

Madera County Groundwater Sustainability Agencies



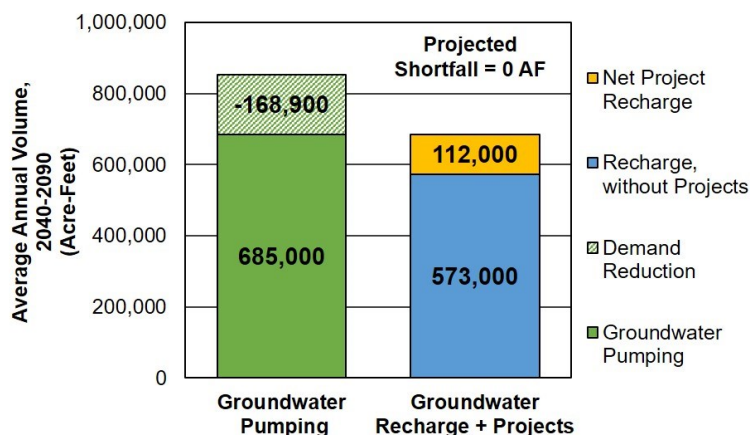
Groundwater Recharge Frequently Asked Questions

“Groundwater recharge” or “recharge” is defined as the augmentation of groundwater by natural or artificial means. In other words, recharge occurs through water that percolates from the land surface downward through the soil to the water table. Examples include stream seepage, rainfall and irrigation water that percolates deeper than plant roots, and additional water applied to the land surface to percolate to the water table.

Why should recharge matter to me?

A: The Sustainable Groundwater Management Act (SGMA) required agencies in groundwater subbasins to develop Groundwater Sustainability Plans (GSPs) that will achieve sustainability by 2040 and, on average, balance groundwater pumping with an equal amount of groundwater recharge. GSPs quantify the amount of pumping and recharge that occurred in the past and the expected amount in the future. GSPs also identify projects and management actions that will help the subbasins to achieve sustainability.

The GSPs for the Chowchilla and Madera Subbasins estimate that additional water supplies (mostly wet year flood releases) are available to support an average increase in recharge of 112,000 acre-feet per year. The GSPs estimate that Madera County GSA recharge implementation projects in the Chowchilla and Madera Subbasins are projected to contribute a combined average annual recharge of 77,200 acre-feet. Without this recharge, to be sustainable by 2040, groundwater pumping would have to be reduced more than the 168,900 per year that is currently estimated. If additional water supplies become available to support more recharge, the required reduction in groundwater pumping could be less than the 168,900 estimated in the GSPs.



Summary Projected Groundwater Budget With Projects during Sustainability Period (2040-2090), for the Combined Chowchilla and Madera Subbasins

What are the County GSAs doing about recharge?

A: The County GSAs are currently evaluating several methods of enhancing recharge by diverting available flood water for recharge projects. The projects support the phased groundwater recharge plan for the Madera County GSA areas, and will help to achieve the groundwater sustainability goal specified in the County GSPs. Recharge projects being evaluated include flood-managed aquifer recharge (Flood-MAR, or on-farm recharge), dedicated recharge or spreading basins, targeted in-lieu recharge opportunities (using flood water for irrigation instead of pumping groundwater), and others.

The planning phase of the County’s groundwater recharge plan will identify suitable locations for the recharge projects included in the GSP, determine the most cost effective method to convey flood water to recharge locations, and refine GSP estimates of costs and benefits of recharge projects. Interactions between the recharge program and other projects and management actions will be evaluated. Projects will be ranked by cost effectiveness and scheduled for detailed design, permitting, environmental compliance and construction according to the ranking. The County is also identifying and pursuing funding opportunities to support recharge project construction.



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Will stakeholders have a chance to give input on the study?

Yes. Stakeholders can provide information on areas suitable for recharge using the form found online. Additionally, stakeholder outreach during the planning phase will include an assessment of landowner interest in participating in Flood-MAR and/or in-lieu recharge projects. This input will be collected through targeted engagement with stakeholders in workshops and/or interviews. Broader outreach will also be conducted to ensure the public is aware of progress and to provide opportunities to review and provide input.

What are the steps for on-farm (Flood-MAR) recharge?

The first step in developing on-farm (Flood-MAR) recharge projects is to identify suitable lands that have high recharge potential and that are owned or managed by stakeholders willing to participate. The participants must be willing to allow their agricultural land to be flooded when flood waters are available. The County will work with interested stakeholders to assess interest, secure appropriate easements for on-farm recharge, comply with the California Environmental Quality Act, and obtain required permits under local, state and federal laws and regulations.

What are the steps for building a dedicated recharge basin?

In contrast to on-farm recharge projects, dedicated recharge basins require acquisition of land, or easements, to develop permanent recharge facilities. The County will identify potential sites in areas with suitable soils and other subsurface conditions, assess feasibility, identify water supply and project partners, and pursue funding opportunities. Feasible recharge basin sites are in close proximity to existing conveyance facilities, and are cost-effective to develop. The County will assist in complying with the California Environmental Quality Act and obtaining required permits under local, state and federal laws and regulations.

Does recharge affect groundwater quality?

Recharge, whether naturally occurring or enhanced through projects and management actions, can affect groundwater quality. For this reason, flood water and other water sources used for enhanced recharge must be of suitability quality and within standards defined for the project.

Recharge can improve groundwater quality conditions by increasing the total volume of water in the groundwater system, thus diluting impaired or contaminated aquifers. However, when surface recharge mechanisms are used, recharge water percolating through soils and unsaturated sediments has some potential to mobilize pollutants from past and current land use activities, transporting these chemicals into the groundwater reservoir and causing contamination. Still, over the long term enhanced recharge in Madera County is anticipated to improve regional groundwater quality through dilution, outweighing any possible short-term and localized adverse groundwater quality impacts. The need for monitoring in the areas of recharge projects will be evaluated, and such need will depend on site circumstances (especially proximity to domestic or public drinking water wells).

Are there environmental benefits of recharge?

The shallow water areas of ponded fields or recharge basins provide temporary habitat for shorebirds and waterfowl. Recharge areas near groundwater dependent ecosystems (GDEs) would also benefit the vegetation and the wildlife species that depend on them.

