

# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure



*Our efforts will ensure that groundwater in the Wyandotte Creek Subbasin continues to be a long-term resource to support our communities and a healthy environment. This brochure intends to provide a high-level overview of the Wyandotte Creek Subbasin Groundwater Sustainability Plan (GSP). The content is derived from the Wyandotte Creek Subbasin GSP Executive Summary and is intended for the general public.*

## How and when to Comment on the GSP

The Groundwater Sustainability Plan is the detailed roadmap for how the Wyandotte Subbasin will reach long-term sustainability... **and the time to share your input on this Plan is NOW.** Visit <https://www.wyandotecreekgsa.com/draft-groundwater-sustainability-plan-gsp> to view the Draft GSP and learn how to submit comments. Public comments are **due by October 24, 2021, 11:59 p.m.**

### *Submit written comments through one of the following methods:*

1. **By Email to:** [WyandotteGSA@gmail.com](mailto:WyandotteGSA@gmail.com)  
To better organize public comments, we are requesting that commenters use a comment tracking sheet. Visit <https://www.wyandotecreekgsa.com/draft-groundwater-sustainability-plan-gsp> to access the comment form.
2. **By Mail to:** Butte County Department of Water & Resource Conservation  
RE: Wyandotte Creek Subbasin GSP  
308 Nelson Ave  
Oroville, CA, 95965
3. **In Person or via Zoom at:** GSP Public Workshop October 20<sup>th</sup> 6:00 – 8:00 PM at HR Training Room East 3 County Center Dr. Oroville, CA 95965

**One-Click to Join:** <https://cbuilding.zoom.us/j/96698241765>

**Or call in by phone:** +1 669 900 6833. Meeting ID: **966 9824 1765**

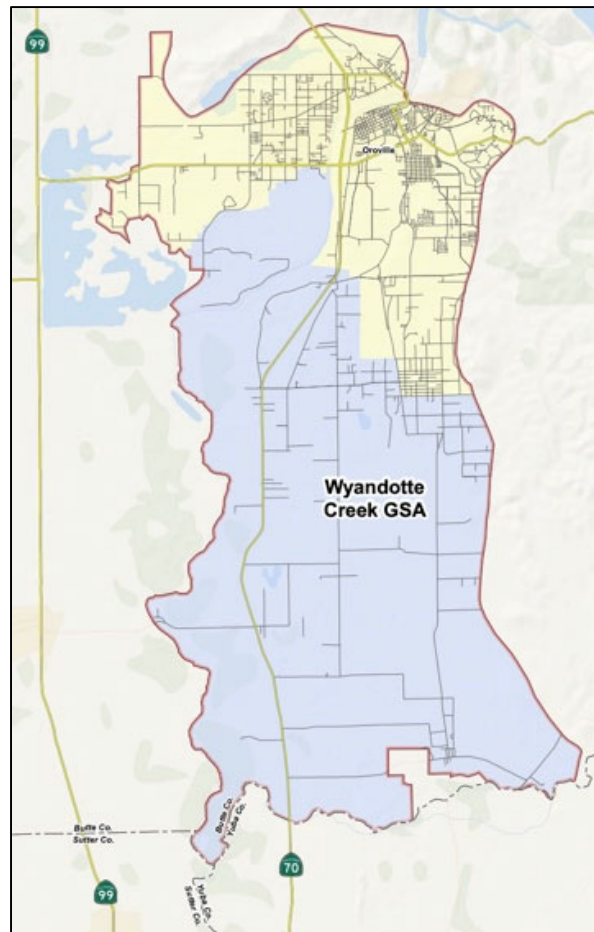
For additional information, please email: [WyandotteGSA@gmail.com](mailto:WyandotteGSA@gmail.com)  
or visit: <https://www.WyandotteCreekGSA.com>

# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## *Chapter 1: Where Is the Wyandotte Creek Subbasin & Who Adopts and Implements the Groundwater Sustainability Plan (GSP)?*

The Wyandotte Creek Subbasin lies in the eastern central portion of the Sacramento Groundwater Basin. It is bounded on the west by the Feather River and Thermalito Afterbay; in the south by the Butte-Yuba County line. It is surrounded by the Butte Subbasin to the west, the Vina Subbasin to the north, the North Yuba Subbasin to the south, and the foothills to the east.

