

Water Planning for All New Mexicans

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Acronyms

CAP	Continuing Authorities Program
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
e.g.	For Example
EJ	Environmental Justice
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EST.	Estimate
FRMP	Floor Risk Management Program
GDP	Gross Domestic Product
HUC	Hydrologic Unit Codes
ITEK	Indigenous Traditional Ecological Knowledge
IQR	Interquartile Range
NM50YWAP	New Mexico 50-Year Water Action Plan
NMISC	New Mexico Interstate Stream Compact
NMOSE	New Mexico Office of the State Engineer
PAS	Planning Assistance to States
PL	Public Law
TWWG	Tribal Water Working Group
USA	United States of America
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act

1 Introduction

Water is fundamental to all aspects of life in New Mexico, and climate change is altering the State's landscape and water resources with an expected reduction in water by 25-35%¹. These changes will continue to affect all aspects of New Mexicans' lives including agriculture, ecosystems, tourism, industry, energy, recreation, infrastructure, and development.

To ensure continued vitality, citizens of New Mexico must tackle complex water challenges together. Developing a culture of integrated planning that draws on New Mexico's rich heritage of water management coupled with an understanding of the modern-day environmental justice (EJ) issues facing communities is critical. In 2021, the New Mexico Interstate Stream Commission (NMISC) reached out to the U.S. Army Corps of Engineers (USACE) to start a Planning Assistance to the States (PAS) project focused on collaborative draft versions of the New Mexico 50-Year Water Action Plan² (NM50YWAP) and related analyses and documents.

PAS was created under the authority provided by Section 22 of the Water Resources Development Act of 1974 (PL 93-251), as amended, USACE can provide states, local governments, other non-Federal entities, and eligible Native American Indian tribes assistance in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources. The program can include many types of studies dealing with water resources issues. Typical PAS studies are planning level in detail; they do not include detailed design for project construction.

This comprehensive planning document aligns state initiatives to increase water security with additional recommendations that emphasize considerations for urban, rural, and overburdened and underserved communities in New Mexico. Planning efforts for each of these communities will take a different approach in terms of outreach, assessment, and implementation.

1.1 Climate Change Impacts in New Mexico

As a consequence of climate change, New Mexico faces a hotter, drier future¹. Temperatures are projected to increase in all seasons in all future scenarios. Because higher temperatures will raise evapotranspiration rates, contribute to early melting and sublimation of the snowpack, and increase the growing season length, water available for use by natural, agricultural, municipal, and industrial users will decline by as much as 25-30% by 2100. Although some climate models project a slightly wetter future, in all cases evapotranspiration increases to a greater degree, leading to a more arid future in which exceptional drought becomes common.

¹ Dunbar et al. 2022: Bulletin 164 — Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources (<https://geoinfo.nmt.edu/publications/monographs/bulletins/164/home.cfm>).

² <https://www.nm.gov/wp-content/uploads/2024/01/New-Mexico-50-Year-WaterAction-Plan.pdf>

Drought will increase forest stress, leading to increases in wildfire frequency and intensity, tree loss through pathogens, and ultimately conversion of conifer forests to shrublands in many areas. This will profoundly change the hydrology of these watersheds in ways that impact water supply and quality. The climate change factors mentioned above will impact all communities within New Mexico. However, overburdened and underserved communities across the state will be particularly impacted by climate change.

Many rural areas struggling with EJ issues as well as Native American Tribes, Pueblos, and Nations throughout the state typically rely on agriculture as a main component of the economy. Agriculture will be the sector hardest hit by water resources changes. Agriculture and food processing constitutes roughly 7% of the state gross domestic product (GDP)³. Agriculture is dominated by family operated farms and ranges (62.1%), with primary products (2012, 89% of total agricultural revenues) being cattle, dairy, hay, pecans, chile, and onions. Of farms in 2017⁴, 34% are classified as farms with Hispanic, Latino, or Spanish producers (Hispanic), 97% of these qualified as family farms, and average net cash farm income was \$7,317. In the same year, 25% of farms were classified as farms with American Indian or Alaska Native producers (Native American), 92% of these qualified as family farms, and average net cash farm income was - \$1,561⁵. For both groups, median farmer age was 59 years.

Hispanic and Native American producers have deep roots in northern New Mexico, where they draw agricultural water directly from high elevation areas via acequias (irrigation ditches)⁶. Acequias are located upstream of most reservoirs in the state, and generally lack water storage capabilities. Consequently, water supply to these communities will be highly sensitive to projected changes in snowmelt runoff (projected to be less in total volume and to occur earlier in the spring) and to increasingly arid climates with longer, more intense droughts and large, watershed-altering wildfires. Zuni Pueblo and the Navajo Nation have an agricultural sector dominated by grazing and are also vulnerable to drought⁷. Small rural agricultural communities in the rest of the state will also struggle to find and afford water.

Many of these northern New Mexico communities have senior water rights within the state or have water rights that remain to be adjudicated. For Hispanic communities in particular, as farmers age and drought reduces agricultural productivity, the pressure to sell water rights to

³ Diermer, J., T. Crawford, and M. Patrick, *Agriculture's Contribution to New Mexico's Economy* (https://pubs.nmsu.edu/_circulars/CR675/index.html).

⁴https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Race,_Ethnicity_and_Gender_Profile/New_Mexico/cpd35000.pdf

⁵https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Race,_Ethnicity_and_Gender_Profile/New_Mexico/cpd35000.pdf

⁶ [https://onlinelibrary.wiley.com/doi/full/10.1111/j.1936-704X.2019.03320.x#:~:text=Approximately%2010%25%20of%20the%20total,\(Rivera%20and%20Glick%202002\).](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1936-704X.2019.03320.x#:~:text=Approximately%2010%25%20of%20the%20total,(Rivera%20and%20Glick%202002).)

⁷ <https://extension.usu.edu/apec/research/impacts-of-drought-on-tribal-economies-in-new-mexico>

municipal areas will grow, threatening economic and cultural cohesion of the small, historic communities.

Drought and wildfire will also threaten municipal and industrial water supplies for communities across the state as snowmelt runoff and shallow aquifer recharge decline, deeper water sources are overdrawn to compensate for surface water losses, and wildfires and vegetation type conversion alter surface water availability⁸. Wildfire will also increase flood risk at the decadal scale for downstream communities, and the shift to a more arid climate is likely to slow watershed recovery. As water becomes scarcer, water prices are anticipated to rise which will be particularly difficult for the many overburdened and underserved communities in the state.

1.2 Main Stream New Mexico

In 2023, the New Mexico Legislature unanimously passed the Water Security Planning Act. This act aims to, in conjunction with other ongoing water planning work, reinvigorated regional water planning for the state of New Mexico. The New Mexico Interstate Stream Commission launched the Main Stream New Mexico Campaign to work together with our local communities, reexamine New Mexico's water regions and how they're delineated, and open new doors to support communities in taking a lead in their own regional water planning decisions. Main Stream provides a trusted resource for New Mexicans to get information, get inspired and get involved in water planning in New Mexico. Visit MainStreamNM.org to stay up to date the implementation of the Water Security Planning Act.

1.3 New Mexico 50-Year Water Action Plan Summary

New Mexico is considered one of the driest states in the nation, with a highly variable water supply that is currently challenged by long-term drought, competing interests, ongoing litigation, and growing demand. Climate change is upending the historical trends on which water use practices and interstate water compact agreements are based and it will test New Mexico's policies and infrastructure. Water supply will decrease as demand for existing water uses increases. Effective regional water planning and water quality protection are essential.

The state action plan is based in science, as reported in the Leap Ahead Report¹, describing and planning for climate change impacts to water supplies in New Mexico over the next 50 years.

⁸ Dunbar et al. 2022: Bulletin 164 — Climate Change in New Mexico Over the Next 50 Years: Impacts on Water Resources (<https://geoinfo.nmt.edu/publications/monographs/bulletins/164/home.cfm>).

The state outlined three primary areas to make actionable change over the next 50 years (Table 1):

Table 1: State of New Mexico 50-year Action Plan to Increase Water Security

Goals	Actions
Water Conservation	A1 – Develop a public education campaign. A2 – Incentivize agricultural agriculture water conservation. A3 – Reduce leaks in drinking water infrastructure and increase municipal conservation. A4 – Improve water storage and delivery systems.
New Water Supplies	B1 – Establish a \$500 Million strategic water supply to spur investments in desalinization and wastewater treatment. B2 – Adopt policies to expand potable and non-potable water reuse. B3 – Improve ground water mapping and monitoring.
Water & Watershed Protection	C1 – Cleanup groundwater sites C2 – Protect surface water by controlling pollution through a discharge permitting program. C3 – Modernize wastewater treatment plants and stormwater infrastructure. C4 – Protect and restore watersheds.

Throughout this PAS report, key topics will be tied back to the NM50YWAP water security goals. This will include highlighting the three primary areas (Water Conservation, etc.) and calling out the specific actions (A1, B2, C3, etc.).

2 Defining Equity & Environmental Justice

As a partner for state and non-federal agencies, USACE plays a critical role in inter-agency collaboration, directing federal investment and resources to communities across the state. USACE follows EJ guidance set by Executive Orders (EO), memorandums, and other Army guidance to successfully deliver its mission to the nation. Per EO 13985, The term **equity** means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. The term **overburdened and underserved communities** refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of “equity.”

Per Water Resources Development Act (WRDA) 2020 Sec. 160 and 117 Implementation Guidance, USACE defines **disadvantaged communities** as:

- Low per capita income - The area has a per capita income of 80% or less of the national average;
- Unemployment rate above national average - The area has an unemployment rate that is, for the most recent 24-month period for which data are available, at least 1% greater than the national average unemployment rate;
- Indian country as defined in 18 U.S.C. 1151 or in the proximity of an Alaska Native Village;
- U.S. Territories; or
- Communities identified as disadvantaged by the Council on Environmental Quality's Climate and Economic Justice Screening Tool (<https://screeningtool.geoplatform.gov>).

2.1 Environmental Justice Specific Executive Orders

- *EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 11 February 1994: Focuses Federal efforts towards minority and low-income populations with the goal of achieving environmental protection for all communities.
- *EO 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, 20 January 2021: Establishes the Federal Government's role of support and empowerment in advancing equity for all, including communities that have been underserved and adversely affected by persistent poverty and inequality.
- *EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, 20 January 2021: Directs Federal agencies to review and formulate actions to address Federal regulations enacted in the last 4 years that conflict with environmental and climate concerns or impacts.
- *EO 14008, Tackling the Climate Crisis at Home and Abroad*, 27 January 2021: Recognizes the right of all to live in healthy, thriving, and resilient communities. Several new initiatives will progress and track steps towards meeting this directive. The White House Environmental Justice Interagency Council will develop strategies to address current and historic environmental injustices; the White House Environmental Justice Advisory Council provides direction on ways to increase the Federal Government's efforts on EJ; the Justice40 Initiative directs 40% of Federal investment to climate change, clean energy, and disadvantaged communities; the development of CEJST to help inform the

decision-making process across the Federal Government; the *Environmental Justice Scorecard* to track Federal agency performance on EJ goals.

- *EO 14091, Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*, 16 February 2023: Extends and strengthens equity-advancing requirements for federal agencies, and positions federal agencies to deliver better outcomes for the American people.
- *EO 14096, Revitalizing Our Nation’s Commitment to Environmental Justice for All*, 21 April 2023: Makes clear that the pursuit of EJ, the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, is a duty of all executive branch agencies and should be incorporated into their missions. It also affirms that EJ is central to the implementation of our bedrock civil rights and environmental laws.

2.2 Environmental Justice Specific USACE Guidance

- *Assistant Secretary of the Army for Civil Works Memorandum for Commanding General, USACE, Subject: Policy Directive - Comprehensive Documentation of Benefits in Decision Document*, 5 January 2021, updates and expands policy on the comprehensive assessment and documentation of water resources development project planning. The project selection process is informed by total benefits of alternatives and equal consideration of economic, environmental, and social categories.
- *Assistant Secretary of the Army for Civil Works Memorandum for Commanding General, USACE, Subject: Implementation of Environmental Justice and the Justice40 Initiative*, 15 March 2022, issued guidance that defines EJ as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income regarding the development, implementation, and enforcement of environmental laws, regulations, and policies, with no group bearing a disproportionate burden of environmental harms and risks”.
- *Assistant Secretary of the Army for Civil Works Memorandum for Commanding General, USACE, Subject: Implementation of the Interim Environmental Justice Strategic Plan*, 16 December 2022, establishes framework to achieve EJ in all phases of USACE Civil Works programs. District Strategic Plans will be developed focus on the following: build internal and external capacity, structure the office for success, assess current relationships and capabilities, and prepare and conduct inclusive outreach and engagement approaches.

