50-Year Water Plan

Resilience + Recommendations

Presentation to Water Policy and Infrastructure Task Force
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Smart Water Management
Sustainability
Equity

Overview

- NMISC Perspective on What the ‘Leap Ahead’ Science Means for New Mexico
  - Resilience Assessment – Fall 2021
    - Description of Engagement on Resilience
    - Key Take-Aways / What did we learn?
  - Comments from our State Agency colleagues?
- Overview of Draft 50-Year Water Plan Recommendations
- Next Steps

Status + Next Steps

Early June = State Agency Review + Input

✓ Input received last week.

Early July = Task Force Review + Webinar

= Tribal Review

= Acequia Community Review

Mid July = Task Force Provides Consensus Input

Late July = Release for Public Comment

August = NMISC Meeting 8/4 for Comment

Incorporate Final Comments

August/September = Finalize

Resilience Assessment – Fall 2021

Upon completion of the ‘Leap Ahead’ by NMBGMR, NMISC conducted significant public engagement on resilience.

RESILIENCE DEFINITION: The ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.

- Where are we resilient and how do we learn from that?
- Where are we most vulnerable and what is needed to address those vulnerabilities?
- How do we help communities / water users assess their resilience and take action?

Outreach and Interaction on Resilience

by Water Use Sector

Human Use Sectors

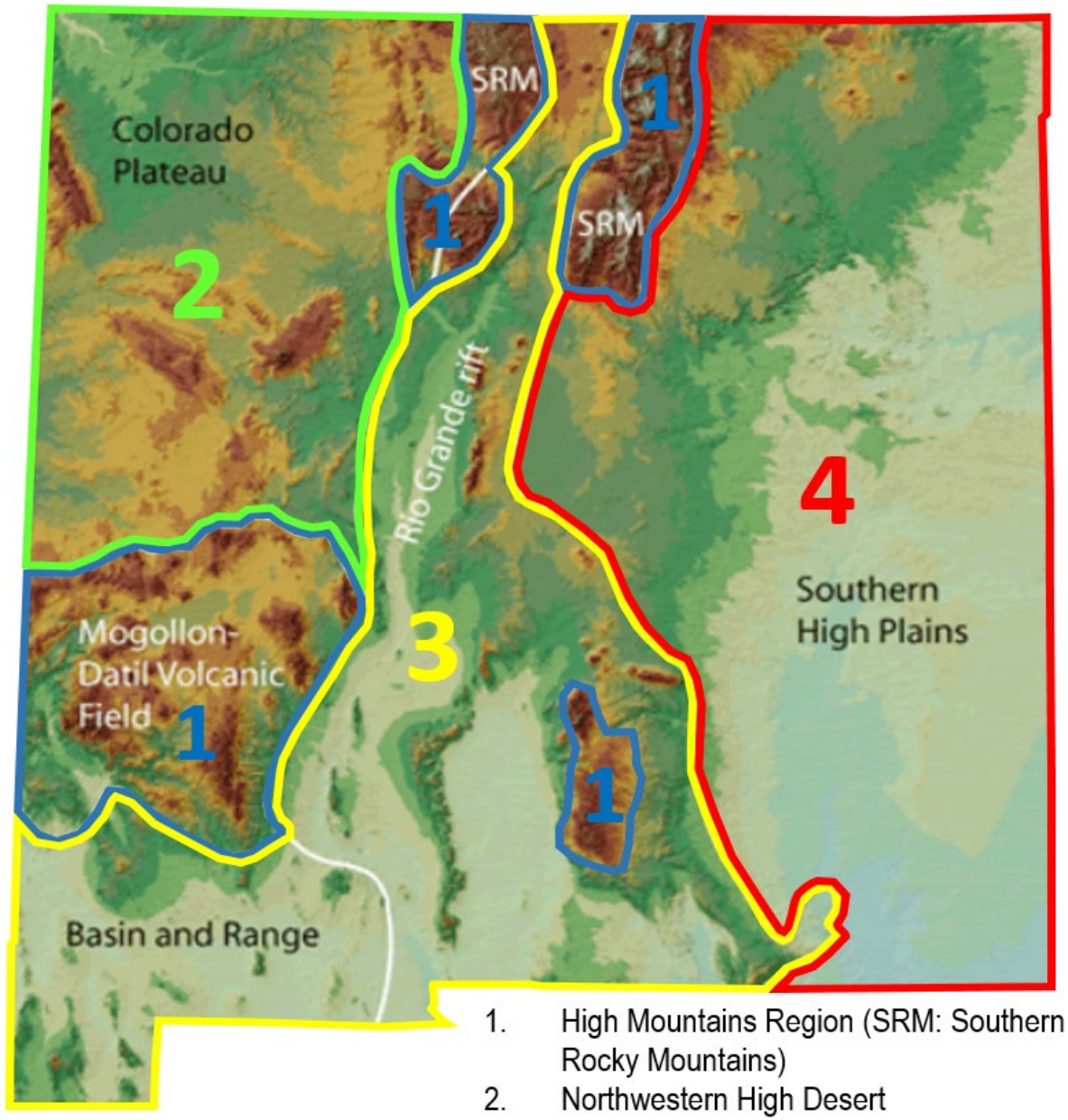
- Agriculture and Livestock Watering
- Public Water Systems and Domestic Wells
- Industrial, Commercial, Mining and Power