### **Map of the Wyandotte Creek Subbasin**



The Wyandotte Creek Groundwater Sustainability Plan (Wyandotte Creek GSP) was developed to meet Sustainable Groundwater Management Act (SGMA) regulatory requirements by the January 31, 2022 deadline while reflecting local needs and preserving local control over water resources. Signed into law in 2014, SGMA requires the adoption of local plans that will bring groundwater supply and demand into balance over a 20-year implementation period. The goal statewide is to stop removing more water out of underground aquifers than is being replenished (by nature or by humans), thus achieving groundwater sustainability. If local areas are unable or unwilling to come up with an effective plan, the law empowers the State to step in and create a plan, which could be more restrictive and more costly for residents. SGMA supports local control of groundwater resources by requiring the creation of local agencies, known as Groundwater Sustainability Agencies (GSAs), to develop and implement plans for groundwater sustainability.

# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## Who is responsible for managing groundwater in the Wyandotte Creek Subbasin?

The Wyandotte Creek GSA is the only GSA in the Wyandotte Creek Subbasin. It was formed through the execution of a Joint Powers Agreement (Agreement) by the County of Butte, City of Oroville, and the Thermalito Water and Sewer District. The agreement also defines two Management Areas (MAs) within the Wyandotte Creek Subbasin: Wyandotte Creek Oroville and Wyandotte Creek South. This GSA is working to develop, adopt, and submit a GSP for the Subbasin that will characterize groundwater conditions in the Subbasin, establish sustainability goals, and describe projects and management actions the GSA could implement to maintain and achieve sustainable groundwater management over the planning period. The Wyandotte Creek GSA serves as the policy-making agency for SGMA implementation in the Wyandotte Creek Subbasin. All GSA Board meetings are subject to the Brown Act and are noticed and open to the public.

## What must the GSP Achieve?

A GSP must assess groundwater quantity, rates of input, extraction, and lay out a plan to show sustainability of groundwater resources over a 20-year horizon. If it is determined that groundwater supplies are being depleted over time, the GSP must contain a strategy to reverse this trend and ensure long-term sustainability of the water available to businesses, residences, farms, ranches, and ecosystems.

The Wyandotte Creek GSA board has been meeting regularly since 2019 to consider input from community members, groundwater users, and technical experts to ensure the GSP meets local needs *and* complies with State requirements outlined in SGMA. The GSP will be adopted and submitted to DWR by January 31, 2022.

In addition to developing the GSP, GSAs also manage both groundwater supply and demand in support of achieving groundwater sustainability, as outlined in the GSP. This may include:

- Developing strategies aimed at increasing groundwater supply or reducing demand
- Charging fees to implement the GSP or to support projects to maintain sustainable conditions
- Collecting data to demonstrate sustainability is being achieved
- Ensuring depletion of surface water due to groundwater pumping does not cause “undesirable results”

# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## Chapter 2: Basin Setting: What We Know & Don't Know

