

# GROUNDWATER SUSTAINABILITY PLANNING

*for the*

# COSUMNES SUBBASIN



Our efforts will ensure that groundwater in the Cosumnes Subbasin continues to be a long-term resource to support our community and a healthy environment.

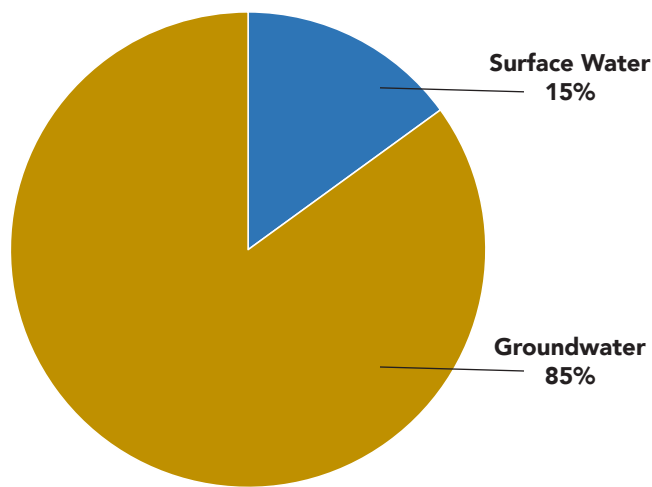


# Groundwater in the Cosumnes Subbasin

The Cosumnes Subbasin extends south of the Cosumnes River to the San Joaquin County border along Dry Creek and west from where the Cosumnes and Mokelumne Rivers meet, just outside the Delta, to the foothills of Amador County. Groundwater in our region—water stored in underground basins called aquifers—is a critical resource that provides drinking water,

allows agriculture to flourish, and supports a healthy environment. But California's frequent droughts and over-allocation of surface water has led to pumping more groundwater, depleting groundwater across the state. It is so severe in some areas that groundwater levels are dropping as much as one foot per year.

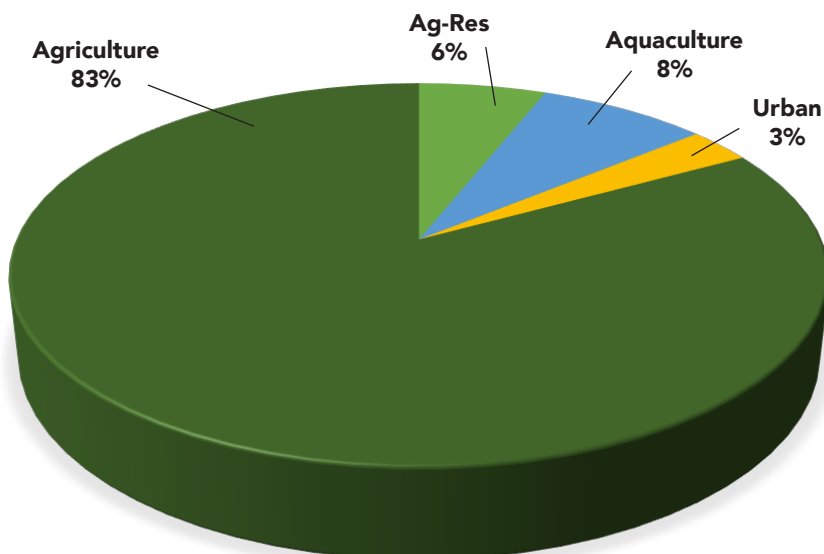
## Where Does our Water Come From?



Water for all uses, including urban, domestic, agricultural, industrial, environmental and other uses, comes primarily from groundwater in the subbasin.