Environmental Use Sectors

- Watersheds and Habitat
- Recreation and Quality of Life

by Climatic Region

- Four regions identified in the ‘Leap Ahead’



1. High Mountains Region (SRM: Southern Rocky Mountains)
2. Northwestern High Desert
3. Rio Grande Valley/Basin and Range
4. Eastern Plains

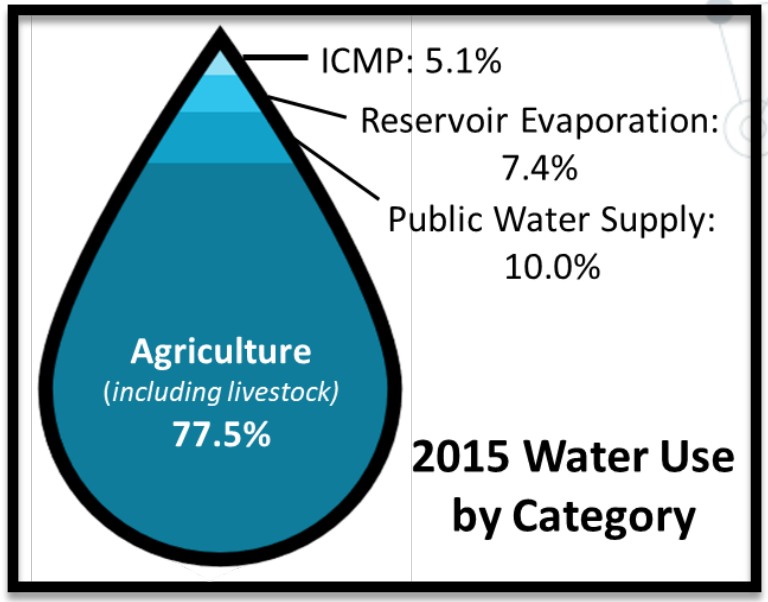
Resilience Assessment
Fall 2021

- State Agency Engagement
  - NMOSE, EMNRD, NMED, NMDA, DGF, DHSEM, EDD, DOH
- 12 Webinars
  - Hosted by NMISC or the U.S. Army Corps of Engineers
- 15 Surveys
  - Posted to the NMISC's webpage and used to finalize resilience matrices
- 5 Matrices - Finalized Based on Input
- Contractor Report for Plan Appendix
- WRRI Conference
  - Break-out groups identified vulnerabilities and actions needed for resilience