- *Assistant Secretary of the Army for Civil Works Memorandum for Commanding General, USACE, Subject: Implementation Guidance for Section 160 of the Water Resources Development Act of 2020, Definition of Economically Disadvantaged Community, 14 March 2023*, issued guidance that defines the term “economically disadvantaged community” for the purpose of the WRDA. An Economically Disadvantaged Community meets one or more of the following: low per capita income (income of 80% or less of the national average), unemployment rate above the national average (most recent 240-month period, at least 1% greater than the national average), Indian Country as defined in 18 U.S.C. 1151 or in the proximity of an Alaska Native Village, U.S. Territories, or identified as disadvantaged by the Council on Environmental Quality’s Climate and Economic Justice Screening Tool.
- *Assistant Secretary of the Army for Civil Works Memorandum for Commanding General, USACE, Subject: Implementation Guidance for Section 117 of the Water Resources Development Act of 2020, Federal Interest Determination, 20 March 2023*, directs that, if a non-Federal agency requests a feasibility study that would benefit an economically disadvantaged community, the determination of Federal interest in the feasibility study or projects that may be proposed in the study must be completed.
- *Assistant Secretary of the Army for Civil Works Memorandum for Commanding General, USACE, Subject: Planning Update for Section 8119 of the Water Resources Development Act of 2022, Technical Assistance, 23 May 2023*, states eligible entities that meet the definition of economically disadvantaged communities under Section 160 of WRDA 2020 may request technical assistance and comprehensive water resource planning support under the PAS program at full federal cost. A Letter of Intent from the non-federal entity requesting assistance is required and will be used by the District to determine eligibility for the cost-share waiver.

3 Climate and Economic Justice Screening Tool

In 2021, President Biden issued EO 13985 and EO 14008, which give direction to federal agencies to promote and work toward proactively achieving EJ. Federal agencies have been directed to develop and implement policies and strategies that strengthen compliance and enforcement, incorporate EJ considerations in their work, increase community engagement, and demonstrate that at least 40% of the benefits from federal investments in climate and clean energy flow to disadvantaged communities. This is known as the Justice40 Initiative.

To meet the White House’s Justice 40 Initiative, the Council on Environmental Quality (CEQ) developed a tool that can be used by federal and state agencies to help identify overburdened

and underserved, or disadvantaged communities. The CEQ released version 1 of the Climate and Economic Justice Screening Tool (CEJST)⁹ in November 2022.

CEJST data is delivered via an online mapping tool that displays communities bounded by **census tracts**. Census tracts are small units of geography determined by the U.S. Census Bureau which occurs once every ten years¹⁰; boundaries used in version1 of the tool are from the 2010 Census. The interactive map displays whether a community is considered disadvantaged (Yes or No) based on eight categories of burden coupled with a socioeconomic threshold based on income or education:

- Climate Change Datasets + Low Income
- Energy Datasets + Low Income
- Health Datasets + Low Income
- Housing Datasets + Low Income
- Legacy Pollution Datasets + Low Income
- Transportation Datasets + Low Income
- Water and Wastewater Datasets + Low Income
- Workforce Development Datasets + High School Degree Non-Attainment

CEJST is different from previous federal environmental screening tools, such as EJScreen (<https://www.epa.gov/ejscreen>), and state screening tools. For example, the CEJST helps to identify geographically defined disadvantaged communities that are marginalized by underinvestment and overburdened by pollution instead of using demographic information combined with some environmental metrics. Also, CEJST only uses data that are nationally consistent and publicly available as opposed to some state specific screening tools that may only use data available to that respective state.

3.1 CEJST Indicators of Burden

The CEJST indicators of burden are formed using high quality datasets from multiple federal, non-federal, and university surveys and databases. The tool ranks categories of burdens with thresholds set at **percentiles**, quantifying how much burden each census tract experiences when compared to other tracts in the United States. Census tracts may be considered disadvantaged by specific circumstances, such as Federally Recognized Tribes¹¹ including

⁹ <https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>

¹⁰ https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_6

¹¹ To respect Tribal sovereignty and self-government and to fulfill Federal trust and treaty responsibilities to Tribal Nations, land within the boundaries of Federally Recognized Tribes is designated as disadvantaged on the map. Alaska Native Villages are included as point locations that are smaller than a census tract. The boundaries of census tracts and the lands of Federally Recognized Tribes are different.

Pueblos, or if a census tract is completely bordered by disadvantaged communities and is at or above the 50th percentile for low income. Other census tracts are considered disadvantaged if they meet thresholds for at least one of the tool’s following categories of burden (Table 2) coupled with the socioeconomic burden (low income or high school degree non-attainment):

Table 2: Categories of Burden

Category of Burden	Communities are identified as disadvantaged if they are in census tracts that:
Climate Change	are at or above the 90 th percentile for expected agricultural loss rate OR expected building loss rate OR expected population loss rate OR projected flood risk OR projected wildfire risk AND are at or above the 65 th percentile for low income
Energy	are at or above the 90 th percentile for energy cost OR inhalable particulate matter 2.5 or smaller micrometer diameter AND are at or above the 65 th percentile for low income
Health	are at or above the 90 th percentile for asthma, OR diabetes OR heart disease OR low life expectancy AND are at or above the 65 th percentile for low income
Housing	experienced historic underinvestment OR are at or above the 90 th percentile for housing cost OR lack of green space OR lack of indoor plumbing OR lead paint AND are at or above the 65 th percentile for low income
Legacy Pollution	have at least one abandoned mine land OR Formerly Used Defense Sites OR at or above the 90 th percentile for proximity to hazardous waste facilities OR proximity to Superfund sites OR proximity to Risk Management Plan facilities AND are at or above the 65 th percentile for low income
Transportation	are at or above the 90 th percentile for diesel particulate matter exposure OR transportation barriers OR traffic proximity and volume AND are at or above the 65 th percentile for low income
Water & Wastewater	are at or above the 90 th percentile for underground storage tanks and releases OR wastewater discharge AND are at or above the 65 th percentile for low income
Workforce Development	are at or above the 90 th percentile for linguistic isolation OR low median income OR poverty OR unemployment AND more than 10% of people ages 25 or older do not have a high school education (i.e., graduated with a high school diploma)
Federally Recognized Tribes, including Pueblos, and Alaska Native Villages, are considered disadvantaged communities.	

Within each category of burden listed Table 2 above, multiple subsets of data help quantify characteristics of disadvantaged communities throughout the United States. This report will provide the full results from relevant categories of burden and subset data available in CEJST. Table 3 shows the indicators from CEJST cross-referenced with NM50YWAP water security goals (See Table 1 above).

Table 3: CEJST Indicators in Reference to NM50YWAP Goals (See Table 1)

Category of Burden	Indicators (Subset Data)	Description
Socio-Economic	Low Income	People in households where income is less than or equal to twice the federal poverty level, not including students enrolled in higher education.
	Highschool Degree Non-Attainment	Percent of people ages 25 years or older whose high school education is less than a high school diploma.
Climate Change	Expected Agricultural Loss Rate NM50YWAP: (A2), (A4), (B2), (B3), (C1), (C2), (C4)	Risk from losses due to fourteen types of natural hazards: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather.
	Expected Building Loss Rate	Risk from losses due to fourteen types of natural hazards: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather.
	Expected Population Loss	Fatalities and injuries resulting from natural hazards each year.
	Projected Flood Risk NM50YWAP: (A4), (C2), (C3), (C4)	Projected risk to properties from projected floods, from tides, rain, riverine and storm surges within 30 years.
	Projected Wildfire Risk NM50YWAP: (A4), (C4)	Projected risk to properties from wildfire from fire fuels, weather, humans, and fire movement in 30 years.
Energy	Energy Costs NM50YWAP: (B1), (C3)	Average annual energy costs divided by household income.
	PM2.5 in the Air NM50YWAP: (C4)	Fine inhalable particles with 2.5 or smaller micrometer diameters; percentile is the weight of particles per cubic meter.
Health	Asthma	Share of people who answer ‘yes’ to both of the following questions: ‘Have you ever been told by a health professional that you have asthma?’ and ‘Do you still have asthma?’
	Diabetes	Share of people ages 18 years and older who have been told by a health professional that they have diabetes other than diabetes during pregnancy.
	Heart Disease	Share of people 18 years and older who have been told by a health professional that they have had angina or coronary heart disease.
	Low Life Expectancy NM50YWAP: (C1), (C4)	Average number of years people have left in their lives.
Housing	Housing Costs NM50YWAP: (C3)	Share of households making less than 80% of the area median family income and spending more than 30% of income on housing.
	Lack of Green Space NM50YWAP: (A4), (C4)	Share of land with developed surfaces covered with artificial materials including concrete or pavement, excluding crop land for agricultural purposes.

	Lack of Indoor Plumbing NM50YWAP: (A3), (A4), (C3)	Housing without indoor kitchen facilities or complete plumbing facilities.
	Lead Paint	Share of homes built before 1960, which indicates potential lead paint exposure.
Legacy Pollution	Abandoned Mine Land NM50YWAP: (B3), (C1), (C4)	Presence of an abandoned mine left by legacy coal mining operations.
	Formerly Used Defense Sites NM50YWAP: (B3), (C1), (C4)	Properties that were owned, leased, or possessed by the United States prior to October 1986.
	Proximity to Hazardous Waste Facilities NM50YWAP: (B3), (C1), (C2), (C4)	Number of hazardous waste facilities (Treatment, Storage, and Disposal Facilities and Large Quantity Generators) within 5 kilometers (or nearest beyond 5 kilometers), each divided by distance in kilometers.
	Proximity to Risk Management Plan Facilities NM50YWAP: (B3), (C1), (C2), (C4)	Count of Risk Management Plan facilities that handle substances with significant environmental and public health risks within 5 kilometers (or nearest one beyond 5 kilometers), each divided by distance in kilometers.
	Proximity to Superfund Sites NM50YWAP: (B3), (C1), (C4)	Number of proposed or listed Superfund or National Priorities List sites within 5 kilometers (or nearest one beyond 5 kilometers), each divided by distance in kilometers.
Transportation	Diesel Particulate Matter Exposure	Mixture of particles in diesel exhaust in the air, as micrograms per cubic meter.
	Traffic Proximity and Volume	Number of vehicles (average annual daily traffic) at major roads within 500 meters, divided by distance in meters.
	Transportation Barriers	Average of relative cost and time spent on transportation.
Water and Wastewater	Underground Storage Tanks and Releases NM50YWAP: (A4), (C1)	Formula of the density of leaking underground storage tanks and number of all active underground storage tanks within 1500 feet of the census tract boundaries.
	Wastewater Discharge NM50YWAP: (A4), (B1), (B2), (C2), (C3)	Modeled toxic concentrations at parts of streams within 500 meters.
Workforce Development	Linguistic Isolation NM50YWAP: (A1)	Share of households where no one over age 14 speaks English very well.
	Low Median Income	Low median income calculated as a share of the area's median income.
	Poverty	Share of people living at or below 100% of the Federal poverty level.
	Unemployment NM50YWAP: (B1)	Number of unemployed people as a part of the labor force.

To learn more about CEJST data and to see the CEJST viewing platform, visit the CEQ's website at <https://screeningtool.geoplatform.gov/>

4 Understanding Environmental Justice Concerns Across New Mexico

Understanding overburdened and underserved communities is a fundamental component of comprehensive water planning. What are communities dealing with outside of water planning? How might those burdens impact a community’s water use or ability to react to changes in state water policy? Then by understanding varying EJ considerations across the state, the Federal and State governments can assist communities in meeting specific needs and areas of opportunity.

