

# Creating Incentives to Boost Groundwater Recharge

An innovative program in the Pajaro Valley offers landowners incentives to collect stormwater run-off to recharge groundwater. The program could be the forerunner of potential ways to successfully replenish groundwater levels across California.

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Rain from storms puddles in farm grazing land in Fresno, Calif. A pilot program aims to incentivize farmers and ranchers to infiltrate stormwater into aquifers to recharge groundwater. The program is launching in Santa Cruz County but could be a model for other areas of the state. Scott Smith, AP

**THE PAJARO VALLEY**, in southern Santa Cruz County close to Monterey Bay, is ground zero for high-value farm crops such as arugula, strawberries and cane berries. The area depends almost entirely on

groundwater and is not connected to any intrastate transfers, so it has to rely only on local water resources.

The valley's farms, residents and commercial businesses draw about 56,000 acre-feet (69 million cubic meters) of water each year, and 98 percent of it comes from the groundwater basin, with the balance from surface water and recycled water. This means that during dry years, the basin is overdrawn and vulnerable to seawater intrusion. To try and manage the problem, the Pajaro Valley (P.V.) Water Management Agency was created in 1984 and focuses on three techniques – conservation, recycling and managed recharge – with the aim of reducing the groundwater deficit by about 12,000 acre-feet (15 million cubic meters) each year, so the basin comes back into balance.

To help improve groundwater recharge, a hydrogeologist with the University of California, Santa Cruz (UCSC) has proposed an innovative plan that gives landowners rebates for collecting stormwater run-off to recharge groundwater.

## **Get Paid to Collect and Infiltrate**



On Jan. 5, 2016, a white egret finds refuge on the vegetation growing inside the Los Angeles River after torrential rains. A new program in Santa Cruz County plans to offer incentives to landowners to help infiltrate stormwater to recharge depleted groundwater aquifers. (Damian Dovarganes, AP)

Andrew Fisher proposed a five-year pilot program, Recharge Net Metering, which will create financial incentives in the range of \$9,500 to \$11,750 a year for landowners to put into the ground at least 100 acre-

feet (120,000 cubic meters) of the stormwater that currently flows from hills, roads and fields during large rainstorms, helping to replenish aquifers.

The pilot program is slated to begin this October, and will be a partnership between P.V. Water, UCSC staff and the Resource Conservation District of Santa Cruz County (RCD).

“We’re going to identify 8 to 10 project sites where we can put in at least 100 acre-feet of water or more each year,” Fisher said. “We hope to do this in one or two sites a year, then keep adding more sites each year. Each site is highly variable, so it will have a different method that works.”

Farms use about 85 percent of the water in the valley, and the larger ranches will be the ones that can best capture the considerable amounts of run-off generated during the rainy season when there are intense storms, and percolate it into the ground instead of allowing it to run off into the ocean.

## **The Rebate Math**

To calculate the rebate, the partners arrived at a formula wherein landowners get 50 percent of the unit water cost charged by P.V. Water to customers as an augmentation fee for pumping water from wells. The rebate will be deducted from water fees for the following year. They chose 50 percent of the cost for rebate calculation because not all water that infiltrates becomes recharge, and not all recharge is recoverable.

“We will measure the inflows for each project and then subtract the infiltration that would have occurred on that land without the project. The rebate provides an incentive for landowners to keep projects working so that they can receive rebates year after year,” Fisher said.

The pilot program can be extended, depending on the results of the first five years. Under the terms of the agreement, UCSC and RCD will act as third-party certification for the recharge net metering, helping to identify and screen potential project sites, raise funds for installation, participate in system designs, obtain permits, develop monitoring plans, collect data and samples and prepare annual reports on the operations.

For water agencies considering similar rebate options to improve aquifer recharge, but concerned about the costs, the Pajaro Valley model is formulated in such a way as to minimize effort and cost for the agency. Funding for the cost of the projects will be raised externally through grants and other means, and the onus for implementing it is on the third party.

Fisher said the first one may be installed before the end of this year, and they have three more in design phases, so if permitting comes through then one or more could go online next year.

## **Potential to Be Replicated Elsewhere**

But given that there is “no one size fits all,” even within Pajaro Valley, can this be modeled elsewhere?

“I think it has enormous potential,” Fisher said. “Yes, it’s not simple and not everyone has the right conditions for this, but this is set up differently than other groundwater banking in other regions.”

One key difference is that it does not guarantee that anyone will get water back, unlike other programs. “Our goal is to recharge the groundwater levels, so that simplifies the program,” Fisher pointed out.

Secondly, since P.V. Water is a special act district, it already meters wells and charges customers a fee to pump groundwater, unlike other areas. Not only is groundwater metered, which is unusual, the ratepayers pay depending on how much they pump.

Since the new sustainability agencies being set up all over the state under the Sustainable Groundwater Management Act have flexibility in how they’re going to be set up, operated and raise revenue, Fisher said that as they’re created they will come up with mechanisms to create a revenue stream.

“What we’re trying to do is create a few projects, demonstrate what the costs are, and what data it can generate that will show how this can work while improving water supply for the entire basin,” Fisher said.