NM WRRI Agricultural Water Resilience Program

Water and Natural Resources Committee 8/17/2025

Presented by: Sam Fernald, NM WRRI Director

NM WRRI Mission

The New Mexico Water Resources Research Institute (NM WRRI) is part of New Mexico State University (NMSU) in Las Cruces, New Mexico reporting to the NMSU Vice President for Research Creativity and Economic Development (VPRCED). The New Mexico Legislature established NM WRRI in 1963, and it was also approved under the 1964 federal Water Resources Research Act. NM WRRI's mission is to develop and disseminate knowledge that will assist the state and nation in solving water problems. NM WRRI supports research and demonstration projects conducted by researchers, faculty, and students from universities across the state to address water issues critical to New Mexico and the region. NM WRRI also provides outreach, education, and technical support to resolve water problems.

NM WRRI Agricultural Water Resilience Program (AgWRP) Purpose

The NM WRRI Agricultural Water Resilience Program (AgWRP) implements Action A2 to incentivize agricultural water conservation, part of the New Mexico 50-Year Water Action Plan. The goal is to maintain the resilience of New Mexico agriculture and provide food security in a future with less available water, as stated in HB2.5 315, the enabling legislation for AgWRP.

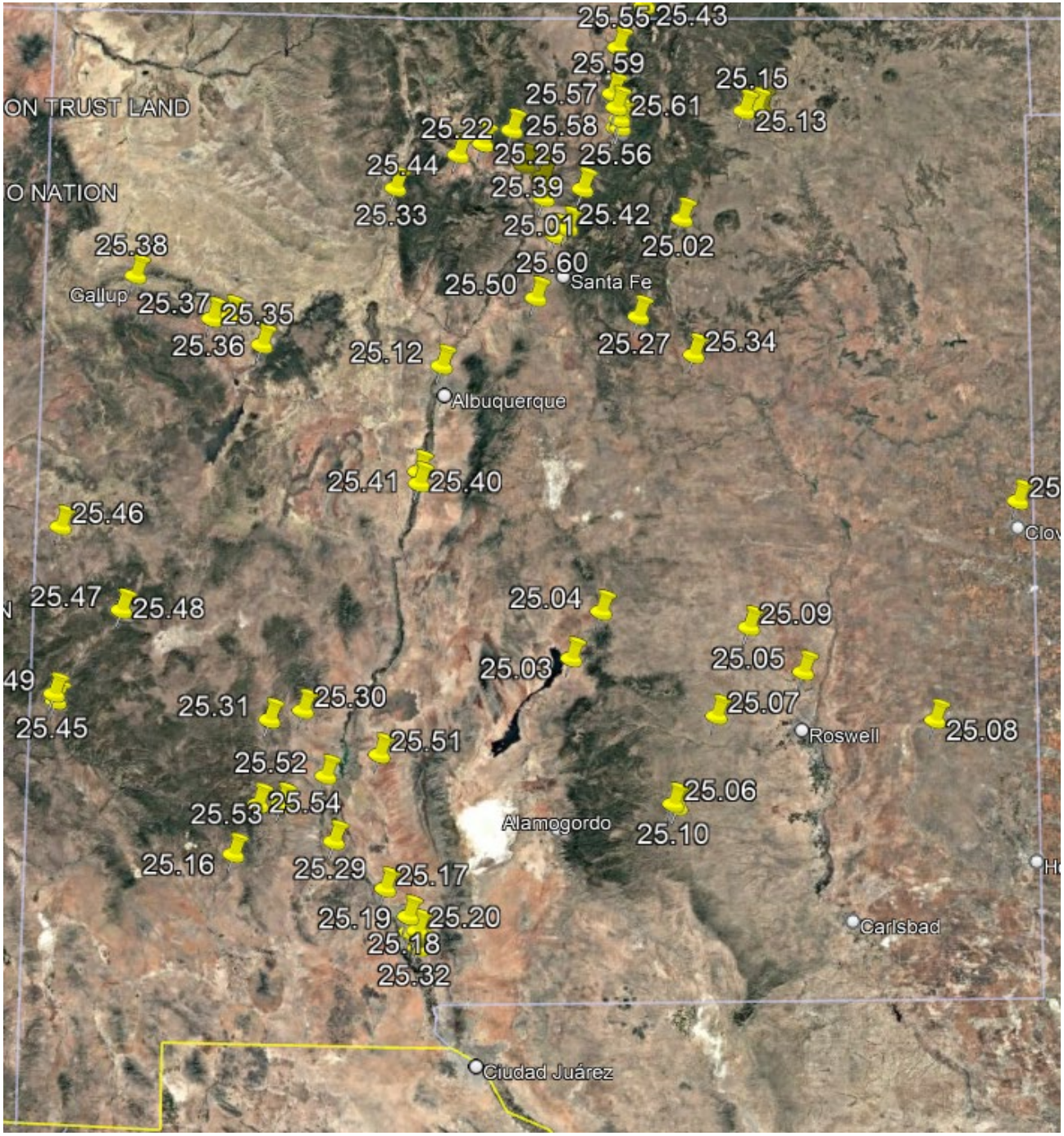
