

The DRAFT New Mexico 50-Year Water Plan

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Stewardship
Sustainability
Equity

Presentation Outline

- Plan Overview
 - What is the 50-Year Water Plan?
 - Partnerships
- What's in the 50-Year Water Plan?
 - Leap Ahead Report
 - Resilience Assessment
 - Recommendations
- Status + Next Steps
- Questions/Comments





What is the 50-Year Water Plan?

- **Governor's Initiative**
- **Purpose** – Help NM plan for climate change impacts to water supplies
- **Audience** – Decision-makers and the general public
- **Format** – Concise, bottom-line-up-front summary of needs and recommendations for improving water resilience

What the 50 Year Water Plan is **NOT**

- State Water Plan
- Regional Water Plans
- Technical Report
- All Gloom-and-Doom
- Able to Solve all the State's Water Problems
- Going to Just Sit on a Shelf



Partners



- NM Bureau of Geology & Mineral Resources
- Volunteer Research Experts
- New Mexico Indian Affairs Department
- Tribal Water Work Group Volunteers
- Other State Agencies – NMOSE, EMNRD, NMED, NMDA, DGF, DHSEM, EDD, DOH
- New Mexico Water Dialogue
- Water Resources Research Institute
- U.S. Army Corps of Engineers



NEW MEXICO'S WATER FUTURE = *DRIER / MORE VARIABLE*

- Anticipated continued changes in climate will mean *less water is available* while demands continue to increase.
- Given this new reality, we must plan ahead to ensure continuing economic development and the needs of all New Mexicans are met.