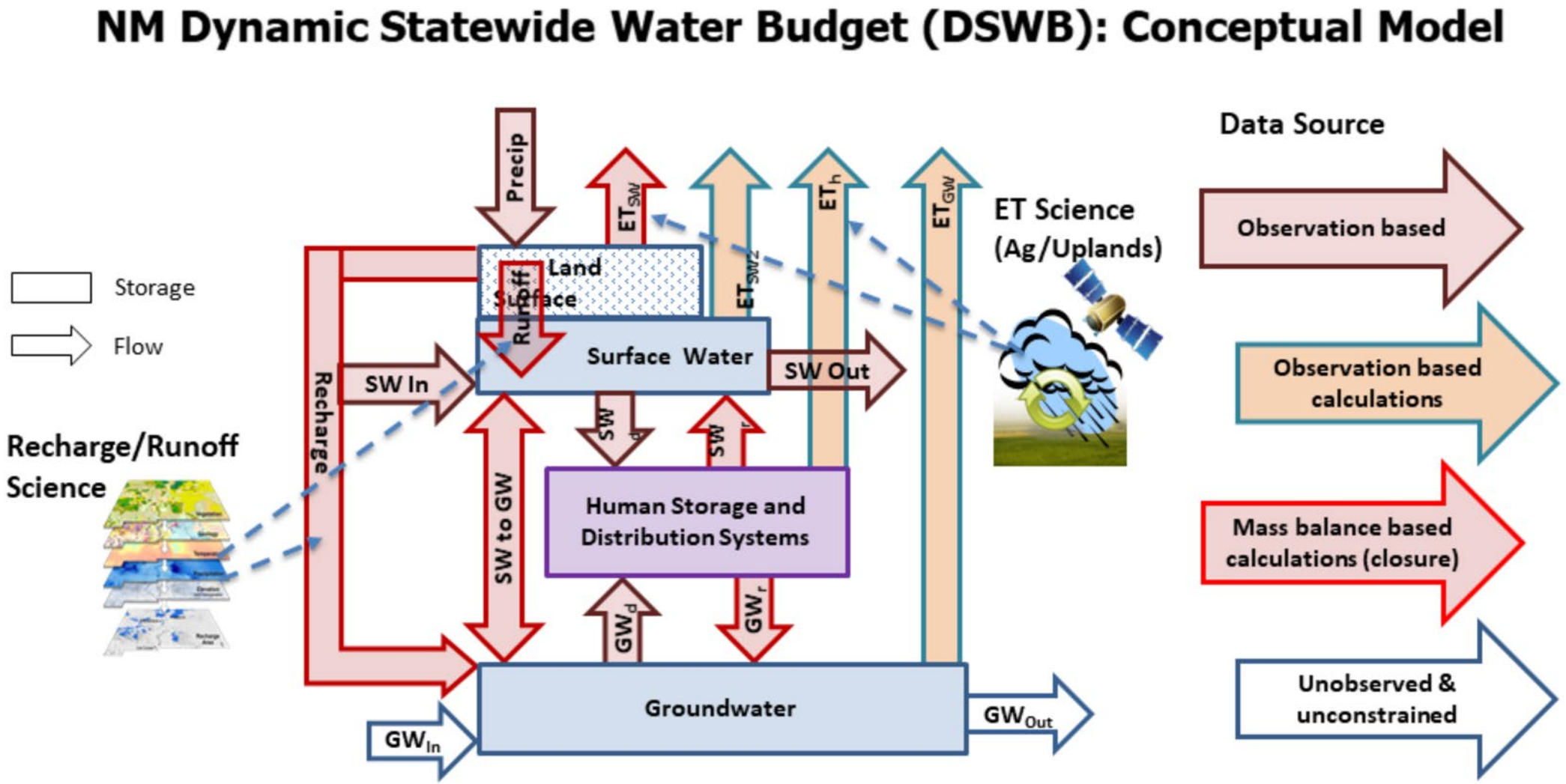
Resilience Assessment
Fall 2021

Who Participated?