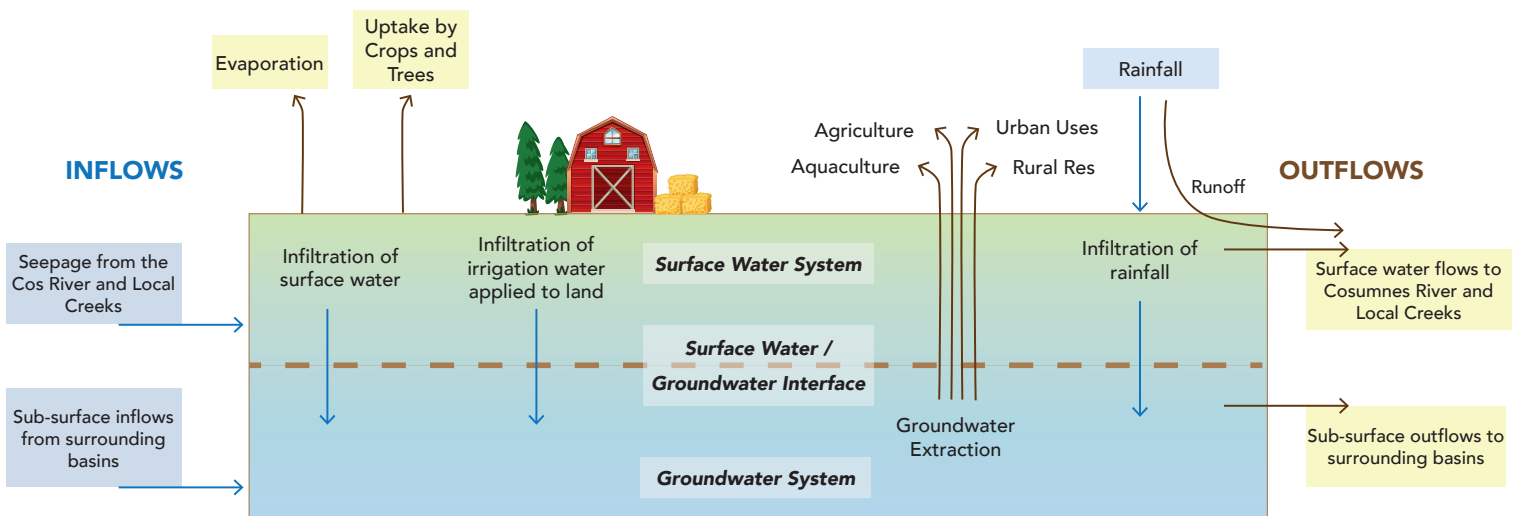
The subbasin is currently pumping more groundwater than it is replenishing.

## Annual percentage of groundwater pumped by usage area:



# How Does Water Move In and Out of the Cosumnes Subbasin?

This conceptual model illustrates our current understating of the movement of water within the Cosumnes Subbasin.



- Much of the rain infiltrates into the soil or becomes runoff in creeks and rivers. Infiltration replenishes soil moisture, which is either consumed by plants (evapotranspiration) or percolates down to the water table.
- The Cosumnes is a leaky river. A sizable amount of watershed runoff and mountain snowmelt infiltrates through the Cosumnes riverbed, and other smaller streams and creeks, to recharge groundwater.
- Some of this surface water is pumped out of the river and applied to the land to irrigate crops. Some of this diverted water infiltrates back into the aquifer, while the remainder is lost to the atmosphere via evapotranspiration.
- Our groundwater system is affected by subsurface flows either entering or leaving the basin through porous sediments connecting our basin to the neighboring basins north and south of us.

**Groundwater is extracted from the aquifer for a variety of purposes: agriculture, aquaculture, urban, and rural residential use. In our basin, this water is applied to the land to irrigate crops, support landscaping, grow fish, and meet urban and residential water needs.**

## Do We Have Groundwater Problems in the Cosumnes Subbasin?

Groundwater in the Cosumnes Subbasin has been declining for decades, with recent estimates suggesting that an average of more than 10,000-acre feet annually are pumped out of the basin than are returned to the aquifer. That is an average decline of 1 foot per year.

The California Department of Water Resources (DWR) “prioritizes” groundwater basins across the state for management purposes. Given our current rate of decline,

the level of importance of groundwater to meeting our communities’ and ecosystems’ needs, and the impacts of over pumping, DWR has classified the Cosumnes subbasin as medium priority. While thankfully our subbasin is not currently listed as critical or high priority, it’s imperative to take steps now to reverse the trend of groundwater decline. With increasing environmental challenges and consistent drought environments, groundwater management will be essential in maintaining this priority status.

