# Supporting Acequia Infrastructure in New Mexico

Presentation to the Rural Economic Opportunities Task Force
July 19, 2021, Mora, NM

New Mexico Acequia Commission
HC 74 Box 842, Pecos, NM 87552
www.nmacequiacommission.org

Established in xxx, the New Mexico Acequia Commission is part of DFA Local Government Division and advises the Governor and Legislature on policy matters of interest to acequias.

Established in 1989, the New Mexico Acequia Association is a statewide, membership-based organization dedicated to protecting water and strengthening acequia agriculture.

The Interstate Stream Commission is charged with protecting New Mexico's waters. The agency administers acequia infrastructure funding from Capital Outlay and other state funds.

# New Mexico Acequia Commission

The New Mexico Acequia Commission was created in 1987 to advise the governor, the New Mexico Interstate Stream Commission and the U.S. Army Corps of Engineers on what criteria should be used to determine priorities for rehabilitating acequias under a new federal funding program. The Acequia Commission was established by statute by the 1993 Legislature as an eleven member commission serving four-year terms.

The Acequia Commission was also charged with the duties of serving as a facilitator for communication between local acequia organizations and the state and federal governments, and for reviewing plans or legislation that affect acequias and presenting their findings to the governor and the New Mexico Interstate Stream Commission.

**The New Mexico Acequia Association** is a grassroots, membership based organization of acequias and community ditches in New Mexico. Since 1989, we have been working to protect acequias and agricultural water rights through community education, organizing, and advocacy.


*Our vision is for acequias to flow with clean water, to work together to grow food, and to celebrate our cultural heritage.*

## NMAA's
## Acequia Governance Project

- Infrastructure Planning
- Water rights and water management
- Acequia Bylaws
- Financial Compliance
- Easements
- Permitting Issues
- And other governance matters

# Presentation Outline

- Importance of Acequias to New Mexico
- What is Acequia Infrastructure?
- Infrastructure Needs and Challenges
- Funding Programs for Acequia Infrastructure
- Policy Recommendations

# Centuries of History and Agricultural Traditions…

# Acequia Timeline in New Mexico

Pre-1600 – time immemorial

Indigenous peoples/Pueblos used irrigation

1600 - 1800s

Establishment of land grants and acequias

1848

Treaty of Guadalupe Hidago between US and Mexico

1851

Territorial water code codifies ancient acequia practices

1898

Within 50 years, most of communal lands lost.

1907

NM Water Code: established State Engineer

1980s

Acequias organize to defend water rights in adjudication defense and to protest water transfers