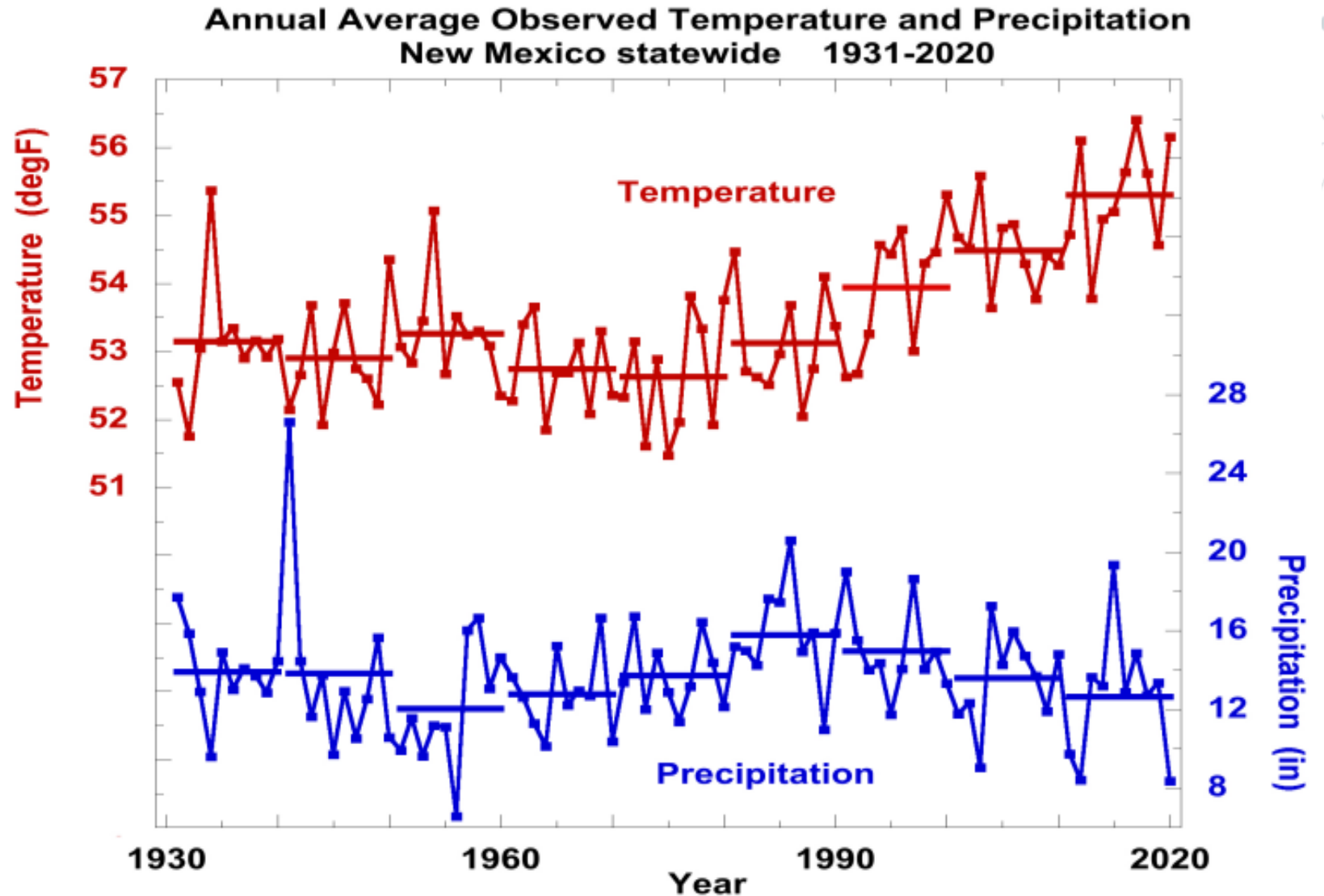


Image from [Climate Change in New Mexico over the Next 50 Years: Impacts on Water Resources](#)

