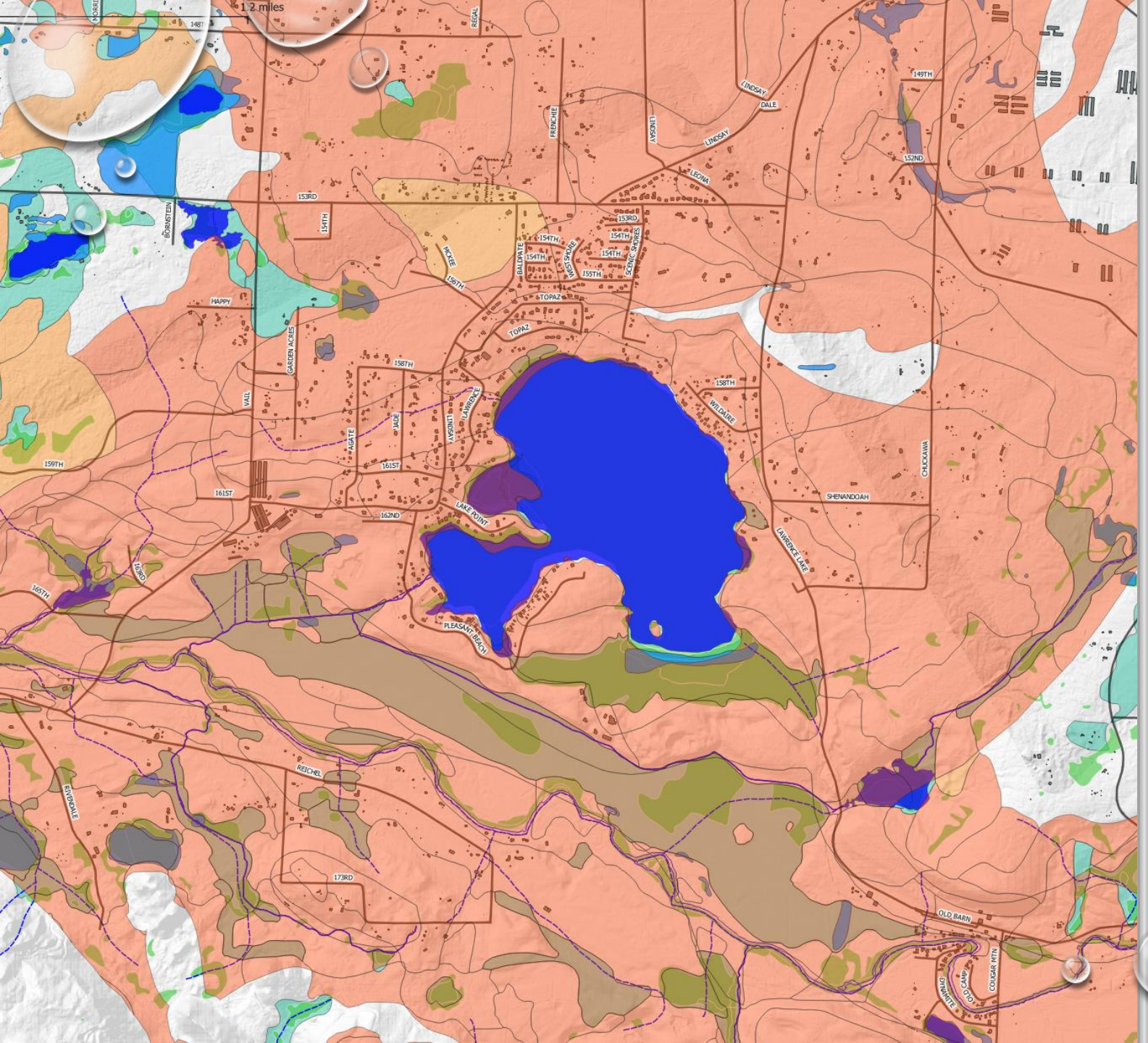
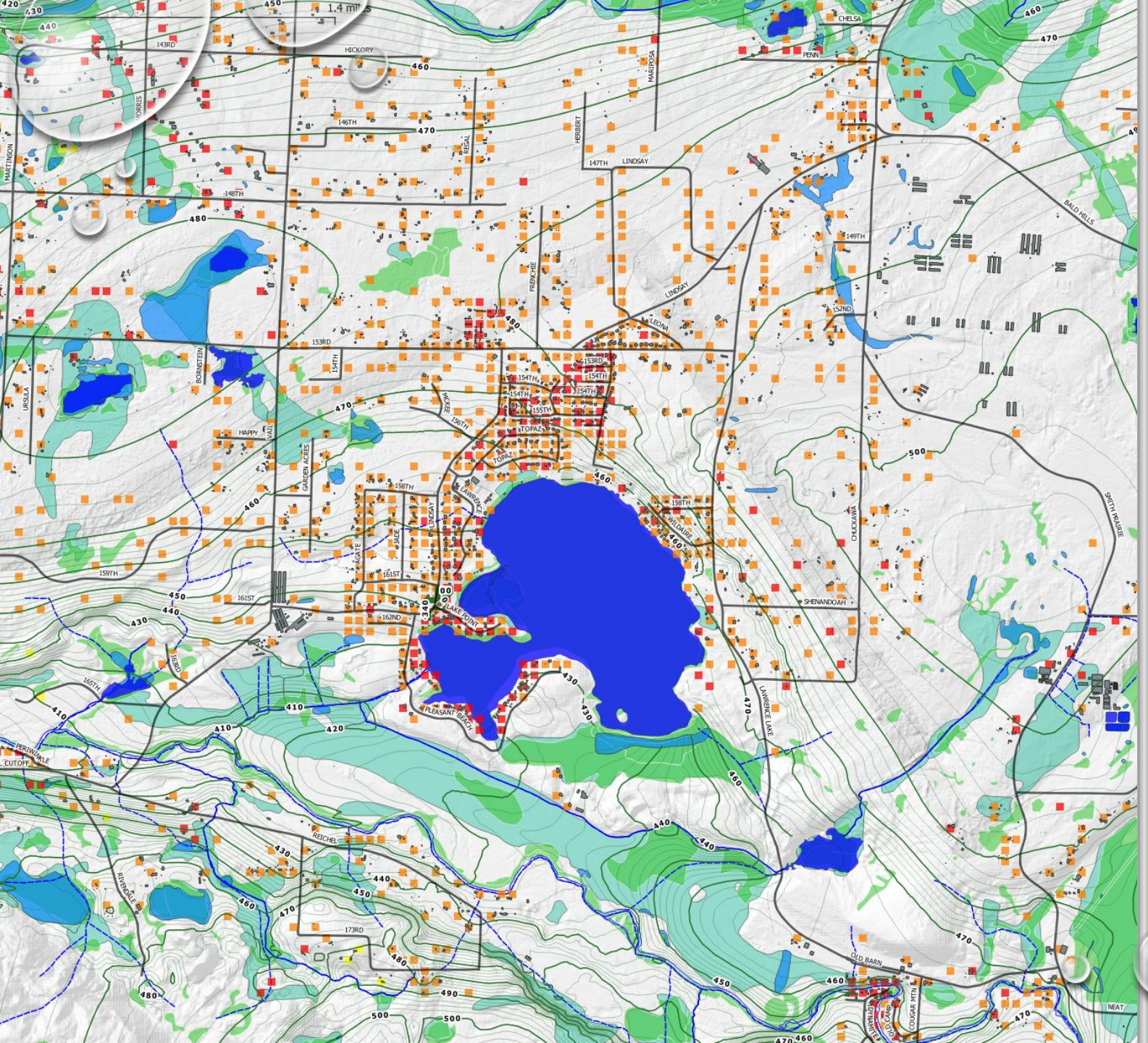