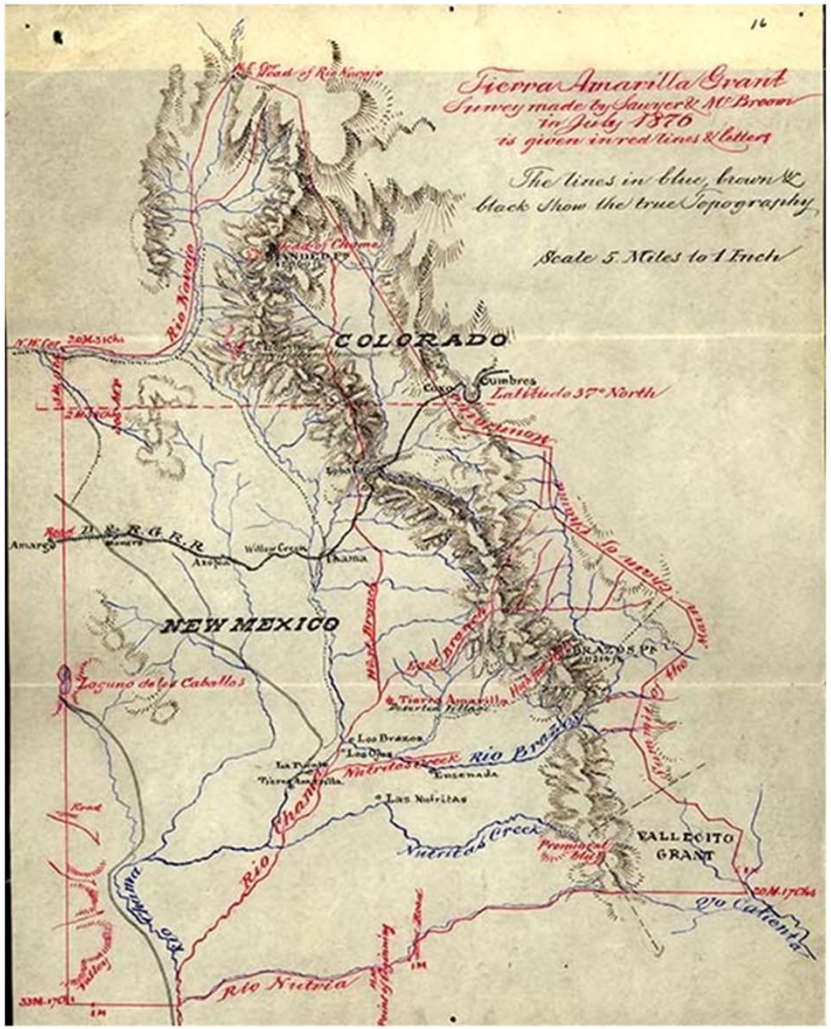
1990s

Statewide acequia and land grant organizations formed

2000s

Historic policy reform strengthening local governance.

2020 – ACEQUIA AND COMMUNITY DITCH INFRASTRUCTURE FUND ESTABLISHED!!



