# New Mexico Climate Risk Map: Local Data Summary for Taos County

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# Table of contents

## Sections


- Introduction 4
- Cross Cutting Sensitivity Factors 6
- Air Quality 12
- Drought 18
- Flooding 23
- Heat 30
- Wildfire 34
- REST Services 39
- Primary Data Sources 40
- Acknowledgements and Disclaimer 45
- Appendix 46
- Cross Cutting Sensitivity Factors 6


## No Data


- Layers of interest with no data 59
- Broken or changed layers of interest 60

# Introduction

This report summarizes select hazard, sensitivity, and adaptive capacity factors that affect community climate risk levels for Taos County. The intent of this report and the Climate Risk Map tool is to help communities around New Mexico better understand the factors that contribute to overall climate change risk. While extensive, the data presented here do not encompass all climate change-related factors and serve as a starting point for users to identify areas for further investigation, not a comprehensive assessment of climate risk. Communities, local, state, and tribal governments making policy and investment decisions should also conduct extensive local outreach to community members and review additional local, state, and regional resources. The Energy, Minerals and Natural Resources Department's (EMNRD) Energy Conservation and Management Division (ECMD) is available to provide technical assistance to users upon request based on staff availability.

EMNRD chose to use three overarching data categories—hazard data (also called environmental exposure), sensitivity factors, and adaptive capacity factors—based on the framework and definitions in the Asian Pacific Environmental Network's (APEN's) comprehensive "Mapping Resilience: A Blueprint for Thriving in the Face of Climate Disasters" report:

- *"**Environmental exposure,** which refers to the magnitude, frequency, and duration of an environmental exposure or disease risk;*
- ***Sensitivity,** which refers to the physiological and socioeconomic factors that directly or indirectly affect the degree to which a population is impacted by climate-related changes; and*
- ***Adaptive capacity,** which refers to the broad range of responses and adjustments to the impacts of climate change, including the capacity to moderate potential damages, take advantage of opportunities, and cope with consequences."*[i]

This tool and report refer to "environmental exposure" data as "hazard" data related to each of the five climate change related hazards covered: air quality, drought, heat, flooding, and wildfire.

ECMD has included demographic factors, including race and poverty, because historic disinvestment and disenfranchisement have led to the impacts of climate change disproportionately impacting some communities. It is important to note that these communities are not inherently vulnerable because of their demographics, but often experience greater risk from climate change and other hazards because of a history of structural racism and environmental discrimination. The intent of this tool is to help the state, local, and tribal governments in NM prioritize investments that counteract this inequity. ECMD welcomes feedback from all communities through the "Feedback" button on the tool page, including on whether the data presented aligns with community knowledge.

This report and the Climate Risk Map online tool do not include all possible factors that affect communities' climate change risk. ECMD selected data based on availability and relative importance as documented by other sources including the APEN report referenced above.[ii]

# Cross Cutting Sensitivity Factors

The direct impacts of climate related hazards in New Mexico—primarily wildfire, extreme heat, poor air quality, flooding from extreme weather events, and lack of water from droughts—may exacerbate social inequities such as lack of access to basic community lifelines such as access to drinking water and electrical service absent proactive policy and investment. Certain population groups have special circumstances that compound the health impacts of climate change. Lack of investment or investment without regard to climate hazards contributes to variations in communities' sensitivity to these hazards across the state. This section provides data on demographic factors that can be indicators of increased sensitivity to multiple climate hazards.

## Race and ethnicity

Race is a social construct that divides people into smaller social groups based on their skin color (Public Health Institute and American Public Health Association).[iii] Climate change disproportionately affects black, Indigenous, and other people of color and is expected to increase health disparities for these populations.[iv] Historic discrimination has meant these communities have often lacked the political and financial clout to ensure decision makers consider their needs and perspectives. These communities are more likely to suffer higher rates of chronic illness such as diabetes or hypertension.

