Using the Western Lake Erie Watershed Water Quality Monitoring Dashboard

What you'll learn

- How to navigate to the public monitoring dashboard and select a sub-watershed
- How to explore real-time and historical water level data
- How to interpret weather, soil temperature, and rainfall data
- How to read water quality measurements including turbidity, conductivity, and water temperature
- How to identify data anomalies such as dry stations or turbidity spikes

Introduction

This guide walks you through the Western Lake Erie Basin Expanded Water Quality Monitoring Program's public data dashboard. It is intended for anyone who wants to explore real-time and historical environmental monitoring data across five priority sub-watersheds in the Western Lake Erie region. By the end of this guide, you will be able to navigate the dashboard, adjust time ranges, and interpret the key data types available.

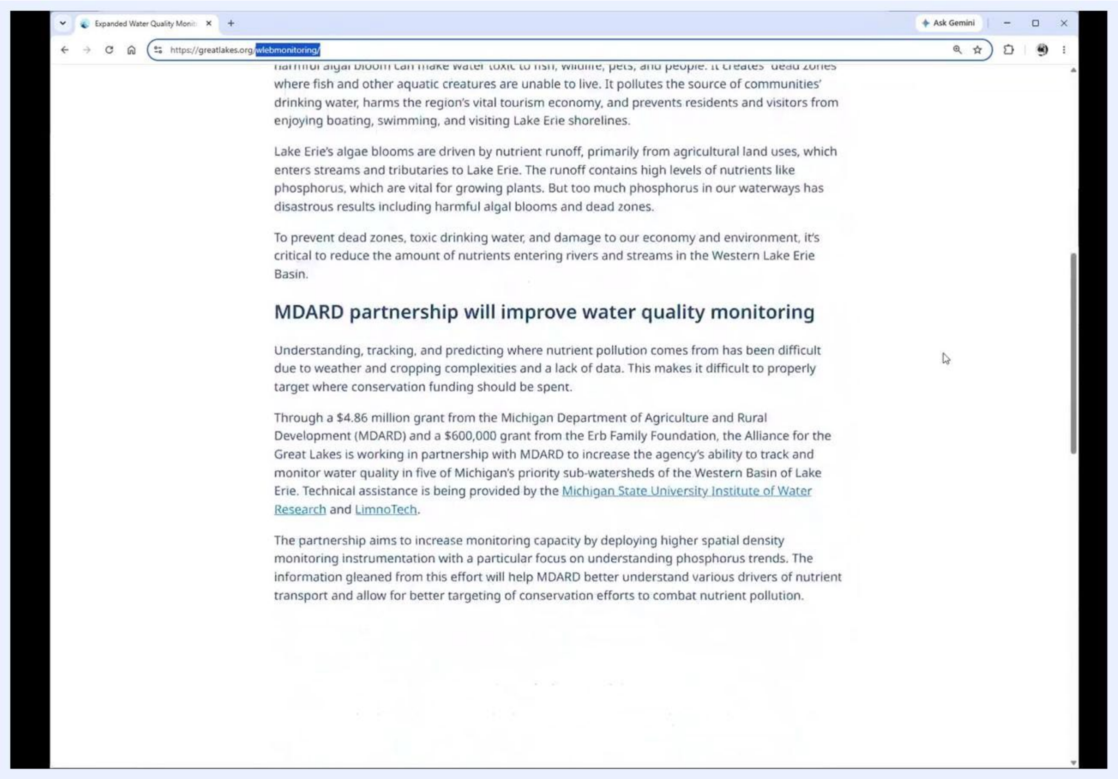
Prerequisites

- A web browser and internet connection
- No login or account is required to access the public dashboard

Accessing the dashboard and exploring water level data

Step 1: Open the project website

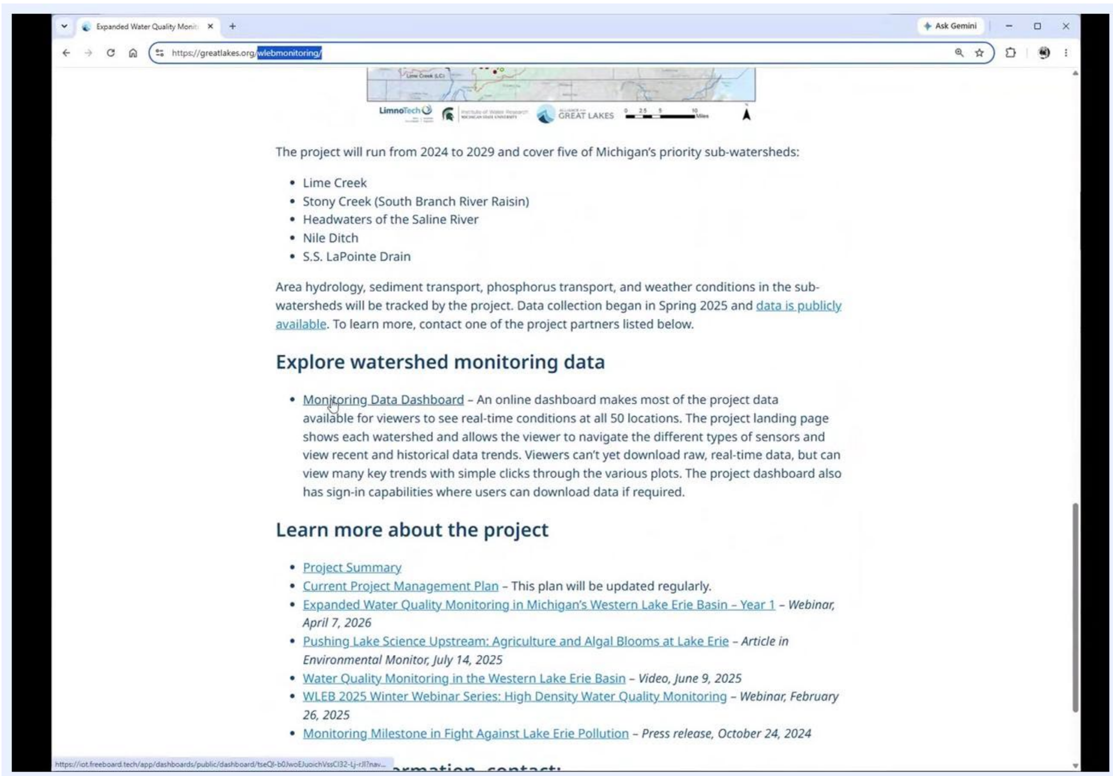
Go to https://greatlakes.org/wlebmonitoring in your browser. The homepage displays the project title "Expanded Water Quality Monitoring in the Western Lake Erie Watershed," partner logos, and a highlighted link labeled **Project Update: Monitoring data dashboard now available**.



Project website homepage with project title, partner logos, highlighted dashboard link, video, and summary text