## What Does it Mean to Have *Groundwater Sustainability*?

Sustainability means that the supply of something is greater than the demand for it. It is like having a positive bank account balance at the end of each month. In the case of groundwater sustainability, it means we are extracting less water than what is going back into the system via precipitation infiltration and groundwater recharge.

The **Cosumnes Subbasin Sustainability Goal** is to ensure that groundwater in the basin continues to be a long-term resource to support our community and a healthy environment. This goal will be achieved by managing groundwater within the Basin’s sustainable yield, as defined by sustainable groundwater conditions and the absence of undesirable results.

## LOCAL CONTROL OF GROUNDWATER

### Sustainable Groundwater Management in California

Signed into law in 2014, the Sustainable Groundwater Management Act (SGMA) requires the adoption of local plans that will bring groundwater supply and demand into balance. 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 certainly more costly for local residents. SGMA supports local control of groundwater resources by requiring the creation of local agencies, known as groundwater sustainability agencies, to develop plans for groundwater sustainability.

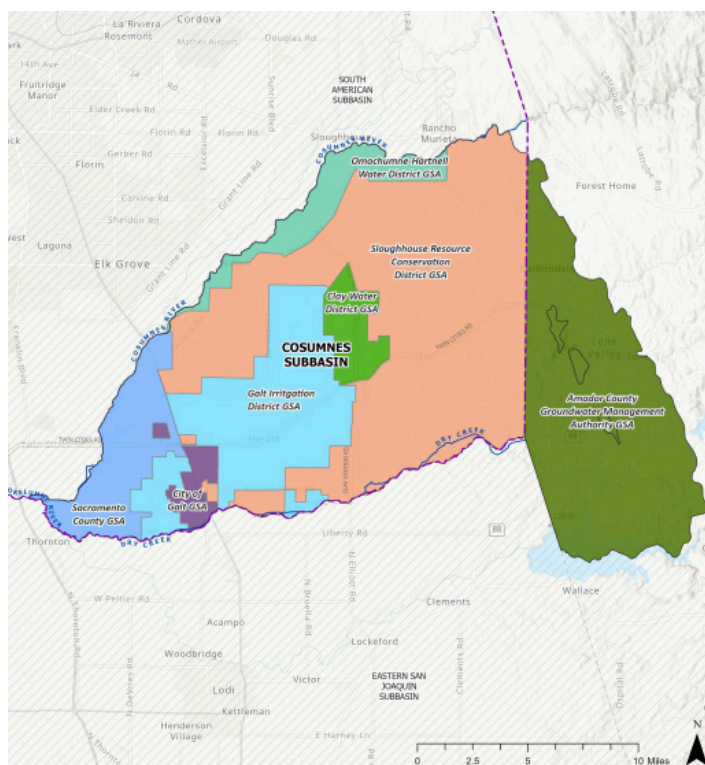
# Who are the Groundwater Sustainability Agencies in Cosumnes?

Seven Groundwater Sustainability Agencies (GSAs) in the Cosumnes Subbasin were formed under the direction of SGMA in 2017. These GSAs are:

- Amador County Groundwater Management Authority
- City of Galt
- Clay Water District
- Galt Irrigation District
- Omochumne-Hartnell Water District
- Sacramento County
- Sloughouse Resource Conservation District

These GSAs are engaged in a collaborative group, called the Cosumnes Subbasin SGMA Working Group, to develop a tailored **Groundwater Sustainability Plan** (GSP or Plan) for our region. 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 Plan 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 Working Group has been meeting monthly since 2017 to consider input from community members, groundwater users, technical experts, hydrologists, geologists, and engineers to ensure the GSP meets local needs and complies with all State requirements outlined in SGMA. The Plan will be adopted and submitted to DWR by January 31, 2022.