CEJST data is compiled by census tracts and displayed below in the same manner (see Section 3 of this report for further explanation of census tracts). Results are reported as averages and medians of percentiles, and occasionally as overall percentages. **Boxplots** are used to display results throughout Section 4. Boxplots are a graphical way to summarize data (Figure 1). The shape of a boxplot shows the data distribution and gives key information such as the spread of the data (minimum and maximum values), median value of the data, the data quartiles, and if there are any data outliers. For this report, the mean of the data was added to the boxplot as an “x”.

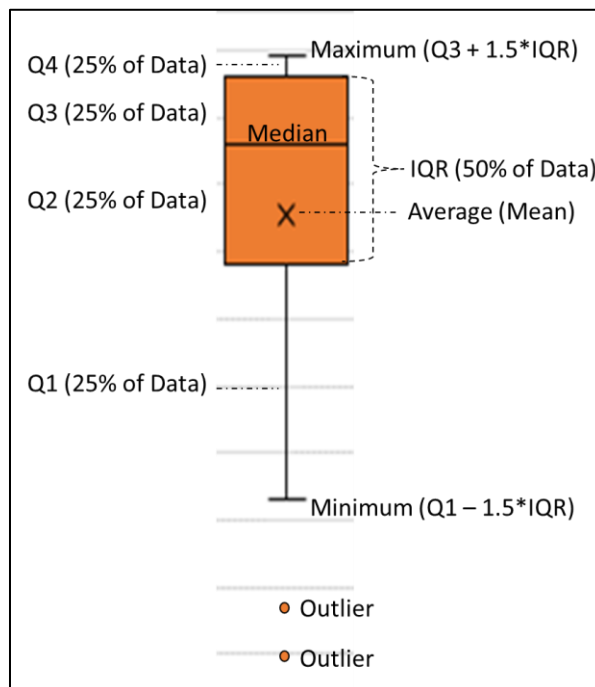


Figure 1: Understanding Boxplots. Q = Quartile, IQR = Interquartile Range

According to the CEJST analysis, approximately 90% of the New Mexico landscape is considered disadvantaged (Figure 2). New Mexico is outlined in red. Census tracts that are marginalized by underinvestment and overburdened by pollution are highlighted as being disadvantaged on the

map (shaded in blue). Federally Recognized Tribes, are considered disadvantaged communities, whether or not they have land.

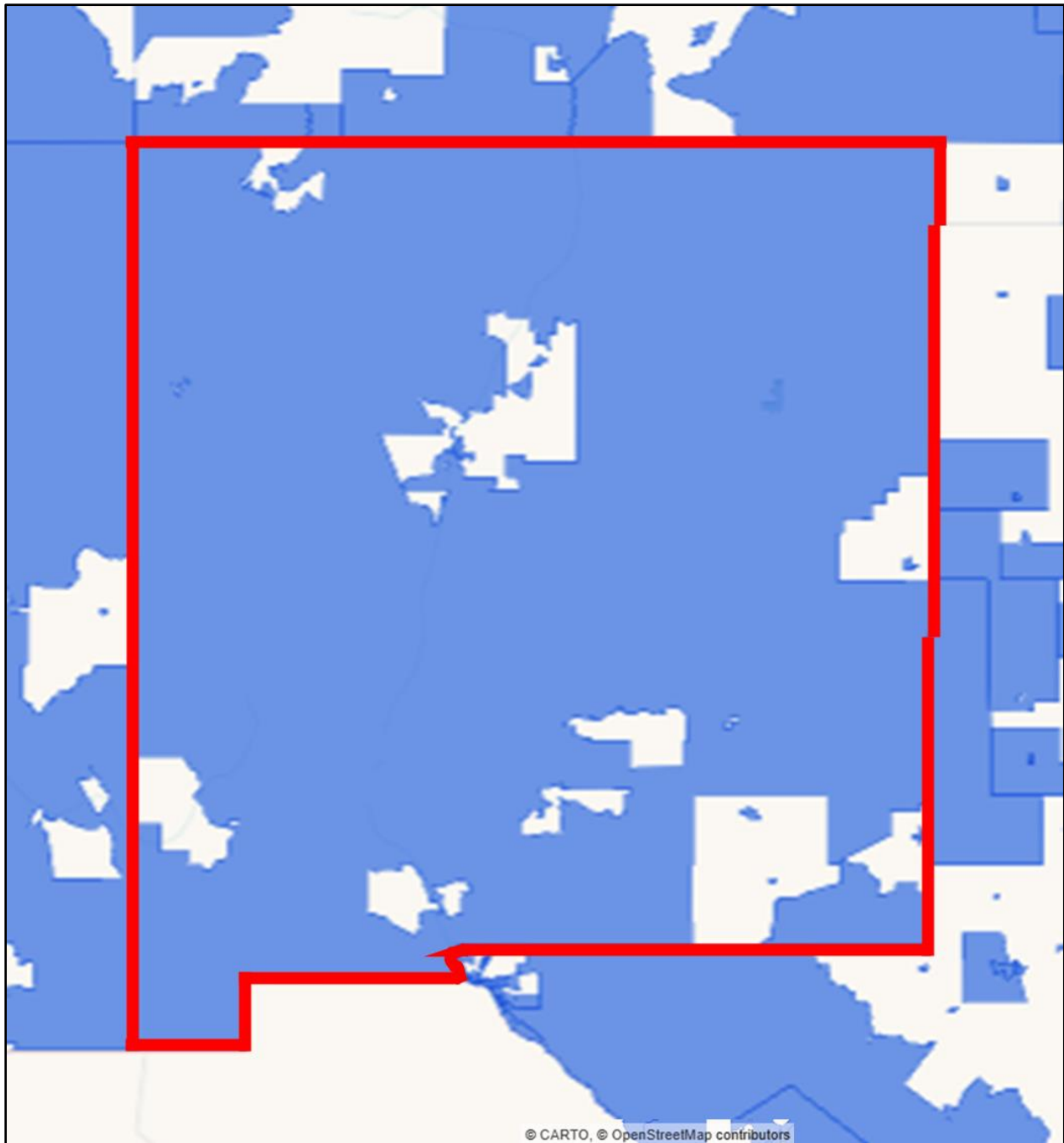


Figure 2: Climate and Economic Justice Screening Tool results for the State of New Mexico (outlined in red). Blue shaded areas are identified as disadvantaged communities. (Source: CEJST v2.0)

To analyze CEJST data and discuss equitable water planning, this report divides the state of New Mexico into:

- (1) Watersheds,
- (2) Urban versus Rural areas, and
- (3) Special Considerations
 - a. Surface vs Groundwater Dependent Communities
 - b. Tribes, Pueblos, and Nations
 - c. Acequia Communities

This report provides the results from relevant categories of burden and subset data available in CEJST for each section.

4.1 Environmental Justice Concerns by Watershed

A watershed is an area of land that drains all rainfall and streams to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. Community identification that aligns in a larger context of watersheds provides a more complete understanding of water resource and management opportunities that require region specific planning, infrastructure, and response. Water availability and impacts can vary from one watershed to another and includes many factors such as elevation, topography, vegetation, land use, and historic and future seasonal weather patterns.

Watersheds are identified by surface hydrologic features at nested, hierarchical levels of classification; 2, 4, 6, 8, 10, and 12-digit hydrologic units (Figure 3). Classification typically used for a localized level of detail are Hydrologic Unit Code (HUC) 8 and 10.

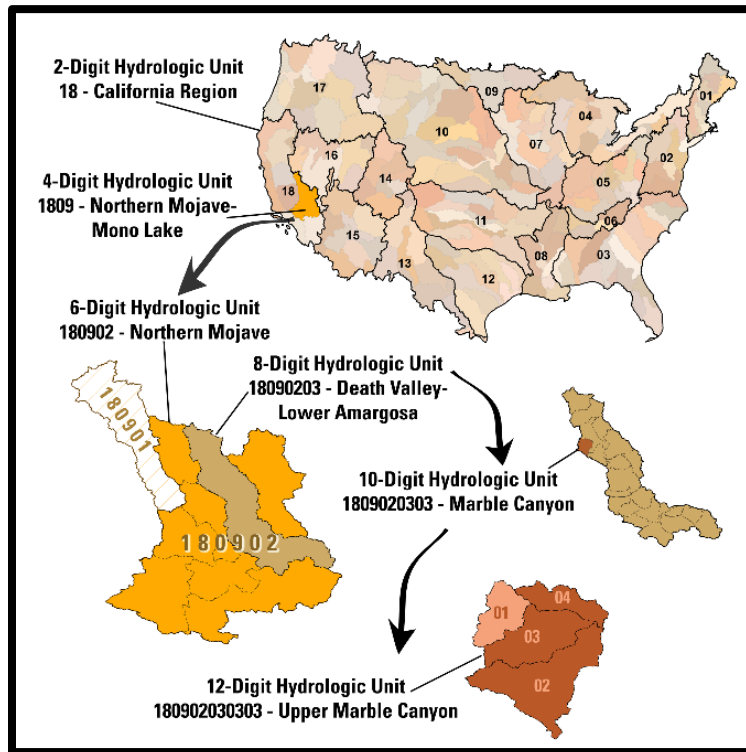


Figure 3: Explanation of the watershed naming convention (HUCs) in the United States. (Source: USGS).

HUC 4 watersheds are the primary watershed level used for analysis in this report (Figure 4). Watersheds have been combined for this report based on either having a small footprint within the state, being a closed basin, or being an open basin. These “combo-basins” include:

- Arkansas, Upper Cimarron, and North Canadian (AR, UC, NC) Basins
 - Arkansas Basin (HUC 1102)
 - Upper Cimarron Basin (HUC 1104)
 - North Canadian Basin (HUC 1110)
- Canadian Basin
 - Upper Canadian Basin (HUC 1108)
 - Lower Canadian Basin (HUC 1109)
- Red, Colorado, Brazos Basins
 - Red Basin (HUC 1112)
 - Brazos Headwaters Basin (HUC 1205)
 - Upper Colorado Basin (HUC 1208)
- Pecos Basin
 - Upper Pecos Basin (HUC 1306)
 - Lower Pecos Basin (HUC 1307)
- Central Closed Basins

- Rio Grande Closed Basins (HUC 130500)
- Jornada Del Muerto Basin (HUC 13020210)
- Jornada Draw Basin (HUC 13030103)
- Rio Grande Basin
 - Rio Grande Headwaters Basin (HUC 1301)
 - Rio Grande Elephant Butte (HUC 1302) *Does not include the NP/SA Closed Basins*
 - Rio Grande – Caballo (HUC 130301)
- North Plains and Plains of San Augustin (NP / SA) Closed Basins
 - North Plains Basin (HUC 13020206)
 - Plains of San Agustin Basin (HUC 13020208)
- Southwest (SW) Closed Basins
 - Animas Valley Basin (HUC 15040003)
 - Cloverdale Basin (15080303)
 - Mimbres Basin (HUC 130302)
- Upper Colorado Basin (HUC 1408)
- Lower Colorado Basin
 - Little Colorado (HUC 1502)
 - Upper Gila (HUC 1504) *Does not include the Animas Valley Basin*

Open Basins and Closed Basins each have unique characteristics in terms of water source, supply, and demand. Open Basin refers to watersheds that drain water eventually into the ocean. Open Basins in New Mexico are mostly surface water dependent and typically adhere to *compacts* (legally binding agreements).

Closed Basins are a drainage surrounded by high land without a natural outlet. Surface water does not flow out to a larger river and thus does not reach the ocean. Closed Basins are typically reliant on groundwater and typically do not have compliance requirements with neighboring communities or watersheds. Section 4.3.1 further describes groundwater versus surface water dependent communities.