CARA SOILS

- CRITICAL AQUIFER RECHARGE AREA (CARA)
- “MY SOIL IS GRAVEL…SO WHY WON’T IT PERK?
- AN EXPENSIVE WASTEWATER QUESTION

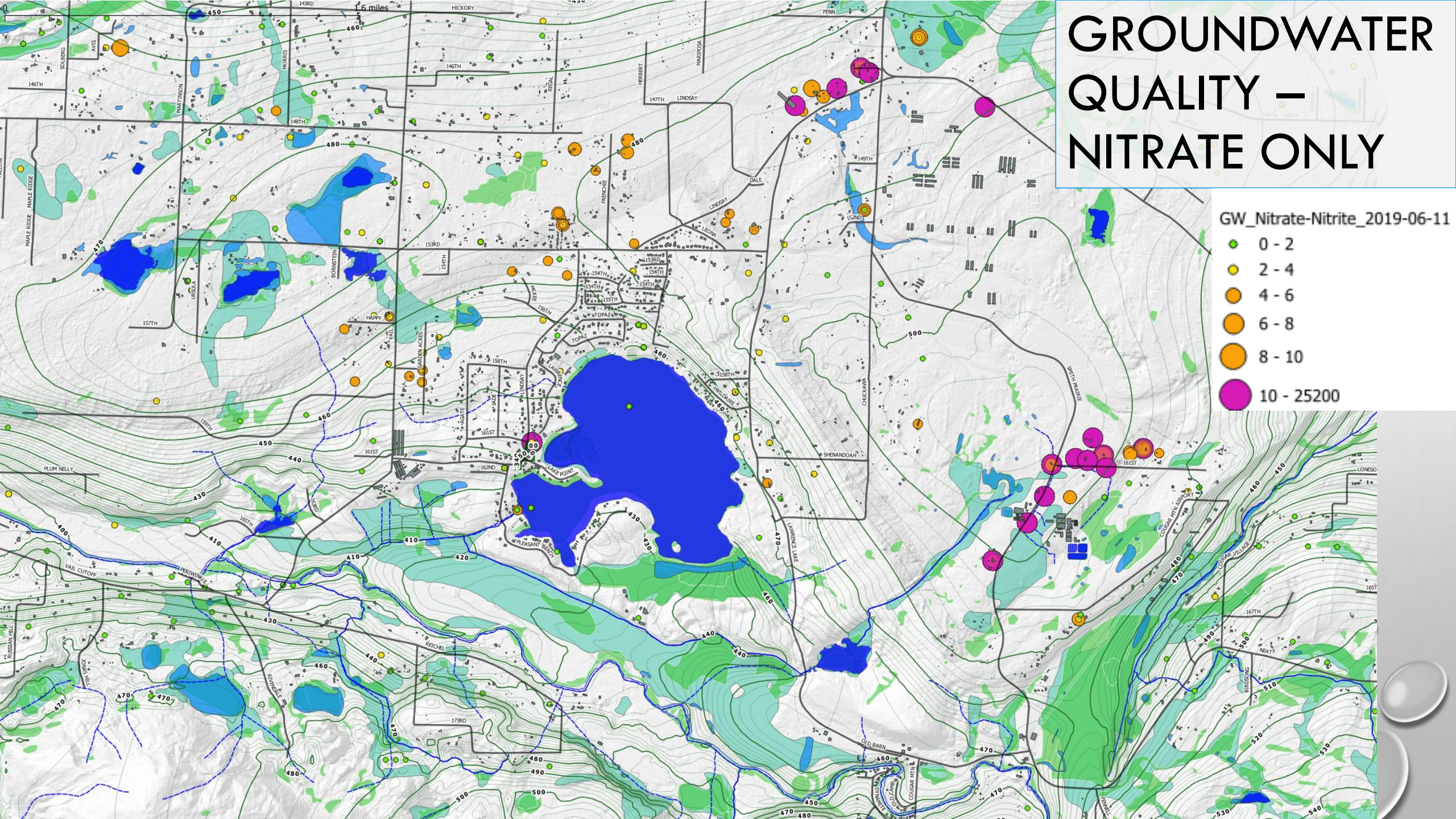


SEPTIC WASTEWATER LOADING

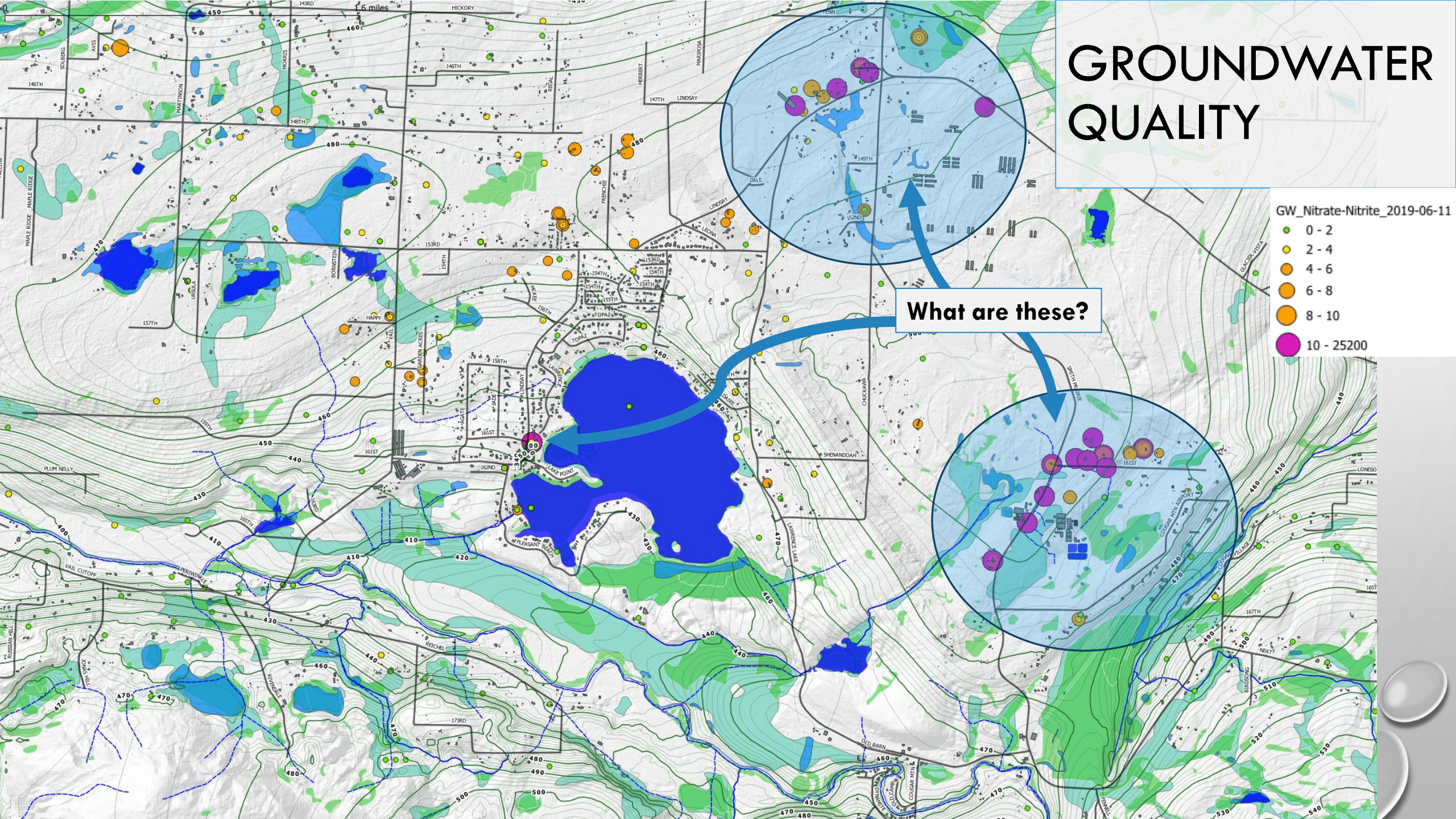
Nitrate_Loading_from_septics_only_2022-03-28_v5

