PROJECTS AND MANAGEMENT ACTIONS: MANAGED GROUNDWATER RECHARGE

WHAT IS IT?

Managed groundwater recharge moves surface water to areas where the water can seep down to recharge the aquifer. This supplements natural recharge and increases water supplies.

In Sierra Valley this approach directs excess (high water) winter stream flows through existing drainages to areas where the geology provides a path for recharge water to reach the aquifer.

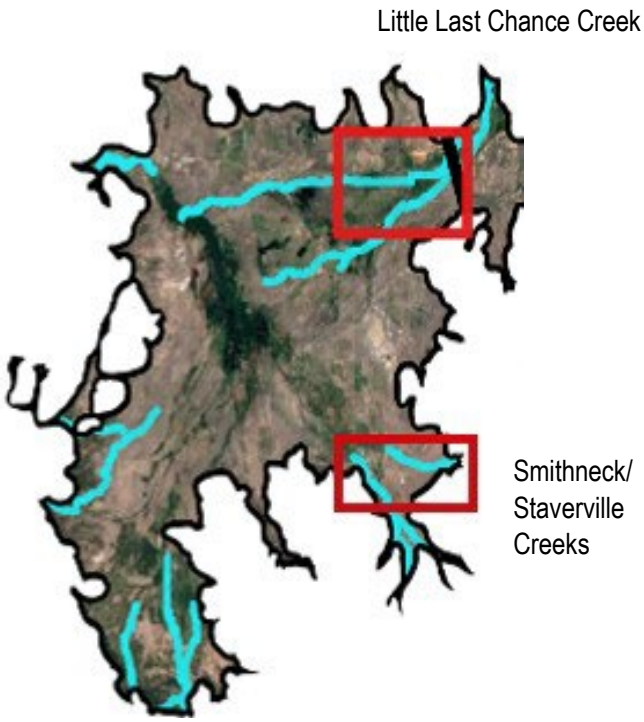
Recharge areas are located in the upslope grades found at the edges of Sierra Valley (see red boxes below). In the valley floor, layers of clay soils prevent recharge to the deep aquifer.

WHY DO IT?

High stream flows can occur due to heavy rains, snow-on-rain events or rapid snow melt. These high-water conditions can cause flooding. Using excess water for recharge can help reduce flood risks while improving local groundwater supplies.

Managed aquifer recharge will slow peak flood flows in dedicated areas where waters can seep down into the aquifer – keeping excess flows available for future use and enhancing long-term water supply.

POTENTIAL RECHARGE AREAS IN SIERRA VALLEY



PROTECTING WATER RIGHTS

Authorization to use excess (high water) winter flows comes from temporary permits issued by the State Water Resources Control Board. These temporary permits are <u>not</u> water rights and <u>only</u> allow use of water that is not claimed by a water right holder.

All groundwater recharge pilot projects in Sierra Valley are coordinated with the Watermaster. This ensures that use of excess flows (capped at 20% of streamflow under high flow conditions and only during the winter season) does not impair any existing water rights.

See other side for description and photos of recharge pilot projects.

Groundwater Recharge Projects in Sierra Valley

Identifying and evaluating potential recharge sites

- Assessment of local geology and hydrology
- Data collection/studies (geodetic, seismic, satellite)
- Drilling test bore holes

Four aquifer recharge projects in Sierra Valley

- Can be located on-stream or off-stream (diverted)
- Concrete retaining blocks installed to slow water.
- Removable check boards help to control flow and the amount of water detained.

Managing and measuring water for recharge

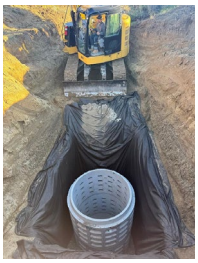
One recharge project involves using a head gate to divert excess flow from the natural channel though a buried pipe, where it is released into a flume where water flow is measured and transmitted.

Head gate

Three recharge projects do not involve diversion. Instead, recharge occurs in the natural channel where stream gages measure water flow.

Enhancing infiltration

A 20’ dry well was installed at the bottom of one of the detention areas. Installation involved drilling through a thin clay layer, allowing excess flows to recharge to the deeper aquifer.



Dry

With Flow

Results will be provided in annual recharge reports and displayed real-time in an online dashboard.

See other side for overview of groundwater recharge.