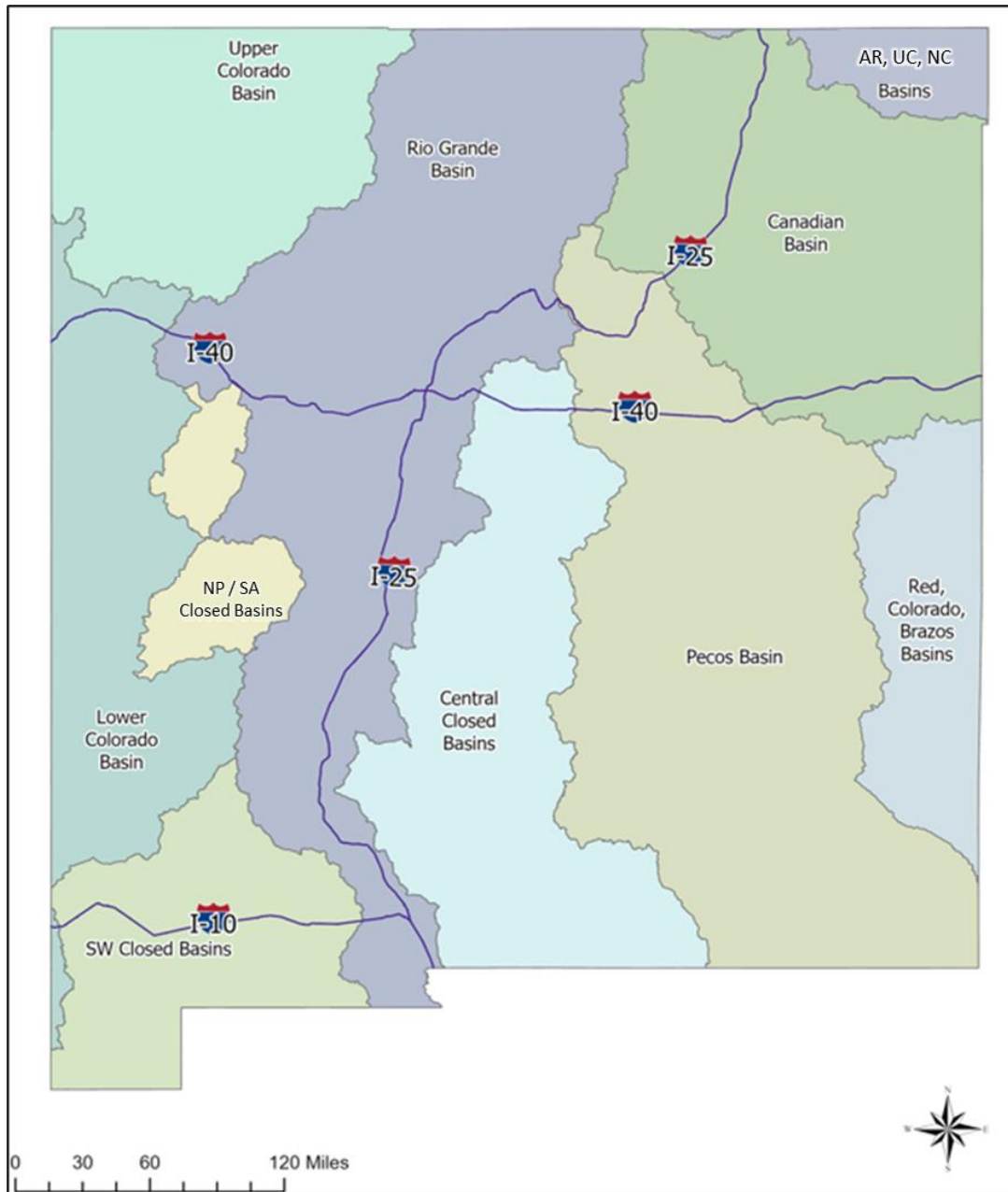


Figure 4: Map of Basins in New Mexico used for analysis in this report.

The number of census tracts within each water basin is based on the population located within that water basin. Therefore, water basins with larger populations have more census tracts within them and basins with smaller populations have fewer census tracts. Water basins with fewer census tracts have a higher percentage of those census tracts considered disadvantaged (Figure 5). Basins with a greater number of census tracts tend to have a smaller percentage of those census tracts considered disadvantaged.

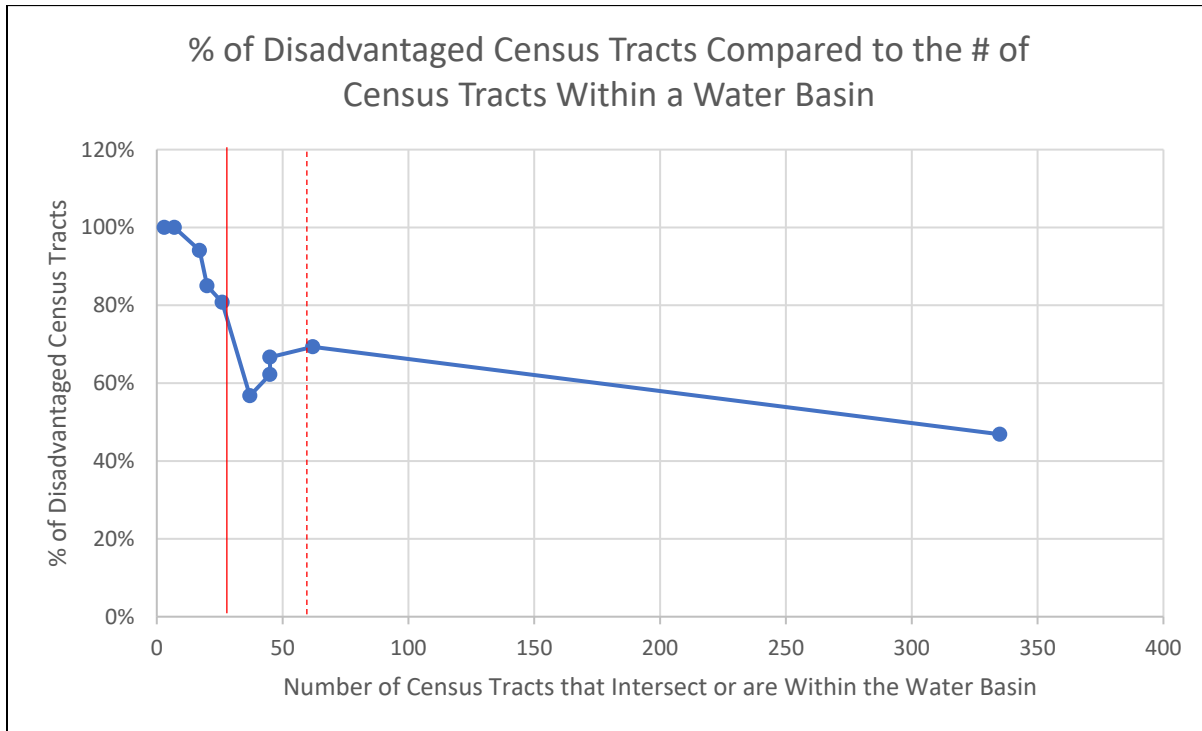


Figure 5: Percent of Census Tracts considered disadvantaged vs the number of Census Tracts within a water basin. The red line indicates the average number of census tracts in New Mexico Water basins ($n=29.1$), with the Rio Grande Basin removed because it is an outlier. When the Rio Grande Basin is included, the average number of Census Tracts within New Mexico water basins jumps up to $n=59.7$ (dotted red line).

Water basins with smaller populations have more EJ burdens on average to deal with than basins with larger populations. These EJ burdens coupled with fewer people to assist means that communities in sparsely populated basins can quickly become overburdened with water planning.

Similarly, one idea that may work in one part of the state may not be an effective solution in another. Many of New Mexico's water basins have a north to south direction. This makes it possible to differentiate potential EJ concerns from east to west. Figure 6 shows which basins are "West" basins (blue outline) and which are "East" basins (orange outline).

The census tracts are colored to show the number of EJ indicator thresholds exceeded according to the CEJST data. Lighter colors represent fewer indicator thresholds exceeded and darker colors represent more indicator thresholds exceeded.

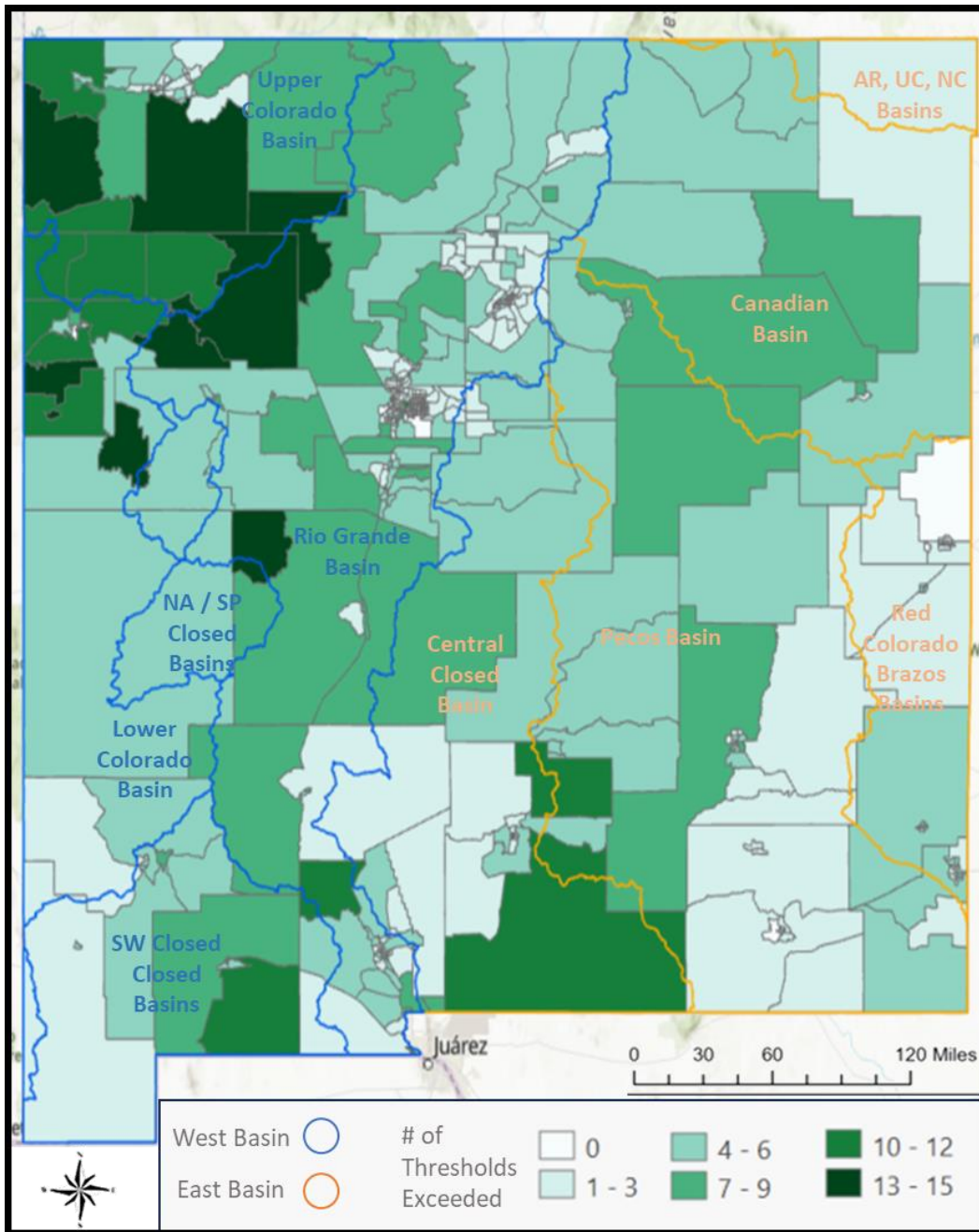


Figure 6: New Mexico water basins divided into West Basins (Blue Outline) and East Basins (Orange Outline). Census tracts show the number of EJ indicator thresholds exceeded with a range from 0-15.

The western basins have, on average, a higher number of thresholds exceeded (~6.24 indicator thresholds) versus the eastern basins (~4.36 indicator thresholds; Figure 7a). However, there is no difference in the average percent of disadvantaged census tracts within western basins (~75.86%) versus the average percent of disadvantaged census tracts within eastern basins (~76%; Figure 7b).