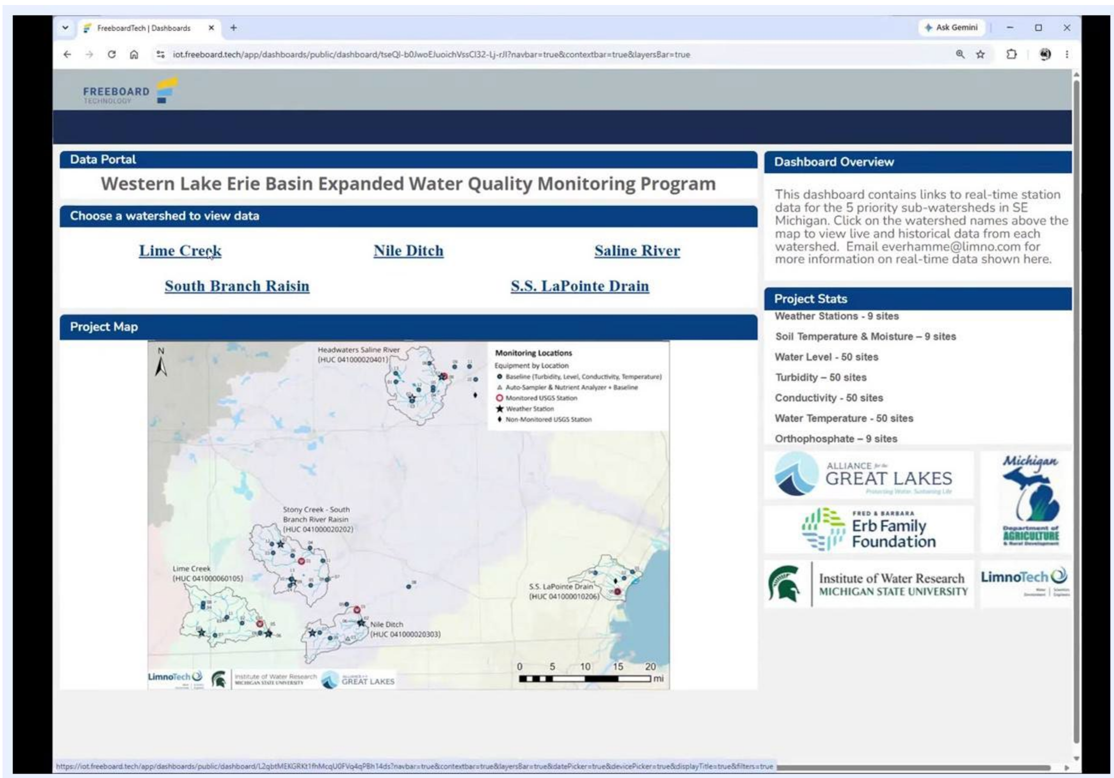
Step 2: Navigate to the monitoring dashboard

Scroll down to the **Explore watershed monitoring data** section and click the **Monitoring Data Dashboard** link. This takes you to the public dashboard where real-time and historical station data is available.



Section with Monitoring Data Dashboard link and list of sub-watersheds

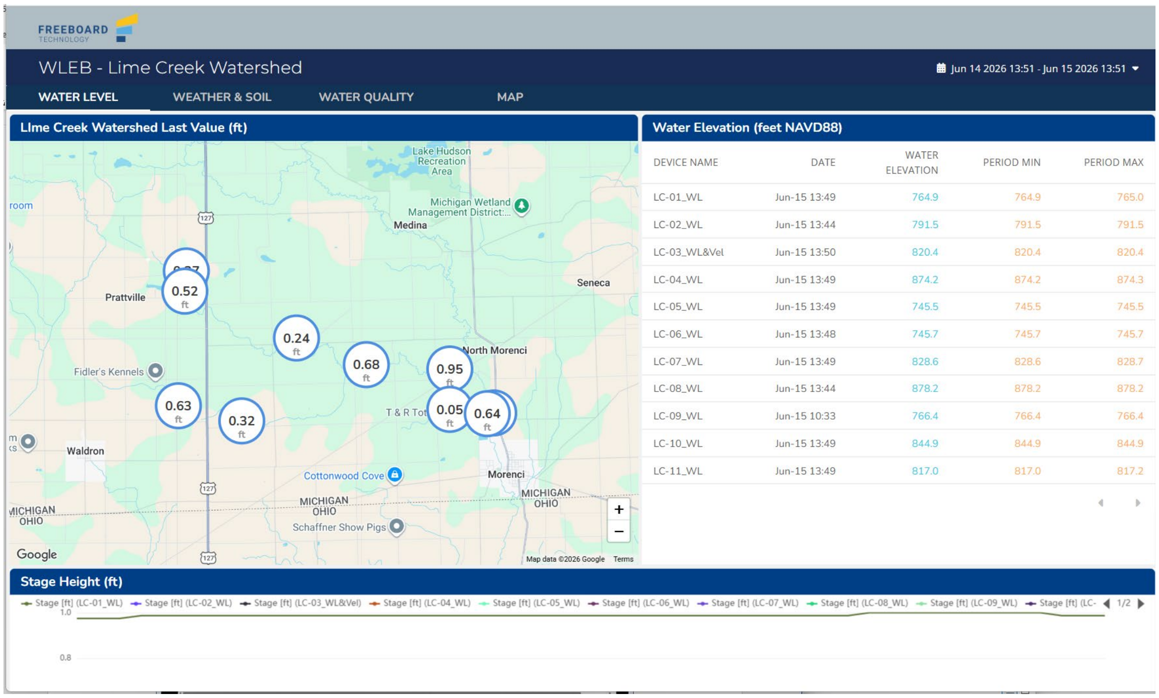
The dashboard landing page is titled "Western Lake Erie Basin Expanded Water Quality Monitoring Program" and shows five clickable watershed names: **Lime Creek**, **Nile Ditch**, **South Branch Raisin**, **Saline River**, and **S.S. LaPointe Drain**. A project map shows monitoring station locations with a legend indicating equipment types (baseline, auto sampler, weather station, non-monitored USGS station). The right sidebar provides a dashboard overview and project stats.



Dashboard landing page with clickable watershed names, project map, and stats

Step 3: Select a sub-watershed

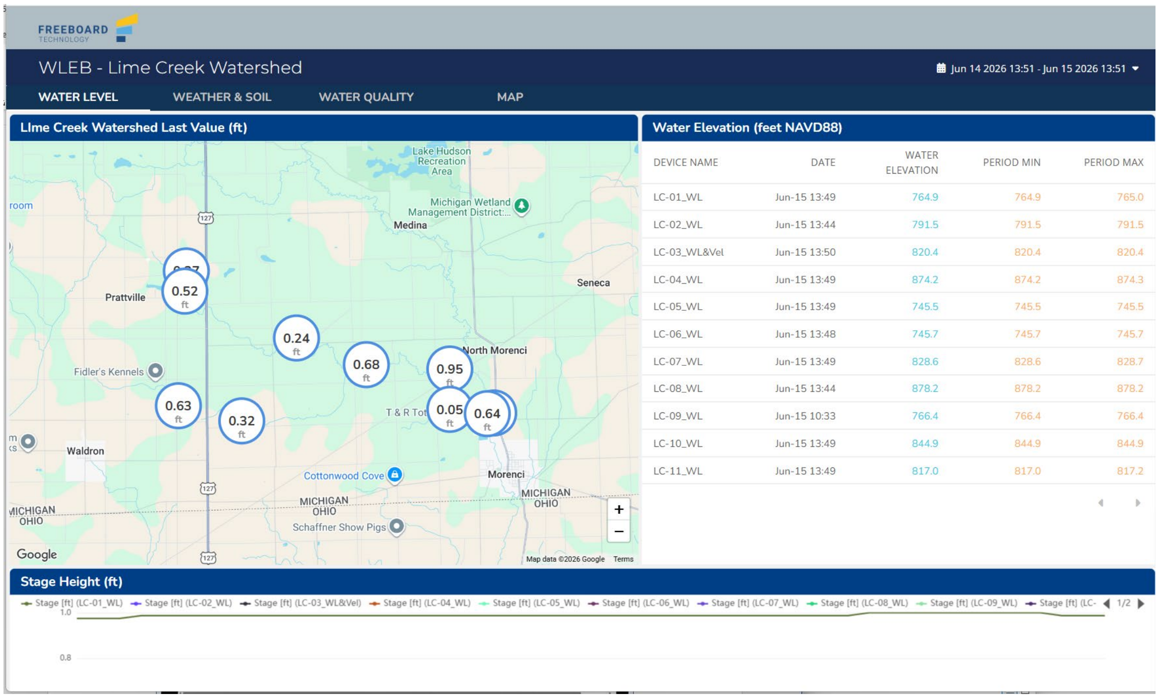
Click a watershed name — for example, **Lime Creek** — to load data for that sub-watershed in a new window. The dashboard shows four tabs at the top: **WATER LEVEL**, **WEATHER & SOIL**, **WATER QUALITY**, and **MAP**.