- *Highly invested policy-oriented water wonks*
  - Many attended all or many events
  - Heavily favored practicing and former NM water professionals
- *Agriculture*
  - NM First direct outreach
  - WRRI focused stakeholder outreach
  - Pursuing additional focused work with Acequias
  - Limited direct participation
  - Representation NOT proportional to water use
- *Public Water Systems (PWS)*
  - Limited Participation by Operators and Municipal Water staff
  - Focused Resilience Outreach Conducted
  - Seeking enhanced participation from PWS customers



Areas of Vulnerability and Resilience



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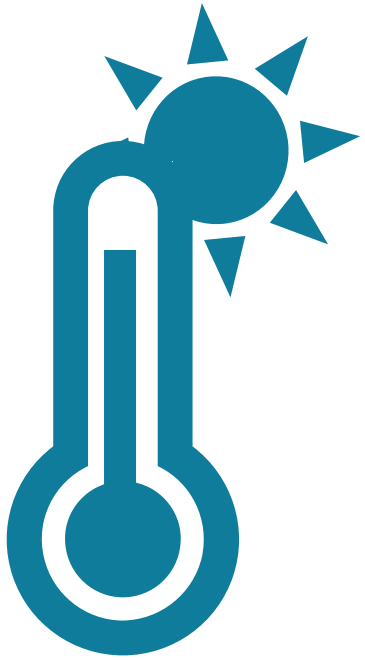


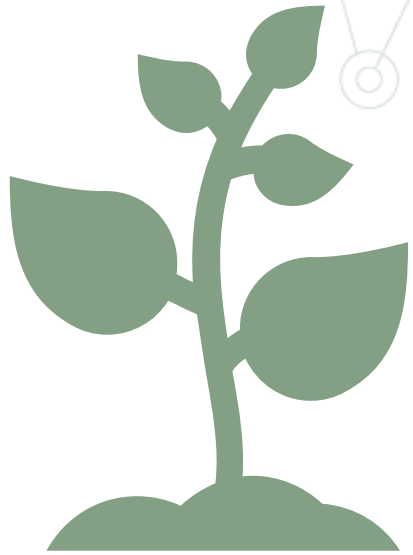
Table 1. Weather Stations and Average Annual Precipitation and Temperatures.

Location	Weather Station ID	1981-2010 Average Precipitation (inches)	1981-2010 Average Temperature	2070 Average Precipitation (no change)	2070 Average Temperature (+5 F)
Farmington	USC00293142	8.6	52	8.6	57
Taos	USC00298668	12.8	48	12.8	53
Albuquerque Valley	USC00290231	10.2	56	10.2	61
Hatch	USC00293855	10.3	61	10.3	66
Conchas Dam	USC00292030	16.1	60	16.1	65
Roswell	USW00023009	12.9	61	12.9	66