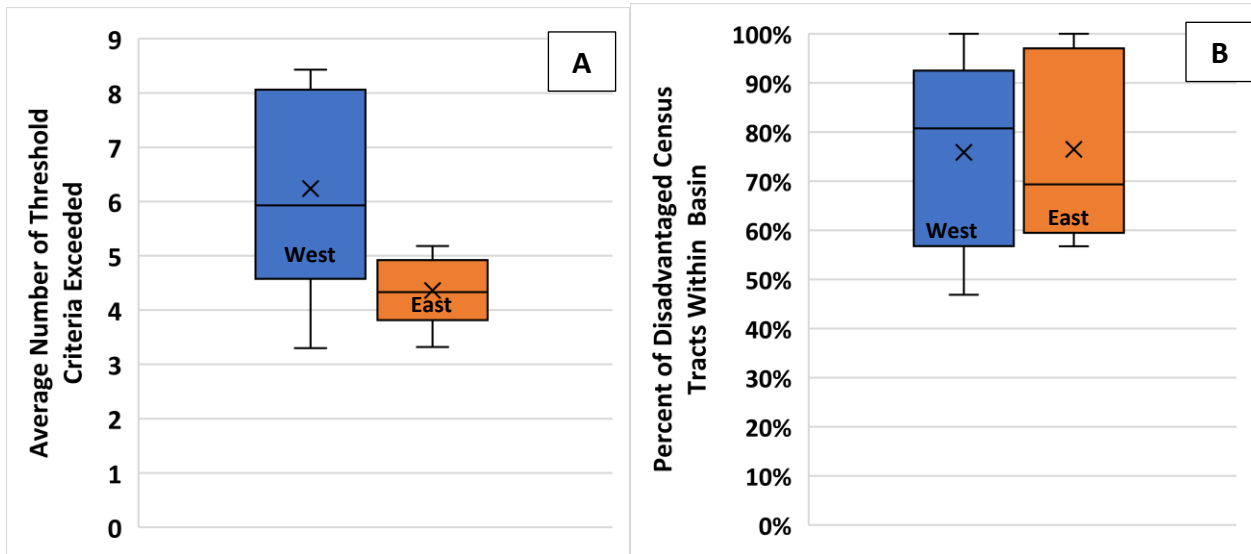


Figure 7: A) Average number of thresholds exceeded in West basins (blue 7a) versus average number of thresholds exceeded in East basins (orange 8a). B) Average percent of disadvantaged census tracts in West basins (blue 7b) versus average percent of East basins (orange 8b). Averages are called out with an x on the boxplots.

Certain environmental justice burdens are more likely to occur in the east versus the west and vice versa. For example, expected agriculture land loss rate percentile (A2, A4), population loss rate percentile, and properties at risk of fire (C4) percentile is higher in eastern water basins versus western water basins. However, western basin census tracts show a higher percentile for homes with no kitchen or indoor plumbing (A3, C3). (Figure 8)

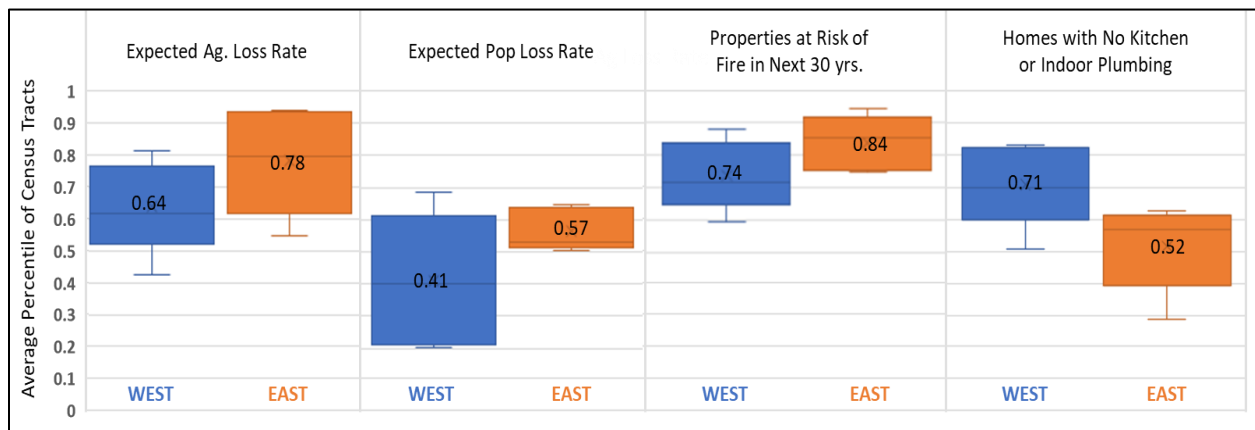


Figure 8: Environmental justice concern percentiles (percentiles are compared to the rest of the USA) comparing West basins with East basins. Averages are called out on the boxplots and designated with an x.

Watersheds are unique across the state. Some are bound to compacts, while others are not, and some rely on groundwater while others rely on surface water or a mix of both surface and groundwater. However, all face the unique problem of a hotter and dryer future with less

surface water for use and for recharging aquifers. With this challenge ahead, the state can use the unique knowledge found within communities coupled with a new understanding of the EJ burdens the communities face to create better planning for water conservation, new water supplies, and watershed protection.

4.2 Environmental Justice Concerns by Urban and Rural Areas

In this section, USACE divides the census tracts into “Rural” and “Urban” areas. Planning and policy processes for rural and urban communities will be different, despite sharing a watershed. New Mexico is largely dominated by rural areas with smaller communities throughout the state that would benefit from increased engagement. Policy and resources that are driven by urban areas should be assessed in their effectiveness of meeting the needs of all residents across the state. Equitable water planning policy will successfully identify opportunities and challenges with the dynamic population and housing density of New Mexico. Technical definitions of urban and rural areas from the U.S. Census Bureau are as follows¹²:

- *Urban area*: an urban area comprises a densely settled core of census blocks that meet minimum housing unit density and/or population density requirements. This includes adjacent territory containing non-residential urban land uses. To qualify as an urban area, the territory must encompass at least 2,000 housing units or have a population of at least 5,000.
- *Rural Area*: Rural encompasses all population, housing, and territory not included within an urban area.

For the purposes of this report, Urban areas in New Mexico follow the definition above in terms of having a population greater than 5,000. Urban areas in New Mexico are further divided into three categories (Figure 9):

- Small Urban Area – Population between 5,000 and 10,000
- Medium Urban Area – Population between 10,001 and 100,000
- Large Urban Area – Population greater than 100,000

In New Mexico there are eighteen small urban areas (41 census tracts), eighteen medium urban areas (132 census tracts), and two large urban areas (191 census tracts). In total there are 364 urban census tracts and 135 rural census tracts in New Mexico.

¹² U.S. Census Bureau, Urban and Rural, 2023. (<https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html>)

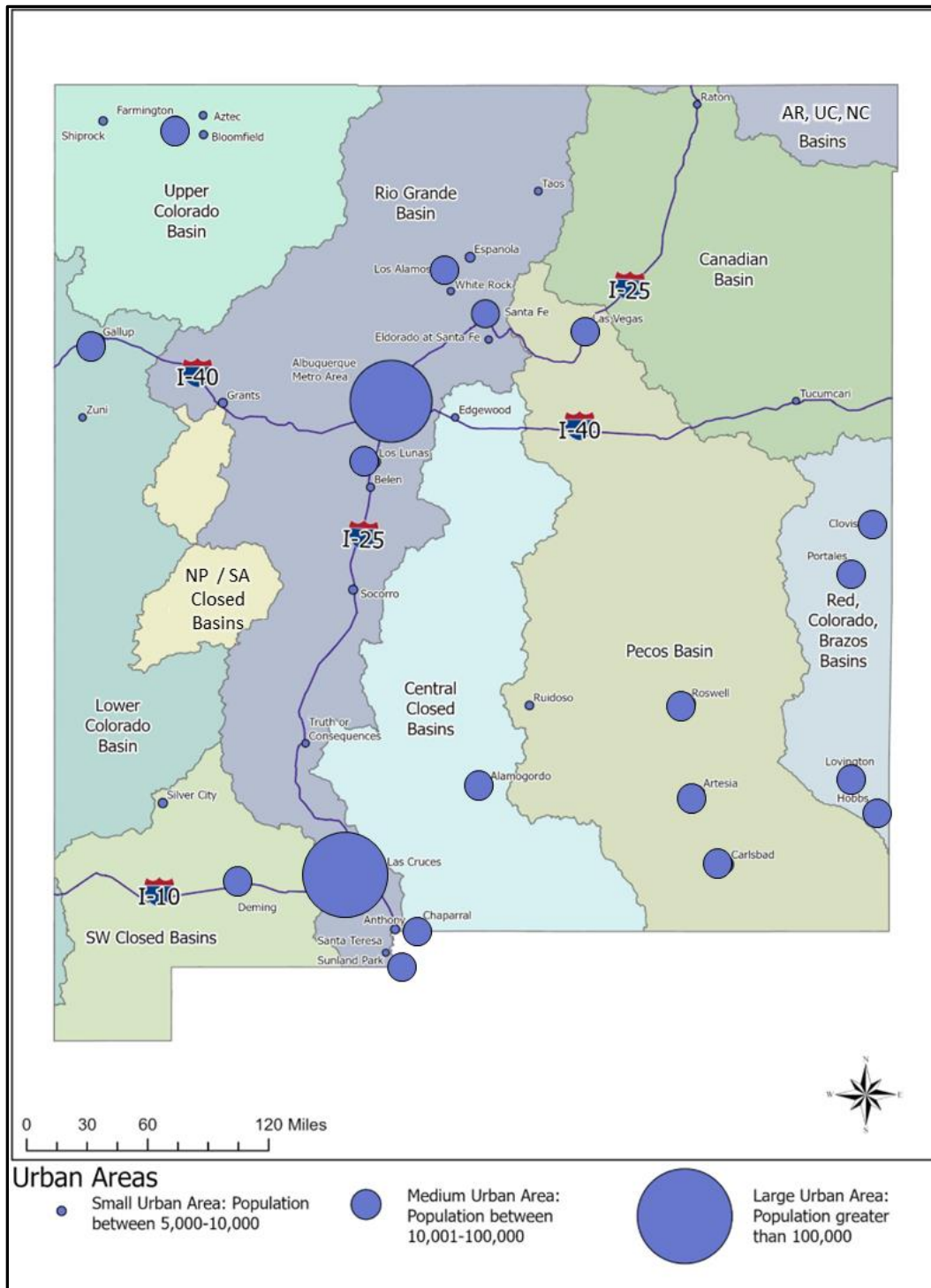


Figure 9: Urban Areas in New Mexico indicated by population size. (Data as of 2020 Census information)

The rural areas of New Mexico have a much higher percent of disadvantaged census tracts compared to the urban areas of the state (Rural = 78%, Urban = 44%). However, when the urban areas are broken into small, medium, and large, the small urban areas of the state are

similar to the rural areas with 68% disadvantaged census tracts. Both medium urban areas and large urban areas are below 51% of their census tracts being considered disadvantaged (Large = 36%, Medium = 50%).

Rural census tracts tend to exceed more EJ threshold criteria than urban census tracts (Rural = 5.68, Urban = 2.95; Figure 10). However, when urban census tracts are broken up into large (Large U), medium (Med U), and small (Small U), the small urban census tracts show similar results to the rural census tracts (Small Urban = 4.46). Medium urban areas act as a middle ground on the number of EJ threshold criteria exceeded with more than large urban census tracts but less than small urban census tracts (Medium Urban = 3.24, Large Urban = 2.43).

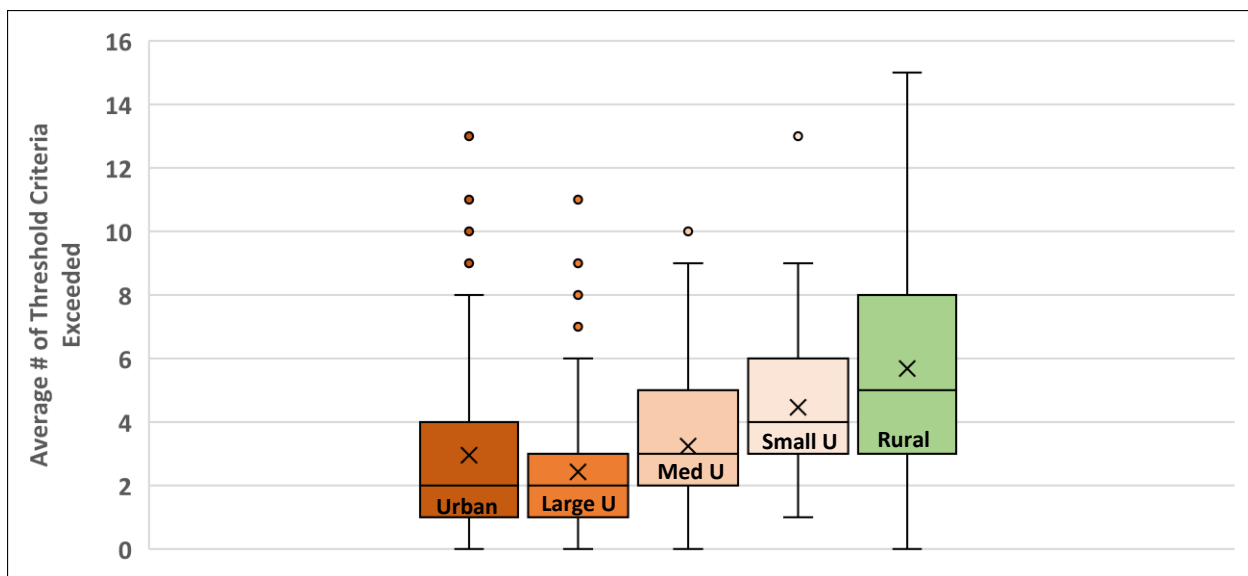


Figure 10: Average number of EJ threshold criteria exceeded by Urban census tracts and Rural census tracts. Urban is further broken into small urban (Small U), medium urban (Med U), and large urban (Large U). x denotes the average. Points indicate outliers.

