More Crop Per Drop

Delivering Efficiency and Service – Benefits of the South San Joaquin Irrigation District's Pilot Pressure Irrigation Project

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SOUTH SAN JOAQUIN IRRIGATION DISTRICT
SSJID
Established 1909
Manteca · Ripon · Escalon

Project Location

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Project Information

- Pressure system to replace gravity based delivery network
- **Cost:** 13 million USD (Received 1 million dollar grant from Bureau of Reclamation and Natural Resources Conservation Service)
- Funding from farmer irrigation charges and SSJID electricity sales
- **Service Area:** 3,800 acres in Ripon, CA
- **Pumping Capacity:** 23,500 GPM
- **Customer Supply Pressure:** Up to 70 psi
- **Customer Connections:** 76 turnouts spread across service area powered by 55 field telemetry units that utilize solar to power magnetic flow meters, flow control valves, orchard moisture sensors, pressure transmitters, and radio communications

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Project Goals & Benefits

Goal 1: Provide the highest level of service to the customers of SSJID: The farmers of SSJID's Division 9 are able to get water for the first time exactly when they need it at the desired pressure. Valves are automatic and the interface is web based allowing farmers to concentrate on their farming operation.

Goal 2: Improve beneficial use of water: With a pressure system available, farmers can reduce flood irrigation and utilize drip, micro, and solid state sprinklers to irrigate their orchards which improves crop yield, and conserves water by up to 50%.

Goal 3: Comply with volume billing requirements: Customers of this system comply with State regulations via a magnetic flow meter accurate to 0.5% at each customer connection.

Goal 4: Reduce groundwater pumping: Groundwater pumping has become commonplace due to unavailability of gravity water. New surface water supplied pressure systems have a considerable reduction in pumping of salinity stricken groundwater. The trees in Division 9 are already benefiting.

Goal 5: Improve air quality: With less groundwater pumping, air quality though out Division 9 has improved due to the reduced use of diesel powered well pumps.

Goal 6: Reduce irrigation costs to farmer: The customer is charged 30 dollars/acre-ft for irrigation water. Many farmers are realizing a 50+% cost savings vs. running well pumps.

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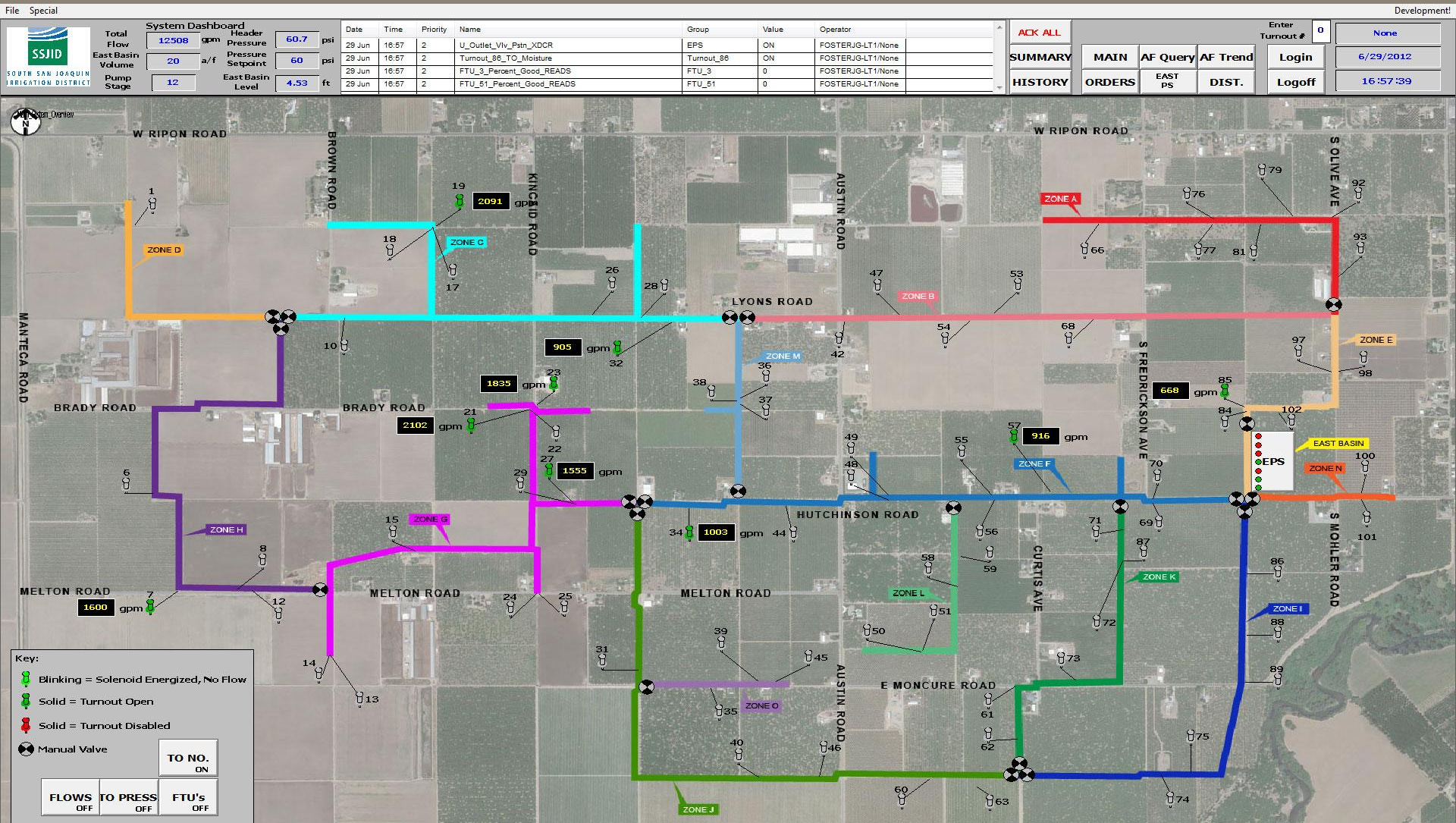
Project Overview