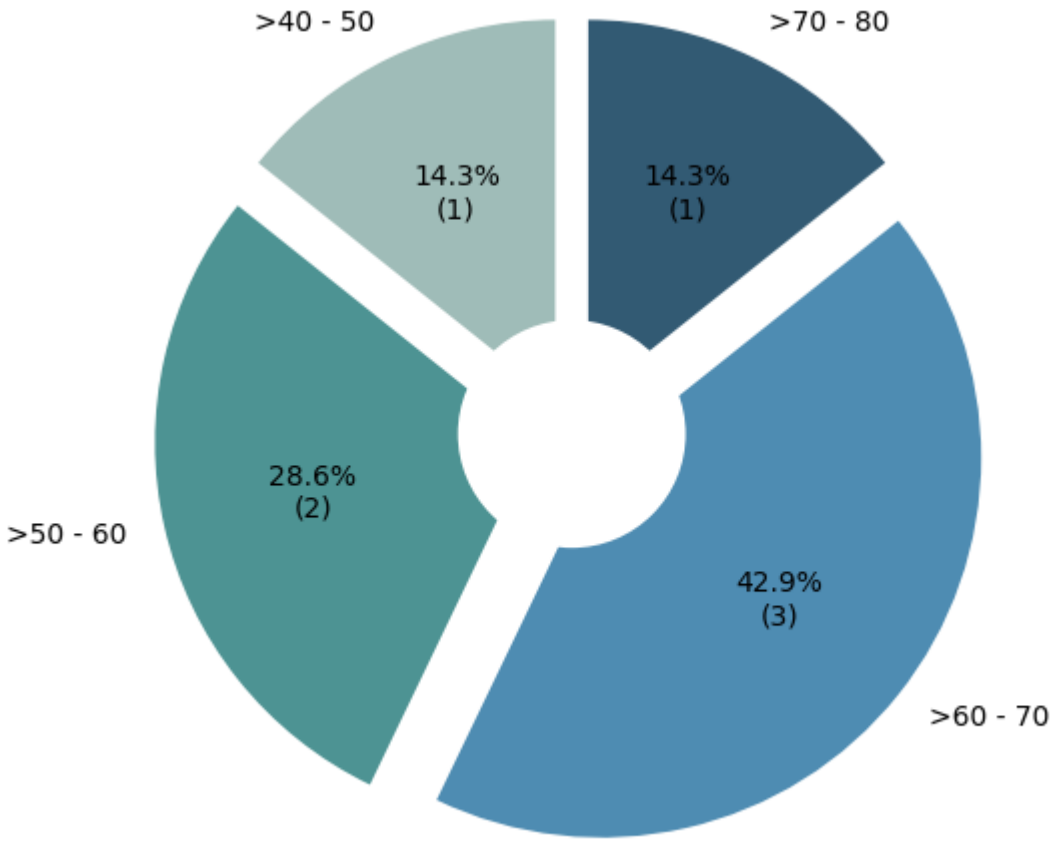
| Race or Ethnicity | Range of Prevalence in Selected Area (%) | Range of Percentile in Selected Area |
|---|---|---|
| Hispanic | 42.58 - 78.97 | 44.80 - 89.70 |
| Native American | 0.52 - 16.11 | 13.10 - 85.50 |
| Black | 0.00 - 1.10 | 0.00 - 37.60 |
| Asian | 0.00 - 0.63 | 0.00 - 31.60 |
| White | 70.49 - 95.95 | 27.10 - 97.50 |

## Poverty

Poverty intersects many social inequity factors including but not limited to food security issues, access to transportation, and housing quality. The US Census Bureau establishes poverty rates based on the percent of households under 200% of the federally-determined poverty level.[v]

Communities with high rates of poverty often lack the socioeconomic resources to recover from extreme weather events. People in low-income communities experience greater inequity in access to health care which can lead to and compound the effects of higher rates of pre-existing health conditions. Poverty intersects many social inequity factors including but not limited to food security issues, access to transportation, and housing quality.

Poverty levels ranges from 37.65% to 55.97% for census tracts within the selected area, which represents between the 40th and 70th percentile relative to the rest of the state. A higher percentile means that the selected area level is higher relative to the rest of the state and a lower percentile means that the selected area level is lower relative to the rest of the state. For example, a census tract in the 90th percentile has a data value higher than 90% of census tracts in the state, where as one in the 10th percentile has a data value higher than only 10% of census tracts in the state.