- |  |   |
|--|---|
| Sacramento County Boundary                         | Clay Water District GSA                       |
| Cosumnes Subbasin Boundary                         | Galt Irrigation District GSA                  |
| Neighboring Subbasins                              | Omochumne-Hartnell Water District GSA         |
| Amador County Groundwater Management Authority GSA | Sacramento County GSA                         |
| City of Galt GSA                                   | Sloughouse Resource Conservation District GSA |

In addition to this essential duty of Plan development, the GSAs will have the authority to manage both groundwater supply and demand to meet objectives developed in the GSP in support of achieving groundwater sustainability. This may include:

- Development of projects and management actions to augment groundwater supply or reduce demand
- Charging pumping fees to support projects to alleviate overdraft conditions
- Collecting data to demonstrate sustainability is being achieved
- Ensuring surface water/groundwater interconnectedness supports ecosystems

# What are the Issues Resulting from Groundwater Decline in Cosumnes?

The GSP must also assess certain “sustainability indicators” and propose measures to correct any “undesirable results” due to reduction in groundwater volumes. Four of these six sustainability indicators are of high concern in the Cosumnes:

- **Lowering of Groundwater Levels.**

Undesirable results would be experienced if and when a chronic decline in groundwater levels negatively affects the long-term viable access to groundwater. This could mean wells going dry, or increased costs to pump water from deeper depths.

- **Surface Water Depletion.** Because surface waters, like streams and rivers, are often connected to groundwater, a decline in groundwater can result in lower surface water levels and reduced surface flows. Plants and wildlife that depend on groundwater, and salmon that depend on consistent water in the river that is linked to groundwater, may be negatively affected. Reduced surface flows can negatively affect permitted diversion points from both the Cosumnes River and Dry Creek.

- **Reduction of Groundwater Storage.**

The primary potential effect of Reduction of Groundwater Storage would be reduced groundwater supply reliability. Since groundwater supplies most users in the Basin, most everyone and everything would be affected. The impacts would be most significant during periods of reduced surface water supply availability due to, for example,

natural drought conditions, regulatory restrictions, natural disasters, or other causes.

- **Water Quality Degradation.** The potential effects caused by Degraded Water Quality may include: increased costs to treat groundwater to drinking water standards; increased costs to blend relatively poor-quality groundwater with higher quality sources for drinking water users; and potential reduction in “usable storage” volume of groundwater in the subbasin.

The remaining two are less of a concern in our subbasin:

- **Land Subsidence.** Subsidence is a condition when the subsurface literally collapses due to lack of water, causing the land surface elevation to decline. It is currently not a problem in the Cosumnes basin.
- **Seawater Intrusion.** The Cosumnes subbasin is not directly connected to the Pacific Ocean, although its western boundary is adjacent to the Sacramento-San Joaquin Delta (the “Delta”) which is influenced by the Pacific Ocean. Under present-day conditions the Basin is at little to no risk of seawater intrusion.

Also, of concern to nearly all of us across the State are the **impacts of drought** on our water supplies. Years of drier-than-normal conditions stress ecosystem function as soil moisture levels drop, pumping increases, and reservoirs decline. Droughts can significantly amplify the undesirable conditions described above.



## Are We at Risk of Wells Going Dry?

The good news is that an effective Groundwater Sustainability Plan would mean that most people will be able to count on their wells even in dry years. Sustainability in our subbasin can be achieved by managing groundwater within the subbasin's sustainable yield, as defined by sustainable groundwater conditions and the absence of undesirable results. The GSP outlines projects intended to reverse the decline in groundwater levels.

# TAKING ACTION TO PROTECT OUR GROUNDWATER RESOURCES

## Strategies for Groundwater Sustainability

Although the Cosumnes Subbasin has both urban (the City of Galt, City of Lone) and rural residential areas (Wilton and Herald), much of the 210,000 acres is devoted to agriculture. **Because we want to protect both the character and the economy of our area**, we are being guided by three strategies:

1. Protect/enhance the amount of water available for all uses, including a healthy environment.
2. Minimize the amount of acreage that is voluntarily taken out of agricultural production.
3. Find cost-effective solutions that meet legal requirements and keep fees low.