AgWRP Overview

- The New Mexico Legislature appropriated $5 M Fiscal Year 2026 funds for the program. $4.5 M will be made available for individual projects and $0.5 M for project implementation and water impact assessment. The maximum award for each project is $250,000. Project funds must be expended from September 15, 2025, through June 30, 2026. Applications were due July 28, 2025, 5 PM MDT.
- Eligible applicants include Soil and Water Conservation Districts, Irrigation and Conservancy Districts, Acequia and Community Ditch Associations, Watershed Districts, local governments, and tribal governments. Eligible applicants will partner with ranchers and farmers to develop and propose projects that improve the ability to manage, conserve, and efficiently apply limited water resources for agricultural production.

AgWRP Application submissions

- 61 Applications
- Funds requested from NM WRRI: $8,574,210
- Matching funds: $1,731,571
- Program and matching funds total: $10,305,781

Spatial Distribution Of AgWRP Applications



AgWRP Applications by Main Category

1. **Gates, Distribution, and Delivery Systems**: Infrastructure upgrades for water control and efficient delivery (automated gates, gated pipes and headgates, etc.)

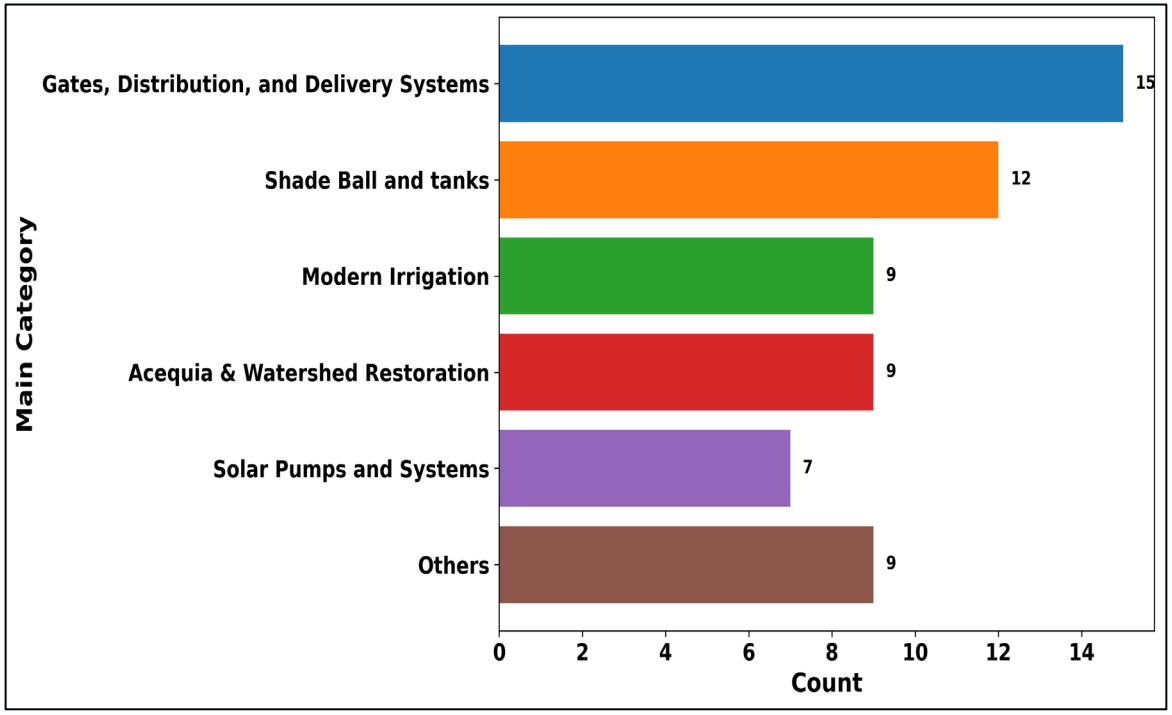
2. **Shade Ball and tanks**: Evaporation reduction (tanks with shade balls, etc.)

