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The Agricultural Experiment Station: Tucumcari Science Center

Jay M. Lillywhite
Associate Dean / Agricultural Experiment Station Director

Leonard Lauriault, Retired
Tucumcari Science Center Research Director

Marcy Ward
Extension Livestock Specialist

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September 23, 2025

The Agricultural Experiment Station

- A component of the Land Grant University system as articulated in the Hatch Act of 1887
- Constitutionally mandated in New Mexico in 1915
- Research arm for the College of Agricultural, Consumer, and Environmental Sciences
- Faculty, staff, and students on the main campus and twelve science centers

Agricultural Science Center Facility Improvements

Project Overview

A statewide initiative to address critical deferred maintenance and end-of-life infrastructure at New Mexico's Agricultural Science Centers.

Guided by a comprehensive Facilities Master Plan and facility condition assessments, funding is prioritized to address safety, research capacity, and statewide equity in capital investment.

Strategic Highlights

- Statewide Impact
- Master Plan & Data-Driven
- Phased Investment Approach
- Research & Student Focused
- Equity & Alignment

Rex E. Kirksey Agricultural Science Center Facility Improvements

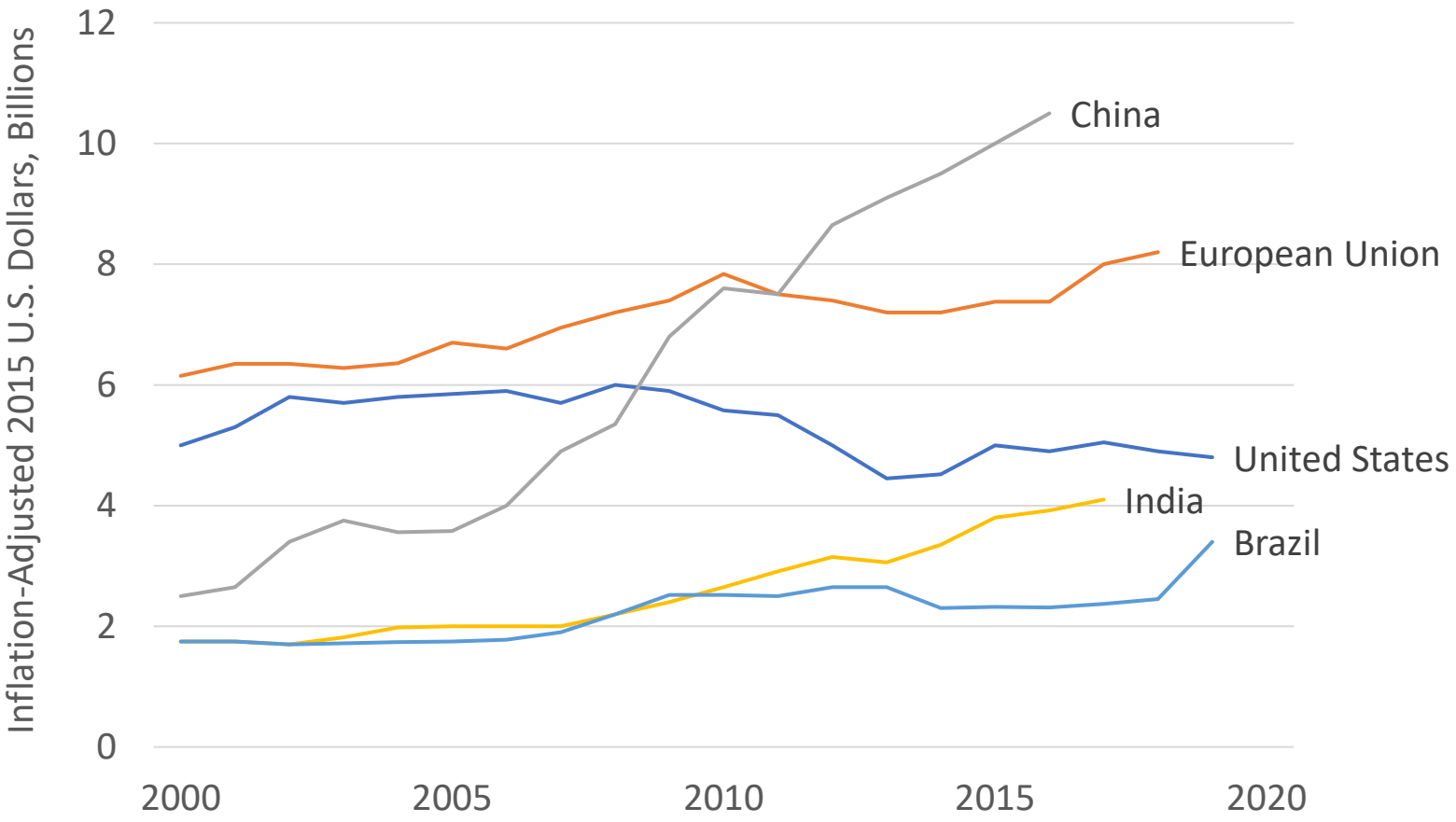
The original shop was built in 1912, with a renovation completed in 1988. The exterior and interior of the building were in poor condition. Work is underway to replace the original building.