The Cosumnes GSP will be adopted by GSA Boards and submitted to the State DWR by January 31, 2022, providing a roadmap for how groundwater will be managed for the next two decades. The Plan is expected to include:

- A path toward achieving groundwater sustainability by 2042.
- Projects providing surface water for recharging groundwater.
- Conservation projects to reduce groundwater use (voluntary fallowing).
- A description of how Plan implementation, projects, and management actions will be funded.
- A governance structure for implementing the Plan.

# Projects and Management Actions to Help us Achieve Sustainability

**With a target of reversing an estimated 10,000 acre-feet per year overdraft**, the Cosumnes Subbasin GSP includes projects that put more winter flood water into the aquifer (recharging) and options that reduce usage. Local GSAs have proposed these long-term projects and management actions to stop the overuse of groundwater, protecting future groundwater availability in the Cosumnes:

**WATER DEMAND REDUCTION:** Reducing the amount of groundwater that is pumped.

**Voluntary Actions Include:**

- fallowing agricultural land for compensation
- cutting back on water use

**WATER SUPPLY AUGMENTATION:**

Participating in the Sacramento Area Flood Control Agency (SAFCA) managed aquifer recharge program and recharging the aquifer through smaller, local projects.

**Proposed Projects Include:**

- Using recycled water from the City of Galt on agricultural properties
- Benefitting from recharge projects on the north side of the Cosumnes River
- Obtaining winter floodwater in partnership with SAFCA. Use that water to recharge the aquifer by spreading it on fields of cooperating farmers and infiltrating it through dry wells locating along the FSC.

**SALE OF WATER:** Selling water to an urban water purveyor, when excess fallowed water is available, to generate revenue to fund projects within the subbasin.

**APPLYING FOR GRANTS:** It is the intent of the Cosumnes Subbasin GSAs to apply for State and other grant funds to offset the cost of projects.

**MONITORING GROUNDWATER**

**CONDITIONS:** A series of wells have been selected throughout the subbasin to regularly assess groundwater levels for demonstrating the subbasin is being managed sustainably. In some cases, new, dedicated monitoring wells have been constructed, using grant funds obtained from the state, to ensure that all areas of the subbasin are represented.

The GSAs are supportive of cost effective, multi-benefit projects (e.g., flood control, environmental, groundwater recharge, etc.) that have a high probability for success and that will maintain the viability of current beneficial uses of groundwater within the Subbasin.





## What About Well Metering?

Under SGMA, groundwater agencies cannot require domestic well owners to put a meter on their well. However, GSAs do have the authority to require farmers to add a meter to their well. Currently, groundwater agencies do not intend to mandate well meters and are actively taking steps to avoid mandatory well metering in the basin.

One of these steps is to submit and have approved our GSP. This will avoid having the State of California step in to manage groundwater in our subbasin. If the State steps in, they have the right to place meters on any well they deem appropriate.

## Currently Proposed Schedule: 2022 Through 2042

We will submit our Plan to the State no later than January 31, 2022. While waiting for their review and approval, we will begin to implement some of these projects and management actions as early as February 2022. **That will give us twenty years – until 2042 – to reverse our trend of groundwater decline, support resilience, and protect our water supplies for future generations.**



## What's This Going to Cost?

Of course, there are costs to implement and monitor whatever Plan is adopted. Based on the work done so far, the GSAs project it will cost about \$450,000 in the first year to get the program up and running across the entire subbasin. Those costs cover a range of program activities, from monitoring and managing groundwater data required by the State, to addressing data gaps, leading public outreach efforts, handling general administrative tasks, preparing and filing required reports, and handling other obligations such as legal reviews and audits.

As the program moves forward, there will be additional costs tied to putting in place the kinds of projects and management actions that will help ensure the subbasin is able to rely on its groundwater for years to come. These actions are still being refined but are likely to include paying for things like groundwater banking, aquifer recharge, and voluntary fallowing. The exact costs of these actions are under continued analysis, but the GSAs currently estimate annual project costs up to \$1.2 million per year.