- 0 - 2
- 2 - 4
- 4 - 10
- 10 - 60.9

GROUNDWATER QUALITY – NITRATE ONLY



GROUNDWATER QUALITY



Washington State Department of HEALTH

Division of Environmental Health
Office of Drinking Water

Note this is Lake Lawrence water, but not Scenic Shores water

Help

Individual System View - LAKE LAWRENCE - Water System Id - 22572

Compliance Actions | Operating Permits | Operators | Reports | Water Use Efficiency

General Information | Source Information | Samples | Exceedances | Water Quality Monitoring Schedule

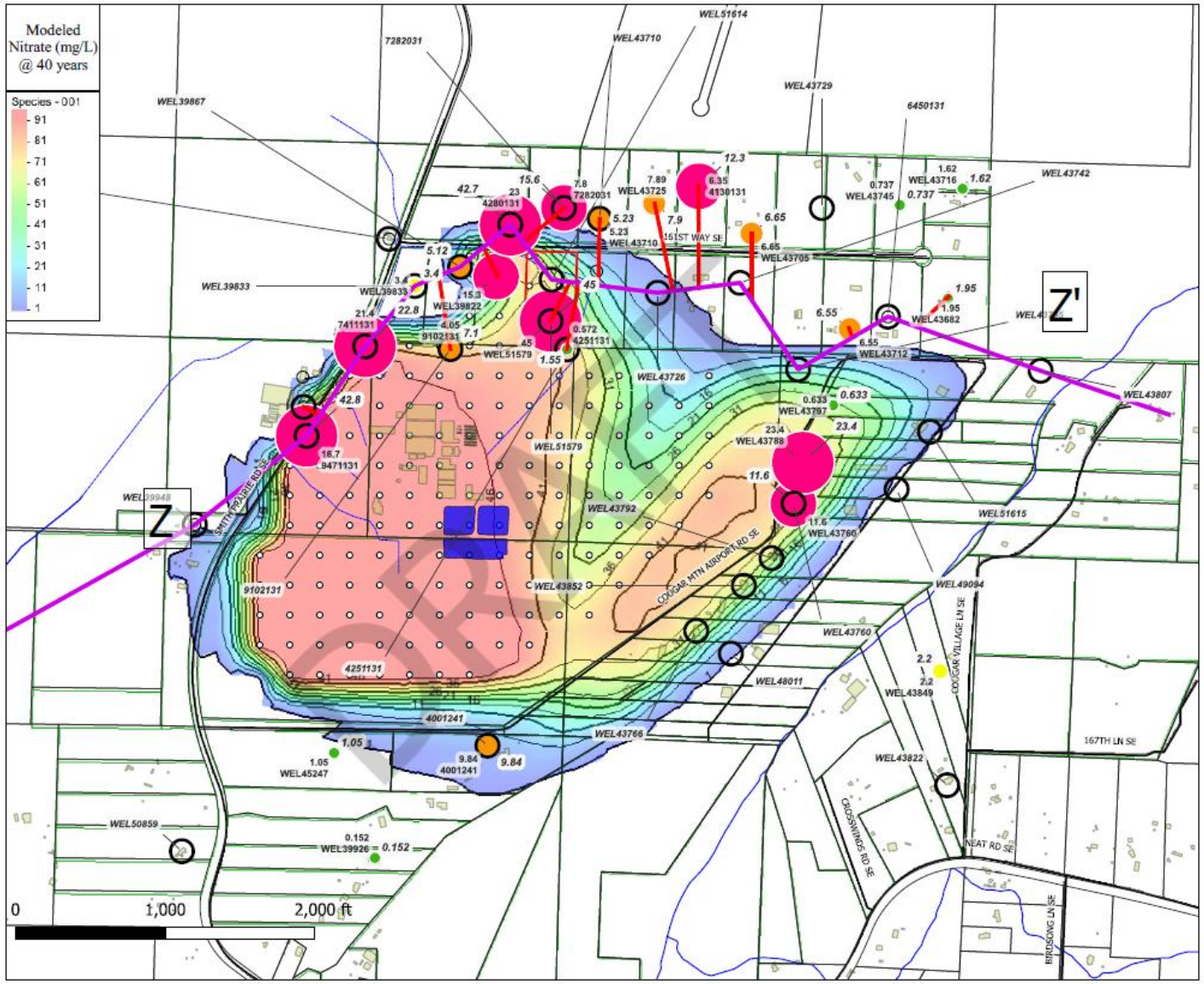
Type	Source	DOE Source	Collect Date	Analyte	Result Quantity	Units	Test Panel	Analyte Group	Sample Number	Lab Number
P	Distribution		8/6/2026	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	13909	144
P	Distribution		8/6/2026	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	13910	144
P	Distribution		8/6/2026	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	13906	144
P	Distribution		8/4/2026	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	07807	144
P	Distribution		8/6/2024	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	77611	010
P	Distribution		9/21/2023	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	28405	010
P	Distribution		9/21/2023	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	28401	010
P	Distribution		9/21/2023	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	28404	010
P	Distribution		9/19/2023	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	19209	010
P	Distribution		8/5/2013	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	55556	089
P	Distribution		6/4/2013	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	49337	089
P	Distribution		10/15/2012	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	26908	089
P	Distribution		10/15/2012	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	26905	089
P	Distribution		10/15/2012	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	26907	089
P	Distribution		10/15/2012	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	26906	089
P	Distribution		10/9/2012	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	26365	089
P	Distribution		4/12/2011	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	71836	089
P	Distribution		4/12/2011	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	71837	089
P	Distribution		4/7/2011	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	71290	089
P	Distribution		11/9/2010	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	57363	089
P	Distribution		11/9/2010	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	57364	089
P	Distribution		11/4/2010	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	56845	089
P	Distribution		7/10/2006	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	02777	089
P	Distribution		7/10/2006	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	02775	089
P	Distribution		7/10/2006	TOTAL COLIFORM	Present	/100ml	COLI_AP	MICRO	02778	089

Records 1 - 25 of 30

Export CSV

DOH RESPONSE TO COLIFORM BACTERIAL DETECTIONS

1. Lake Lawrence had several total coliform samples in August 2026
2. the ‘routine’ monthly sample and each ‘repeat’ sample in distribution were total coliform positive.
3. The well samples were absent coliform.
4. This event required that the system provide a Level 1 assessment, which Washington Water Service sent to DOH on September 4th, 2026.
5. The assessment was thorough and complete
6. The facilities, operations and maintenance were found to be in great condition.
7. Jimmie Jensen at WA Water is listed as the contact person



Legend

Groundwater Nitrate
Concentration mg/L
Most recent value
Well ID shown

- 0 - 2
- 2 - 4
- 4 - 10
- 10 - 20
- 20 - 50
- MT3D_Source_v5

Cross-Section_Z-Z

- Smith Prairie wells with logs v3
- Cross-section_Z_Z_centerline_only
- Cross-section_Z_Z projected onto cross-setion
- LiDAR_singleline_streams_2011
- bldg_ft_prn
- Parcels_7_2022-02-01

Figure 3

Groundwater sample analysis results for nitrate; 1990's to the present, Smith Prairie area near161st Way SE.