Dashboard with Lime Creek selected, showing tabs

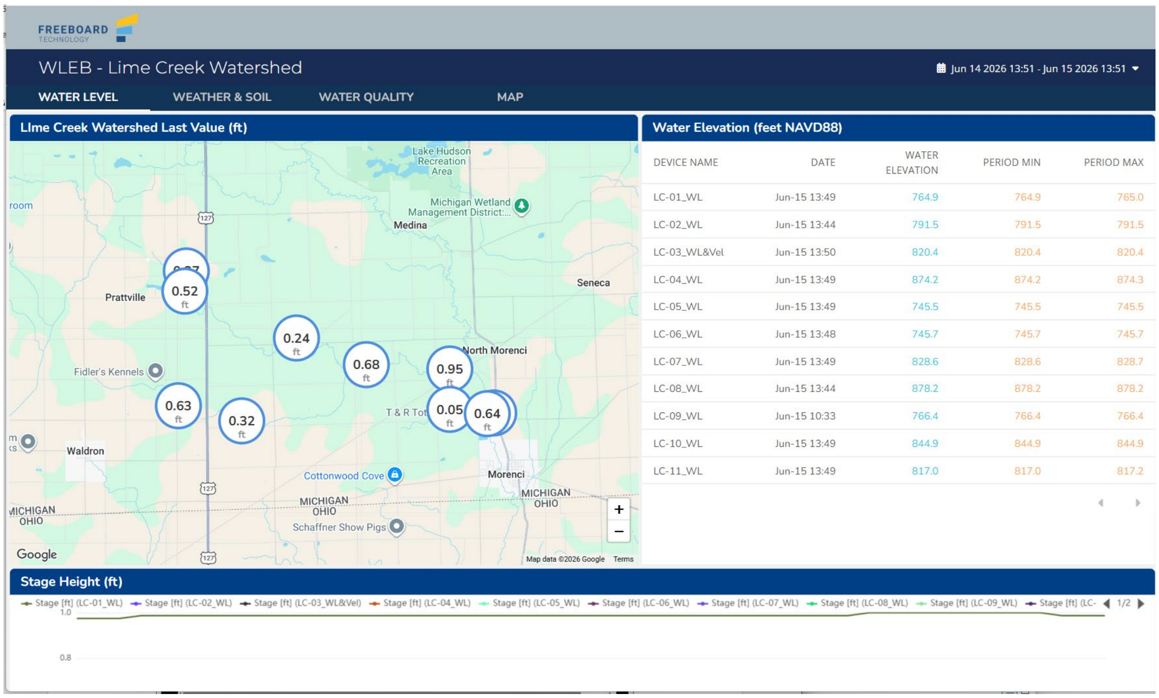
Step 4: Review water level data

The **WATER LEVEL** tab is selected by default. The map displays the latest water level at each monitoring station as blue circles with values in feet. Below the map, a **Stage Height (ft)** plot shows water level trends over time, with each colored line representing a different station (for example, LC-01_WL, LC-02_WL). The right panel lists device names, dates, water elevations, and period minimums.



Lime Creek watershed dashboard with water level map, station values, and trend plot

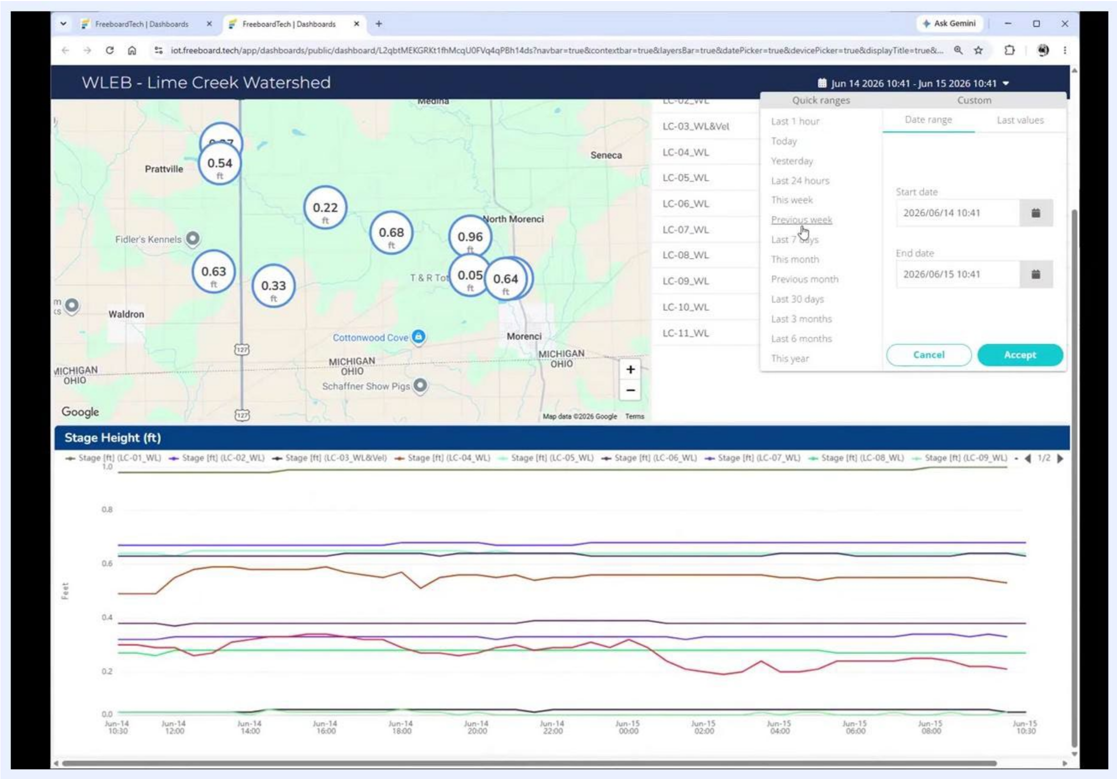
Hover over any station on the map to see a tooltip with the exact stage value and timestamp (for example, "Stage 0.54 ft, Jun-15 10:29"). You can also hover over the plot to see a popup with all station values at a specific point in time.



Stage Height plot with popup showing all station values at a specific time

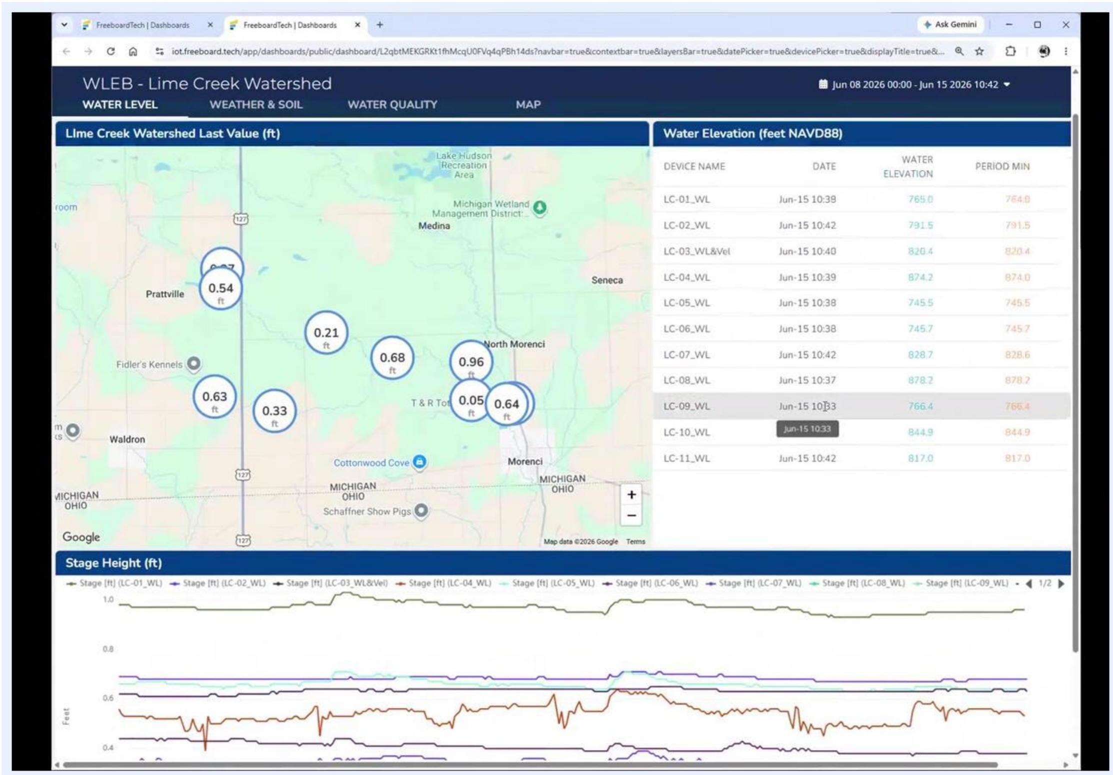
Step 5: Change the time range

Locate the date range selector in the upper right of the dashboard and click it to open a popup. You can choose from quick ranges (such as Last 1 hour, Last 24 hours, Last 7 days, This week), a custom date range, or last values. Select your desired range and click **Accept** to update the map, table, and plot.