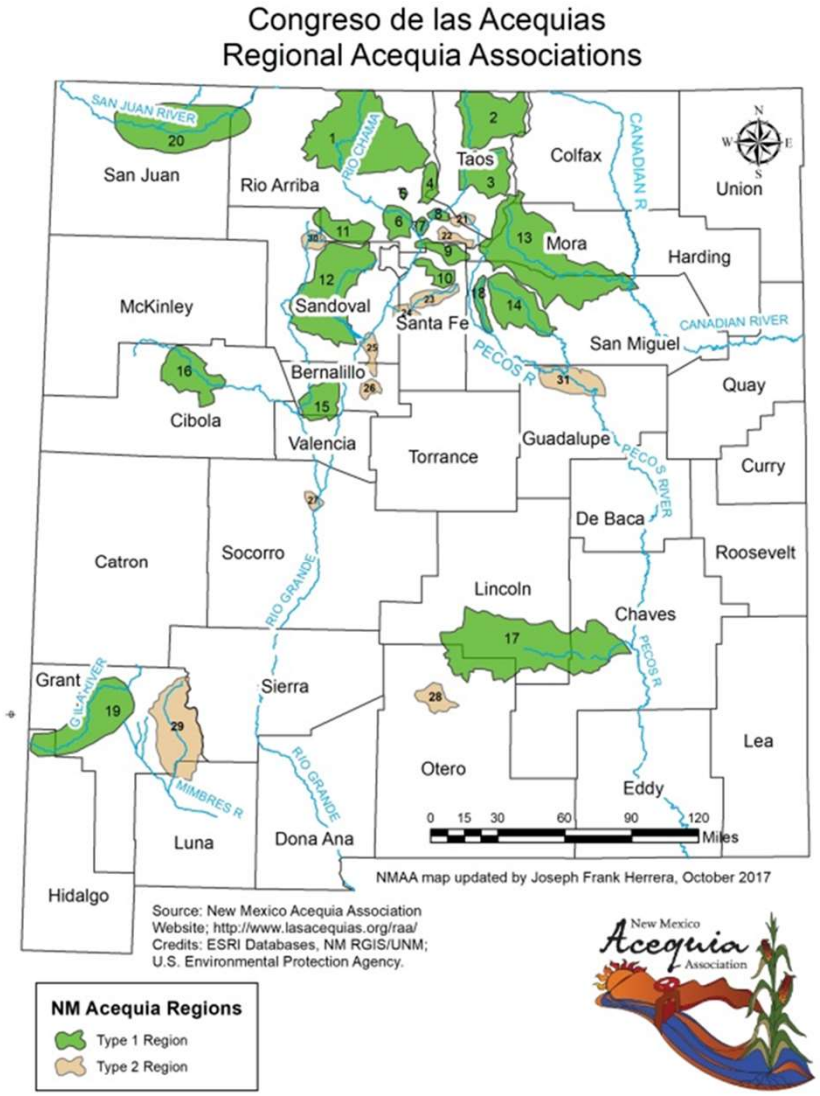
# Acequias: Land, Water, People

- 600-700 community acequias in New Mexico (not including private ditches)
- Over 100,000 acres of irrigated land
- Tens of thousands of acequia families have water rights
- Acequia irrigators rely primarily on seasonal surface waters for irrigation
- Acequias and community ditches contribute to aquifer recharge

*Source: NMSU "Acequias of the Southwestern United States: Elements of Resilience in a Coupled Natural & Human System"*

# ~640 Acequias in New Mexico

Rio Grande and Tributaries
San Juan River
Rio Chama
Nambe/Pojoaque/Tesuque
Pecos River (Gallinas)
Canadian (Mora)
Rio Pueblo/Rio Embudo
Jemez River
Rio San Jose
Hondo River
Gila River
Mimbres River



# Acequia Culture and Governance

Local self-governance, elected mayordomo and commission

Repartimiento (water sharing traditions) are cultural basis for allocation of water

Community labor and the dignity of work, annual cleaning (sacando la acequia)

# Repartimiento: Water sharing practices

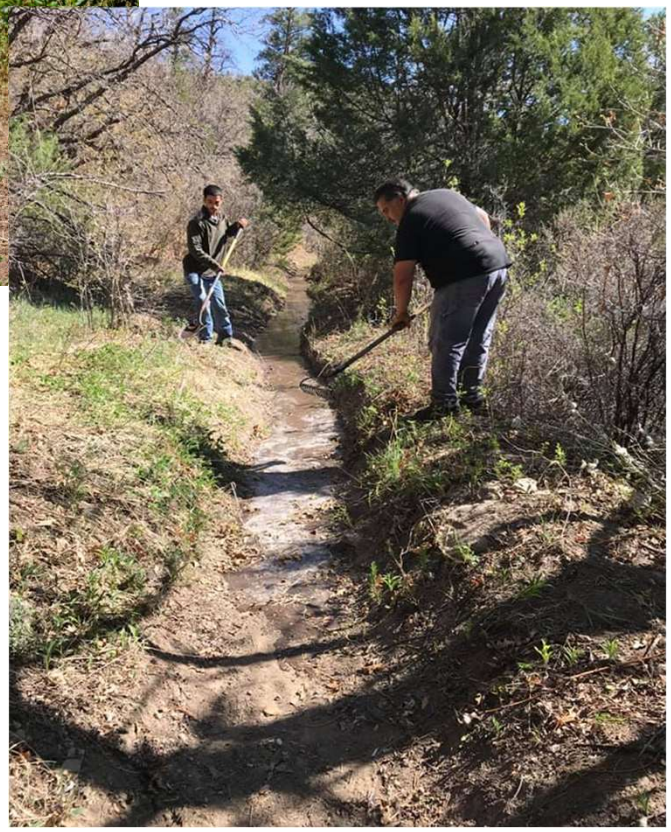
- Centuries-old customs and traditions of sharing scarce water endure in the acequias.
- Acequia-based allocation on a shared stream is recognized in acequia statutes.
- Water sharing is affirmed in Active Water Resource Management (AWRM) as a type of Alternative Administration

# Acequias and Sustainability

**Agricultural traditions:** Acequias sustain ancient food traditions in New Mexico on small-acreage farms. These include heirloom crops and small herds of livestock.

**Local Food Systems:** Acequia farmers and ranchers are feeding families in their respective communities through subsistence and sale at local markets.