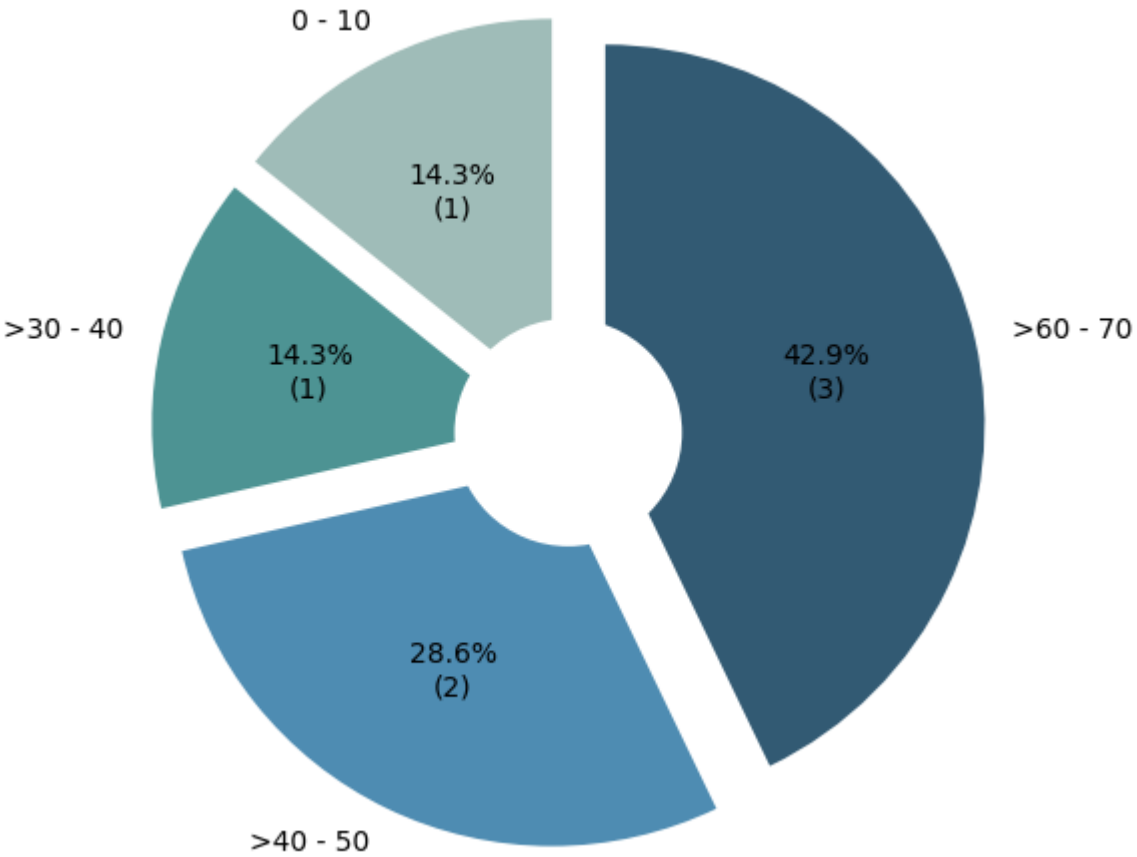



*Note: The percent of census tracts does not represent the average percent for the selected area on a population basis; these data provide a general sense of the distribution of prevalence. Census tracts may have population sizes between 1,200 and 8,000 people and geographic size varies widely depending on population density.*[vi] *For detailed tract-level data on this and other factors, please see the census data tables in the appendix.*

## Linguistic isolation

Linguistic isolation is a term used by the US Census Bureau. Linguistic isolation can be defined by percent of household with no one aged ≥ 14 years speaking English.[vii] The Census Quick Facts show that 35% of New Mexicans five years and older speak a language other than English at home. Limited English proficiency can limit access to services, social and cultural isolation, and disinvestment from social safety nets. Failure to provide notification in languages other than English can prevent linguistically isolated populations from receiving critical, life-saving messages during wildfire or flooding evacuations.

Linguistic isolation prevalence ranges from 0.00% to 7.02% for census tracts within the selected area, which represents between the <10th and 60th percentile relative to the rest of the state. A higher percentile means that the selected area level is higher relative to the rest of the state and a lower percentile means that the selected area level is lower relative to the rest of the state. For example, a census tract in the 90th percentile has a data value higher than 90% of census tracts in the state, where as one in the 10th percentile has a data value higher than only 10% of census tracts in the state.