Agriculture land loss is an issue across the USA¹³. Within New Mexico, rural census tracts have a median percentile above the 90th compared to the rest of the USA for expected agriculture land loss (Figure 11). Not surprisingly, New Mexico’s rural census tracts also have a significantly higher average percentile for expected agriculture land loss than large and medium urban areas within the state.

¹³ US Department of Agriculture, National Agricultural Statistics Service. February 2024. 1997 and 2022 Census of Agriculture. <https://www.nass.usda.gov/AgCensus/>

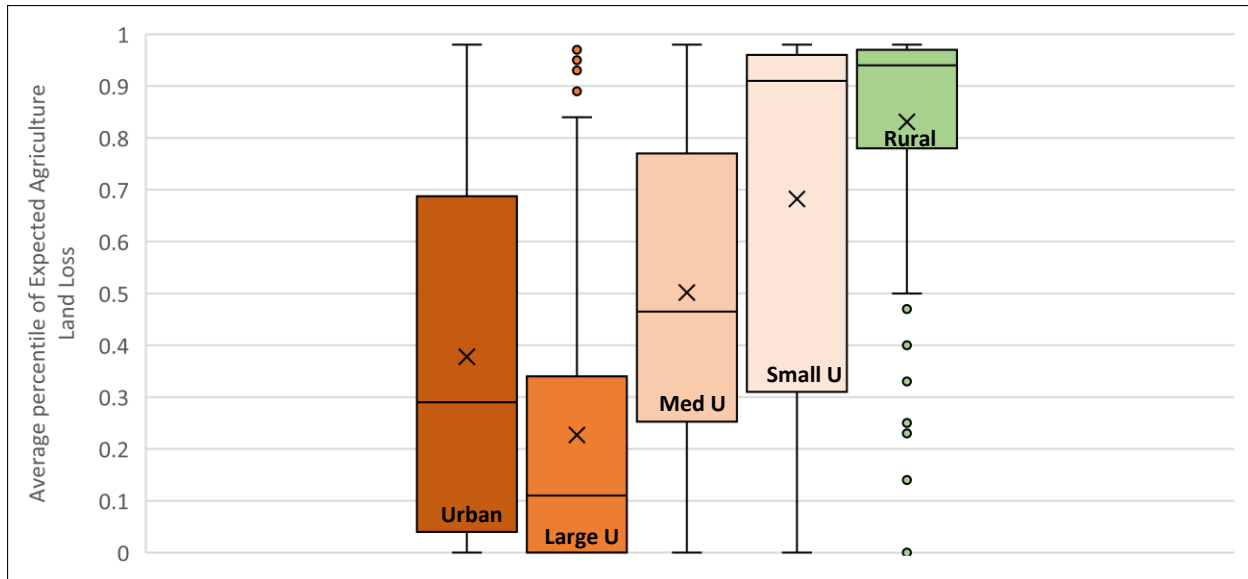


Figure 11: Average percentile of expected agriculture land loss. Percentile is compared to the rest of the USA. Urban is further broken into small urban (Small U), medium urban (Med U), and large urban (Large U). x denotes the average. Points indicate outliers.

Agriculture land loss in an area can greatly change the availability and use of water across a landscape. Some of the lush landscapes that exist in New Mexico rely on water from agriculture irrigation runoff (A2, A4). These watersheds will cease to exist in their current form when agriculture practices change or disappear from the landscape.

Similarly, there are whole communities and cultures that surround the historic agriculture irrigation ditches of New Mexico (A2, A4). With the increased loss of agriculture lands, these iconic communities are at a greater risk of disappearing from the landscape. Agriculture land loss is a stress on rural communities that the state must acknowledge when working in these communities on water security goals.

The urbanization,¹⁴ (the movement of people from small communities and rural areas to urban areas) of the USA is also occurring in New Mexico. CEJST data shows that rural, along with medium urban and small urban areas, have a significantly higher average percentile for expected population loss compared to large urban areas in the State (Figure 12). Both medians for small urban and rural census tracts top the threshold (90th percentile) for being considered disadvantaged in this EJ burden.

¹⁴ <https://carsey.unh.edu/publication/rural-america-lost-population-over-past-decade-first-time-history>

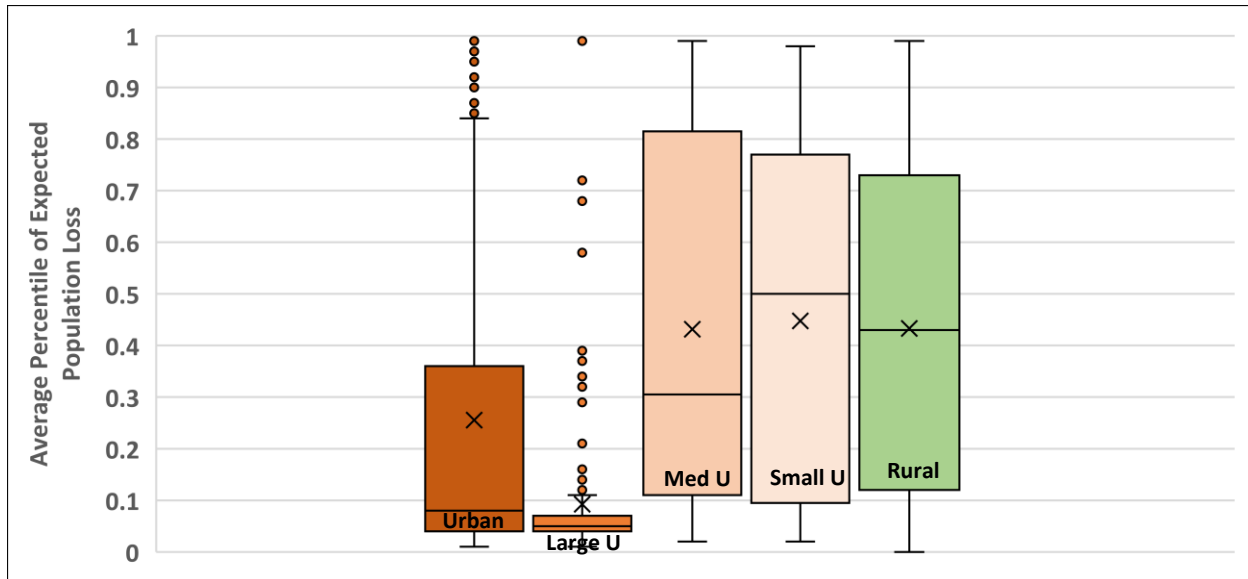


Figure 12: Average percentile of expected population loss. Percentile is compared to the rest of the USA. Urban is further broken into small urban (Small U), medium urban (Med U), and large urban (Large U). x denotes the average. Points indicate outliers.

Small communities face multiple challenges in supporting a community water system. Whether that is a drinking water system or an irrigation ditch, the fewer people there are, the more work for everyone in the area. It can become difficult for a community to commit to changing their infrastructure, using a new piece of technology, or even to write a water planning document if there are only a few people around to share the work.

New Mexico's large urban census tracts have a closer proximity to Superfund Sites (SfS), Risk Management Facilities (RMF), and Hazardous Waste Sites (HWS) compared to medium urban, small urban, and rural census tracts (Figure 13). Specifically, large urban areas have a significantly higher proximity to Superfund Sites with an average percentile of 71st.

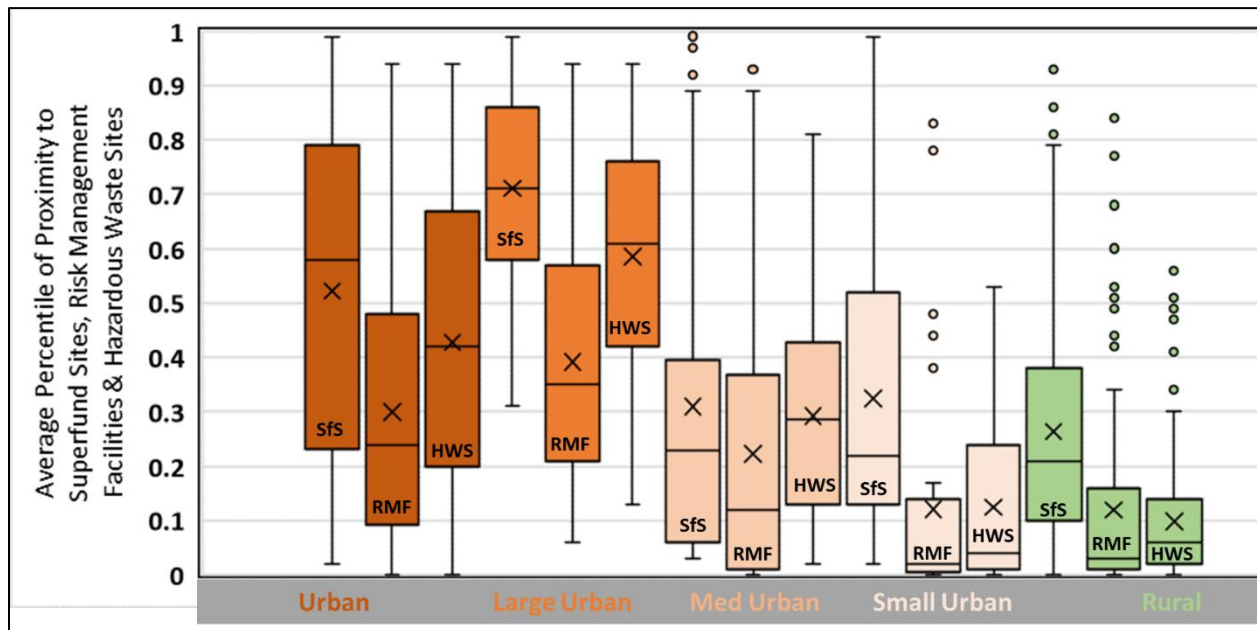


Figure 13: Average percentile of proximity to Superfund Sites (Sfs), Risk Management Facilities (RMF), and Hazardous Waste Sites (HWS). Percentile is compared to the rest of the USA. Urban is further broken into small urban, medium urban, and large urban. x denotes the average. Points indicate outliers.

Educating the public on the importance of cleaning up polluted sites and ensuring there are less sites created in the future, is a necessary step in water and watershed protection across New Mexico (A1, C1, C2). Water and watershed protection messaging can use EJ information (like that highlighted in Figure 13) to create a more personalized campaign. For example, the State may focus on Superfund sites in large urban areas but alter the message to focus on abandoned mine sites in rural areas.

The risk of wildfire in any community in New Mexico is high compared to the rest of the USA (Figure 14). All census tracts, no matter if they are urban or rural, on average are in the 79th percentile for being at risk of experiencing a wildfire in the next 30 years. The median for all census tract groups in the state is above the 85th percentile, with Medium Urban being at the 91st percentile and Small Urban at the 90th percentile. Both categories top the threshold (90th percentile) and are considered disadvantaged in this EJ burden. The lack of significant difference between any of the rural or urban census groups shows that wildfire is a burden all New Mexicans face no matter where they live. The impact of wildfire to water resources in a community varies based on that community's exposure and, while surface water use generally improves community resilience, reliance on surface water increases the scale of negative outcomes from fire.