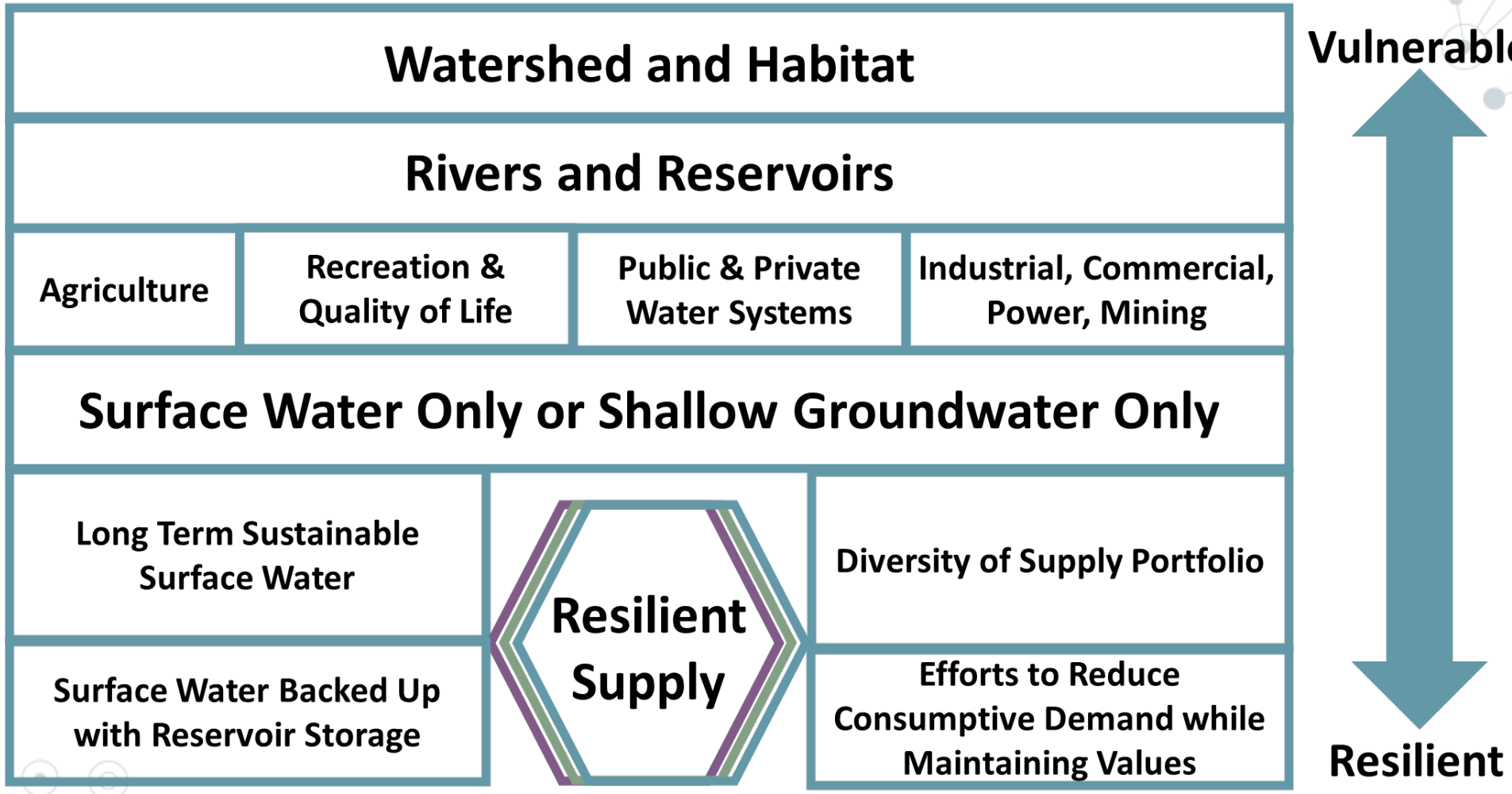
(NOAA, 2021)

Areas of Vulnerability and Resilience

Location	Alfalfa				Orchards			
	CIR (feet)		*Increase in Growing Season (days)*	*Increase in Water Use*	*CIR (feet)*		*Increase in Growing Season (days)*	*Increase in Water Use*
	Past	*Future*			*Past*	*Future*		
Farmington	2.59	3.27	36	26%	1.88	2.32	34	23%
Taos	1.55	1.98	33	28%	1.04	1.35	31	30%
Albuquerque	2.43	2.92	36	20%	1.74	2.10	38	21%
Hatch	3.02	3.55	42	18%	2.77	3.38	37	22%
Conchas Dam	2.36	2.86	35	21%	1.59	1.96	36	20%
Roswell	2.47	2.99	33	21%	2.41	2.96	34	23%
	AVERAGE		36	22%	**AVERAGE**		34	22%



Areas of Vulnerability and Resilience



Areas of Resilience

What contributes to resilience?