## How Will the Subbasin Pay for This Program?

The seven local GSAs will be working aggressively to bring in grants and partners to cover a portion of the costs. The remaining portion of the costs will need to be generated locally. To get the implementation of the GSP started, in the Summer of 2021, the local GSAs implemented a user fee on those extracting more than a *de minimus* amount (more than 2 AFY) of groundwater (predominately agricultural uses).

We will also establish a water bank supported by the sale of groundwater saved from voluntary fallowing. The revenue generated by the sale of this water will be used to fund our participation in a regional program that will bring excess winter flood water from the American River into the South American and Cosumnes basins for

aquifer recharge. The amount of fallowed water committed to this banking activity will be subject to a “leave behind” policy that ensures we remain on track to increase groundwater storage in the basin. In the end, the sale of fallowed water will help to keep fees assessed to local residents lower than might otherwise be possible.

Moving forward, a funding plan that spreads costs for projects, management actions, and overall GSP implementation among users without creating a heavy burden for any one party is under development and will be shared in a public workshop and local agency hearings in early 2022. The GSAs are in the process of developing a **Citizens Advisory Committee** for the public to provide advice on how to develop a fee program that is reasonable and fair.

### Year 1 Fee Program

To cover costs in the first year, five of the seven agencies recently implemented a fee of \$10 for each irrigated acre in the subbasin (excluding City of Galt and Amador County) as a proxy for groundwater use. Because most wells are not metered (and there are currently no plans to meter wells) irrigated acreage is a surrogate for water being pumped. Approximately \$450,000 is expected to be generated through this irrigated acreage fee in Year 1.

The two other GSAs – City of Galt and Amador County GSA – have agreed to make set contributions in Year 1 (\$15,000 for City of Galt GSA and \$5,000 for Amador County GSA based on actual water pumped since their wells are metered). These contributions are in lieu of an

irrigated acreage fee but are intended to be comparable and ensure equitable contributions from all groundwater users across the subbasin.

These fees will primarily be used towards:

- Conducting feasibility studies of various methods of aquifer recharge
- Setting up a voluntary fallowing and recharge system
- Establishing a water bank that will enable us to sell water when sufficient reserves have been built up
- Development of an annual report
- Monitoring groundwater levels and water quality

Fees will not be used to cover operating costs of the groundwater agencies that are unrelated to SGMA implementation.

## Year 2 and Beyond

Beyond the first year, the GSAs are considering a combination of both groundwater user fees and a potential per-parcel type of fee to cover both program and project and management action costs. The specifics of a fee program for Year 2 and beyond are still under discussion and will be developed collaboratively by the seven GSAs with a Citizens Advisory Committee advice, and then discussed in a series of public workshops.

## What Happens if we Fail? *State Intervention*

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 of water pumped.

*The local GSAs are working hard to avoid State Intervention and these high costs.*

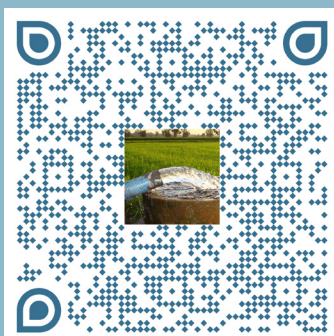


### ...so how do we avoid State Intervention?

The projects and management actions described in the Plan won't be easy to achieve. They may require new investments, an unflinching commitment to collaboration, uncomfortable options we haven't wanted to discuss in the past, and potential sacrifice in the future. They will reflect a **continued commitment to work collaboratively for the common good of our region**, rather than as individual water users and organizations competing for limited resources.

## Want more information on the GSP?

The Groundwater Sustainability Plan is the detailed roadmap for how the Cosumnes Subbasin will reach long-term sustainability. Visit [Cosumnes.WaterForum.org](http://Cosumnes.WaterForum.org) to view the Draft GSP chapters, access informational videos, sign up for email updates, contact your local GSA representatives, and more.



### Local Contacts:

- [Amador County Groundwater Management Authority](#)
- [City of Galt](#)
- [Clay Water District](#)
- [Galt Irrigation District](#)
- [Omochumne-Hartnell Water District](#)
- [Sloughouse Resource Conservation District](#)
- [Sacramento County](#)