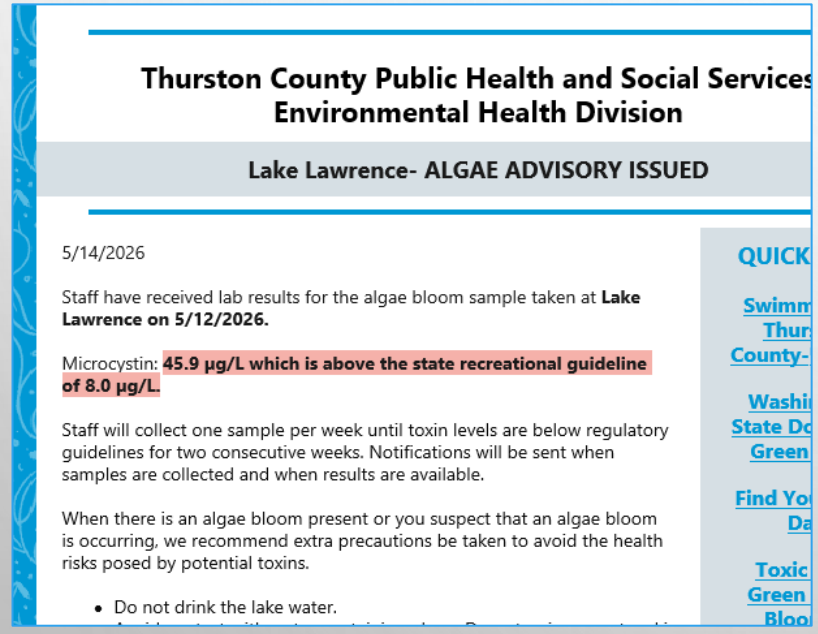
Samples show all dates - all locations - all agency data sources.

Modeled nitrate plume: L5 @ 14600days, MODFLOW v195, MT3D v26, Source v5 @ 50 mg/L

7 June 2023, K. Hansen, LHG, LG

LAKE LAWRENCE AND OTHER LAKES ACROSS THE COUNTY ARE OFTEN AFFECTED BY HAZARDOUS ALGAE BLOOMS (HABs)

Lake Lawrence – **Microcystin 45.9 ug/L,** May 14th 2026



Thurston County Public Health and Social Services
Environmental Health Division

Lake Lawrence- ALGAE ADVISORY ISSUED

5/14/2026

Staff have received lab results for the algae bloom sample taken at **Lake Lawrence on 5/12/2026.**

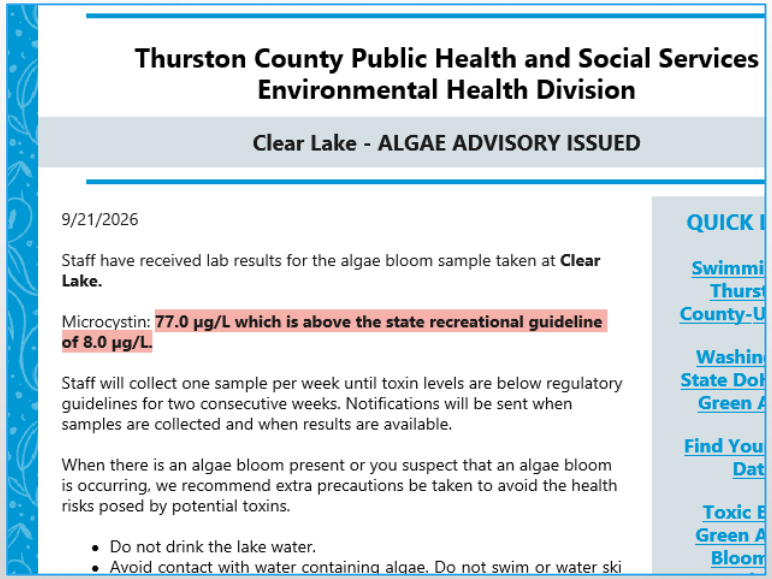
Microcystin: **45.9 µg/L which is above the state recreational guideline of 8.0 µg/L.**

Staff will collect one sample per week until toxin levels are below regulatory guidelines for two consecutive weeks. Notifications will be sent when samples are collected and when results are available.

When there is an algae bloom present or you suspect that an algae bloom is occurring, we recommend extra precautions be taken to avoid the health risks posed by potential toxins.

- Do not drink the lake water.

Clear Lake – **Microcystin 77.0 ug/L,** Sept. 21st 2026



Thurston County Public Health and Social Services
Environmental Health Division

Clear Lake - ALGAE ADVISORY ISSUED

9/21/2026

Staff have received lab results for the algae bloom sample taken at **Clear Lake.**

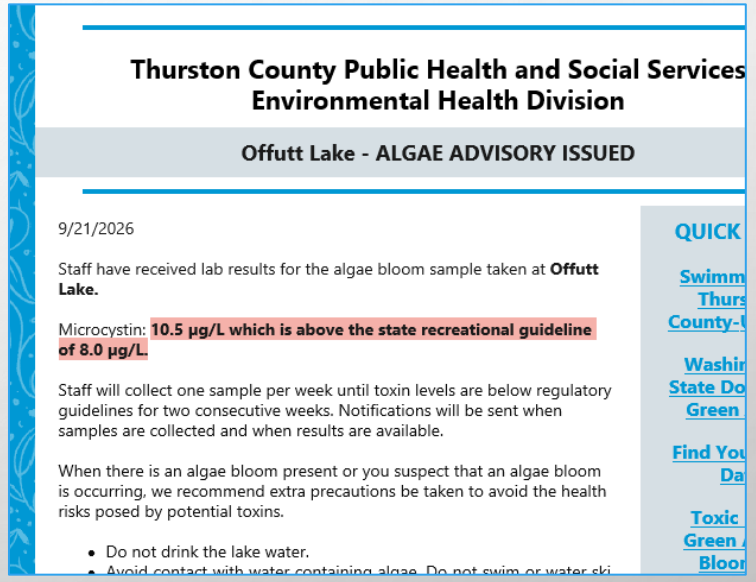
Microcystin: **77.0 µg/L which is above the state recreational guideline of 8.0 µg/L.**

Staff will collect one sample per week until toxin levels are below regulatory guidelines for two consecutive weeks. Notifications will be sent when samples are collected and when results are available.

When there is an algae bloom present or you suspect that an algae bloom is occurring, we recommend extra precautions be taken to avoid the health risks posed by potential toxins.