Date range selector popup with quick range and custom date options

After the dashboard reloads, review the updated trends. The right panel shows the latest water elevation and period minimum for each station.

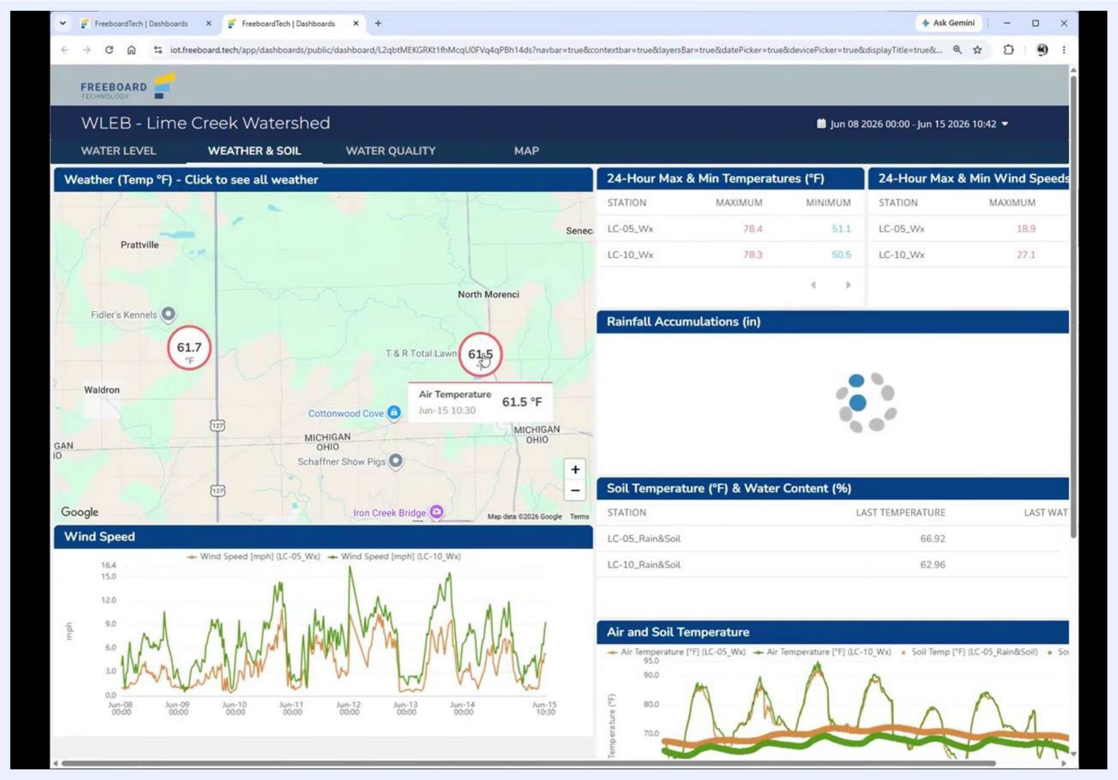


Dashboard with updated water elevation and minimum values

Viewing weather and soil data

Step 1: Open the Weather & Soil tab

Click the **WEATHER & SOIL** tab at the top of the dashboard. The map updates to show weather station locations, each marked with a current temperature reading in °F.

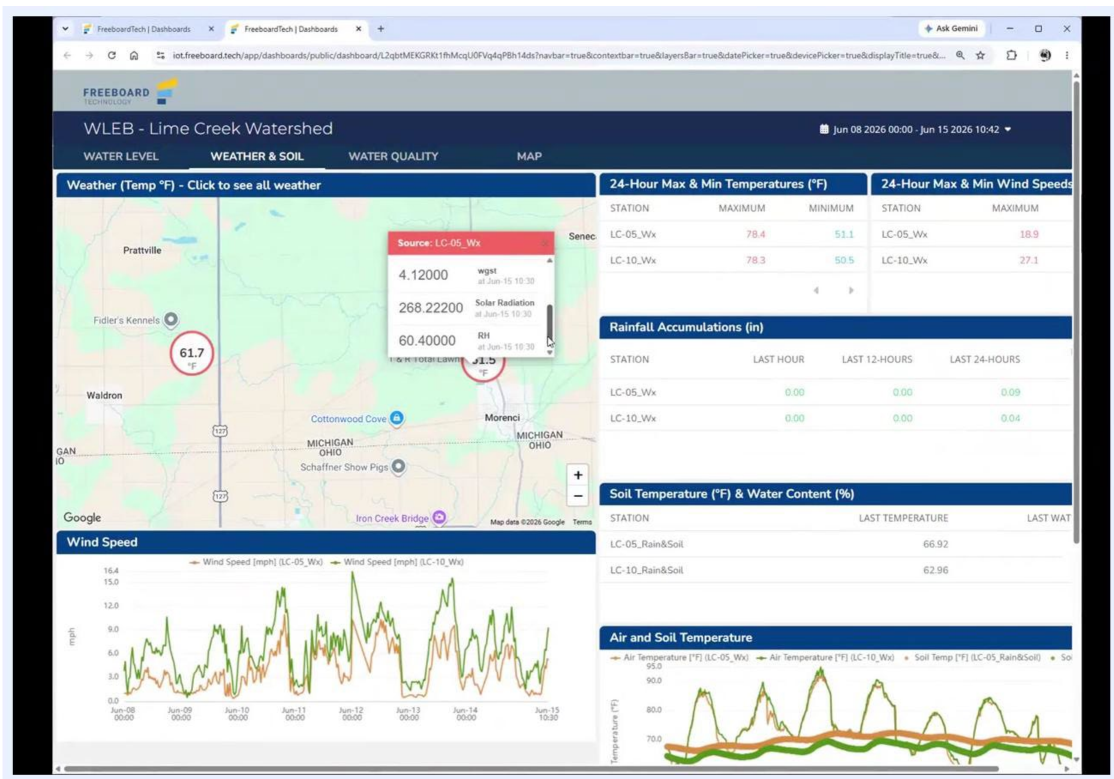


Map with weather station locations, temperature readings, and navigation tabs (WEATHER & SOIL selected)

Step 2: Inspect a weather station

Click a weather station icon on the map to view a summary popup of current readings, including:

- **Air Temperature** (°F)
- **Wind Speed** (mph)
- **Wind Direction** (compass heading in degrees)
- **Wind Gust** (mph)
- **Solar Radiation**
- **Relative Humidity** (%)