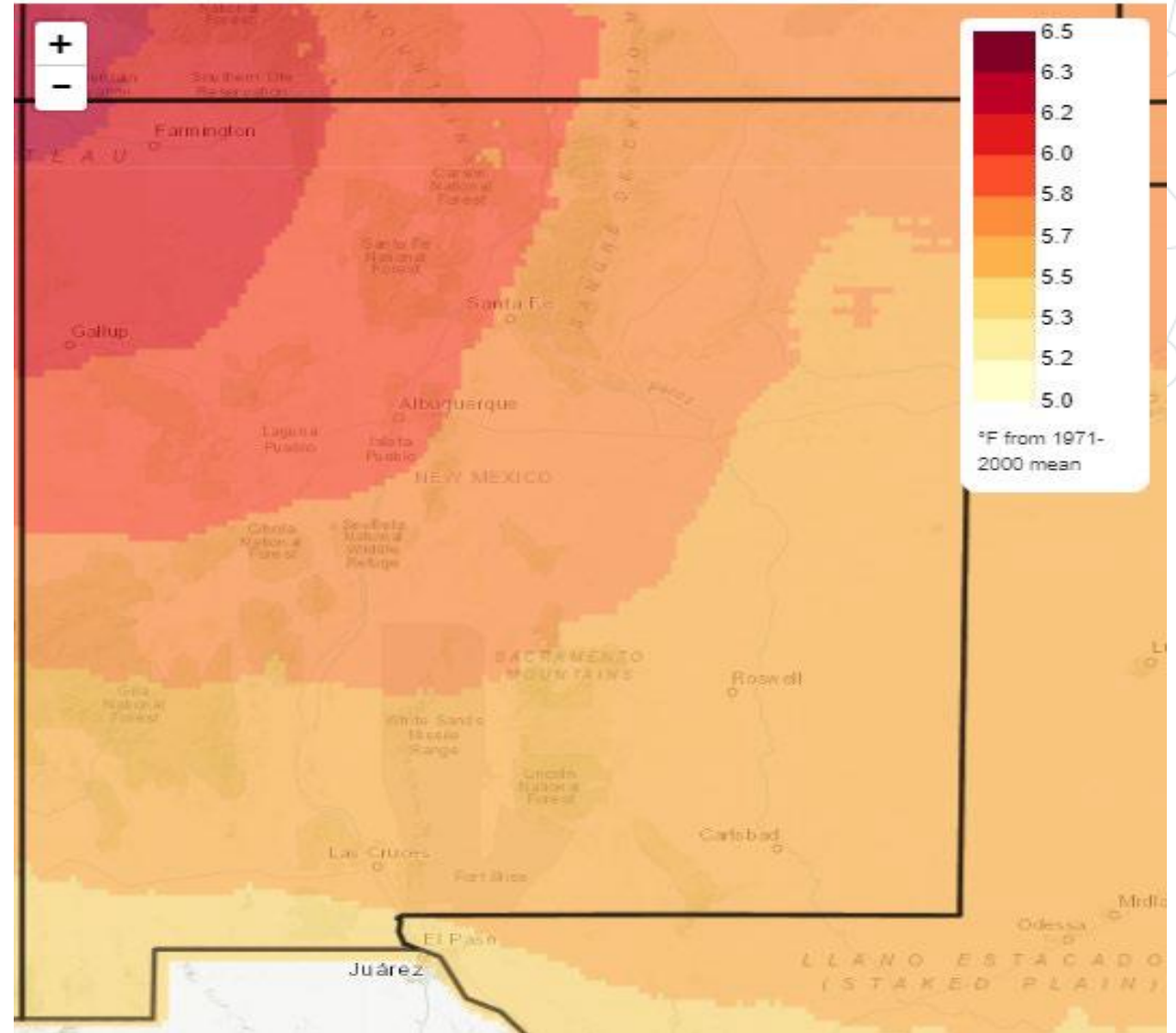


Temperature Change in New Mexico

- Temperature increase will occur throughout the entire state.
- Especially high in the Northwest part of the state.

Higher Emissions (RCP 8.5) 2040-2069 vs. historical simulation 1971-2000, mean change

Multi-model mean derived from 20 downscaled CMIP5 models





National Water Stress Index

While the eastern half of the country can expect more water, the west can expect more water stress, and NM is no exception.

Projected change in water stress by mid-century (2040-2061) compared to historical average (1900-2000). Lindsey, 2013.