- Do not drink the lake water.
- Avoid contact with water containing algae. Do not swim or water ski

Offut Lake – **Microcystin 10.5 ug/L,** Sept. 21st 2026



Thurston County Public Health and Social Services
Environmental Health Division

Offutt Lake - ALGAE ADVISORY ISSUED

9/21/2026

Staff have received lab results for the algae bloom sample taken at **Offutt Lake.**

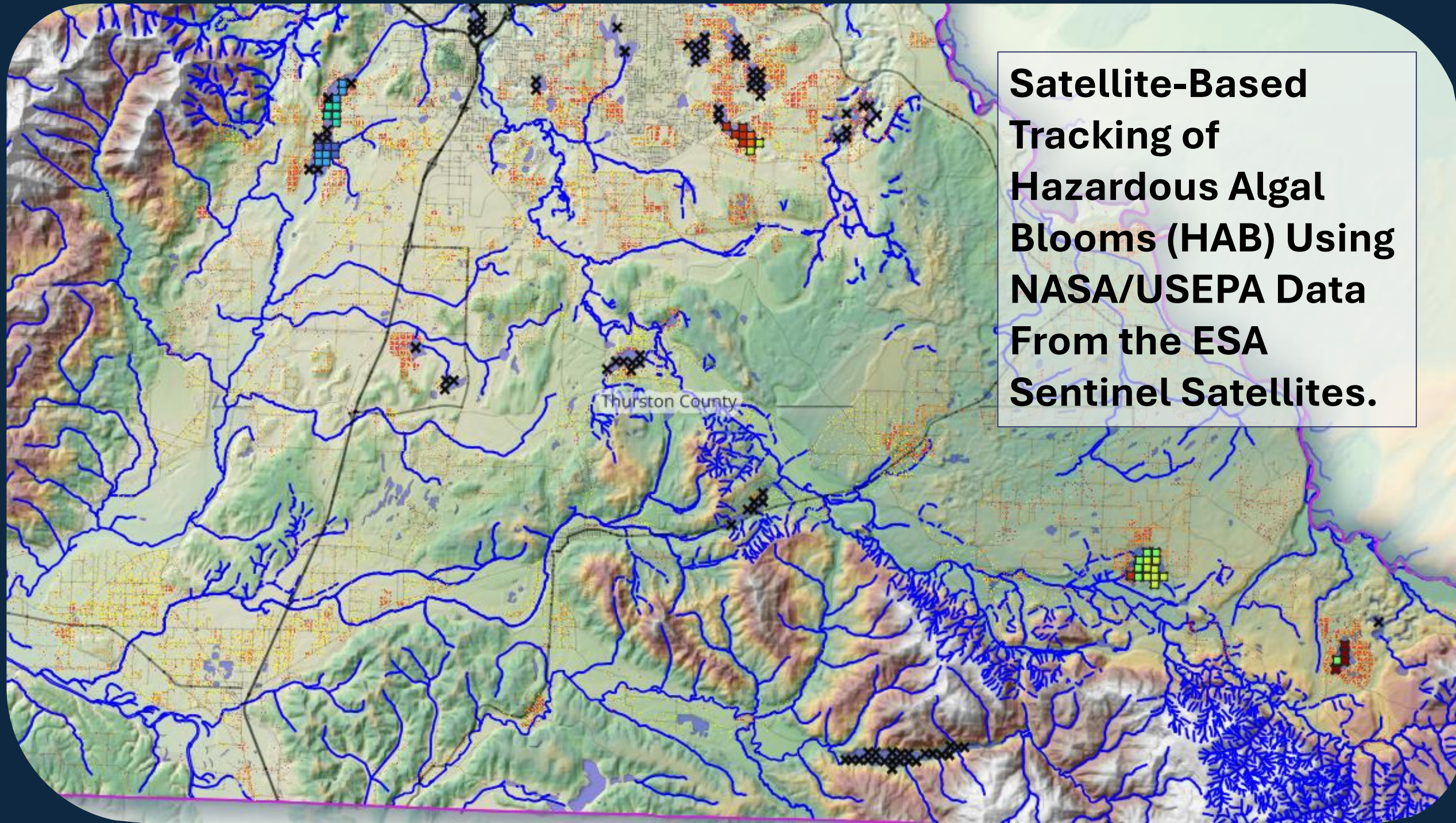
Microcystin: **10.5 µg/L which is above the state recreational guideline of 8.0 µg/L.**

Staff will collect one sample per week until toxin levels are below regulatory guidelines for two consecutive weeks. Notifications will be sent when samples are collected and when results are available.

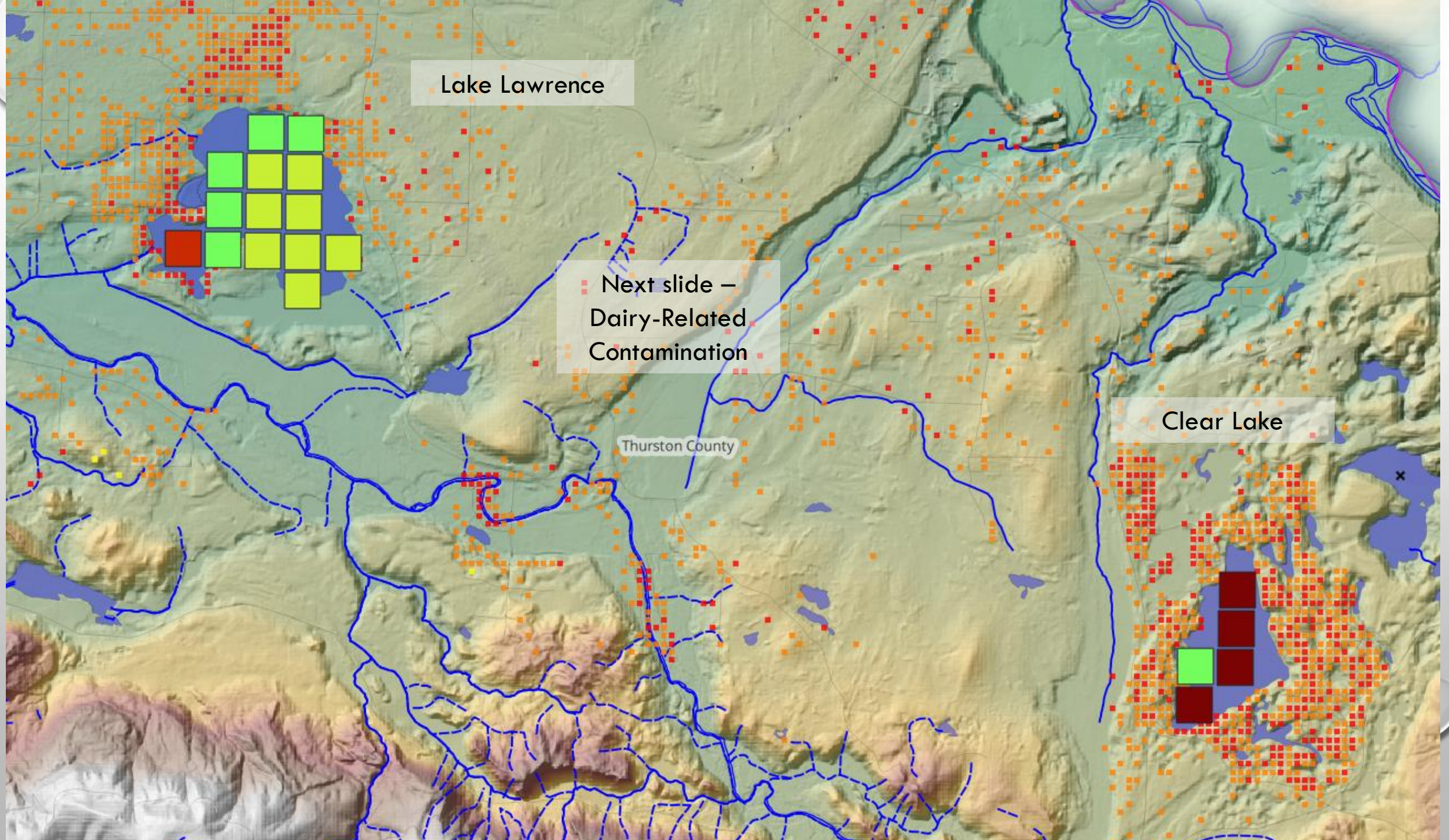
When there is an algae bloom present or you suspect that an algae bloom is occurring, we recommend extra precautions be taken to avoid the health risks posed by potential toxins.

