Westlands Water District

Groundwater Recharge Efforts
in Westlands Water District
Planning Today for Tomorrow

What is Groundwater Recharge?
Groundwater recharge is a hydrologic process that entails moving water down from the ground surface or the bottom of a waterway into an underlying aquifer.The recharge process occurs both naturally through precipitation and runoff and intentionally through several different methods including recharge basins, sublaterals, Aquifer Storage and Recovery (ASR), and Flood-Managed Aquifer Recharge (Floor-MAR).

Recharge is increasingly more important in managing our water supply mainly due to climate-driven weather extremes that are intensifying and lengthening drought periods. It's also a critical tool established in the Westside Subbasin Groundwater Sustainability Plan to achieve sustainability and optimize conjunctive use.

Westlands Water District's Commitment to Recharge
Sustainability is at the core of Westlands Water District's (District) comprehensive water delivery system and groundwater recharge is a key tool to help store and preserve water. It's also one strategy the District has deployed to meet Sustainable Groundwater Management Act (SGMA) obligations.

Recharge projects are providing a lifeline to hundreds of family-owned farms and residents in the San Joaquin Valley who, after years of drought and minimal water allocations, have identified innovative ways to save water, not just for today but for tomorrow, so they can thrive and sustain our national food supply.

> We recognize the next drought is not if but when and it is critical we use extra water to prepare for future years when water may be sparse. The District's groundwater recharge efforts will help ensure we meet our Groundwater Sustainability Plan objectives while allowing our farmers the opportunity to save water and plan next year's crop.
>
> **Allison Febbo, General Manager, Westlands Water District**

By the Numbers:

District Recharge Effort

Over 275,000 af
The aim for total recharge by end of February 2024

~261,000 af
Recharge efforts through Dec. 2023

More recharge projects will be online soon, as the District has processed **576** applications for:

- **121** percolation basins
- **79** Aquifer Storage and Recovery (ASR) projects
- **362** Flood-Managed Aquifer Recharge (MAR) Projects
- **14** sublateral projects

Types of Groundwater Recharge Projects in the District

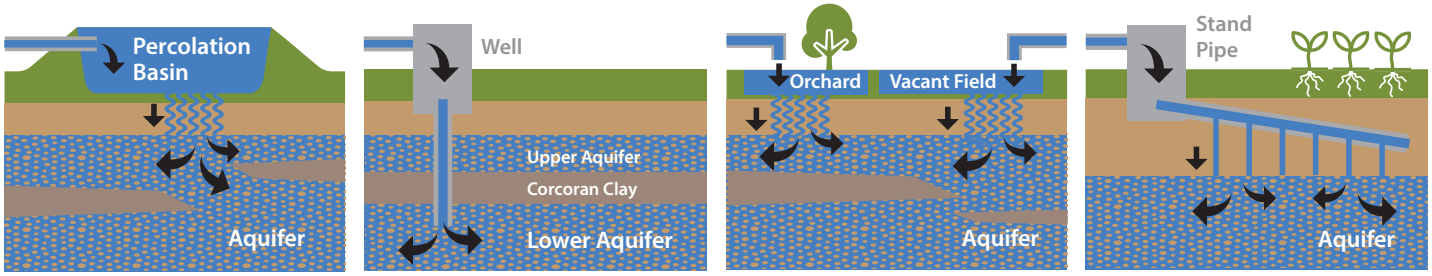
The District is currently offering groundwater recharge programs and incentives to help landowners refill and replenish aquifers. Project types include percolation basins, Aquifer Storage and Recovery (ASR), Flood-Managed Aquifer Recharge (Flood-MAR), and sublateral recharge.

1 Percolation Basin

2 Aquifer Storage and Recovery (ASR)

3 Flood-Managed Aquifer Recharge (Flood-MAR)

4 Sublateral Recharge



CURRENT & FUTURE PROJECTS

1 **Percolation Basin:** Percolation basins are open bermed areas used to recharge surplus surface water. Percolations basins help restore the aquifers as they are designed to infiltrate surface water through permeable soils into the basin. **121**

2 **Aquifer Storage and Recovery (ASR):** ASR is a technique used to bypass clay lenses and inject filtered water directly into the upper and lower aquifers. Due to the geology and the presence of a Corcoran Clay layer underlying much of the District, recharge through percolation basins is not always feasible. In these instances, ASR can be used to inject water below the Corcoran Clay lens into the lower aquifer. **79**

3 **Flood-Managed Aquifer Recharge (Flood-MAR):** Flood-MAR involves flooding over the crops root zone needs. Flood-MAR helps recharges groundwater and gradually restores the upper aquifer and, if the location is suitable, the lower aquifer as well. **362**

4 **Sublateral Recharge:** Sublateral recharge is another technique used to recharge water below the root zone and avoid evaporative losses. Water is pumped into a standpipe and injected below the crops root zone through perforated pipes which then seeps into upper and lower aquifers. **14**

Groundwater recharge projects are turned on and off at the discretion of program participants based on various factors, including crop management and rotation, cultivation, water supply and other agricultural conditions.

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