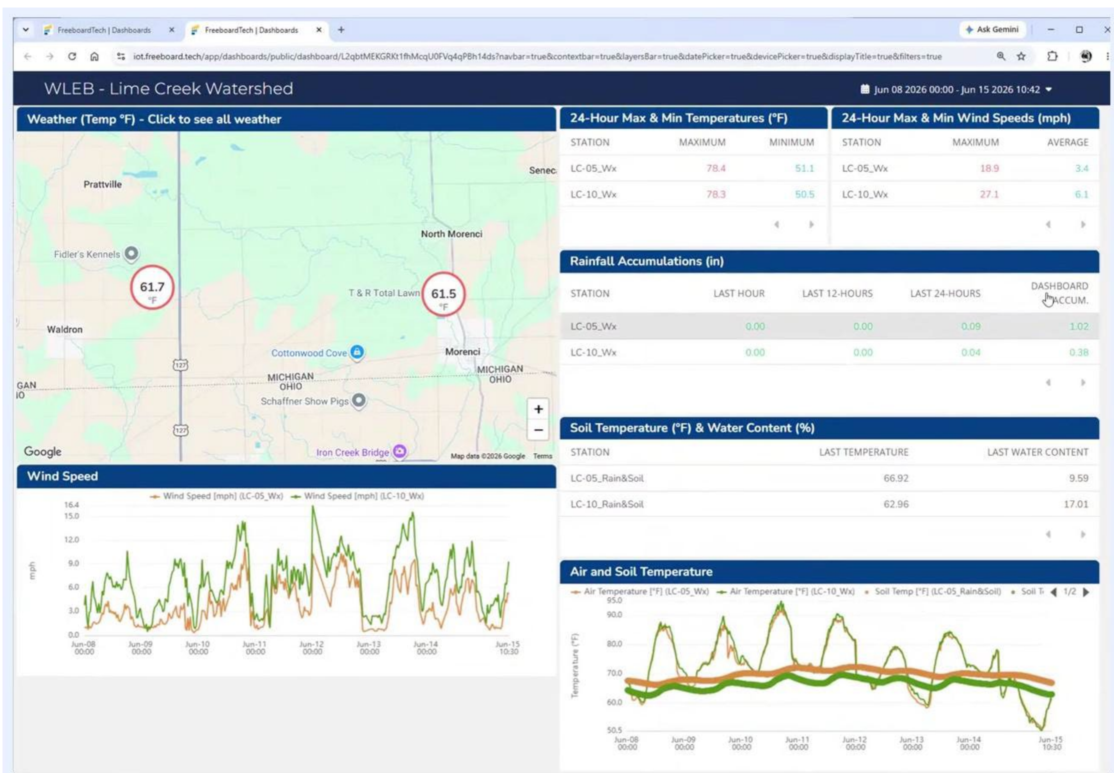


Weather station popup showing air temperature, wind speed, wind direction, wind gust, solar radiation, and RH

Step 3: Review summary tables

The right side of the dashboard shows several summary tables:

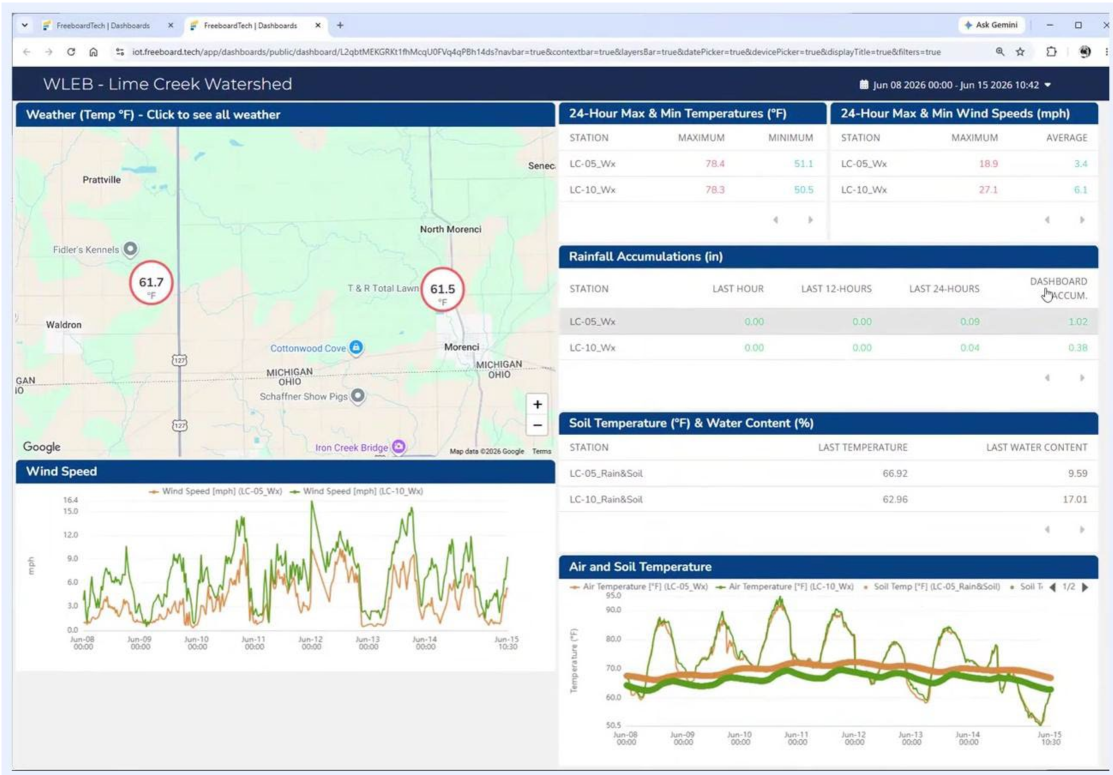
Table	What it shows
24-Hour Max & Min Temperatures	High and low air temperature per station
24-Hour Max & Min Wind Speeds	Peak and average wind speed per station
Rainfall Accumulations (in)	Rainfall for the last hour, 12 hours, 24 hours, and the dashboard period
Soil Temperature & Water Content	Latest soil temperature (°F) and water content (%) per station



Rainfall accumulation, temperature, wind speed, and soil data tables with map and graphs

Step 4: Analyze the time-series graphs

Scroll down to view graphs for wind speed, air and soil temperature, and rainfall and soil water content. Each colored line represents a different station. Use the legend and toggles to show or hide individual data series so you can focus on specific stations or variables.

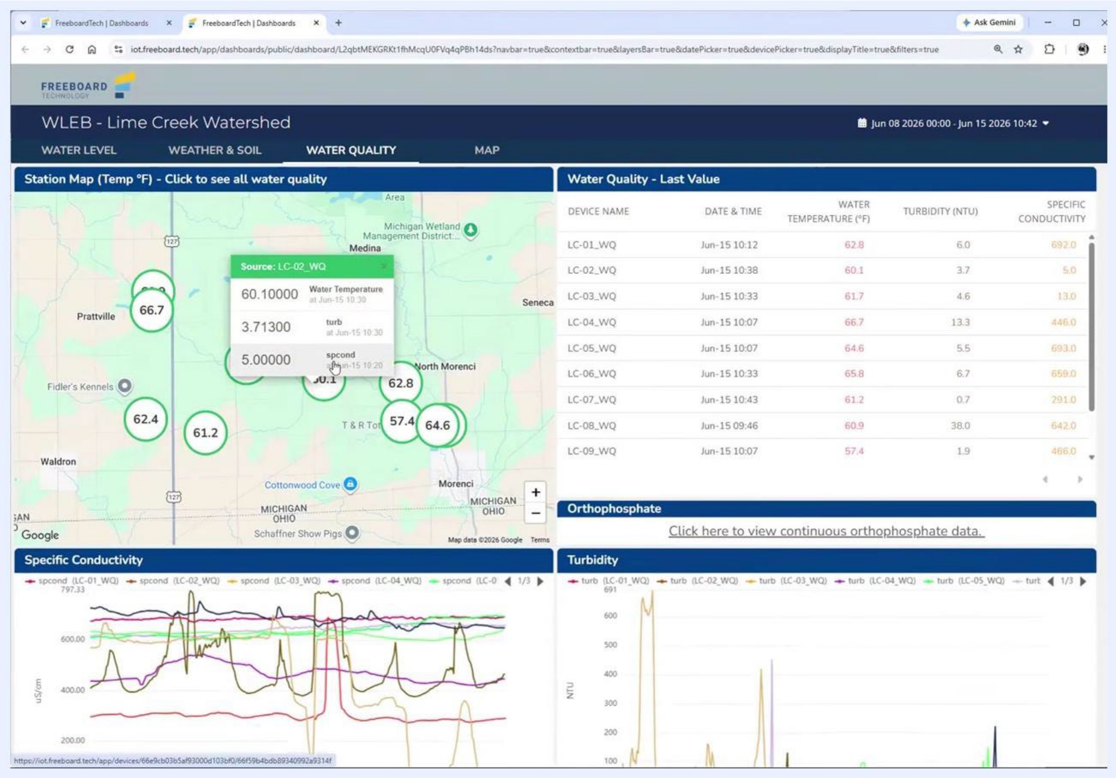


Tip: Turning off rainfall data in the **Rainfall and Soil Water Content** graph lets you focus on soil moisture trends alone — useful for assessing ground conditions before and after a rain event.

Viewing water quality data

Step 1: Open the Water Quality tab

Click the **WATER QUALITY** tab. The map updates to show water quality station locations, each marked with a current water temperature reading in °F.