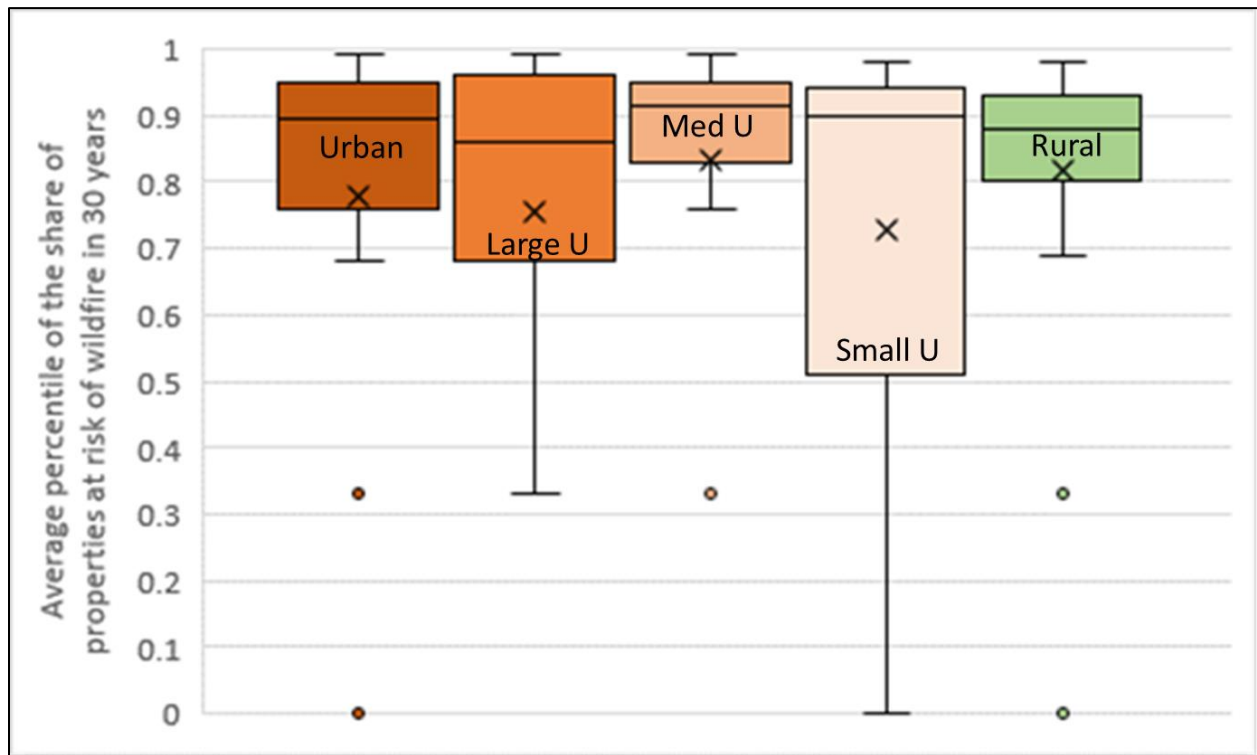


Figure 14: Average percentile of the share of properties at risk of wildfire in 30 years. Percentile is compared to the rest of the USA. Urban is further broken into small urban, medium urban, and large urban. x denotes the average. Points indicate outliers.

Wildfire and subsequent flooding and debris flow risks greatly impact not only communities but the watersheds these communities rely on (C4). Increasing water conservation and establishing new water supplies in an area can mean a community is better prepared to fight fires before they spread. Watershed protection is ever changing as people continue to right the wrongs of past forest management strategies¹⁵, learn from traditional knowledge (see Section 4.3.2), and adapt to a changing climate (see Section 1.1).

On average Rural communities face more EJ burdens than urban census tracts in New Mexico. However, if we dig into the EJ burdens there are surprising similarities between all New Mexicans like having high numbers of people that speak a language other than English at home or being at risk of a wildfire in the next 30 years. There are several EJ burdens that impact small urban populations and rural populations similarly such as population loss, proximity to Hazardous Waste Sites, and the overall percent of disadvantaged census tracts. Urban areas do carry their own unique burdens with soaring housing costs, increased proximity to Superfund

¹⁵ The Southwest Fire Science Consortium (SWFSC) gets emerging science on the ground by connecting scientists, land managers, and the public. By facilitating these connections, the SWFSC helps to assure that scientists are addressing the most pressing questions and managers are applying cutting-edge science and diverse knowledge in their efforts to protect communities and critical natural resources. <https://www.swfireconsortium.org/>

Sites, and populations being exposed to more diesel particulate matter and other air pollutants from the increased amount of traffic.

No matter if a watershed is open or closed, spans the whole state, or just takes up a small corner, population densities change the types of EJ burdens experienced in that watershed. One decision that makes a positive impact for the rural northern end of the water basin, may not work for the southern end of the basin where there is a large urban area. The state will have to keep in mind how the population of New Mexico is dispersed across the state, the EJ burdens these communities face (both rural and urban), and the unique challenges that adds to water planning.

4.3 Special Considerations Beyond Watersheds and Urban Versus Rural

During the water planning process, special considerations beyond typical classifications will need to be addressed. New Mexico is a vibrant and diverse cultural landscape, with a rich historic culture and connection to water. Communities across the state have relied on water from multiple sources and may have water settlements that pre-date current uses.

4.3.1 Ground Water versus Surface Water Dependent Communities

Surface water is described as an open body of water such as a stream, river, or a lake. *Groundwater* is any water found below the surface. Assessing availability and use informs policy regarding existing and future infrastructure and development needs, as well as changes that may occur with water rights. Complete understanding and modeling of groundwater levels and uses is complex, expensive, and time consuming – water planning needs to utilize the best available information now rather than waiting for additional analyses.

USACE was not able to review the EJ burdens that exists within ground water dependent communities and surface water dependent communities with this report. The NM50YWAP includes several actions that impact groundwater and surface water dependent communities. These include improving groundwater mapping and monitoring (B3), cleaning up contaminated groundwater sites (C1), and protecting surface water (C2). The state can use the tools available (CEJST, EJ Screen from the EPA, and others) to assess if a decision will increase the EJ burdens experienced in groundwater dependent and surface water dependent communities.

4.3.2 Tribes, Pueblos, and Nations

Many of New Mexico's Indigenous communities have thousands of years of experience and specialized expertise in surviving in this arid landscape. Indigenous Traditional Ecological Knowledge (ITEK) regarding water management and surviving in New Mexico needs to be recognized, respected, and included in close coordination with the Tribal communities as part

of any future water planning. This will require continued negotiation and resolution of several long-standing water rights negotiations with Tribal communities. Figure 15 shows where Tribal Trust lands occur in relation to the watershed units. Most of the Tribal lands occur in the northwest corner of the state in the Upper Colorado, Lower Colorado, and Rio Grande Basins along with portions of the SA/NP Basin and the Central Closed and Pecos Basins.

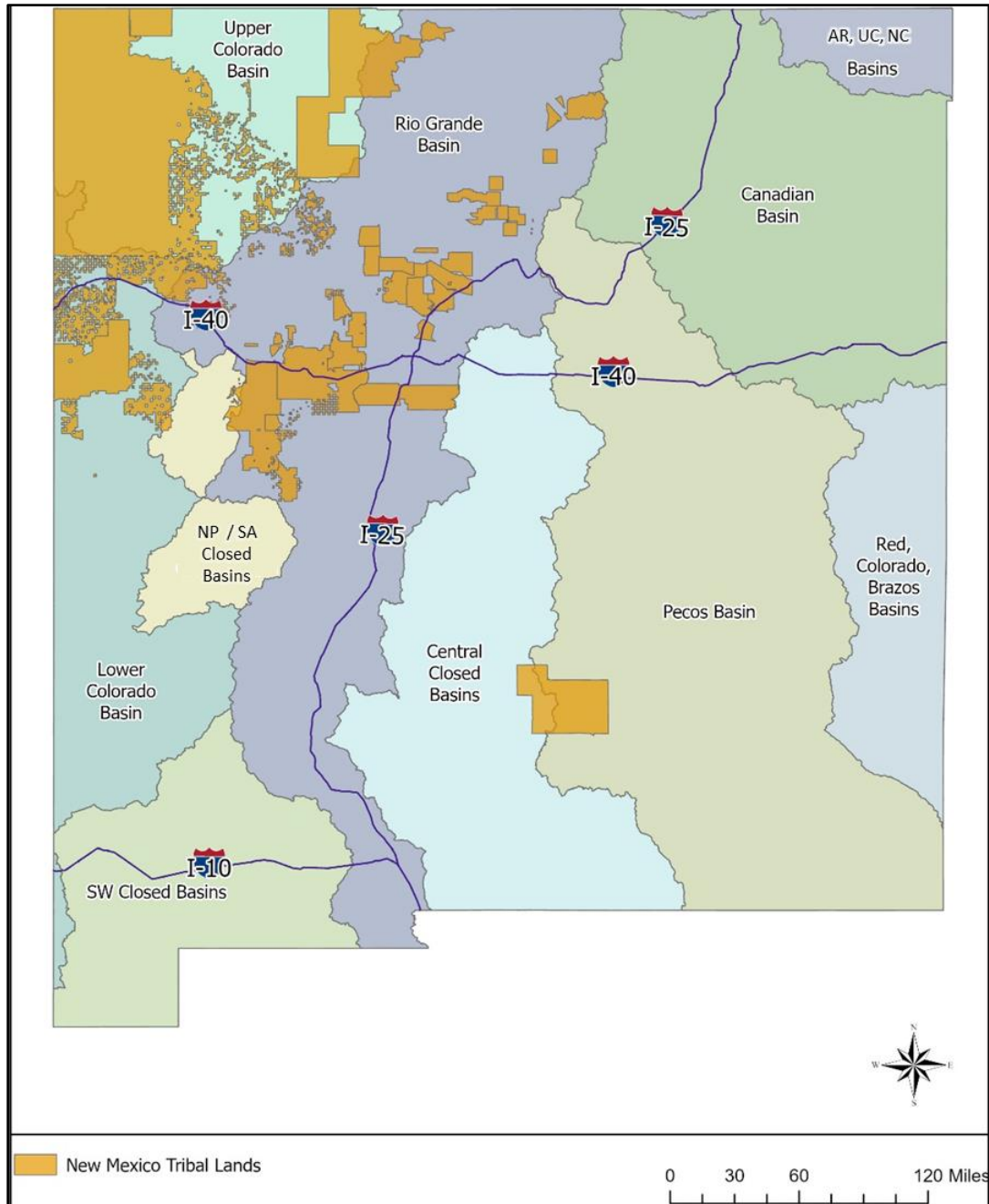


Figure 15: Map of Tribal Lands and Watersheds in New Mexico.

Because the majority of Tribal communities are located in the western water basins, the EJ concerns discussed in Section 4.1 for the western basins can be a place to start to understand some of the unique EJ burdens that impact Tribes. However, water planning in New Mexico should include collaborating with Tribes for all the watershed units, but significantly more collaboration and consultation will be necessary in the watershed units with Tribal lands.

Tribal sovereignty and data sovereignty must be respected when implementing a dedicated water monitoring network (B3) as described in the new water supplies plan in watersheds where Tribal lands are present. The Tribal communities should also be closely coordinated with regarding the development of new water supplies to minimize impacts to cultural properties and sacred sites.

Finally, the water and watershed protection plan includes actions that Tribal communities are already participating in (C3, C4) and the state should seek ways to enhance and compliment these efforts. The Tribal Water Working Group (TWWG), established in 2021, consists of Tribal water experts, staff, and professionals from various Pueblos, Tribes, and Nations that worked together to advise the state on collective and broad policy recommendations. Many of the recommendations from the TWWG are at least partially addressed by the NM50YWAP, but the state should continue to explore opportunities to address the other TWWG recommendations. The full list of recommendations can be found at http://bit.ly/NM50YAP_TribalWaterReport, as provided in the *List of Related Resources* in the NM50YWAP.

4.3.3 Acequia Communities

Acequias are communally managed irrigation systems that use gravity flow and local customs to share water from a common water source, such as a river or spring. They are defined as local governments (political subdivisions of the State) in New Mexico, operate as local water democracies, and are responsible for local water management.