3. **Modern Irrigation:** Precision irrigation systems for improved efficiency, drip system, etc.

4. **Acequia & Watershed Restoration:** Restoration of traditional ditches and watershed areas.

5. Solar Pumps and Systems: Technology for efficient water management

6. Others: Miscellaneous projects (drone spraying for invasive species control, filtration system, etc.



Gates and Distribution System

Gates and distribution systems are essential for delivering water precisely and efficiently, reducing waste, improving crop yields, optimizing overall irrigation management, and enhancing the efficiency and resilience of irrigation networks.

https://www.awmawatercontrol.com.au/irrigation-gates/

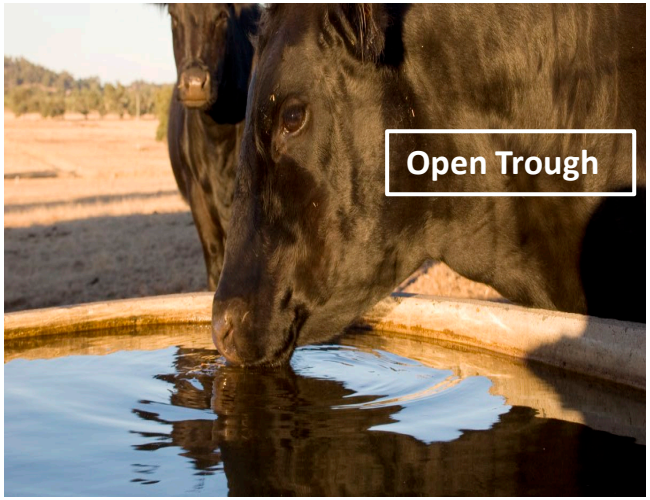
https://watchtechnologies.com/irrigation-gates/

https://www.krausekbox.com/new-page

https://www.usgr.com/poly-pipe-irrigation/poly-pipe-irrigation/

Shade Balls

An example of increasing efficiency and resilience by shifting from **open water troughs** to **shade ball-covered troughs**.



https://www.hubbardfeeds.com/blog/water-quality-and-concerns-beef-cattle

High evaporation, dust, algae growth.

TRANSITION

https://www.farmprogress.com/conservation-and-sustainability/how-to-make-water-saving-reusing-can-extend-resources

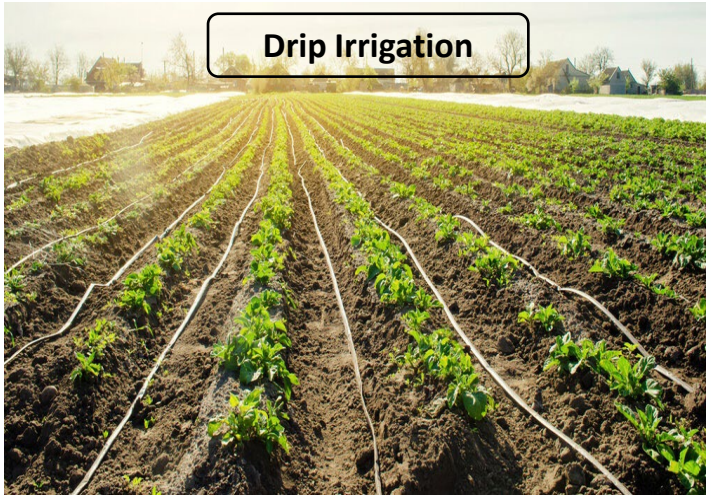
Reduce evaporation, improve water quality, limit algae growth.

Modern Irrigation

An example of increasing efficiency by shifting from **flood irrigation** to **drip irrigation**.

https://www.usgs.gov/special-topics/water-science-school/science/irrigation-methods-furrow-or-flood-irrigation

TRANSITION



https://www.twl-irrigation.com/how-drip-irrigation-saves-water/

Traditional method; less efficient.

Modern method; delivers water directly to plant root zone, saving water.

Acequia & Watershed Restoration

Restoring acequias and watersheds improves water efficiency by reducing losses and enhancing storage capacity.

