

# Monthly Update

## Farm Assessments, DWR Grant Project Recommendations, Irrigation Efficiency Study, Plumas Demonstration Project

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April 21, 2025



# Farm Assessments Field Work Completed

## **12 Ranches Surveyed**

Diamond G - Complete  
Goodwin Family - Complete  
DS Ranch - Complete  
Bar One Ranch – On Going  
KT Hay/Dennis Marsh - Complete  
Williams/Dotta Ranch – On Going

McHenry Ranch - Complete  
Potter Ranch - Complete  
Grissom Ranch - Complete  
Roberti Ranch – On Going  
Goicoechea Ranch - Complete  
Grandi Ranch - Complete

## **Other Ranches**

Loyalton H.S. – Discussed with Grandi, Complete  
Macey Ranch – In Progress, recommendations have been determined  
Lafoon Ranch – To be scheduled, recommendations have been determined  
Green Gulch – not participating

# Farm Assessment Recommendations

## DWR Efficiencies Funding

- Center Pivot Sprinkler Packages (LEPA/LESA/High Efficiency Heads)
- Sand Separators, Groundwater at well heads
- Filtration Systems, mixed water sources
- Surface water/mixed water source intake filters
- Pump VFD Controls – improve control of water application
- Wheel line lateral improvements for leak repairs and sprinkler efficiency improvements
- Pipeline replacements – leak source prevention
- Soi Moisture Monitoring – improvements to irrigation scheduling

# Example Recommendation Table

**Summary of Irrigation Efficiency Opportunities Determined During Farm Assessments**

<b>Ranch</b>	<b>Project Location</b>	<b>Water Efficiency Opportunity</b>	<b>Project Action</b>	<b>Meets Grant Requirements</b>	<b>Owner Interest</b>	<b>Groundwater</b>	<b>Completed</b>
<b>Diamond G Ranch</b>	<i>No further assessment work is necessary in determining additional water efficiency opportunities.</i>						
	North Pivot	Sprinkler Conversion to improve efficiency	MESA --> LESA Conversion	Yes	Yes	Yes	Yes
	South Pivot	Sprinkler Conversion to improve efficiency	MESA --> LEPA Conversion	Yes	Yes	Yes	Yes
	N&S Pivot Well	Improve resulting sprinkler performance by limiting sediment clogging	Well Head Filtration	Yes	Yes	Yes	
	East Pivot	Sprinkler Conversion to improve efficiency	MESA --> LESA Conversion	Yes	Yes	Yes	
	East Pivot Well	Improve resulting sprinkler performance by limiting sediment clogging	Well Head Filtration	Yes	Yes	Yes	
	East Pivot	Soil Moisture Monitoring to Improve Irrigation Scheduling	Soil Moisture Sensor Installation	Yes	Yes	Yes	
	North&South Pivot	Soil Moisture Monitoring to Improve Irrigation Scheduling	Soil Moisture Sensor Installation	Yes	Yes	Yes	

# Farm Assessment Recommendations Summary

## Pivot Sprinkler Package Conversions (LEPA/LESA/Orbitors)

46 – Total Recommended Pivot Conversions in the Valley

20 – Completed to Date

2 – on April Board meeting

26 –Remaining

**\$477,000 Estimated Total** (estimate \$15K/LESA & \$10K/Orbitor package)

# Farm Assessment Recommendations Summary

## Sand Separators at Well Heads

Sediment pulled up from well casings can reduced irrigation efficiency by clogging sprinkler heads and create leaks along pipeline spans. Utilizing Sand Separators at well heads to reduced sediment loads in the irrigation systems are recommended where sediment is a recognized significant issue.

8 – Recommended Sand Separators, to date. (Well Heads where sediment has been communicated as an issue.)

1 – Purchased to date

2 – on April Board meeting

5 – Remaining

**\$170,000 Estimated Total** (estimate \$20K per installation)

# Farm Assessment Recommendations Summary

## **Other Water Filtration Systems**

Water systems utilizing both surface water and groundwater are susceptible to reduced irrigation efficiency created by clogging issues caused by organic debris. Filtration of water sources to limit this fouling is recommended.

5 – Surface Water Intake Screens (Board approved, Mar-2025)

\$50,000 Total Estimate

No other intake screens are recommended

3 – Potential In-line Water Filtration Systems

\$75,000 Total (refined estimate to be determined)

**Up to \$50,000 Estimated Total**

# Farm Assessment Recommendations Summary

## **Pump Controls – Variable Frequency Drives**

Replace pump controls with VFD controls to improve pump output performance for variable irrigation demands, i.e. irrigation of multiple fields at different rates.

VFDs are utilized at locations where utilization would be beneficial to irrigation efficiency. Currently only one location was assessed to benefit from the addition of VFD control

1 – VFD purchased

**\$22,000 Estimated Total**



# Farm Assessment Recommendations Summary

## **Wheel Line Lateral Assessment and Repairs**

Replace the following components to limit water losses; feed hoses, sprinkler heads (impact or higher efficiency if possible), weights, new pipe joints ends as necessary, gaskets, drains, and riser gaskets.

41 – Wheel Line Laterals on 23 Fields

## **Estimated \$5K per wheel lateral on select laterals**

At fields where it has been communicated that hydraulic performance is an issue, it is recommended that a field assessment be conducted to determine possible improvements.

# Farm Assessment Recommendations Summary

## **Soil Moisture Monitoring Stations**

Recommend at least 1 station per ranch and per irrigation type; i.e. pivot, wheel, flood, etc.

33 – Soil Moisture Stations with Remote Data Access

\$5,000 per station

4 – Analog Direct Read Soil Moisture Stations

\$650 per station

**Up to \$168,000 Estimated Total**

# Farm Assessment Recommendations Summary

## **Pipeline Replacement**

Replace above ground aluminum pipe with buried pipe, limiting losses to leaks.

1. 3,450 feet of pipe on Grandi Ranch
2. 2,540 to 5,700 feet of pipe on Bar One Ranch
3. 1,800 feet of pipe on Grissom (Wallace) Ranch

**Estimate to be determined**

# Farm Assessment Recommendations Summary

## Summary of Project Estimates

Pivot Sprinkler Package Conversions	\$477,000
Sand Separators at Well Heads	\$170,000
Other Water Filtration Systems	\$ 50,000
Pump Controls (VFD)	\$ 22,000
Wheel Line Lateral Repairs	\$200,000
Soil Moisture Monitoring Stations	\$168,000
Pipeline Replacement	TBD

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**Project Estimate Total (to date)      \$1,086,000**

# DWR and Plumas Equipment Budget

<b>Project Estimate Total (to date)</b>	<b>\$1,080,000</b>
DWR Component 4(c)	
Implementation/Assessment	\$820,000
DWR Component 4(d)	
Monitoring	\$205,000
Plumas Task 7	
<u>Plumas Demo Project</u>	<u>\$ 120,000</u>
Total Grant	\$1,145,000
• Difference Grant Funding – Project Estimate	\$ 65,000

# Plumas Demo Project

- Installed Soil Moisture Meters March 20/21
  - Diamond G East Pivot
  - Bar One Indian Pivot
- Install Additional Soil Moisture Meters – April 24
  - Roberti Pivot 2 or other pivot
  - DS Ranch Pivot 11
- Install Meter Register on Roberti Pivot 2 or use different pivot
- On-going irrigation season consultation with Diamond G, Roberti, Bar One and DS Ranches regarding soil moisture interpretation