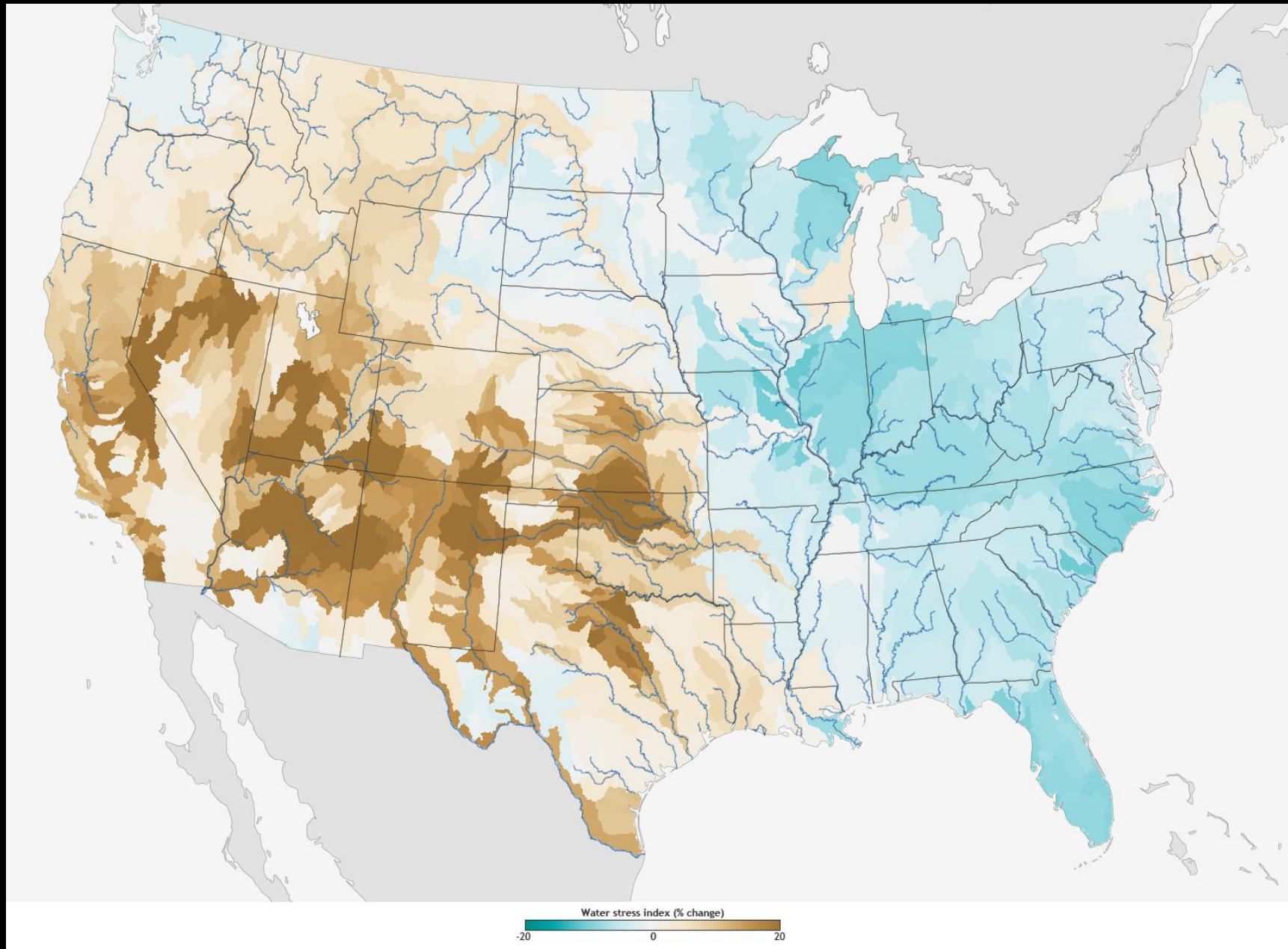


Image from Climate Change in New Mexico over the Next 50 Years: Impacts on Water Resources



Climate Change and Water in New Mexico: The Next 50 Years

- Average temperature rise of 5° to 7°F
- Lower streamflow and aquifer recharge
- Greater year-to-year variability in precipitation
- Hotter, more severe droughts
- Decreasing snowpack, earlier and diminishing runoff
- Greater demands on dwindling groundwater due to surface water shortfall
- Stress on natural vegetation caused by increasing temperature and decreased water availability
- Increasing catastrophic forest fire frequency resulting from heat and dryness
- Increasing flooding and sediment transport due to more intense storm events and fires
- Irreversible damage to soils through loss of vegetation and erosion
- Degraded quality of surface waters



Assessing Resilience

What contributes to resilience?

Each circle here represents a key factor of water resilience. The more factors a community/water user has, the more resilient they are likely to be.

Demand Management

- Ongoing water conservation is key and needs to be a way of life for all New Mexicans. Are these mechanisms in place?

Watershed Health

- Ecosystem health is essential to providing often-overlooked ecosystem services including delivery of clean water, supporting groundwater recharge, and resistance to fire. Are these conditions present?

Water Diversity

- How many sources of water does a user have access and rights to?

Water Availability

- How much water is available from those source(s)?

Infrastructure Capacity

- Is infrastructure sufficient to address the increasing demands associated with climate change?
- Is there equitable access to infrastructure/funding to address infrastructure needs?
- Does infrastructure have sufficient storage or an emergency supply

Note: Size of bubbles are not necessarily representative of degree of importance. Factors of resilience may vary in communities across the State.

50-Year Water Plan Recommendations



Sustainability

- **Continue to Lead in Water Conservation**
 - Work with Farmers
 - Equitable Access to Water Saving Technology
 - Turn Efficiency into Conservation
 - Lead - NMOSE
- **Modernize Administrative Practices for Water**
 - Promote Shortage Sharing
 - Engage NMOSE Staff
 - On-Line Tools
 - End Water Right Declarations
 - Develop Alternative Permitting Pathways
 - Statewide Metering
 - Enforcement
 - Lead - NMOSE
- **Modernize Water Infrastructure**
 - Inter-Agency Task Force
 - Improve Technical & Administrative Capacity
 - Coordinate with Universities
 - Prioritize Flood Protection
 - Increase Storage
 - Clean Drinking Water
 - Lead – NMOSE



