

MID groundwater recharge basins utilizing storm water

For Immediate Release: January 20, 2017

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As storms continue to pound California, hundreds of acre feet of water are being diverted into local groundwater replenishment basins operated by Merced Irrigation District.

One basin is located in the Cressey-Winton area. A second basin is located in the El Nido area.

Storm-water captured in MID's canals and waterways has been diverted into the District's groundwater recharge basins since the beginning of the year.

"The drought of the past five years had severely strained groundwater in eastern Merced County. "This groundwater recharge is a benefit to both MID growers and our community as a whole," said MID General Manager John Sweigard.

MID operates as a "conjunctive-use" irrigation district: it replenishes groundwater in most years with surface water from Lake McClure as it delivers water to MID growers in eastern Merced County. The District pumps a small portion of that replenished groundwater, typically about 5,000 acre feet per season.

In most years, MID helps replenish up to 140,000 acre feet of groundwater through its operations and deliveries of Lake McClure surface water in eastern Merced County. As MID's Lake McClure water flows through 700 miles of open channels and waterways, the water percolates back into the groundwater. This is the equivalent of diverting about 14 percent of a full Lake McClure into local groundwater, or diverting all the water in Lake Yosemite into the groundwater about 20 times each year.

In the Cressey-Winton area, MID constructed a highly permeable groundwater recharge basin over a 20-acre plot of land. The basin required the excavation of 100,000 cubic yards of soil, digging down 10 feet to bypass a hardpan soil layer. After 10 years of planning, construction and excavation, the first flows of water began flowing into the basin in 2011, the last wet year. Currently MID is replenishing about 25 acre feet of groundwater per day in that basin, depending on the weather and water availability that can be captured from localized storm runoff.

The recharge basin in the El Nido area spans approximately 18 acres. The recharge basin is helping replenish approximately 18 acre feet of groundwater per day with flows being diverted from storm runoff in Mariposa Creek.

"Obviously all of this water flowing through local streams and waterways is benefitting our community's groundwater," said MID's John Sweigard. "In instances where we can divert some of this storm water into our extremely permeable groundwater recharge basins, we want to ensure we are doing everything possible to benefit the groundwater."

Groundwater in Eastern Merced County is used by cities, including Merced, as well as rural residents with wells and local agriculture.

Lake McClure is continuing to fill and is slightly above 67 percent of its capacity; the reservoir had reached a historic low of just 6 percent at this time two years ago.