Water quality tab selected, map with water temperature readings, and summary tables for water quality

Step 2: Inspect a water quality station

Click a station icon to see a summary popup showing:

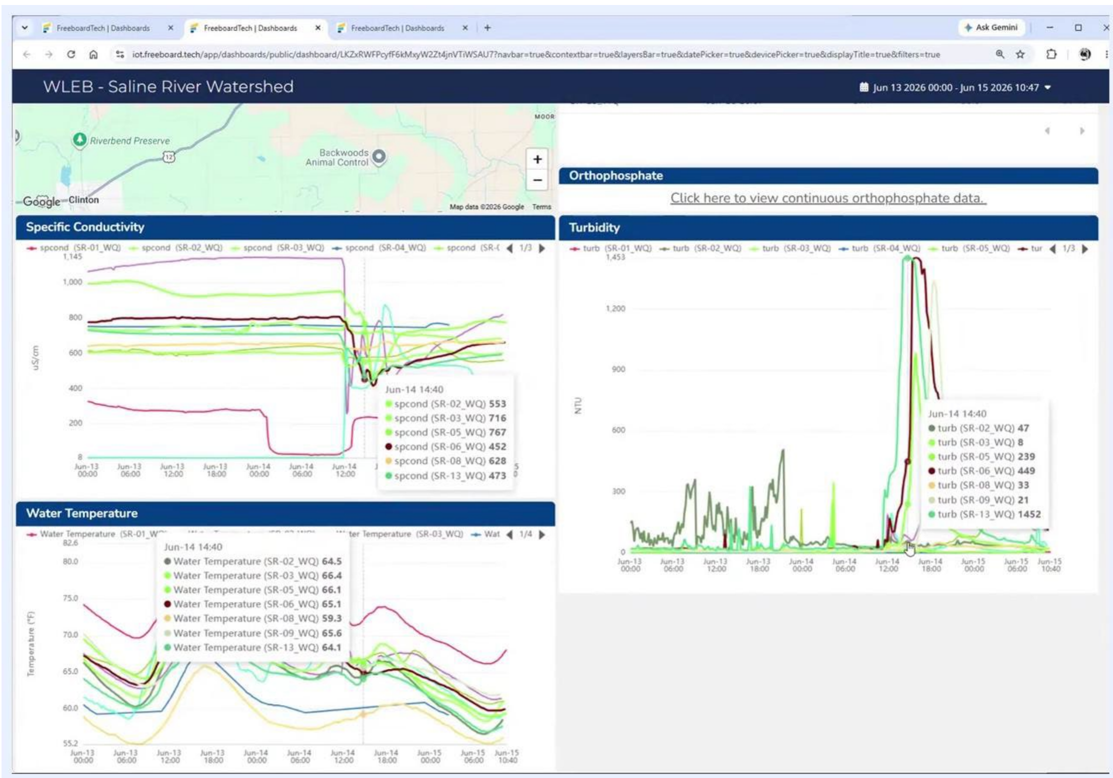
- **Water Temperature** (°F)
- **Turbidity** (NTU)
- **Specific Conductivity** (µS/cm)

The **Water Quality - Last Value** table on the right lists the most recent readings — including date, time, water temperature, turbidity, and specific conductivity — for every device in the watershed.

Step 3: Read the water quality charts

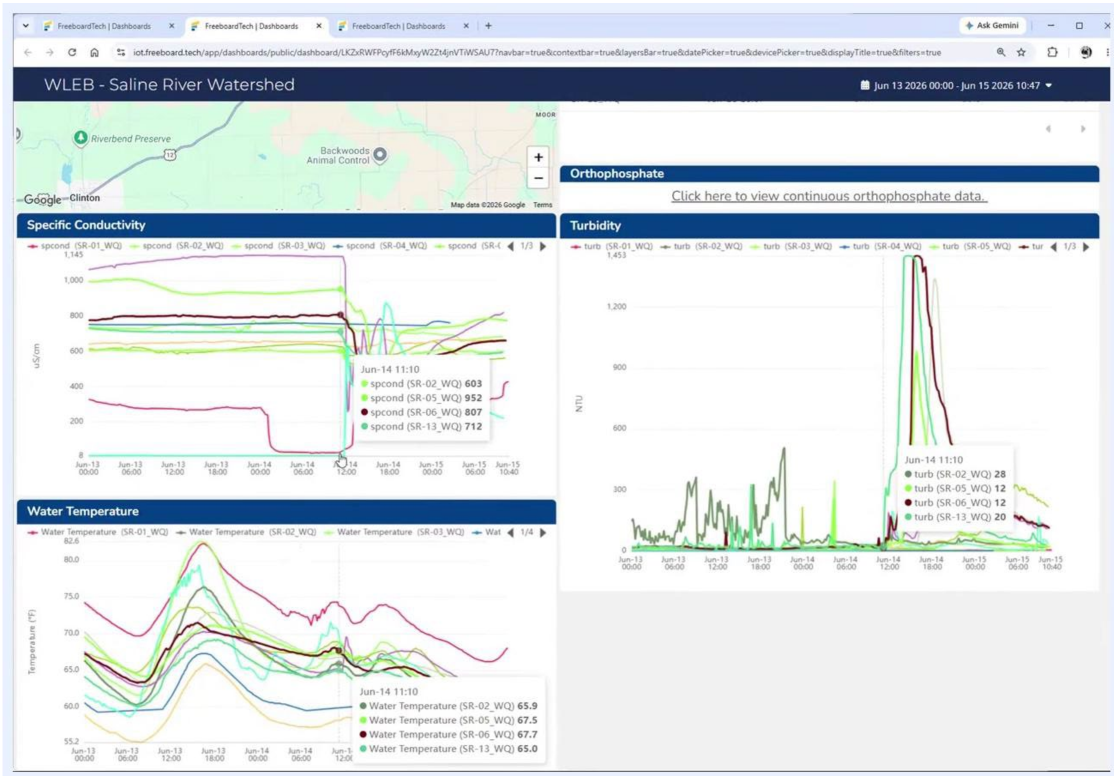
Scroll down to view time-series charts for specific conductivity, turbidity, and water temperature. Hover over any line to see exact values at a specific time.

Pay particular attention to the **Turbidity** chart. Sudden spikes — for example, a rapid rise to over 1,000 NTU followed by a quick drop — can indicate a storm or runoff event at a station.



Dashboard showing Specific Conductivity, Water Temperature, and Turbidity charts. Turbidity chart highlights a spike up to 1,452 NTU.

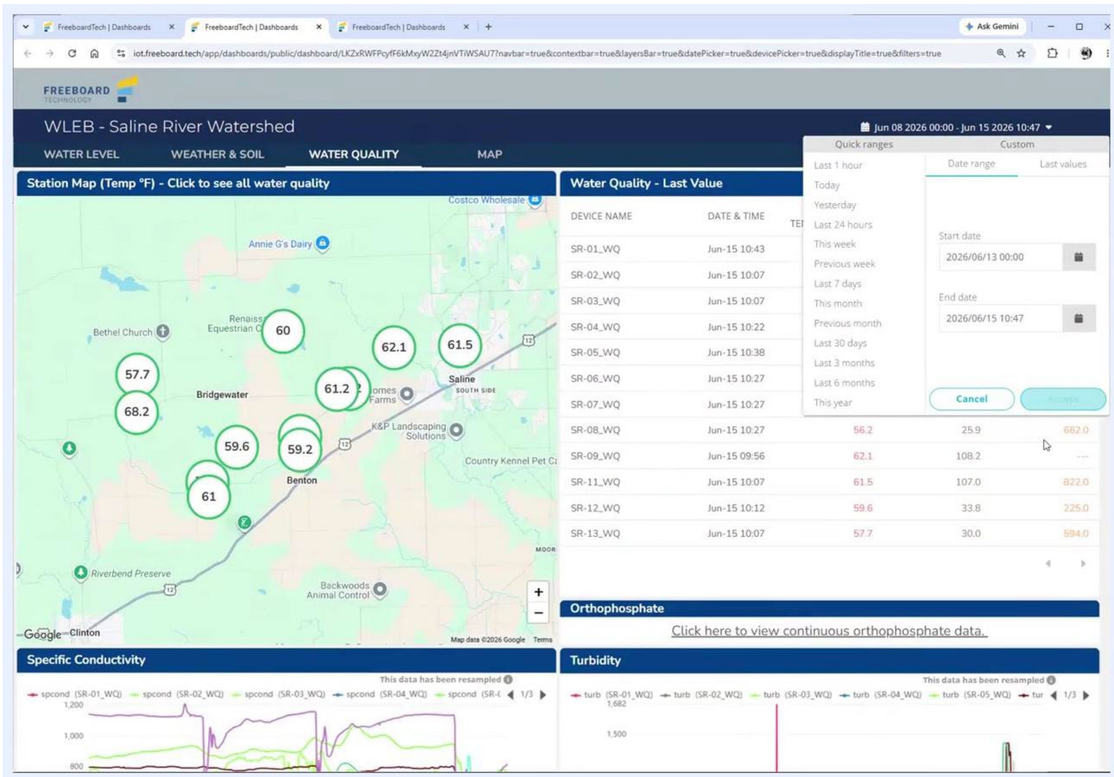
A rise in turbidity or conductivity at a station that was previously reading near zero can also indicate that water has returned to a previously dry site.