Original Shop

Current Construction Site

Replacement Shop

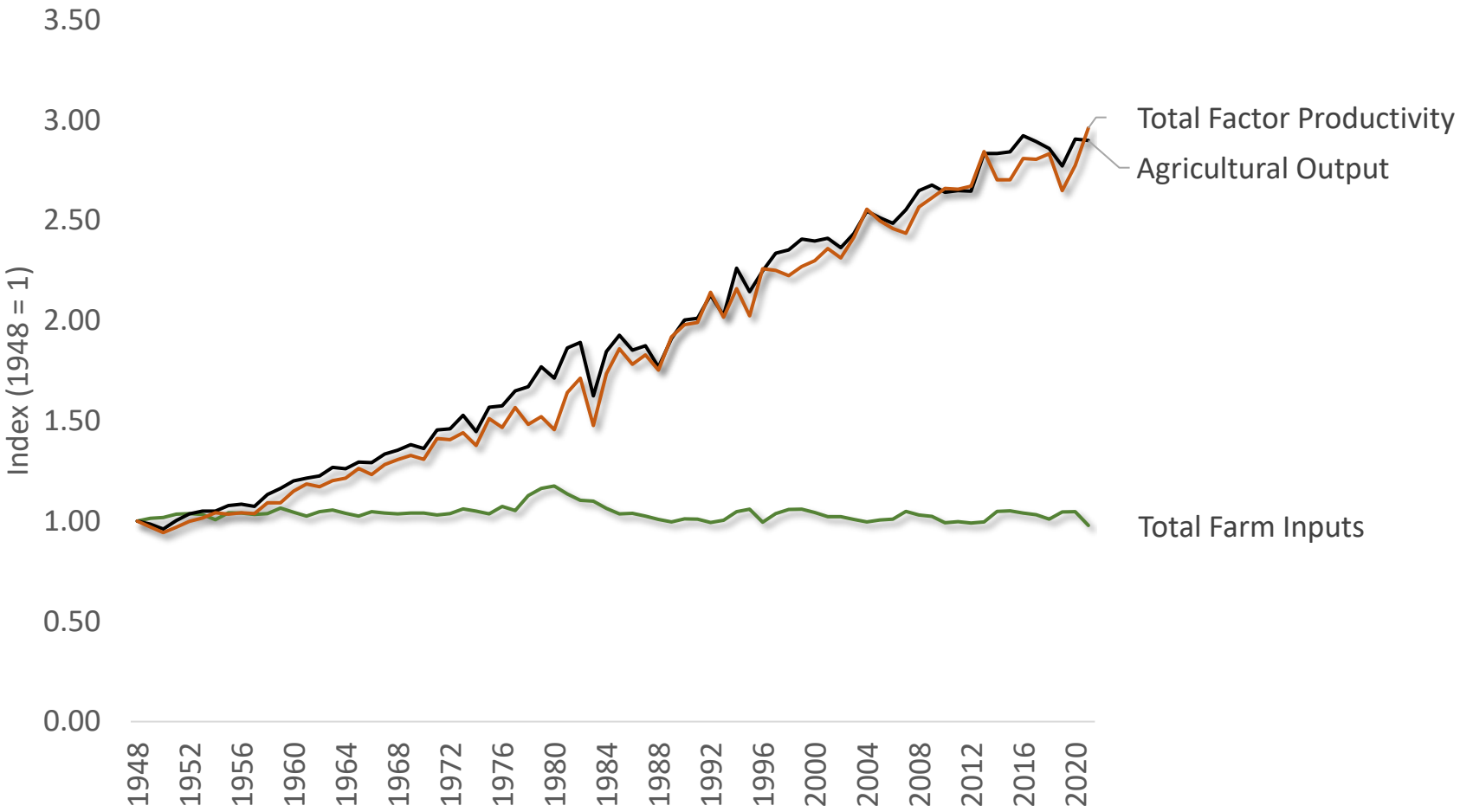
Agricultural Research



Agricultural and Food R&D, Selected Countries, 2000-2020. Source: USDA ERS[1]

[1] Reproduced from USDA-ERS publication.