**Ecological benefits:** Acequias expand riparian habitat and wildlife corridors in addition to recharging aquifers.



# Recent NMSU study affirms acequia contributions:

- "Acequias are technological systems that are designed, maintained, and operated to meet a variety of productive goals, social services, and health needs, with the practice of irrigated agriculture being of paramount importance."
- "The design of acequia systems required a deep understanding of local environmental and geographic conditions to fulfill the goals of the community with the locally available resources."
- "Acequias are old. Very old. Throughout the centuries, acequias have overcome periodic environmental crises, rivalries among water users, and profound historical changes. And they have survived because of their common-good oriented design that is based on principles, such as cooperation, water sharing, respect, equity, transparency, fairness, mediation, negotiation, proportionality between water allocation rights and systemic maintenance duties, and solidarity."

*Source: NMSU "Acequias of the Southwestern United States: Elements of Resilience in a Coupled Natural & Human System", Luis Pablo Martínez Sanmartín, Historian and Anthropologist, September 26, 2020*

# Acequias Contribute to the Agricultural Economy

| | New Mexico | Acequia Counties | |
|---|---|---|---|
| Number of Farms | 11,430 | 4,856 | **42%** |
| Irrigated Acres | 680,318 | 185,985 | **27%** |

Based on USDA Census of Agriculture, acequia counties contain around 40% of the farms in New Mexico.

They are small scale and produce for family subsistence and local markets.

Cattle and other livestock make up a significant part of the income of acequia producers.

**Acequia agriculture keeps money in rural economies.**

* Source: USDA 2012 Census of Agriculture. Counties are Rio Arriba, Taos, Mora, Lincoln, San Miguel, San Juan, Cibola, Grant, Sandoval. Note that county-level data also includes other agriculture.

# What is Acequia Infrastructure?

## Presa – Diversion Dam

In a typical, earthen acequia, the diversion dam (presa) is the most complicated and expensive element of the infrastructure.

Acequia del Alto del Norte, Mora County.
Price: $160,000 (pre-Covid)
Design: NRCS

- EQIP 50%
- ISC 45%
- Local cost share 5%

# Acequia Martinez Medio

BEFORE
- No diversion
- No governance documents
- No financial compliance

AFTER – NMAA GOVERNANCE Tech. Asst.
- Adopted bylaws, elected officers
- Bank account and EIN
- Financial compliance (OSA)

**Then… ready for infrastructure project.**

1. Planning: NMAA Pre-assessment and ICIP
2. Engineering Design: RCPP
3. Construction:
   RCPP $100,0000
   ISC 90-10 Approx. $90,000
   Local Share Approx. $10,000
   Capital Outlay $20,000

## Acequia infrastructure also includes other structures:

**Dividers:** Within an acequia, a divider will split an acequia into two acequias or will divide water into a lateral ditch.

**Desagües:** These are structures to remove/drain water from the acequia - from the tail end back to the river or at certain points along the length of the acequia to control flow volume.

**Arroyo Crossings:** Acequias traverse lands that have arroyos and structures are needed to move high flows across the ditch to avoid flooding and breaking the embankment.

*Photo credit: Taos Soil and Water Conservation District*

# Acequia Infrastructure Challenges

The GOOD NEWS:

- Hundreds of acequias are dedicating countless volunteer hours to make improvements. In general, there is more interest in growing food and irrigating than there has been in decades.
- There are some programs offering resources for acequia infrastructure and governance with state and federal agencies and their partners: NMAA, NMACD, local SWCDs.

HOWEVER…. there are challenges:

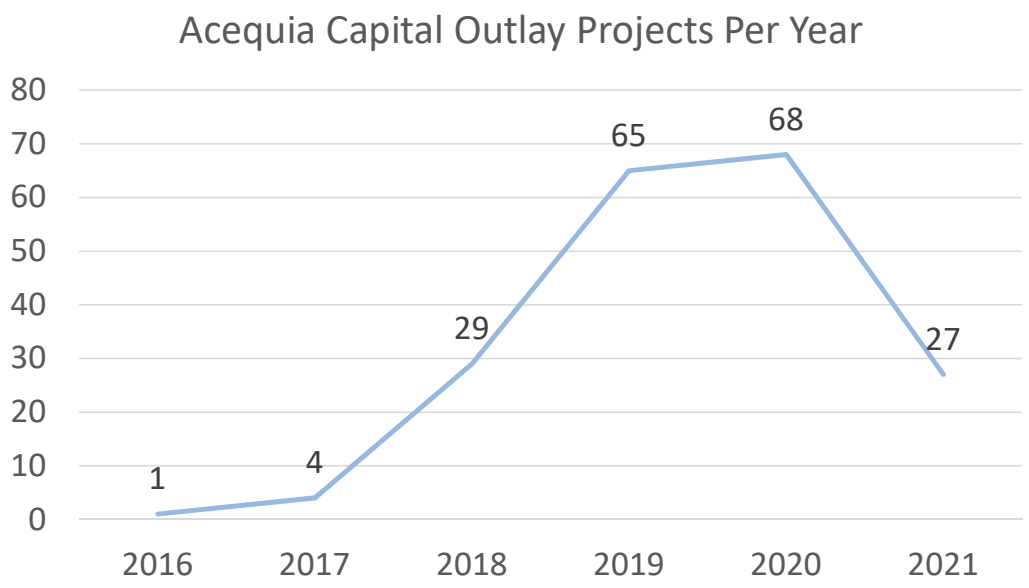
- The number of acequias requesting funding and assistance exceeds the current capacity of funding programs (ISC, RCPP, Capital Outlay)
- Acequias vary greatly in capacity and project readiness. Most need assistance with governance, pre-planning, and project management.
- There is a bottleneck in the process for engineering design. This limits the number of acequias ready to receive construction funding.

Requests for Capital Outlay funding have been increasing.

Prior to COVID, the number of projects was on a steep rise.

Some acequias who receive Capital Outlay are not ready in terms of governance and planning/design.

This causes unfinished projects and delays in spending Capital Outlay.



**Interstate Stream Commission**

Acequia and Community Ditch Infrastructure Fund $2.5 million annually
90-10 Program: state/local cost share
Acequia Loan Program: 2% Loans

- Contact: Jonathan Martinez
- 505-827-6160, JonathanC.Martinez@state.nm.us

**NM State Legislature**

Capital Outlay: Amount available varies.

- Contact: Your State Legislator, List is at www.nmlegis.gov

**Water Trust Board**

- Contact: NM Finance Authority 505-984-1454, www.nmfa.net

**NRCS Regional Conservation Partnership Program (RCPP)**

NM Association of Soil and Water Conservation Districts

- Contact: Your NRCS District Conservationist
- Contact: Norman Vigil 575-684-0042, norman.vigilsr@outlook.com
- NMAA can provide a list of names and phone numbers

**USACE Acequia Program**

- Funding for larger projects greater than $500k
- Contact: Jonathan Martinez from ISC

# Acequia and Community Ditch Infrastructure Fund (ACDIF)

- Created in statute with SB 428 (2019)
- Administered by the Interstate Stream Commission (ISC)
- Receives $2.5 million annually from the Irrigation Works Construction Fund (IWCF)
- FY22 will be the first ACDIF funding cycle with applications due in September
- ACDIF will fund:
  - Planning
  - Engineering Design
  - Construction
- More staffing is needed to effectively implement the purpose of the ACDIF

# Acequia Funding Process – ACDIF Can Address Need for Planning and Design Assistance

| | Pre-planning | Project Planning | **Engineering Design** | More planning.. | **Construction** |
|---|---|---|---|---|---|
| | • Update bylaws<br>• Bank account<br>• Financial compliance | • Site visit<br>• Preliminary assessment<br>• Preliminary cost estimate<br>• ICIP | | • Identify cost share amounts<br>• Plan budget | |
| NOW | NMAA assists with Governance and Financial Compliance | NMAA assists (some) with Project Planning and ICIP | ? Uncertain ?<br>CO for design, a few get assistance from RCPP (NRCS), NMAA advises some on funding sources | | Some projects complete within 3 years |
| DESIRED PROCESS | NMAA assists with Governance and Financial Compliance | ACDIF Staff assists with Project Planning, NMAA with assists w/ ICIP | ACDIF covers 100% of Design Cost | ACDIF staff and other partners assist with cost share. | ALL PROJECTS COMPLETED in 2 years |

# Acequia Infrastructure Policy Recommendations

Ensure availability of funding for the newly created Acequia and Community Ditch Infrastructure Fund

Increase staffing levels at ISC for the acequia program to address the increased work load

Create an Acequia Infrastructure Bureau at Interstate Stream Commission that would have dedicated staff for acequia infrastructure

Staffing pattern for acequias at ISC should include project support, technical assistance, and professional engineering services

Continue to fund Acequia and Community Ditch Education Program which funds NMAA's Acequia Governance Project and Infrastructure Planning work.