Dashboard with map, water quality table, and charts for quick at-a-glance review.

Step 4: Set a custom date range for focused analysis

Use the date range selector in the upper right to narrow your view to a specific event window. Enter a custom start and end date and time, then click **Accept**. The map, table, and charts all update to reflect the selected period.



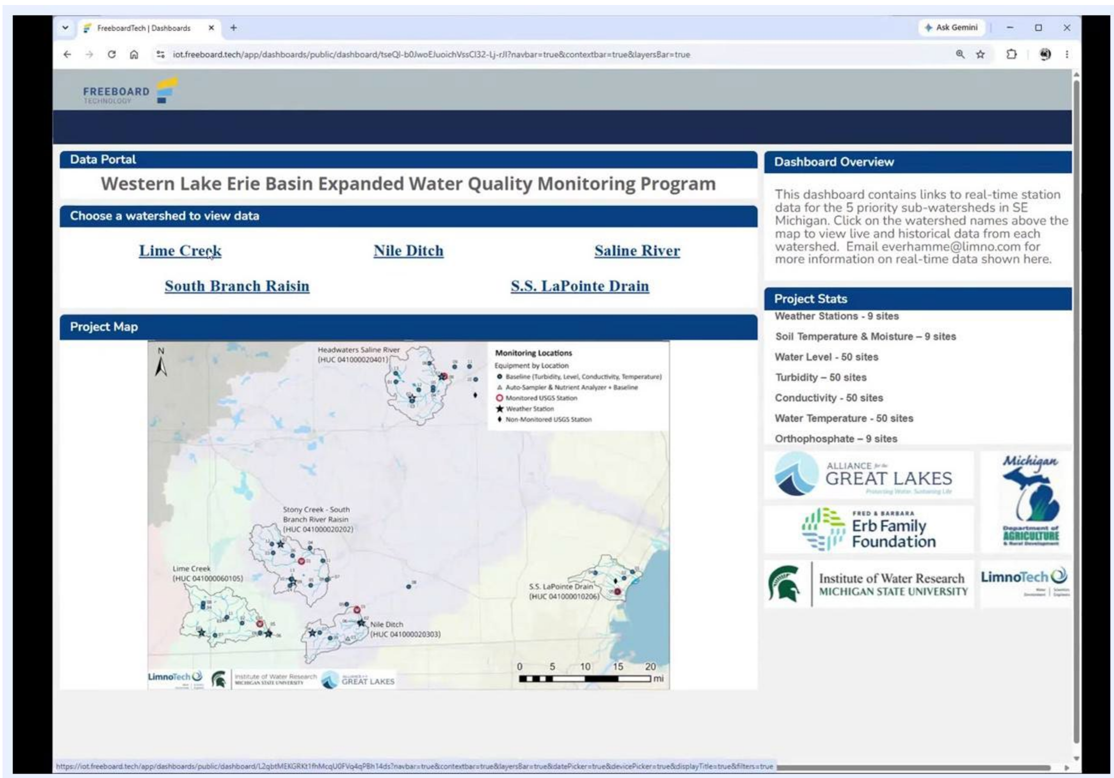
Dashboard showing map of monitoring stations, water quality table, and data charts. Tabs for WATER LEVEL, WEATHER & SOIL, WATER QUALITY, and MAP are visible.

Tip: If you notice a storm event in the water level data, set a matching custom date range in the water quality tab to see how turbidity and conductivity responded.

Procedure 4: Working across multiple watersheds

Step 1: Return to the main dashboard

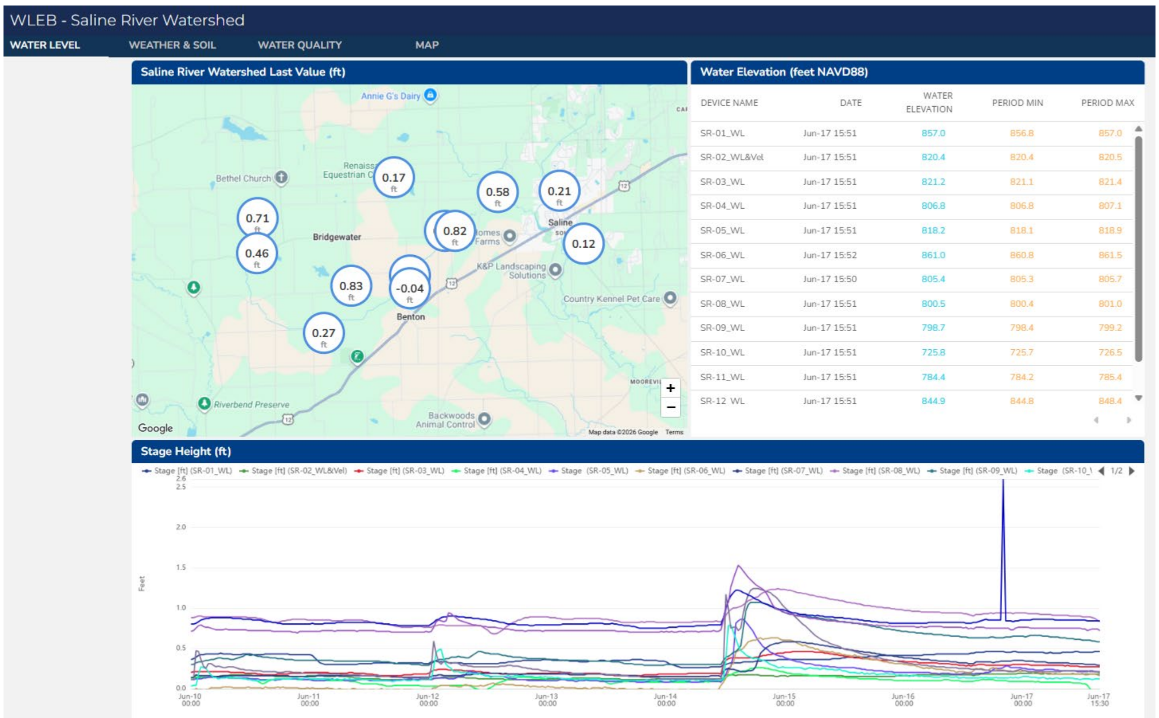
Navigate back to the main dashboard landing page to select a different sub-watershed by closing the pop-up window. Click any of the five watershed names — **Lime Creek**, **Nile Ditch**, **South Branch Raisin**, **Saline River**, or **S.S. LaPointe Drain —** to load its data in a new window.



Main project dashboard with clickable watershed names, project map, dashboard overview, and project stats.