### What is the Basin Setting?

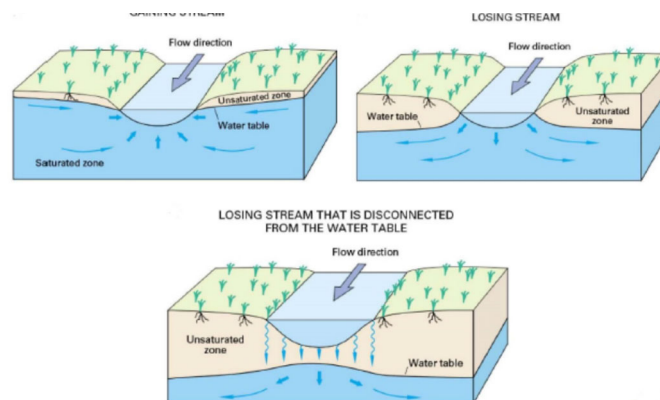
The "Basin Setting" portion of the GSP describes what we know and don't know about the subbasin. Characteristics like the geology, characteristics of the aquifer systems, and how water moves in and through the system (such as recharge and pumping areas) generally **do not** change over time. This understanding of the basin's physical characteristics is called the Hydrogeologic Conceptual Model. This becomes the basis for our understanding of groundwater behavior and cause and effect relationships in the system. Additional sub-sections of the Basin Setting describe characteristics of the subbasin that **do** change over time and will likely change in the future, such as changes in climate (affecting water supplies), land use, water demands, etc. This includes a description of Groundwater Conditions (groundwater levels, water quality, and subsidence, if present) and the Water Budget, an accounting (quantitative) of the inflows and outflows of water through the surface water and groundwater systems over time.

### How are groundwater conditions doing in the Wyandotte Creek Subbasin?

Groundwater levels in the Subbasin indicate that groundwater elevations are relatively stable. Groundwater quality in the basin is good except in areas where man-made sources have impacted the groundwater. Groundwater storage in Subbasin is relatively stable. The Feather River and Thermalito Afterbay stabilize storage volumes by providing recharge to the Subbasin. The total fresh groundwater in storage was estimated at about 2.1 million-acre-feet (MAF) in 2018. The amount of groundwater in storage has decreased by approximately 0.14 percent per year between 2000 and 2018. As such, it is highly unlikely the Subbasin will experience conditions under which the volume of stored groundwater poses a concern. However, the depth to access that groundwater across the Subbasin may pose a concern. Land subsidence has not historically been an area of concern in the Subbasin and there are no records of land subsidence caused by groundwater pumping in the Subbasin.

The groundwater system and surface waters found in rivers and streams can be connected and affect one another. Surface water flow can be partially sourced from the groundwater in the aquifer (known as a gaining reach) or, oppositely, surface water can leak down into the aquifer as recharge (known as a losing reach). Because groundwater and surface water can be connected, if the water table beneath the rivers, creeks or streams lowers, the stream may disconnect entirely from the underlying aquifer.

### Illustration of Gaining and Losing Interconnected and Disconnected Streams Reaches (Source: United States and Geological Survey)



# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## Chapter 3: How Is Sustainability Defined: Sustainability Indicators & Undesirable Results?

The GSP must also assess certain “sustainability indicators” and propose measures to correct any “undesirable results” due to groundwater use. Undesirable results to be avoided in the Wyandotte Creek Subbasin are:



Lowering GW Levels



Reduction of Storage



Seawater Intrusion



Degraded Quality



Land Subsidence



Surface Water Depletion

- **Lowering of Groundwater Levels.** *If sufficient in magnitude, this has the potential to cause significant and unreasonable declines such as: dewatering of some groundwater infrastructure, starting with the shallowest wells, increased pumping costs, adverse effects on groundwater dependent ecosystems including difficulty for plants and animals to access groundwater, changes in irrigation practices and crops grown, and impacts to property values and the regional economy.*
- **Reduction of Groundwater Storage.** *The primary potential effect would be potentially dewatering of existing groundwater infrastructure and changes in irrigation practices and crops grown and could adversely affect groundwater dependent ecosystems and property values. Additionally, reaching undesirable results for reduction of groundwater storage could adversely affect domestic and irrigation uses of groundwater in the Subbasin.*
- **Water Quality Degradation.** *This includes impacts from groundwater quantity related activities (i.e., groundwater extraction, recharge, etc.) rather than impacts from land use practices, naturally occurring constituents, etc. Potential impacts may include shortage in supply to groundwater users without additional treatment. High levels of salinity impact both drinking water and agricultural uses.*
- **Land Subsidence.** *Subsidence is a condition when the subsurface collapses due to groundwater extraction, causing the land surface elevation to decline which can cause issues to infrastructure, i.e. highways, bridges or water conveyance structures. Land subsidence is currently not a problem in the Wyandotte Creek Subbasin.*
- **Surface Water Depletion.** *Surface waters, like streams and rivers, are often connected to groundwater. A decline in groundwater can result in lower surface water levels, reduced surface flows, and/or increased temperatures that could potentially impact ecosystems.*

