PROJECTS AND MANAGEMENT ACTIONS: AG IRRIGATION EFFICIENCY

WHAT IS IT?

Improving agricultural irrigation efficiency helps to reduce demand for groundwater – by optimizing effective use of water.

Equipment and information technology contribute to increasing water use efficiency in agricultural settings.

Irrigation efficiency improvements help reduce the amount of water "lost" (or not available for crops) due to:

- Leaky pipes
- Blocked sprinkler heads
- Strong winds
- Overwatering

WHY DO IT?

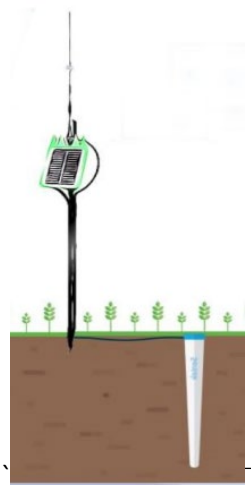
Too much water… not enough water… irrigating too soon or waiting too long… all of these can stress crops!

Increasing ag irrigation efficiency helps to conserve water supplies – while also helping ranchers and farmers apply the right amount of water, at the right time, to their crops. Efficient irrigation can save water and improve crop production.

In **Sierra Valley**, individual farm assessments were conducted to identify possible opportunities for improving efficiencies on pivot and wheel line irrigation systems.

TIMING – WHEN TO IRRIGATE

Irrigation schedules must take a number of factors into account: soil types, soil moisture levels, crop needs (related to evapotranspiration), weather and farm activities such as planting and harvesting.



Multi-level soil moisture sensors precisely measure and transmit data on soil moisture at different depths – up to 4 feet below ground level.

This provides greater certainty about when and how much to irrigate.

EQUIPMENT – APPLICATION SYSTEMS

Irrigation efficiency improvements work to effectively provide adequate and consistent application of water – in a way that best uses every drop!

Farm assessments help identify where irrigation efficiency can be improved. This may involve:

- Eliminating leaks
- Updating older irrigation equipment provides better efficiency
- Increasing the consistency of water distribution to crops

See other side for descriptions of irrigation efficiency pilot proje

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Ag Irrigation Efficiency Projects in Sierra Valley

Irrigation Efficiency Equipment Installed to Date

By March of 2026, the following efficiency improvements had been installed:

- 37 high-efficiency sprinkler package (see equipment description below)
- 17 wheel line improvements
- 11 soil moisture stations
- 6 pipeline replacements/construction
- 6 ditch pump intake screens and 3 sand separators (to reduce clogging)
- 2 variable frequency drive pump controls
- 3 weather stations

Water Savings

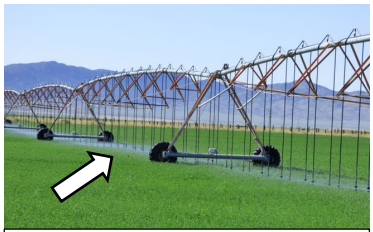
- Calculations based on field data indicate that the groundwater savings across Sierra Valley is approximately 470 acre-feet per year, during a year with average precipitation.
- Approximately 90% of the savings come from high-efficiency sprinkler upgrades.
- High-efficiency sprinklers reduce water use by up to 15 % compared to previous center-pivot irrigation systems.

Equipment – Sprinkler Systems and Sprinkler Heads

Wind drift and evaporation can contribute to significant losses of applied water (in terms of how much water actually reaches the crop).

Lowering the elevation of sprinkler heads reduces water use.

Mid Elevation



Low Elevation

High-efficiency sprinkler heads, designed to minimize water loss, deliver larger and heavier water droplets

Installation of high efficiency sprinklers can generally provide water savings of 15%.

See other side for overview of ag irrigation efficiency.

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