Acequia communities are highly reliant on healthy upland watersheds and ecosystems that are sensitive to changes in climate, vegetation, increased erosion, and forest fires. Engagement with acequia communities benefits water planning and policy by accounting for the systems and seasonal water use that is diverted from main waterways. Equitable water planning will ensure opportunities are taken to preserve acequias and the communities they sustain.

The WRDA of 1986 authorizes the implementation of necessary federal measures to preserve and restore the water diversion structures and associated canals of acequias:

‘The Congress finds that the irrigations ditch systems in New Mexico, known as the Acequia system, date from the eighteenth century, and that these early engineering works have significance in the settlement and development of the western portion of

the United States. The Congress, therefore, declares that the restoration and preservation of the Acequia systems has cultural and historic values to the region. The Secretary is authorized and directed to undertake, without regard to economic analysis, such measures as are necessary to protect and restore the river diversion structures and associated canals attendant to the operations of the community ditch and Acequia systems in New Mexico that are declared to be a political subdivision of the State of New Mexico.'

Additionally, the water structure improvement actions described under 'A4' of the NM50YWAP identifies acequias as infrastructure in need of repair.

USACE did not complete EJ analysis of acequia communities due to a lack of reliable data about where these communities are located and a clearly defined inventory of systems in the State. It is understood that most acequia communities are in rural or small urban areas. Therefore, the EJ concerns discussed in Section 4.2 related to rural and small urban communities should be considered a good starting point for understanding the EJ burdens of each unique acequia community.

5 Water Planning for All New Mexicans

Water planning in New Mexico should incorporate strategies that engage and support community resilience to a changing climate and protect water resource availability across all regions of the state. Understanding the unique EJ concerns within watersheds and communities (Section 4 above) is paramount in water planning. Meeting goals of providing sustainable clean water to communities across the state will be accomplished by the following:

- Strategic investment of Federal and State funding,
- Broad deployment of advanced technology,
- Collaboration with community members and leaders across all levels of government,
- Utilization of cultural and traditional knowledge of our tribal and acequia communities, and
- Modernizing policy approaches tailored for 21st century resource management.

Understanding community characteristics and demographics can assist agencies during water policy formation and review. Equitable initiatives can be developed with positive impacts at a community focused level.

5.1 Water Conservation

Water conservation efforts will require communication in primary and secondary languages to overcome challenges and bridge gaps when engaging in outreach strategies (A1). Investing in existing systems will aid in the reducing agricultural loss, improve water storage, delivery, and accessibility. Implementing water conservation initiatives will improve overall water system health and mitigate flood and wildfire risk for the most vulnerable communities. Water conservation can utilize innovations in green infrastructure (C3) to generate and improve access to green space throughout urban communities across the state.

Water planning with Tribal communities requires acknowledgement that Tribal Nations are sovereign governments requiring different types of engagement than other communities. Engagement early and often should be a priority for water management infrastructure improvements aimed at repairing acequias. Work is presently underway, as part of the Water Security Planning Act, to permanently establish a Water Security Tribal Advisory Council comprised of tribal representatives for considering tribal sovereignty, tribal water rights and the needs of tribal communities.

5.2 New Water Supplies

Many marginalized communities in New Mexico lack access to the capital and administrative capacity needed to exercise and protect their water rights in the face of climate change. Tribal and Rural communities show a greater EJ concern due to potential disproportionate energy costs in the state. Examining opportunities for new water supplies that require infrastructure for desalination and wastewater treatment facilities, mapping and monitoring of groundwater supplies, and policies to expand water re-use will benefit local and state economies.

Many communities, including Tribal communities face uncertainties of clean water supply due to proximity to abandoned mines, formerly used defense sites, hazardous waste facilities, risk management facilities, naturally occurring contaminants, and Superfund sites. To ensure a clean and secure water supply for communities that are reliant on surface and / or groundwater as a primary source will require consistent monitoring and reporting. Monitoring on Tribal lands must acknowledge data sovereignty and be closely coordinated.

5.3 Water and Watershed Protection

Water and watershed protection is vital to communities across the state with a changing climate and reduced supplies. Communities and industries that are dependent on fragile water systems will become more resilient with policies that continue cleanup, prevent contamination, improve water storage, delivery, and accessibility. Protection efforts will benefit communities

with close proximities to abandoned mines, formerly used defense sites, hazardous waste facilities, risk management facilities, and Superfund sites.

Watershed functionality and health reduces risks for flooding and wildfires by retaining more water at higher elevations, improving the natural landscape, as regional systems feed into a larger network of rivers and groundwater resources. Many Tribal communities are already planning or implementing water and watershed protection actions that align with the 50-year Water Action Plan.

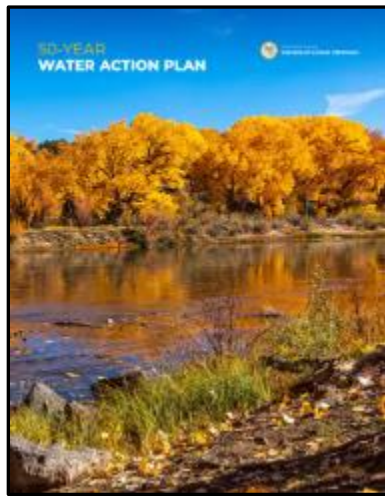
6 Linking USACE Specific Authorities to Equitable Water Planning

USACE can aid state and non-federal agencies in water planning, water infrastructure improvement, ecosystem restoration, and flood risk mitigation efforts. USACE authorities are listed below. The table includes a link to the USACE authority website, how the authority aligns with the NM50YWAP, a brief description of the authority, and funding amounts.

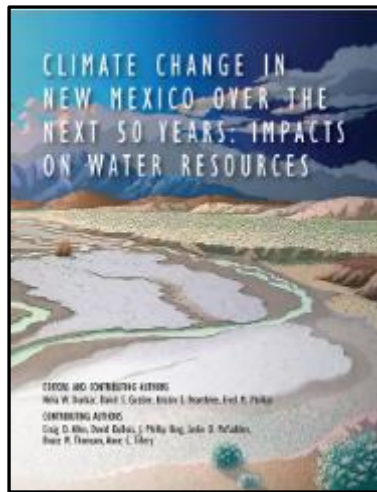
Programs	Authority / Alignment with NM50YWAP	Description	Funding Amount
<u>Acequia Program</u>	Section 1113 of the WRDA of 1986, and Section 334 of the WRDA of 1996 NM50YWAP: Aligns with Water Supplies	Provides technical assistance to Acequia Commissions or Community Ditch Associations for rehabilitation and improvements of their system. The work is to protect and restore the river diversion structures and associated channels.	Varies
<u>Continuing Authorities Program (CAP)</u>	Section 206 Aquatic Ecosystem Restoration of the WRDA of 1996, also referred to as Section 206 under the Continuing Authorities Program Section 1135 Project Modifications for Improvement of Environment or Drought Resilience of the WRDA 1986 NM50YWAP: Aligns with Water Conservation and Water and Watershed Protection	Develop ecosystem restoration and protection project to improve the quality of the environment.	Max Federal Expenditure \$15,000,000 (Sec206) \$12,500,000 (Sec 1135)
<u>New Mexico Silver Jackets</u>	Executive Order 11988 Floodplain Management; Flood Risk Management Program NM50YWAP: Aligns with Water Conservation, Water Supplies, and Water and Watershed Protection	Assisting in leveraging information and multi-agency resources, improving public risk communication, and creating a mechanism to collaboratively solve flood risk management issues and implement initiatives at local levels. Fully federal funding.	Typically, less than \$150,000
<u>Planning Assistance to States (PAS)</u>	Section 22 of the WRDA of 1974 NM50YWAP: Aligns with Water Conservation, Water Supplies, and Water and Watershed Protection	Typical water resources problems and opportunities included in comprehensive state water resource planning efforts include flood risk management, water supply, water conservation, environmental restoration, water quality, hydropower, erosion, navigation, fish and wildlife, cultural resources, and environmental resources. Planning Assistance to the States (PAS) studies cannot include detailed design for project construction, and implementation of the plan is the responsibility of the State, Tribe, or Territory.	Max Federal Expenditure \$5,000,000 per fiscal year in a State or Territory

<u>Tribal Partnership Program (TPP)</u>	Section 203 of the WRDA of 2000	Assists in leveraging Tribal and multi-agency resources to study water resources projects to improve the environment and natural and cultural resources.	Varies
	NM50YWAP: Aligns with Water Conservation, Water Supplies, and Water and Watershed Protection		
<u>Watershed Studies</u>	Section 729 of the Water Resources Development Act of 1986	Assesses water resources needs of water basins and watersheds with projects including ecosystem restoration, watershed protection, water supply, and drought preparedness.	Varies
	NM50YWAP: Aligns with Water Conservation, Water Supplies, and Water and Watershed Protection		
<u>FUDS / HTRW</u>	Engineer Regulation 200-3-1	Identification of properties that were formerly owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary of Defense prior to October 1986. Sites are applicable for environmental restoration (cleanup).	Varies
	NM50YWAP: Aligns with Water Supplies, and Water and Watershed Protection		

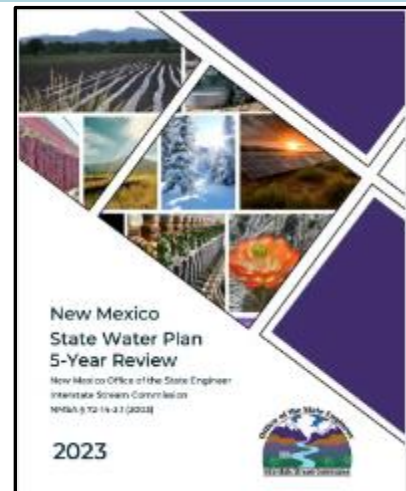
7 Regional Water Planning Reports



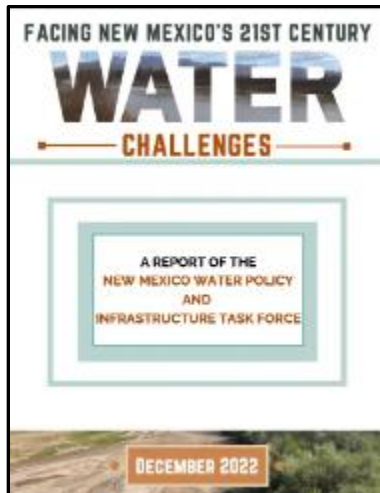
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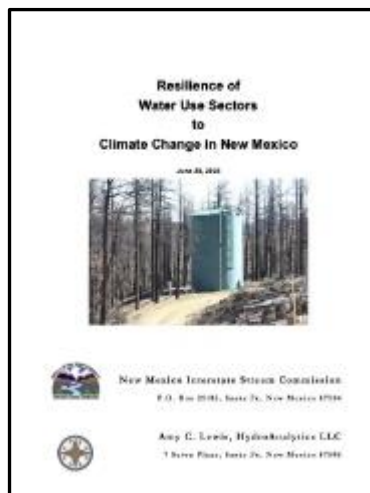
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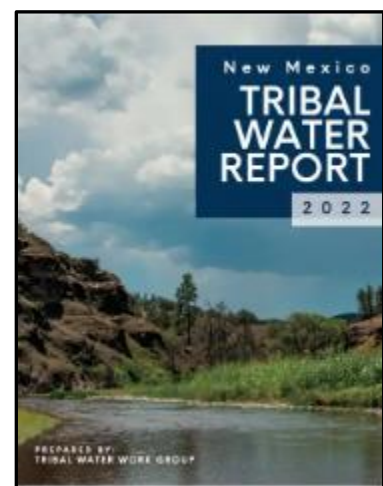
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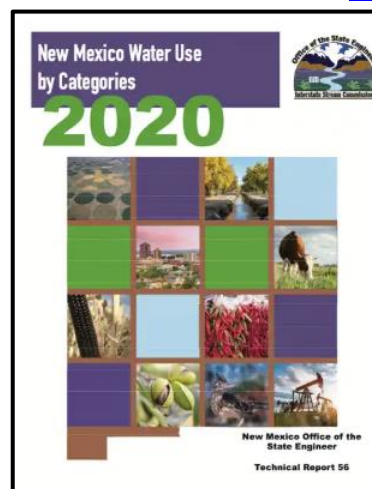
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