- Do not drink the lake water.

Wikipedia: "Microcystins—or **cyanoginosins**—are a class of cyanotoxins, which are toxins produced by cyanobacteria, sometimes known as blue-green algae…Cyanobacteria can produce microcystins in large quantities during algal blooms which then pose a major threat to drinking and irrigation water supplies, and the environment at large."



Satellite-Based Tracking of Hazardous Algal Blooms (HAB) Using NASA/USEPA Data From the ESA Sentinel Satellites.


Lake Lawrence
Next slide –
Dairy-Related
Contamination
Thurston County
Clear Lake

NEW WATER DASHBOARDS

GOOGLE: "THURSTON WATER DASHBOARDS"

Welcome to the Water & Climate Planning Dashboard

We study water, track climate trends, and share reliable data to help decision-makers, businesses, and residents make smart choices for the future
growth that protects land, water, and our shared future, we're helping build a healthier environment, a stronger economy, and more vibrant commur
generations to come!

Streams Water Quality Dashboard

The Streams Water Quality Dashboard provides detailed scientific information about ground water in Thurston County

Community Planning and Economic Development

Lakes Water Quality Dashboard

The Lakes Water Quality Dashboard provides detailed scientific information about surface water in Thurston County

Community Planning

Rainfall and Lake Levels Dashboard

Thurston County monitors certain water levels around the county and makes the information available in the Water Levels Dashboard - find information about montiored river, lake, stream and Puget

Thurston County Lakes Water Quality Data Dashboard

URSTON COUNTY
WASHINGTON
SINCE 1852

Map of Lake Monitoring Stations

Below are all stations, active and inactive, used to monitor water quality in Thurston County. To learn more about a station, click on the icon and follow the prompts to various data tabs.

Trends

Lake: Lawrence Lake @ Big Basin (

Select Year to Highlight

2025

Select Parameter

Total Phosphorus

Select Month(s) for Profile Plots

1 12

1 3 5 7 9 11 12

Select Year Range for Trend

1998 2025

1998 2003 2009 2014 2020 2025

Select Depth Range for Trend

0 9.23

0 0.9 1.8 2.8 3.7 4.6 5.5 6.5 7.4 8.3 9.23

☐ Correct for Autocorrelation? (requires 10+ years data)?