These projects also build resilience, helping farms and communities adapt to drought and climate challenges.

https://www.intel.com/content/www/us/en/environment/water-restoration-new-mexico.html

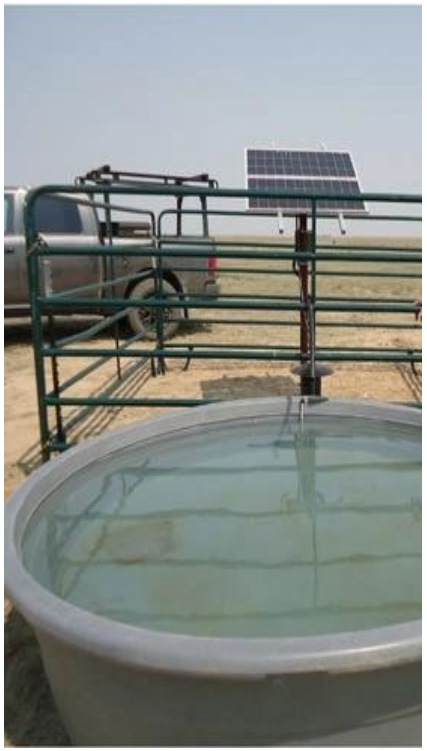
https://www.spa.usace.army.mil/Missions/Civil-Works/Acequia-Program/

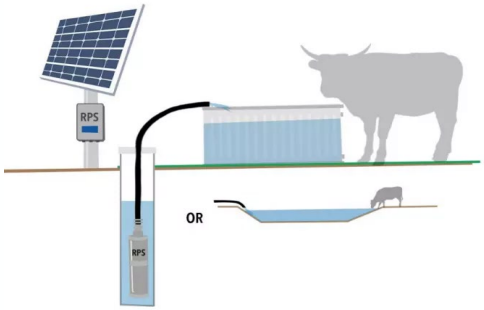
Photo: Marc De Simone/Alamy
https://www.audubon.org/magazine/climate-change-puts-new-mexicos-ancient-acequias-test

https://kalliopeia.org/grantee-partner/new-mexico-acequia-association/

Solar pumps and systems

Livestock Solar Pump

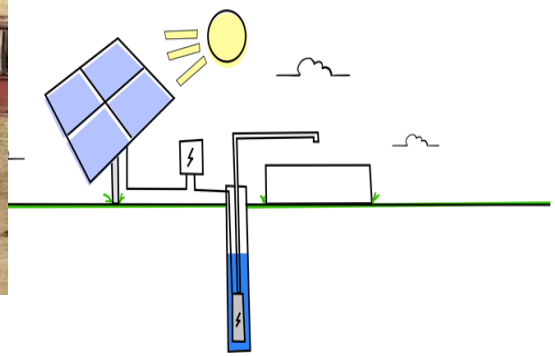




https://www.rpssolarpumps.com/livestock/

Providing a reliable, cost-effective, and environmentally friendly way to access water, especially in remote desert areas.

Reduces carbon emissions, helping to mitigate the effects of climate change and drought in the long term.



Water Impact Assessment

- The NM WRRI—through its researchers—will assess the project in terms of *improving water use efficiency (using less water to achieve the same or better yield)* and *improving resilience (maintaining the water supply and making the farm or ranch system able to adapt and continue functioning during challenges such as drought)* through June 30, 2027.

- Some devices will be installed at the project locations. These devices are measuring instruments that have no negative impact on the project, whether it is a ranch or a farm.

Examples of Instruments
• Flow Meters • Pressure Transducers • Rain Gauge • Weather Station • Data Loggers • Sensors • Battery and Solar Panels

Contact Information

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The following slides are extra slides to have on hand for the presentation, but will not be included in the handout

AgWRP Process Acknowledgements

- Advocates: NM Cattle Growers, NMAA, others …
- NMDA: Secretary Witte, Max Henkels
- Governor's office: Rebecca Roose, Kendal Chavez
- NM Legislature
- NMSU Office of the VPRCED: Patricia Sullivan
- NMSU Government and Community Relations: Clayton Abbey
- NMSU Office of the President: Justin Bannister
- NM Office of the State Engineer: Tanya Trujillo
- NMACD: Debbie Hughes
- NM WRRI: Carolina Mijares, Paige Ramsey, Bob Sabie, Ahmed Mashaly, Mark Sheely, Anik Alvi
- Application review panelists: 12 total from NM universities and agencies

NM WRRI Program Appropriation

(315) NEW MEXICO STATE UNIVERSITY	5,000.0	5,000.0

~~To the department of agriculture~~ for grants ~~to local governments~~ to implement projects that improve farmers' and ranchers' ability to manage, save and efficiently apply limited water resources for agricultural production.