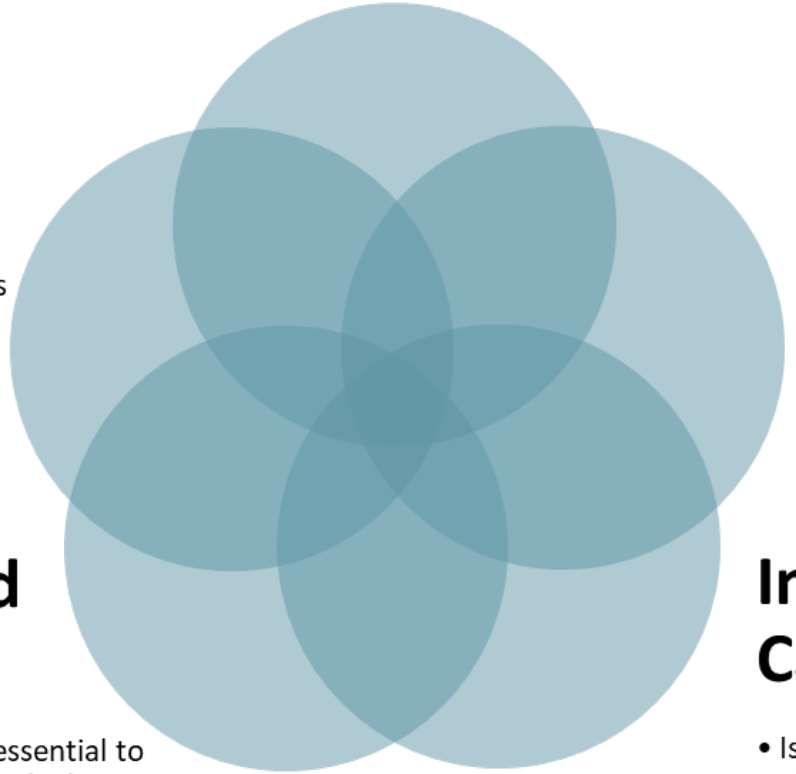
Each circle here represents a key factor of water resilience. The more factors a community/water user has, the more resilient they are likely to be.

Water Diversity

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

Demand Management

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



Water Availability

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

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?

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?

Note: Size of circles is not necessarily representative of the degree of importance of each factor. Factors of resilience may vary in communities across the State.

50-Year Water Plan Recommendations

Stewardship

Improve Upland Watershed Health

- Outreach & Education
- Increase Funding
- Develop Funding Sources
    - Lead – ENMRD

Stewardship

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

Stewardship

Protect Groundwater Health

- Establish Benchmarks
- Plug Abandoned Wells
- Clean Up Aquifers
- Protect & Enhance Recharge
- Develop Alternatives
    - Lead – NMED

Sustainability

Continue to Lead in Water Conservation

- Work with Farmers
- Equitable Access to Water Saving Technology
- Turn Efficiency into Conservation
  - Lead - NMOSE

Sustainability

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

Sustainability

Modernize Water Infrastructure

- Inter-Agency Task Force
- Improve Technical & Administrative Capacity
- Coordinate with Universities
- Prioritize Flood Protection
- Increase Storage
- Clean Drinking Water
    - Lead – NMOSE

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

Equity

Protect Acequia Culture

- Improve Fire Resilience
- Expand Market Opportunities
- Ongoing Focused Support
- Focus on Adaptation
    - Lead – ISC

Equity

Evaluate Alternative Water Sources

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

Equity

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

Task Force Next Steps

- Advisory Capacity
- Collective Expertise = Stronger Plan
- *Focus on Plan Recommendations*
  - ***Review Draft including State Agency Input***
  - ***Webinars – July 13 + 14 @ 10:30-12***
  - ***Survey to be distributed to support development of consensus input at the next Task Force meeting***
- Task Force Report to Legislature Ideally Builds on Plan Recommendations
- Serve as Plan Ambassadors
  - With Communities Across the State / Decision-Makers

Comments & Questions?