AWWA Class Pipeline Components

Division 9 Irrigation Enhancement Project

Field Telemetry Unit and Turnout Assembly

Division 9 Irrigation Enhancement Project

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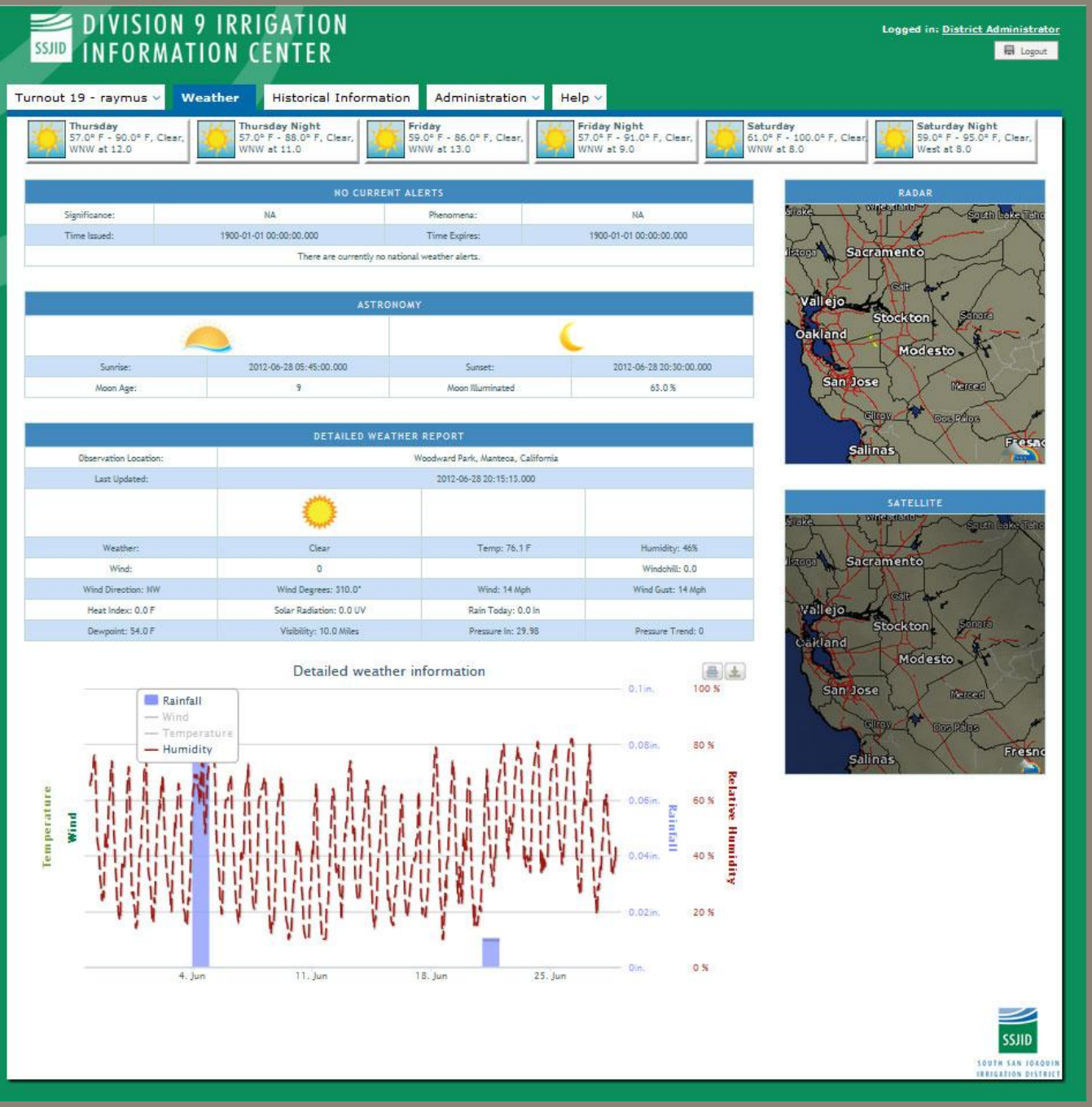