Also, of concern are the **impacts of drought** on water supplies. Years of drier-than-normal conditions stress ecosystem function as soil moisture levels drop, pumping increases, and reservoirs decline. Implementation of the GSP should allow the Wyandotte Creek subbasin to weather future droughts better by planning for the variability of wet and dry cycles California experiences.

### What is the Sustainability Goal?

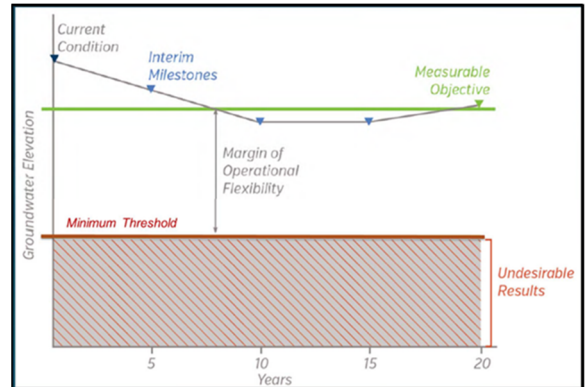
The sustainability goal of the Wyandotte Creek Subbasin is to maintain a sufficient groundwater supply and quality that can be used by rural areas, communities, and agricultural users.

# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## What are the Sustainable Management Criteria?

The Sustainable Management Criteria are the umbrella that include the Sustainability Goal (qualitative), Undesirable Results, Minimum Thresholds, and Measurable Objectives.

- Description of Undesirable Result: description of what constitutes a “significant and unreasonable” condition is determined by local GSAs and stakeholders.
- Minimum Threshold (MT): quantitative definition of groundwater conditions at a representative monitoring site at which undesirable results may begin to occur.
- Measurable Objective (MO): quantitative definition that reflects desired groundwater condition and allows the GSAs to achieve sustainability within 20 years.



## Wyandotte Creek Subbasin Sustainability Indicators, Minimum Thresholds, Measurable Objectives, and Undesirable Results

Sustainability Indicator	Minimum Threshold	Measurable Objective	Undesirable Result
Chronic Lowering of Groundwater Levels	Two RMS wells within a management area reach their MT for two consecutive non-dry year-types.	The groundwater level based on the groundwater trend line for the dry periods (over the period of record) of observed short-term climatic cycles extended to 2030	Sustained groundwater levels are too low to provide a water supply of adequate quantity and quality to achieve the Sustainability Goal.
Reduction of Groundwater Storage	Same as listed for Chronic Lowering of Groundwater Levels	Same as listed for Chronic Lowering of Groundwater Levels	Same as listed for Chronic Lowering of Groundwater Levels
Degraded Water Quality	1,600 micro-siemens per centimeter ( $\mu\text{S}/\text{cm}$ ) for each representative monitoring well, consistent with the upper limit of the California Secondary Maximum Contaminant Level (MCL) for electrical conductivity	900 $\mu\text{S}/\text{cm}$ for each representative monitoring well, consistent with the California Secondary MCL for electrical conductivity	Same as listed for Chronic Lowering of Groundwater Levels
Inelastic Land Subsidence	Same as listed for Chronic Lowering of Groundwater Levels	Same as listed for Chronic Lowering of Groundwater Levels	Same as listed for Chronic Lowering of Groundwater Levels
Depletion of Interconnected Surface Water	Same as listed for Chronic Lowering of Groundwater Levels	Same as listed for Chronic Lowering of Groundwater Levels	Depletion of surface water flows caused by groundwater pumping significantly and unreasonably impacts beneficial uses of surface water.