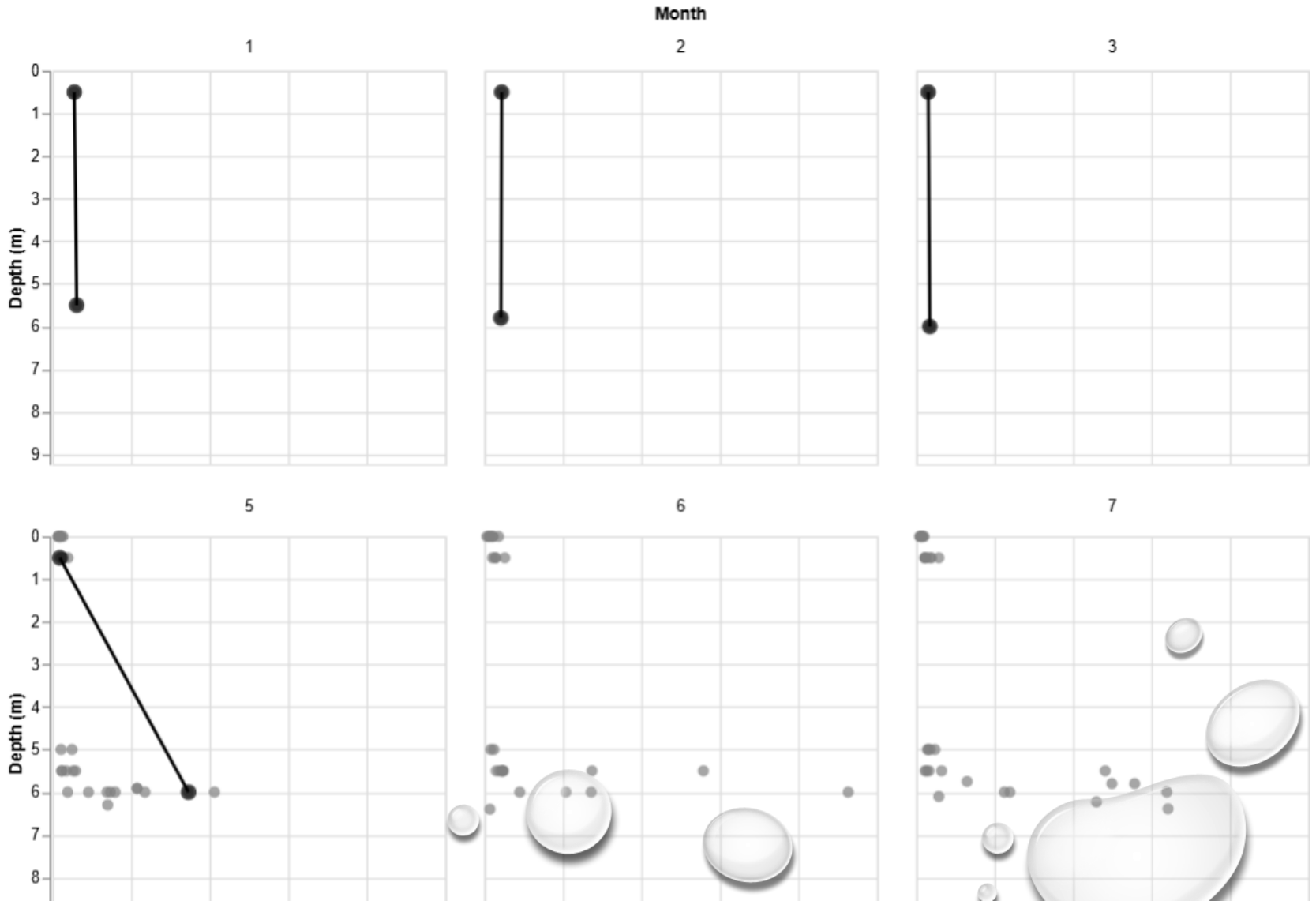
Select Seasons for Mann-Kendall Test

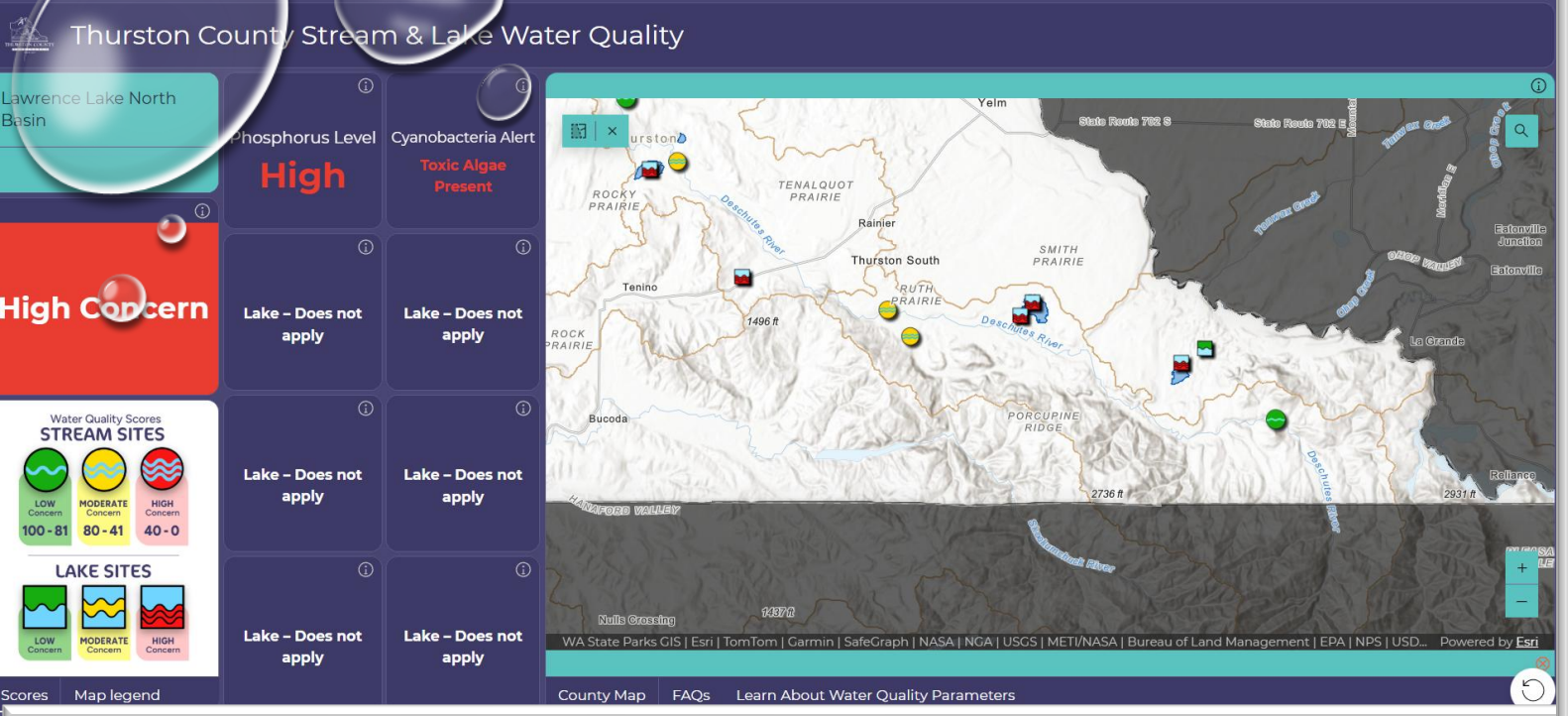
All

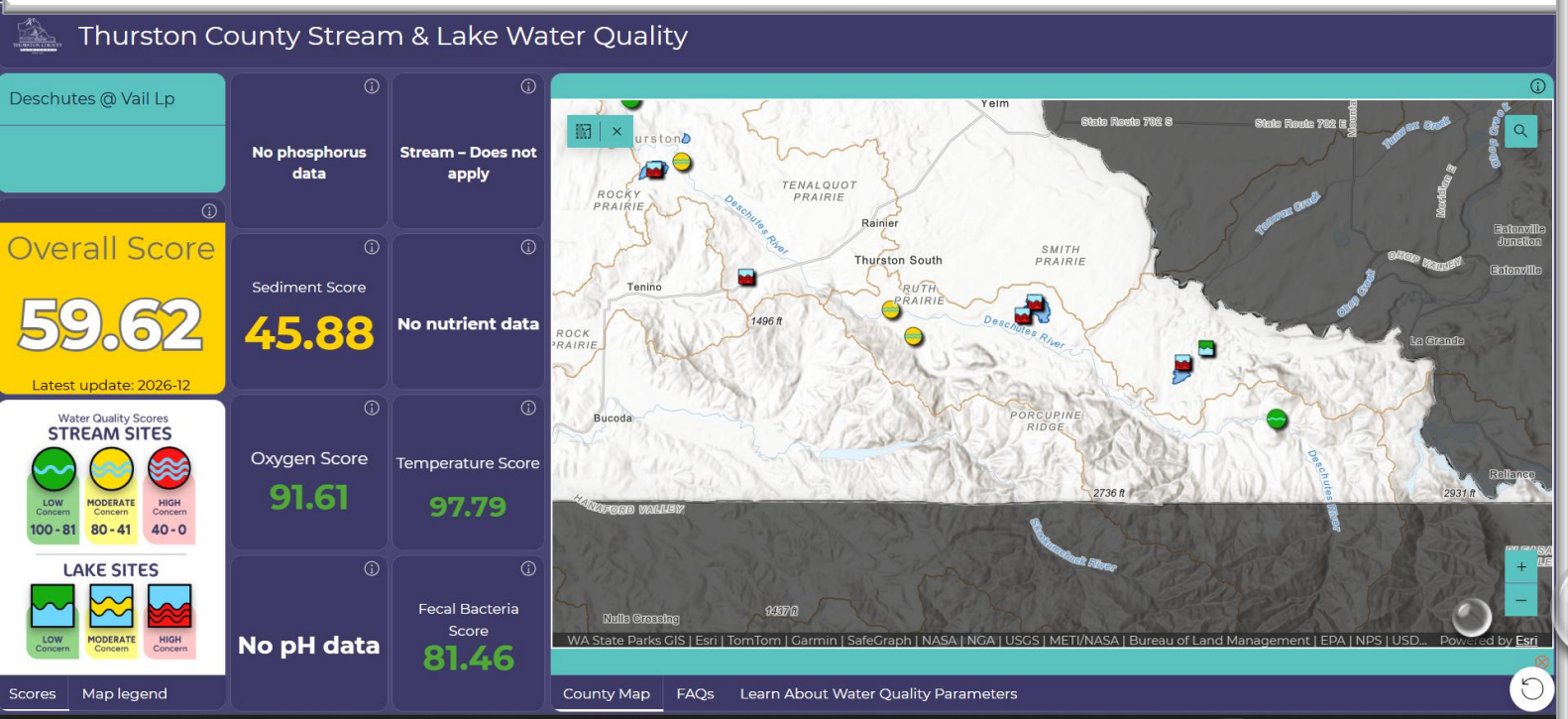
Log-scale?