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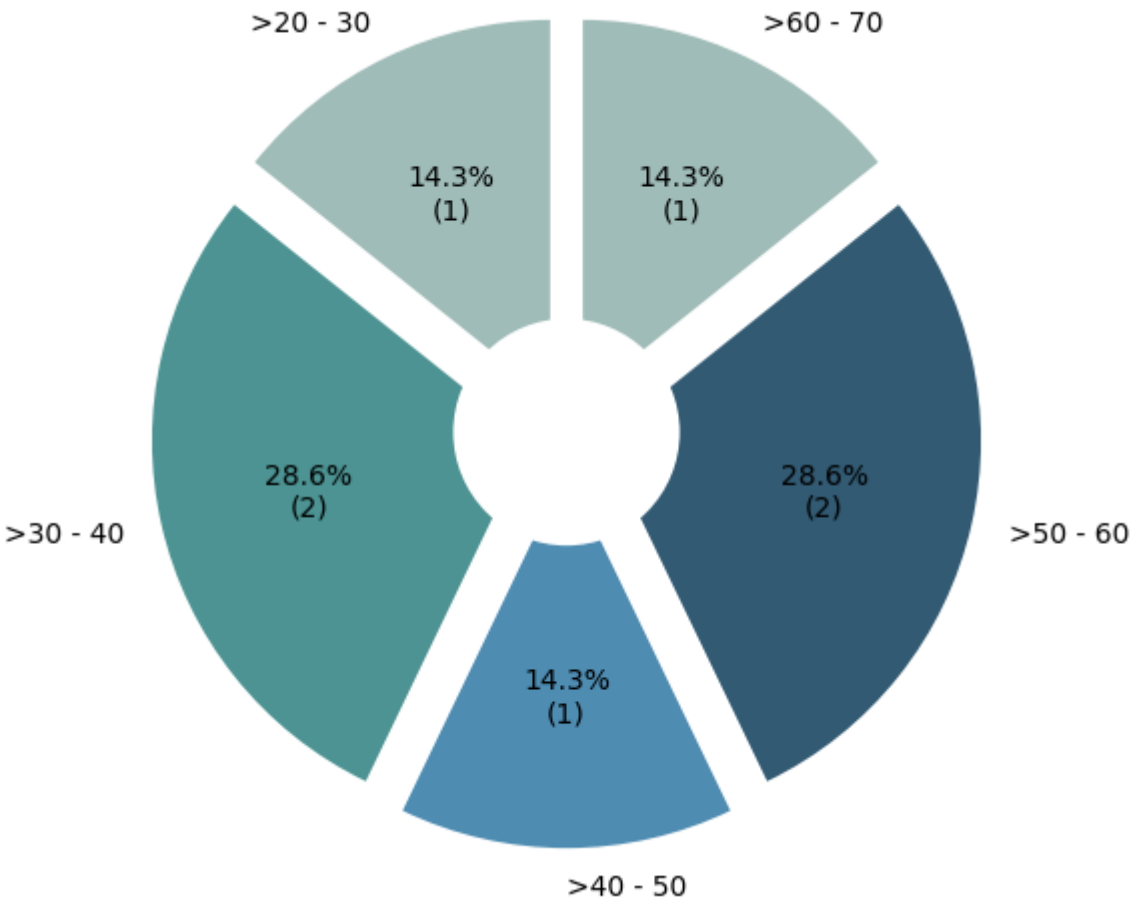
varies widely depending on population density.[viii] For detailed tract-level data on this and other factors, please see the census data tables in the appendix.

## Educational attainment

Educational attainment is the highest level of education a person has completed. The US Census Bureau data displayed in the tool is the percent people over 25 years of age with no high school education.[ix] People with more education usually earn more than people with less education. Due to the intersection of race, poverty, and chronic illness, people of color and those with a lower educational attainment are at a higher risk of negative health effects of chronic illness, which can increase vulnerability to climate change hazards such as extreme heat, wildfire, and air quality.

The percentage of population aged ≥ 25 years with less than a high school education ranges from 6.10% to 16.69% for census tracts within the selected area, which represents between the 20th and 60th percentile relative to the rest of the state. A higher percentile means that the selected area level is higher relative to the rest of the state and a lower percentile means that the selected area level is lower relative to the rest of the state. For example, a census tract in the 90th percentile has a data value higher than 90% of census tracts in the state, where as one in the 10th percentile has a data value higher than only 10% of census tracts in the state.