Agricultural Productivity



U.S. Agricultural Productivity, 1948 to 2021. Source: USDA ERS.

Returns to Agricultural Research

Estimated Returns to Agricultural Research

Author	Social IRR[1]	Approximated BC Ratio[2]	Period	R&D Time Path
Baldos et al. (2015)	17%	15.3	1949-2011	50 years
Anderson & Song (2013)	21%	17.7	1949-2002	50 years
Alston et al. (2010)	23%	19.3	1949-2004	50 years
Wang et al. (2012)	45%	37.8	1980-2004	35 years
Jin & Huffman (2016)	67%	56.3	1970-2004	35 years
Huffman and Evenson (2006)	56%	47.1	1970-1999	35 years

[1] Adjusted for inflation (real)
[2] Approximated using the real long-term Treasury rate of 1.2%

The Agricultural Experiment Station

New Mexico's Agricultural Experiment Station is having significant impacts on the food and fiber supply chain.

Agricultural Experiment Station Tucumcari Science Center

Unique facilities/programs at the Tucumcari Agricultural Science Center

- Municipal Wastewater
- Bull test facility

Agricultural Experiment Station Tucumcari Science Center

Research Examples

- Beef genetic improvement
- Winter cover crops
- Alternative cropping systems
- Soil amendments / Soil carbon
- Treated municipal wastewater for winter cover crops
- Variety performance (alfalfa, cotton, sorghum, barley)

Agricultural Experiment Station Tucumcari Science Center

Outreach / Learning Opportunities

- Impact reports
- Science center annual report
- Field days
- Public outreach events

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Tucumcari Agricultural Science Center Wastewater Research

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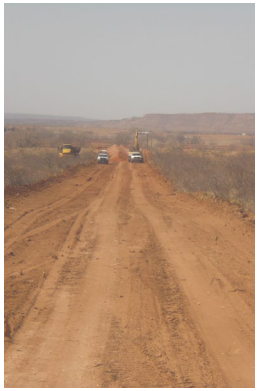
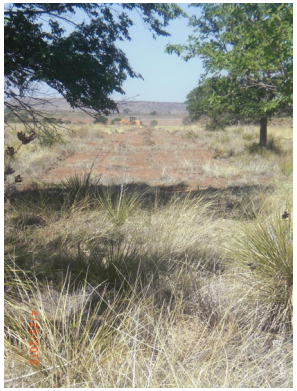
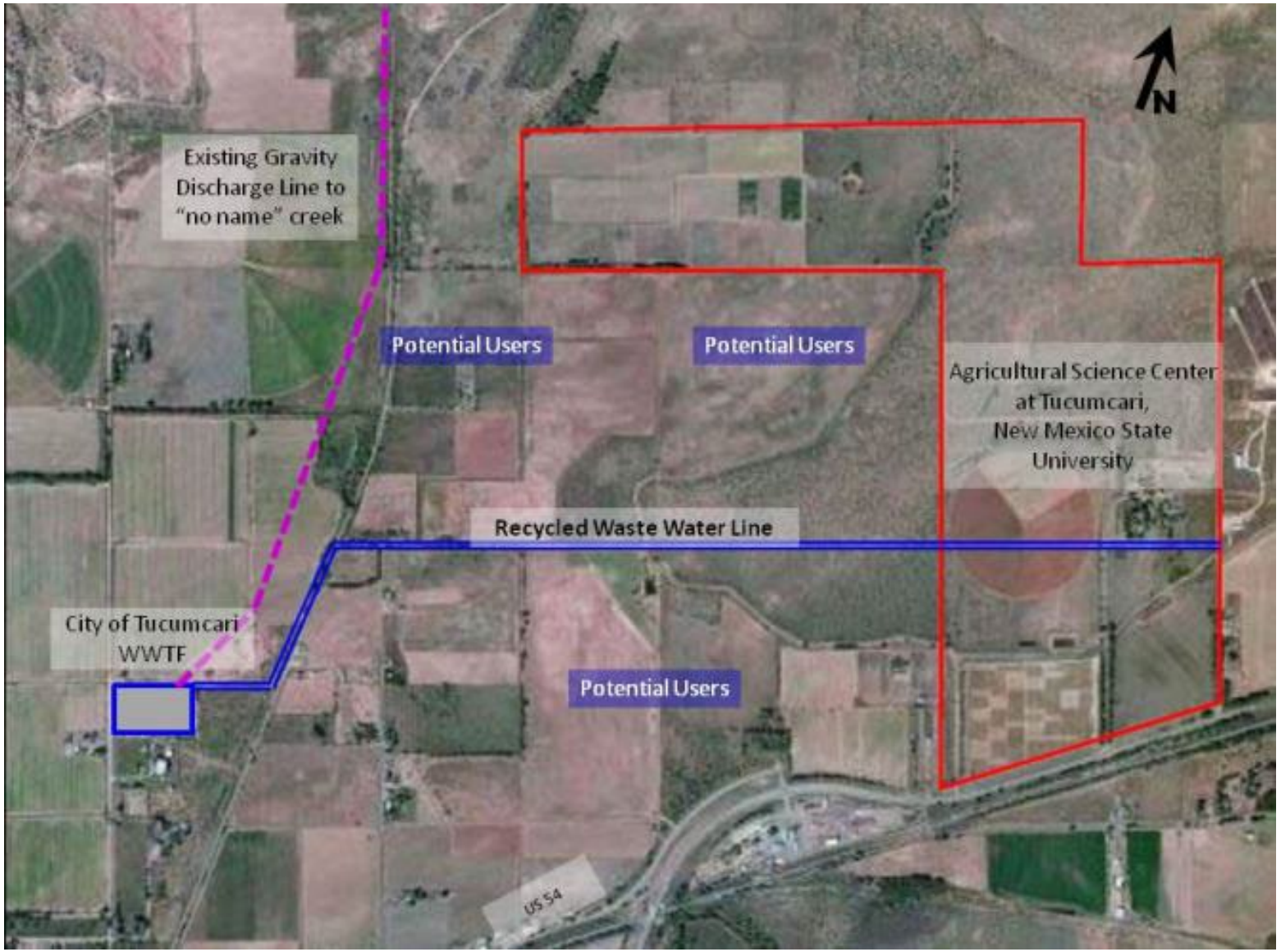




