# Tracking Groundwater Conditions and Health

Wyandotte Creek GROUNDWATER SUSTAINABILITY AGENCY

## *Understanding Monitoring Networks*

Reliable monitoring networks are crucial for understanding how groundwater conditions change over time and for assessing the effectiveness of Groundwater Sustainability Agencies (GSAs) and their partners in managing groundwater. The good news is that Butte County has a long history of groundwater level monitoring, resulting in a rich and informative dataset. The Wyandotte Creek Subbasin's monitoring networks consist of wells and surface water measurement sites that track key sustainability indicators.

### What Wyandotte Creek GSA Monitors to Demonstrate Compliance with SGMA Requirements

Under the Sustainable Groundwater Management Act (SGMA), sustainability is demonstrated by avoiding "Undesirable Results" for the following indicators. Monitoring and data collection provide evidence of sustainability or show where there is a problem that needs attention.

The Wyandotte Creek Subbasin monitoring networks are designed to collect data for these groundwater sustainability indicators:

**Groundwater Levels:** Monitoring the depth of water underground.

**Water Quality:** Tracking trends in salinity.

**Groundwater Storage:** Tracking changes in the volume of water held within the basin.

**Land Subsidence:** Tracking ground surface elevation changes.

**Interconnected Surface Water:** Understanding the complex connection between groundwater and rivers and streams—where and when are they connected.

### Why Monitoring Is Critical

Groundwater is monitored to understand the factors that impact it. A robust monitoring network helps:

- Track seasonal, short-term, and long-term trends.
- Evaluate whether groundwater is being sustainably managed.
- Measure progress toward sustainability goals and thresholds.
- Inform groundwater management decisions.

### Key Milestones

- Fall 2024: Public review of proposed new monitoring sites
- Winter/Spring 2026: New wells and equipment installation
- Winter/Spring 2026: Community-based monitoring program launches
- Spring 2026: Data collection at new monitoring network sites begins

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# Monitoring Network

## How Data Is Collected

The grant-funded Data Gap Identification and Data Improvement project (2024-2026) reevaluated the available network of monitoring wells. Adjustments to the networks for all sustainability indicators were made through the periodic evaluation process in 2026. State-approved protocols are used to collect data and assess local and subbasin-wide conditions:

### Groundwater Levels

Measured at least twice per year; some sites collect data hourly with sensors. The California Department of Water Resources (DWR) and Butte County Water and Resource Conservation (WRC) staff conduct the monitoring.

### Water Quality - Salinity

WRC staff measures salinity annually. Actively tracking salinity helps ensure water remains high-quality and reliable. The GSA coordinates with other water quality regulatory programs.

### Land Subsidence

Data from GPS and satellite imaging reveal where and how much the ground surface elevation is changing. This data is provided by DWR.

### Surface Water

Stream gages record flow levels from every hour to every day. This data is provided by DWR and other agencies.

## Representative Monitoring Sites (RMS)

How do you know if Undesirable Results are occurring in the subbasin? The GSA tracks conditions and compares results to an established standard or threshold at each representative monitoring site. These are a subset of monitoring wells, called RMS wells. In proposed amendments to the 2022 Groundwater Sustainability Plan (GSP), a network for each sustainability indicator is defined.

## Filling the Gaps

Some data gaps are still being filled, including:

- Better data on domestic well depths.
- Installing new monitoring wells to provide groundwater level information.
- Considering new locations for water quality (salinity) monitoring.
- More information on how groundwater pumping affects nearby streams and ecosystems.
- More data on shallow groundwater (i.e., water table) conditions.

As the GSA implements the Subbasin's Groundwater Sustainability Plan, it will continue to gather and analyze more data to further understand the system and track changing conditions.

## Monitoring Locations

The GSA's groundwater monitoring networks include:

**Groundwater Level Wells**
10 wells across the subbasin.

**Water Quality Wells**
8 wells, plus data from state and federal programs.

**Interconnected Surface Water Sites**
8 shallow wells and 3 stream gages to monitor stream-groundwater interactions.

**Land Subsidence**
1 GPS station, plus satellite-based InSAR data.

Monitoring locations and wells are located across the Wyandotte Creek Subbasin's two management areas (Oroville and South), with attention to spatial coverage, well depth, and existing data history.

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