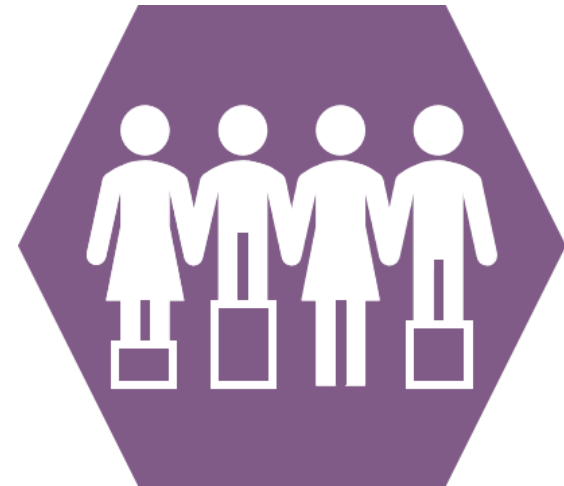
Stewardship

- **Improve Upland Watershed Health**
 - Outreach & Education
 - Increase Funding
 - Develop Funding Sources
 - Lead – EMNRD
- **Improve Health of Rivers, Lakes & Reservoirs**
 - Use Leap Ahead River Projections
 - Protect Native and Riparian Aquatic Species
 - Improve Recreational Access
 - In-Stream Flows
 - Maintain Water Quality
 - Lead - NMED
- **Protect Groundwater Health**
 - Establish Benchmarks
 - Plug Abandoned Wells
 - Clean Up Aquifers
 - Protect & Enhance Recharge
 - Develop Alternatives
 - Lead – NMED



Equity

- **Increase Engagement with Tribes, Pueblos & Nations in Water Management**
 - Resolve Indian Water Rights Litigation
 - Utilize Traditional Ecological Knowledge
 - Improve Policy Agility
 - Evaluate Best Practices
 - Lead – IAD & ISC
- **Protect Acequias**
 - Improve Fire Resilience
 - Expand Market Opportunities
 - Ongoing Focussed Support
 - Focus on Adaptation
 - Lead – ISC
- **Evaluate Alternative Water Sources**
 - Study & Report
 - Incentivize Innovation
 - Highlight Resilience
 - Drought Pilot Projects
 - Brackish Treatment
 - Lead - ISC
- **Continued Research & Planning**
 - Engage More People
 - Collaborate
 - Utilize New Mexican Expertise
 - Learn From Other Plans
 - Regional Planning
 - Support the Water Data Act
 - Identify Data Gaps
 - Agricultural Conservation
 - Annual Conference
 - Lead - ISC



Equity

• Optimize Alternative Water Sources

- Study & Report
- Incentivize Innovation
- Highlight Resilience
- Drought Pilot Projects
- Brackish Treatment
 - Lead - ISC



Optimize Alternative Water Sources

Alternative water sources provide an opportunity to offset the impacts of climate change on surface- and groundwater resources. Numerous alternative sources of water are available including:

- produced water derived from oil and gas production,
- deep wells, over 2,500' deep which access previously under-used aquifers,
- treated brackish water, including water from many deep wells, requiring salt removal for human and crop consumption,
- treated wastewater,
- cloud seeding,
- rainwater capture, and
- imported water from other states and basins.

Alternative sources cannot replace existing reliance on traditional sources and should be optimized for appropriate applications. Conservation and efficient utilization of all water resources, including alternative sources, is an essential principle for a resilient water future.



The NMISC and its planning program are well positioned to facilitate evaluation of alternative sources statewide by leading experts.

Goal: Optimize the use of alternative sources of water to reduce impacts on traditional water resources.

Action Steps

Study & Report: Work with experts and develop reports on the potential scale, location, applications and cost for alternative water sources to inform planning for appropriate implementation.

Incentivize Innovation: Remove regulatory obstacles and develop incentives for innovative strategies for improving water resilience.

Highlight Resilience: Archive and organize strategies for improving water user resilience.

Drought Pilot Projects: Pilot drought-relief projects including following.

Brackish Treatment: Seek funding for the location, planning, design, and construction of several large brackish water and reuse treatment facilities near unserved populations.



Challenge is Opportunity

- **Challenge is Opportunity**
 - Implementation Needs
 - Coordination
 - Resources
 - Current Situation
 - Forest Fires
 - BIL funding
- **Next Steps: Organizing and Funding**
 - Short Term (next 24 months)
 - Medium Term (2-5 years)
 - Long Term (5 years +)



Questions?

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