\*Monitoring of groundwater levels are used as a proxy for change in groundwater storage. The values developed for these criteria are based on the current understanding of the basin setting as described in Chapter 2. As new information is obtained, these values will be assessed and modified, as warranted.

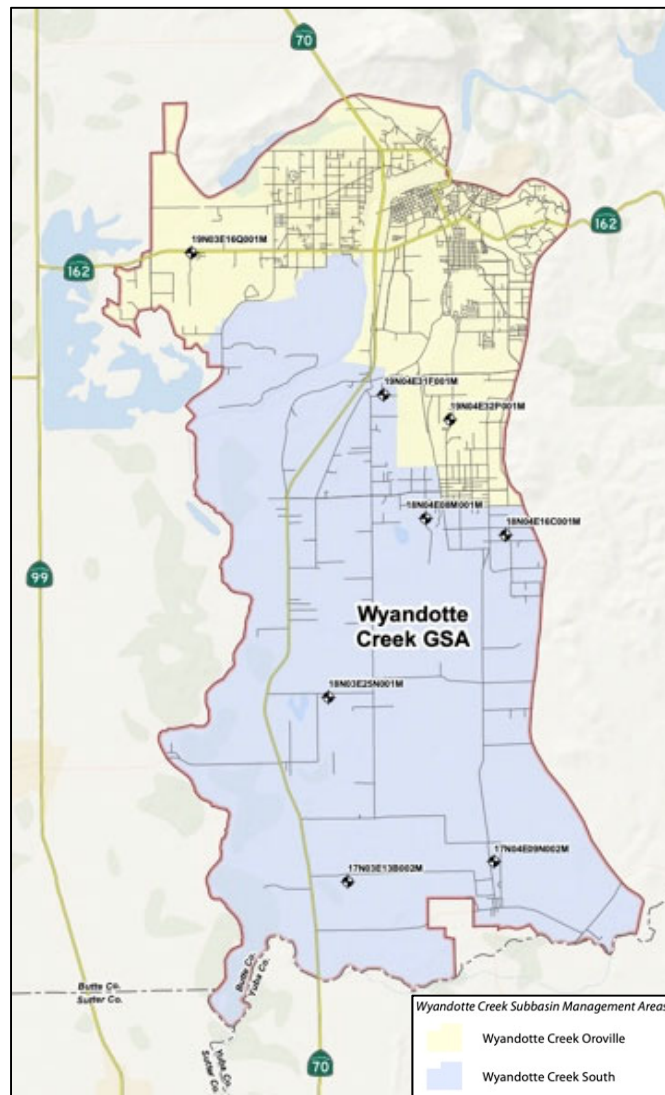
# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## Chapter 4: How Are We Monitoring Conditions and Effectiveness of the Groundwater Sustainability Plan (GSP)?

### Monitoring Networks

The draft Groundwater Sustainability Plan includes the representative monitoring network, with the objective of observing and recording data on groundwater levels, quality, interconnection of surface water and groundwater, and land subsidence. Wells included in the existing representative monitoring networks were selected to provide baseline information about current conditions in the Subbasin to assist with establishing Sustainable Management Criteria and to evaluate conditions related to the effectiveness of the GSP, specifically to detect short-term, seasonal, and long-term trends. The representative monitoring networks will be periodically reviewed and modified as needed.

### Groundwater Elevation Representative Monitoring Well Locations



# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## Chapter 5: How Will We Maintain Sustainability & What Will it Cost?

### Projects and Management Actions

Projects and management actions were developed with the goal of leveling off the imbalance in groundwater storage, (estimated at 1 thousand acre-feet/year). There are eight planned projects, five potential projects and two conceptual projects as well as a number of management actions included in the draft GSP. Planned projects will move forward to help maintain the region’s sustainability by 2042. Potential projects are currently in the planning stages and may potentially be implemented by the GSAs and may move forward if funding becomes available to support ongoing sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects.