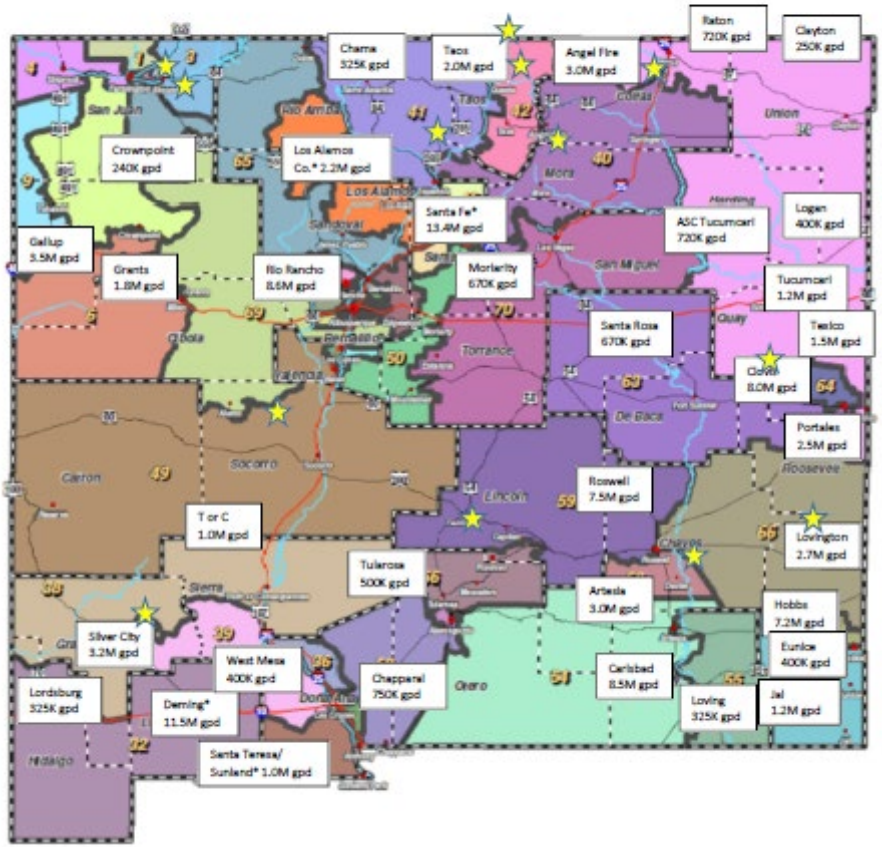

Water Trust Board Reuse Project
Using Reclaimed Water From The
City of Tucumcari
Wastewater Treatment Facility
In partnership with
New Mexico State University
Agricultural Science Center at Tucumcari