# Protect Funding for the ACDIF and Ensure Adequate Funding for OSE/ISC Budget

The source of recurring funding of $2.5 million per year for the ACDIF is the Irrigation Works Construction Fund (IWCF).

The IWCF is a trust fund that gets about $8 million per year from State Trust land revenue.

The corpus of the IWCF is nearly depleted due to years expenditures exceeding revenue into the fund. Expenditures have mainly been for OSE/ISC agency expenses.

At the current rate of spending, the corpus will be depleted and the legislature will need to replace IWCF funds with General Fund monies to fund the OSE/ISC agency budget.

**Policy Recommendation: Incrementally replace IWCF in OSE/ISC budget with General Fund monies to keep IWCF revenues and expenditures in balance.**

# Create Acequia Infrastructure Bureau at ISC and Staff the Program Properly

The current Acequia Construction Program has two part-time staff who are administering funding for nearly two hundred projects.

The same program historically had up to six staff who could assist acequias directly with project needs.

Creating a Bureau at ISC would formalize the program and would provide dedicated staffing.

The staffing pattern should include more technical staff and professional engineers who could complete designs.

**Policy Recommendation: In the next ISC budget, include an Acequia Bureau with 4 to 6 FTE including at least one professional engineer.**

# Continue funding assistance to acequias for governance and infrastructure planning

The Acequia and Community Ditch Education Program is housed at the DFA Local Government Division. The program funds a contract that supports NMAA's Acequia Governance Project.

The Acequia Governance Project is a vital resource for acequias in assisting local elected officials with a range of governance needs:

- Acequia Bylaws
- Infrastructure Capital Improvement Plans
- Water Management Challenges
- Easements
- State and Federal Permitting

The NMAA partners with NMAC in getting direction and recommendations for cases and projects including our Infrastructure Master List.

**Policy Recommendation: Continue current funding levels for the Acequia and Community Ditch Education Program at DFA.**

# Strengthen Climate Resiliency and Disaster Response

# Impacts of flooding on acequias

- Threats to human life, livestock, and wildlife
- Damage to stream beds, acequia infrastructure, roads/bridges, farmland, fencing
- Challenge facing acequias is to ensure that they are included in damage assessments – local knowledge is critical in locating areas damaged by floods
- There is a wide gap between funding for disasters depending on whether there is a federal declaration.

**Policy Recommendations:**

- **Conduct/complete acequia infrastructure inventory & mapping for DHSEM-FEMA Hazard Mitigation Plan**
- **Train/Prepare local acequia leaders to serve as liaisons with state and federal disaster agencies**
- **Provide more resources for DHSEM response to disasters that do not receive a federal emergency declaration**

# Flooding Impacts to Acequias


New Acequia infrastructure:
• Variability of low/high flow
• More resilient to flooding

# Summary of Policy Recommendations

**Acequia Infrastructure Funding and Technical Support**

- Incrementally replace IWCF in OSE/ISC budget with General Fund monies to keep IWCF revenues and expenditures in balance.
- In the next ISC budget, include an Acequia Bureau with 4 to 6 FTE including at least one professional engineer.
- Continue current funding levels for the Acequia and Community Ditch Education Program at DFA.

**Climate Resiliency and Disaster Response**

- Conduct/complete acequia infrastructure inventory & mapping for DHSEM-FEMA Hazard Mitigation Plan
- Train/Prepare local acequia leaders to serve as liaisons with state and federal disaster agencies
- Provide more resources for DHSEM response to disasters that do not receive a federal emergency declaration
- Institutional support for climate-resilient infrastructure designs

# Que Vivan las Acequias!