#### Planned Projects

Project Name	Project/ Management Action Type	Gross Average Annual Benefit at Full Implementation
<b>Planned Projects:</b> Planned to be completed prior to 2042. The expected yield of these projects is expected to support GSAs in achieving the GSP sustainability goal and responding to changing conditions in the subbasin.		
Residential Water Conservation	Conservation	100 – 200 acre-feet/year
Agricultural Irrigation Efficiency	Conservation	4,000 acre/feet/year
Flood MAR	Direct Recharge, In-Lieu Recharge	TBD
Oroville Wildlife Area Robinson’s Riffle Project	In-Lieu Recharge	TBD
Streamflow Augmentation	Direct Recharge, InLieu Recharge	1,000-5,000 acre/feet/year
Water Treatment Plant Capacity Upgrade	Conservation	500+ acre/feet/year
Water Loss Monitoring	Conservation	Unknown
Palermo Clean Water Improvement Project	Conservation	Unknown



# Wyandotte Creek DRAFT Groundwater Sustainability Plan (GSP) Overview Brochure

## Chapter 6: What is the Schedule, When Will Reporting Occur, and How Will We Fund Projects

### Plan Implementation

A schedule for implementing the GSP is provided in Chapter 6. This chapter also discusses how information will be reported that includes Annual Reports and 5-year reviews of the GSP. At a minimum, a review of the SMCs must be presented in the 5-year review.

Administering and implementing the GSP, and monitoring and reporting progress, is projected to cost roughly \$100,000 - \$300,000 dollars annually. The GSA will seek to capitalize on existing funding and programs that overlap with GSP requirements. For example, Butte County, DWR and other entities currently fund groundwater data collection programs at locations within the Subbasin. The GSAs will ensure that the existing programs meet the technical requirements of the monitoring and reporting as outlined in the GSP.

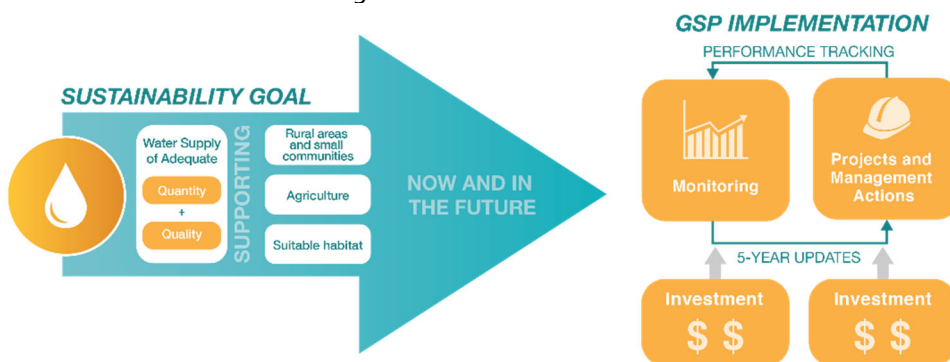
In cases where no funding or programs are established, the GSA will be responsible for securing funding for the GSP implementation. The GSA will coordinate funding with their respective constituent members within the Subbasin. GSAs will fund the GSP through a cost-sharing collaboration to be determined after adoption of GSP.

Funding is anticipated to be met from one or a combination of the following sources: direct contributions from the GSA constituent members, State and Federal grant funding, and taxes or assessments levied on landowners and groundwater users in accordance with local and State law.

The GSAs are evaluating a variety of funding mechanisms including Proposition 218 or Proposition 26 to support ongoing operational costs and to fund agency operations.

### What is the alternative?

If the local GSAs are unable to implement a Plan that meets state requirements, the State Water Resources Control Board will step in and develop a plan to manage the subbasin. If this occurs, the State could charge up to \$300/well/year for all groundwater extractors and up to \$55/acre-foot for water pumped. The local GSAs are working hard to avoid State Intervention and these high costs.



### More Information:

To download a copy of the Full draft GSP:

<https://www.wyandottecreekgsa.com/draft-groundwater-sustainability-plan-gsp>

To contact us with questions: Email [WyandotteGSA@gmail.com](mailto:WyandotteGSA@gmail.com)

or visit us at

<https://WyandottecreekGSA.com>