Monthly Lake Water Quality Profiles | Long-term Trend

Monthly Lake Water Quality Profiles





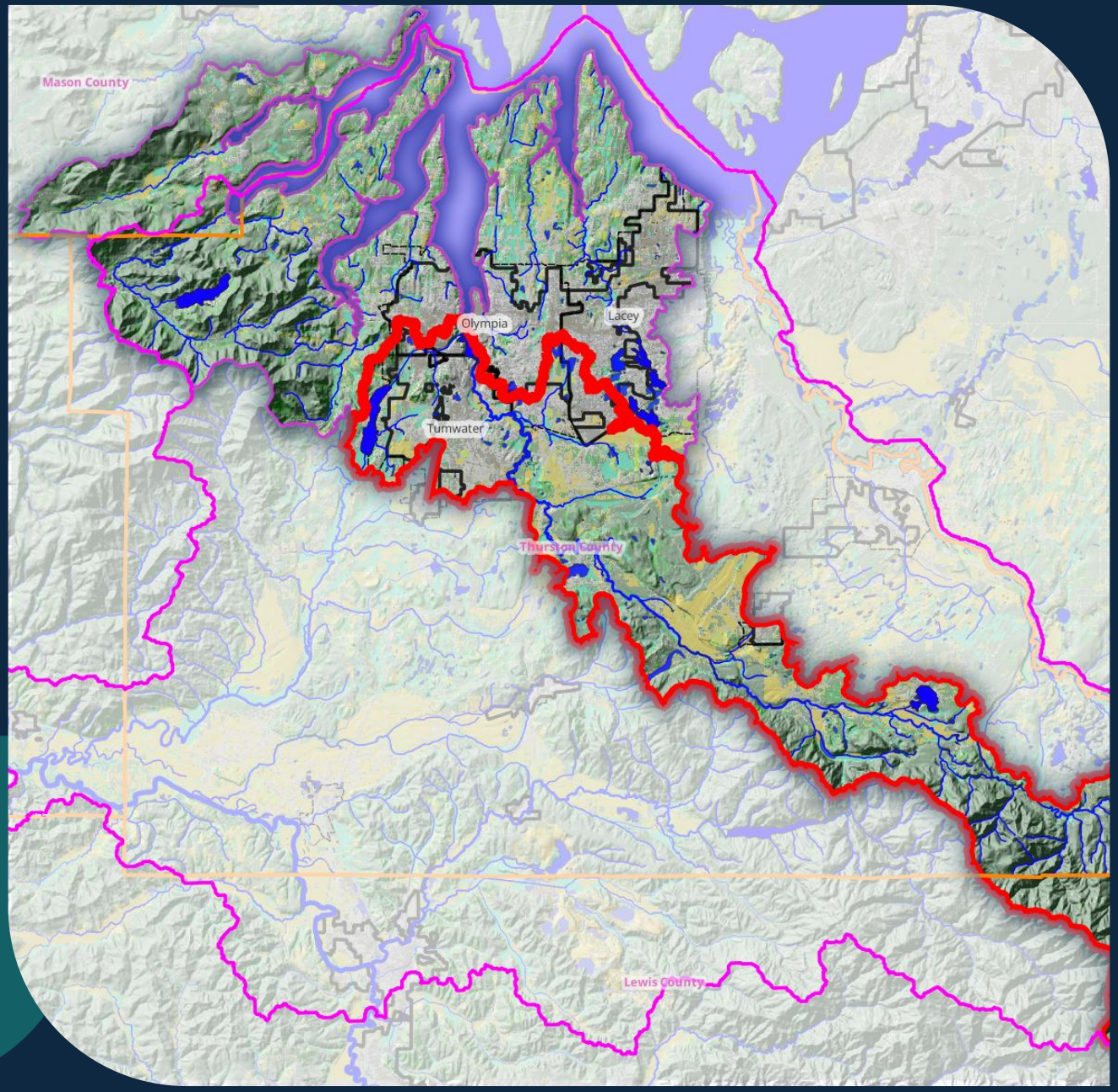


NEW PUBLIC-FACING DASHBOARDS

- LAKES
- STREAMS
- COLOR-CODED
- WATER-QUALITY INDEX SCORES
- HEALTH-BASED LAKE CONCERN LEVEL

Is There an Opportunity?

- Form a Council?
- Hear Ideas?
- Test/Model Ideas?
- Effective?
- Actionable?



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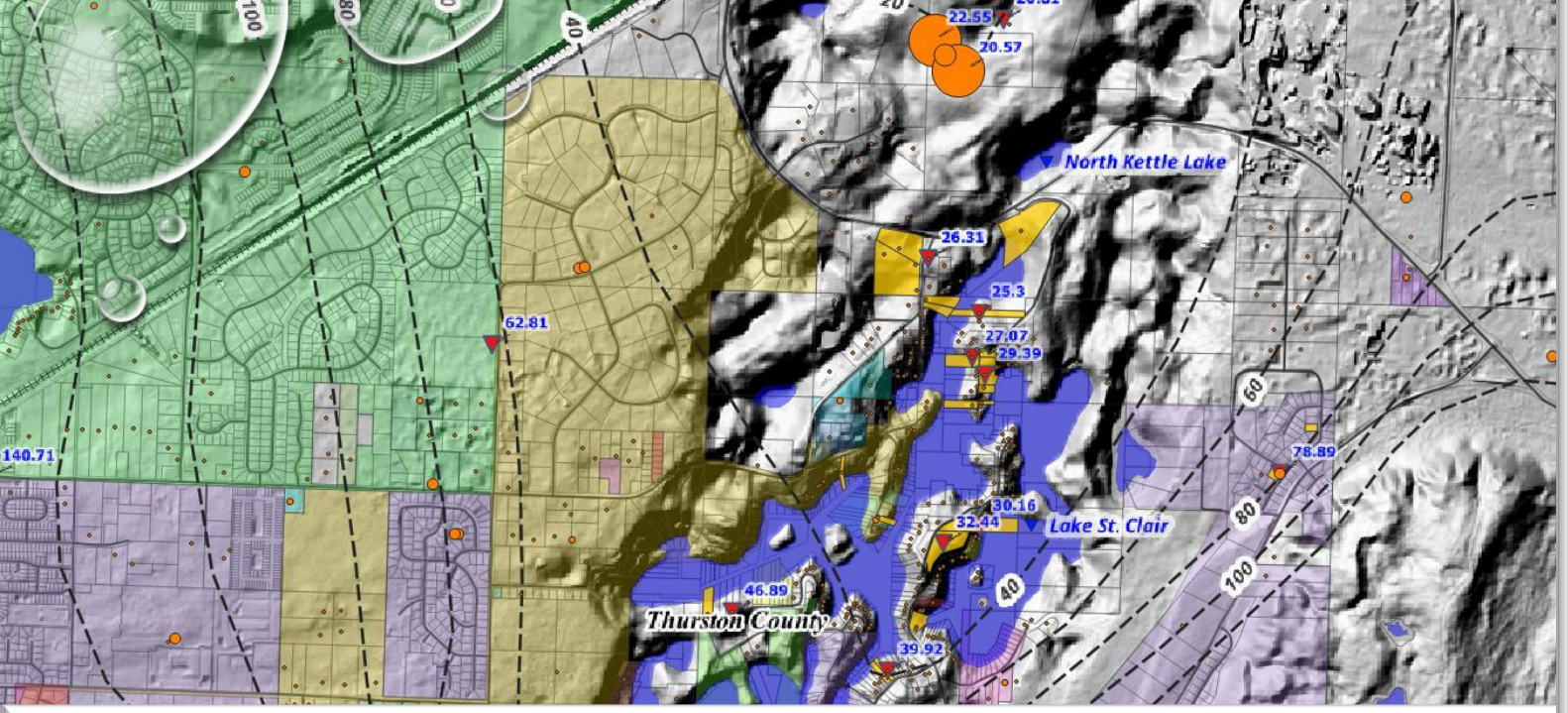

DO WE NEED A STUDY?

- 420+ LAKES IN THE COUNTY
- A FEW LAKES: COUNTY-LED BASIC DATA COLLECTION AND RESEARCH TO INFORM FOLLOW-UP ACTIONS
- NO LMDS TO SUPPORT THE WORK
- LAKE ST CLAIR: 18 DRY WELLS IN PAST 12 MONTHS
- SUMMIT LAKE: ~600 HOMES DRINKING LAKE WATER WITH HAB BLOOMS
- WATER BUDGETS AND CHEMISTRY, HEAT BALANCES AND ALGAE/HAB MANAGEMENT PLAN @ SUMMIT LAKE

Questions?

Kevin Hansen: kevin.Hansen@co.thurston.wa.us

(360) 545-7485

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