Farmer Weather Information

Division 9 Irrigation Enhancement Project

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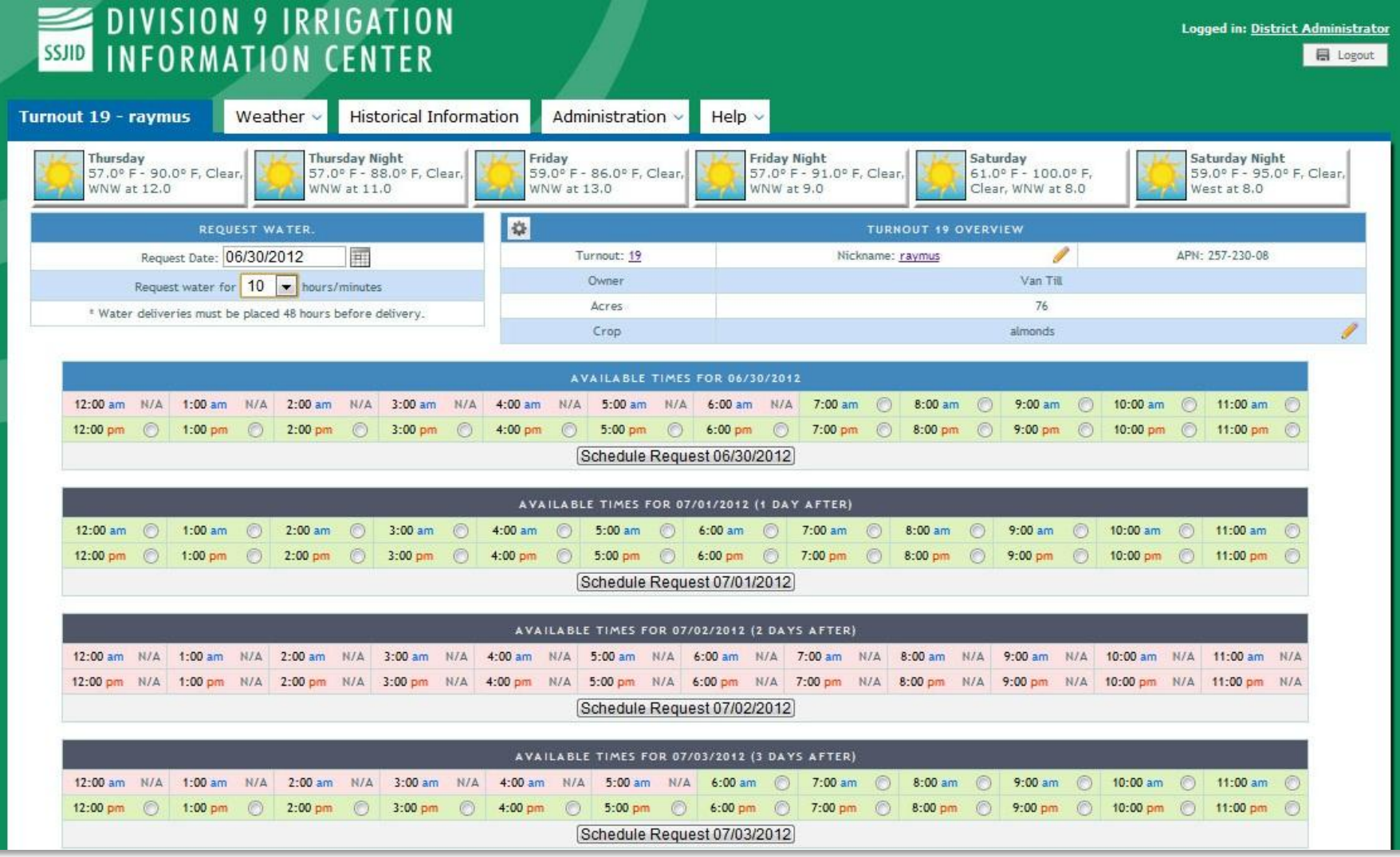