Step 2: Compare water level responses to rainfall

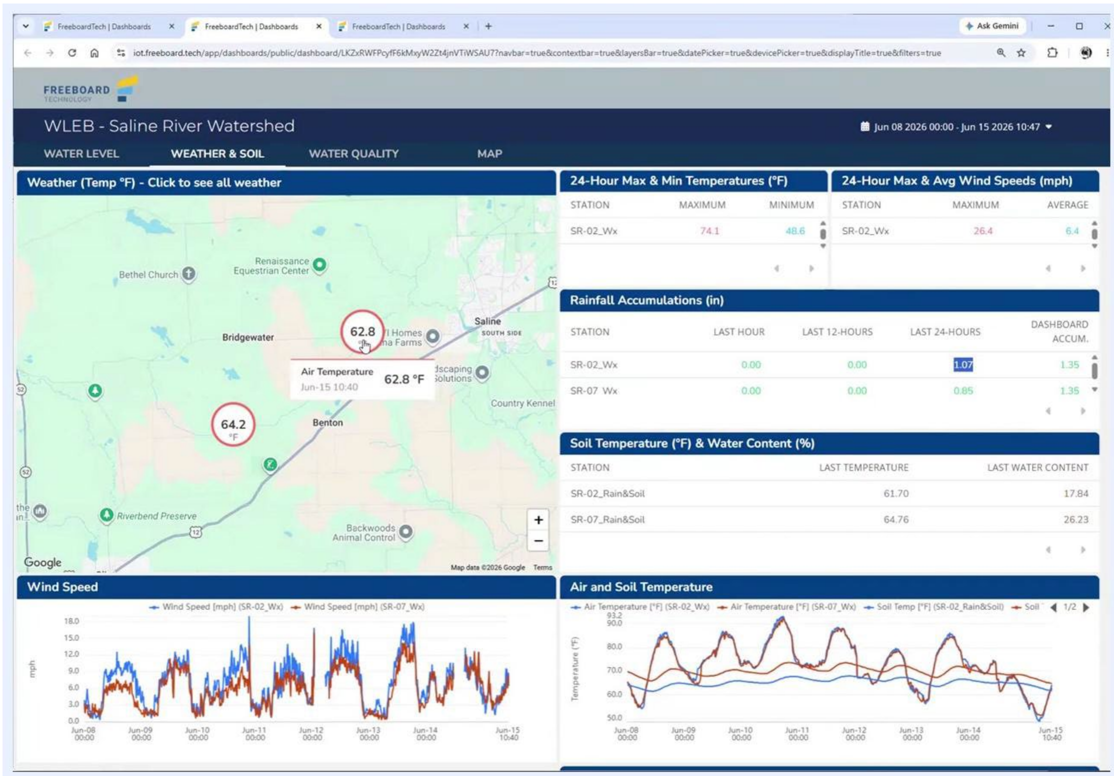
Select a watershed such as **Saline River** and set the date range to the last seven days. Examine the **Stage Height (ft)** graph for spikes that correspond to rainfall events. For example, a rainfall event on Sunday morning, June 14, 2026 produced a water level increase of approximately 1.5 feet at some sites, with levels returning toward baseline by the following morning.



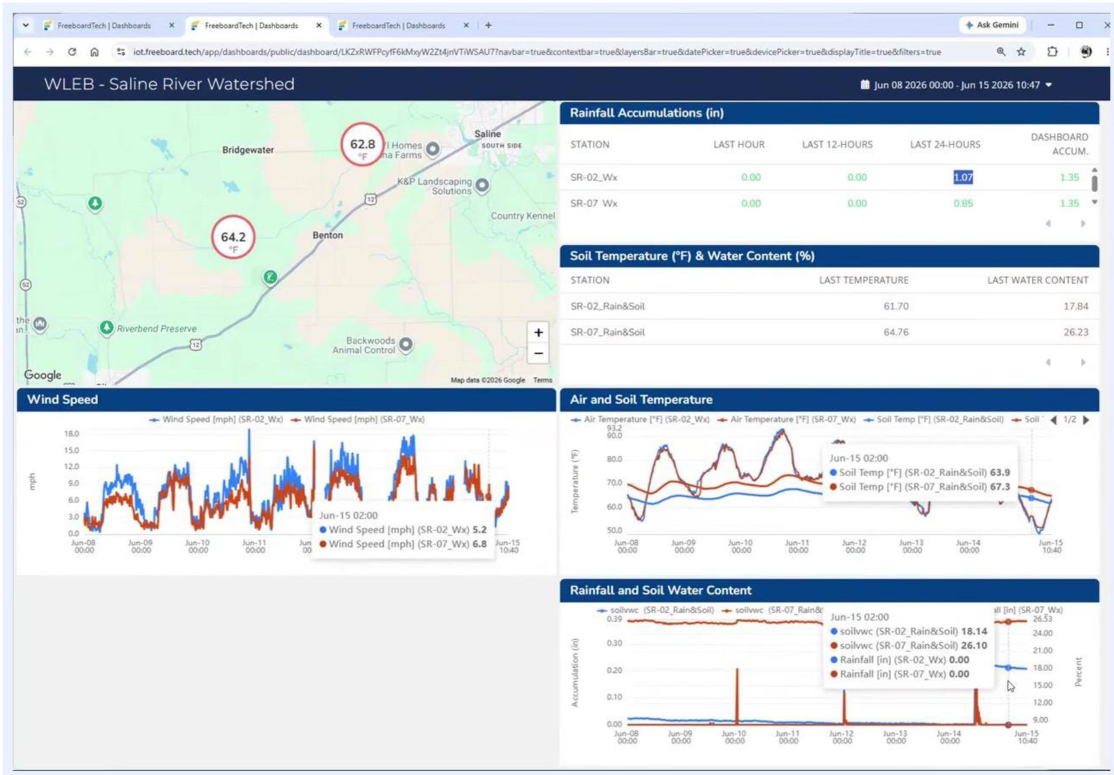
Saline River watershed dashboard showing map with water level values, recent readings table, and stage height graph with a visible spike after rainfall.

Step 3: Correlate rainfall and soil moisture

Switch to the **WEATHER & SOIL** tab for the same watershed and review the **Rainfall Accumulations** and **Soil Temperature & Water Content** panels together. Comparing these two data sources helps you assess how wet or dry the ground was before a rain event and how quickly soils responded.



Weather and soil dashboard showing rainfall accumulations, soil temperature and water content, wind speed, and temperature graphs.



Dashboard with rainfall data hidden, highlighting soil water content trends over time.

Step 4: Identify dry stations

When a station appears dry:

- Treat turbidity readings with caution, as they may not reflect actual water conditions.
- Water temperature readings may reflect air temperature rather than water temperature.
- Use the map and station list to locate and verify the status of each site.

Dashboard showing map, specific conductivity, turbidity, and water temperature panels for multiple stations in the WLEB - Lime Creek Watershed. Conductivity and temperature values are plotted over time, with some stations showing low or single-digit conductivity.

> **Note:** When a monitoring station's water level drops below the sensor position, the site may be dry. Conductivity readings below 200 µS/cm — or single-digit values — are a strong indicator that no water is present at the sensor.

Troubleshooting

Symptom	Likely cause	What to do
Dashboard panels fail to load	Browser or network issue	Click **Refresh** in your browser and wait for the page to reload
Conductivity shows single-digit or near-zero values	Station sensor is above the waterline (dry site)	Note the site as potentially dry; interpret turbidity and temperature data with caution
Temperature readings seem unusually high for water	Sensor not submerged	The sensor may be measuring air temperature; verify water level data for the same station
Turbidity spike with rapid return to baseline	Storm or runoff event	Set a custom date range around the event and review conductivity and water level charts to confirm

FAQ

Do I need an account to view the dashboard?
No. The dashboard is publicly accessible. Navigate to https://greatlakes.org/wlebmonitoring/ and click the **Monitoring Data Dashboard** link — no login is required.

What are the five sub-watersheds covered by this program?
The five priority sub-watersheds are Lime Creek, Stony Creek (South Branch River Raisin), Headwaters of the Saline River, Nile Ditch, and S.S. LaPointe Drain.

How do I know if a monitoring station is currently dry?
Specific conductivity readings below 200 µS/cm — especially single-digit values — suggest the sensor is not submerged. Cross-check with the water level tab for confirmation.

What does a turbidity spike indicate?
A sudden rise in turbidity (NTU), especially during or after a rain event, typically indicates increased sediment or runoff entering the waterway. Values can spike to over 1,000 NTU during events and return to single digits quickly afterward.

Can I view data for a specific date and time?
Yes. Use the date range selector in the upper right of the dashboard. You can select a predefined range (such as Last 7 days) or enter custom start and end dates and times, then click **Accept** to filter all charts and tables to that window.