- HB2.5 funding of $5M was designated for the program
- The text “department of agriculture” was stricken, leading to appropriation of the funding to NMSU
- NM WRRI was assigned to implement the program
- Unexpended balances of the appropriation remaining at the end of fiscal year 2026 revert to the appropriate fund

NM WRRI AgWRP Implementation

Request for Applications (RFA)

- Released on June 16, 2025
- Due July 28
- Reviewed August 18-25
- Recipients informed ~August 29

Implementation

- NM WRRI will award funding to eligible applicants to implement on-the-ground projects by ranchers and farmers; maximum of $250K per project

Water impact assessment

- NM WRRI will monitor and assess the impact of projects on water efficiency and resilience

NM WRRI AgWRP Projects, Program Implementation, and Water Impact Assessment

- $4.5M for on-the-ground projects with a maximum of $250K per project
- $0.5M for program implementation and water impact assessment
  - Personnel for program development, technical guidance, grant management, data operations, and delivery of all program outputs
  - Travel to field sites to coordinate with partners, monitor on-the-ground project activities, install and operate impact assessment equipment, and meet with communities
  - Materials and supplies for water impact assessment
- Project budgets must be expended by June 30, 2026
- Water impact assessment will be completed by June 30, 2027

NM WRRI AgWRP Performance Metrics

- Projected amount of water saved per year
- Number of farms and ranches implementing improved water conservation infrastructure or practices
- Number of agricultural acres impacted by grant projects
- Number of watersheds impacted
- Increased crop yield per acre, water use efficiency*, and economic water use efficiency*

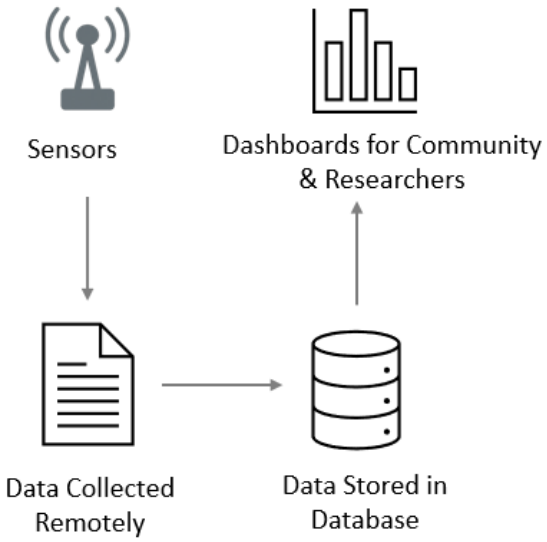
*Note:

- Water Use Efficiency = Crop Yield (kg) / Water Consumed (m^3)
- Economic Water Use Efficiency = Gross Revenue or Net Profit ($) / Water Consumed ($m^3$)

NM WRRI AgWRP Performance Metrics (Cont.)

- Program impacts assessed and results distributed through website applications, scientific reports, and publications

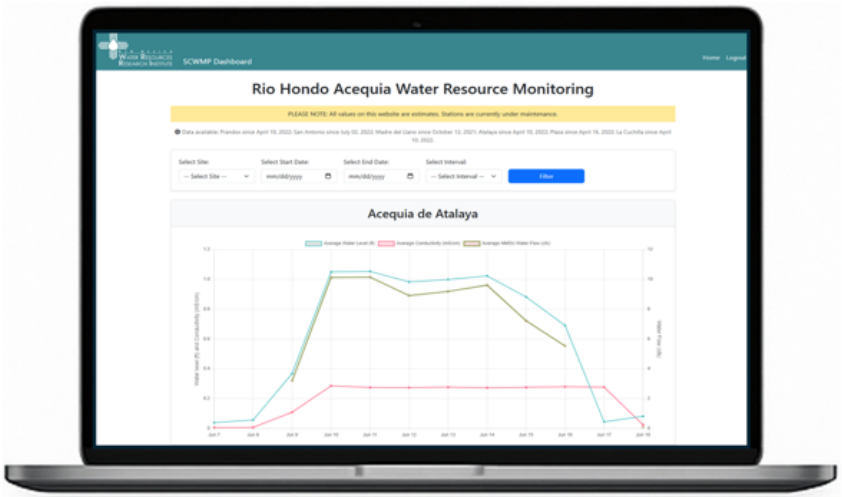
Water Data Management System



Community Dashboard

Used by community members to monitor live water data

Researcher Dashboard



Used by researcher to view, download and analyze data