Farmer Irrigation Scheduler Interface

Division 9 Irrigation Enhancement Project

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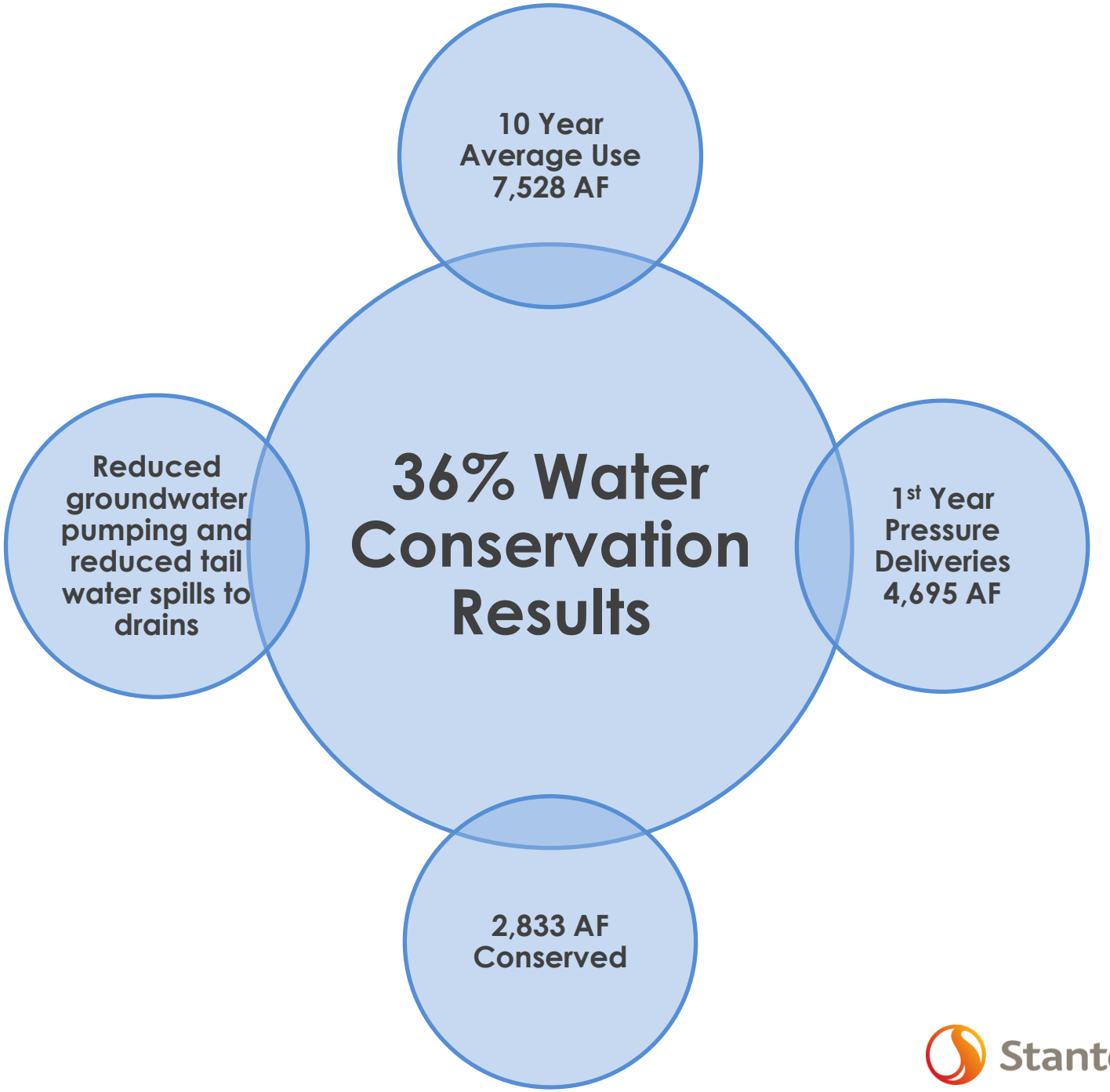
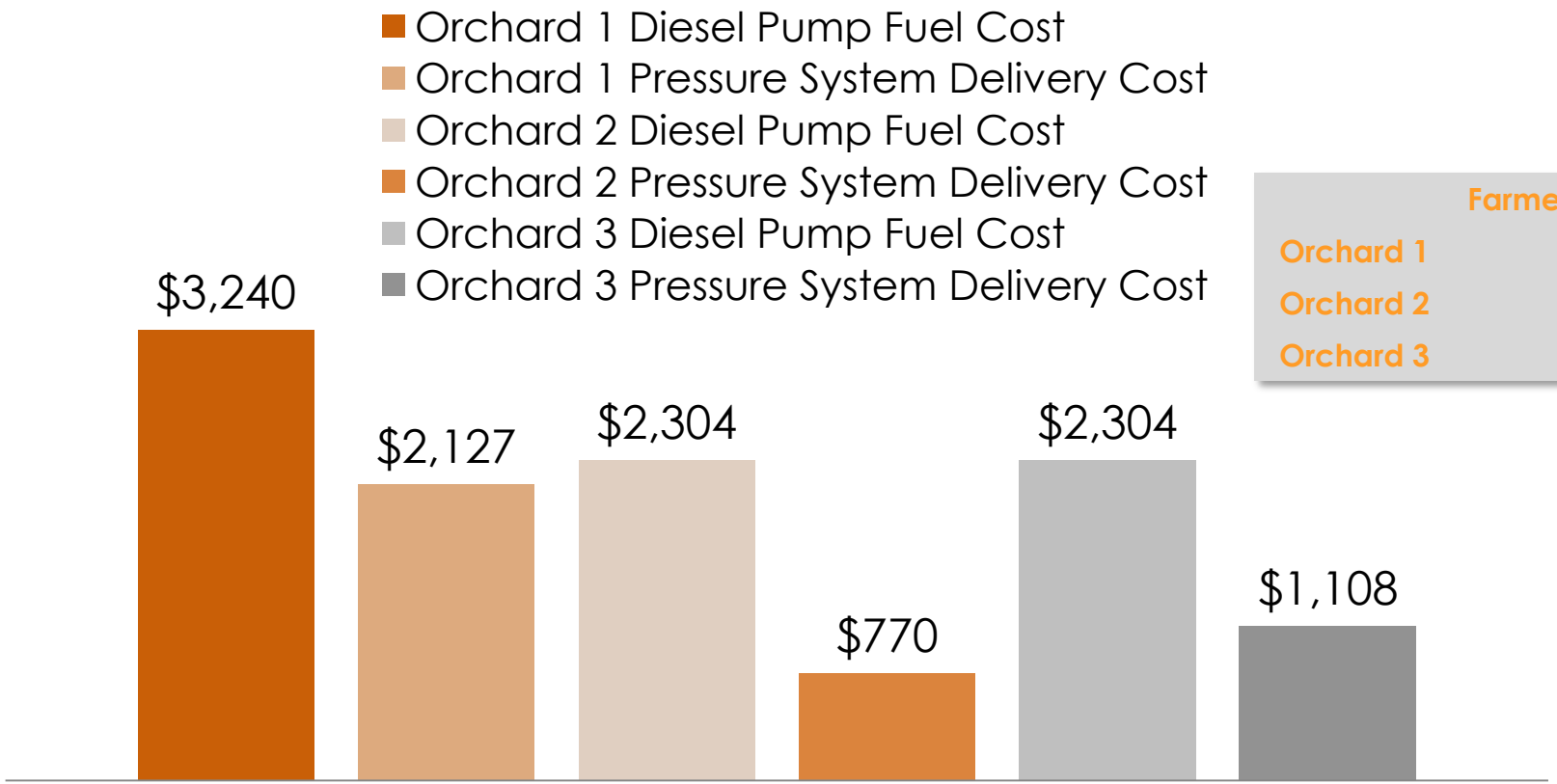

10 Year Average Use 7,528 AF
Reduced groundwater pumping and reduced tail water spills to drains
36% Water Conservation Results
1st Year Pressure Deliveries 4,695 AF
2,833 AF Conserved

Reduction In Farmer Energy Costs

2012 Division 9 Peak Season Case Study



	Farmer Savings (%)
Orchard 1	34%
Orchard 2	67%
Orchard 3	52%

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Improved Yields

- Pressure Customer 2013 Yield: 6,900 lbs/acre = 30% increase in yield

Questions?