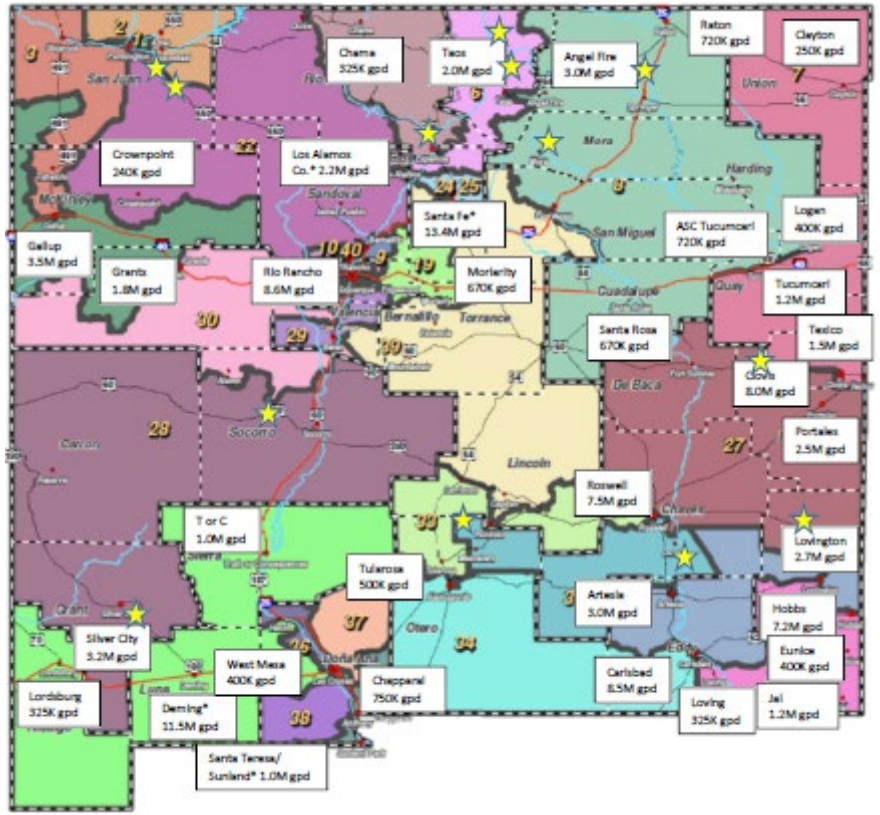

Existing Gravity Discharge Line to "no name" creek
Potential Users
Potential Users
Agricultural Science Center at Tucumcari, New Mexico State University
Recycled Waste Water Line
City of Tucumcari WWTF
Potential Users
US 54
N

Tucumcari Wastewater Research

- Wastewater irrigation does not impede alfalfa establishment and improves soil health during the first year of stand life. Alfalfa is New Mexico's #1 cash field crop.
- Annual grass forages (sorghums) take up more nitrogen than applied through irrigation with noncompliant wastewater (>15 ppm).
- The New Mexico Environment Department has shown a positive response to a suggestion by Alexander Wilson, Extension Agricultural Economist with NMSU-ACES' Center for Excellence in Sustainable Agricultural and Food Systems, that blending noncompliant water with compliant water from any source could be a solution to pollution by dilution.
- An evaluation of soil quality (nutrients, microbial activity, etc.) was conducted in 2022, after 10 years of wastewater irrigation under various soil types and cropping systems. That data is yet to be summarized for publication.
- A comparison of water sources for human food production initiated to support the New Mexico True industry.

New Mexico House (left) and Senate (right) Districts, ca 2012-2015





There is a wastewater treatment facility near you!

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Tucumcari Agricultural Science Center Tucumcari Bull Test

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The Tucumcari Feed Efficiency Test (TFET) Collaborative

Est. 1961

2025

The Collaborative

- NMSU owns the land, the TFET cooperative owns the cattle facilities.
- Extension personnel oversee projects held at the cattle facility.
- AES personnel offer onsite support
- Collaborative activities
  - The annual bull test
  - Research
  - Extension programming

The Impacts

- Since 1961, 35% gain in efficiency and growth in cattle from producers. Based largely on station test results.
- Cooperators have invested $300,000 in technology to improve data accuracy and increase animal testing capacity.
- Sale averages have increased producer income by 15%.
- Customer base has increased by 18%, reaching 7 states.

THANK YOU!

BE BOLD. Shape the Future.
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