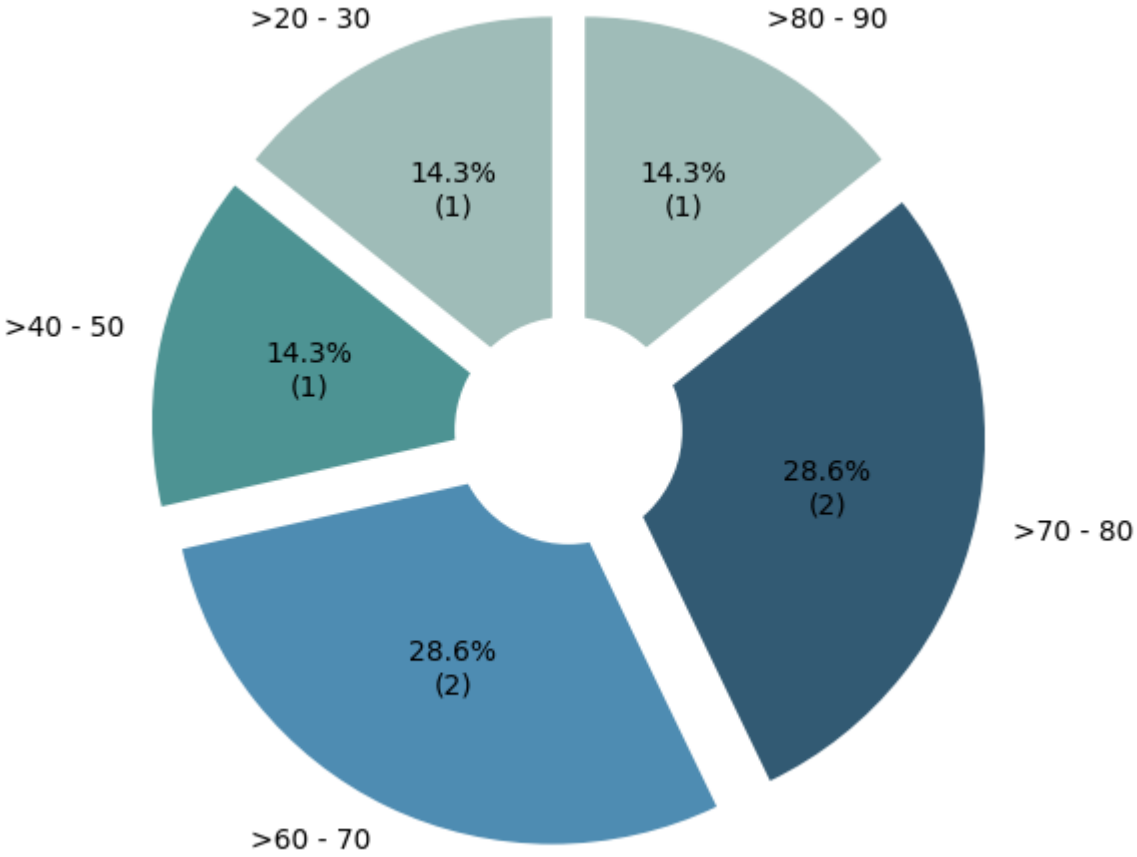


Note: The percent of census tracts does not represent the average percent for the selected area on a population basis; these data provide a general sense of the distribution of prevalence. Census tracts may have population sizes between 1,200 and 8,000 people and geographic size varies widely depending on population density.[x] For detailed tract-level data on this and other factors, please see the census data tables in the appendix.

## Employment

Stress from long-term unemployment can lead to chronic illnesses, such as heart disease, and can shorten a person's life. The US Census Bureau counts people who are over 16 years old, out of work and able to work but not working, as unemployed. This does not include students, active-duty military, retired people, or people who have stopped looking for work.[xi] Low employment or under employment can lead to food insecurity and reduced financial capacity to recover from disasters. Lack of financial capacity also limits access to childcare and transportation.

Unemployment level ranges from 2.51% to 6.75% for census tracts within the selected area, which represents between the 20th and 80th percentile relative to the rest of the state. A higher percentile means that the selected area level is higher relative to the rest of the state and a lower percentile means that the selected area level is lower relative to the rest of the state. For example, a census tract in the 90th percentile has a data value higher than 90% of census tracts in the state, where as one in the 10th percentile has a data value higher than only 10% of census tracts in the state.




Note: The percent of census tracts does not represent the average percent for the selected area on a population basis; these data provide a general sense of the distribution of prevalence. Census tracts may have population sizes between 1,200 and 8,000 people and geographic size varies widely depending on population density.[xii] For detailed tract-level data on this and other factors, please see the census data tables in the appendix.

## CDC Social Vulnerability Index

The Centers for Disease Control (CDC) Social Vulnerability Index (SVI) uses several social factors to rank overall vulnerability to external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. The CDC SVI uses US Census Bureau data to determine the social vulnerability of every census tract. The CDC SVI ranks each tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes.[xiii] It is important to consider overall social vulnerability levels when planning climate adaptation and resilience projects and strategy.

The CDC Social Vulnerability Index dataset is missing information for Taos County

# Air Quality

Air quality and climate change are linked in multiple ways. Specifically, higher temperatures may increase ground-level ozone, a pollutant with negative health impacts, which may make it more difficult for communities to attain air quality standards that protect human health and the environment. Increased wildfire frequency and severity is also likely to increase particulate matter pollution in regions including the Intermountain West, where New Mexico is located.[xv] Decreased air quality increases health risks and concerns. According to the US Global Change Research Program's Fourth National Climate Assessment, climate change will affect human health by increasing ground level ozone and particulate level in some locations.[xvi]

## Hazard Data

### Air Monitoring stations

New Mexico Air Quality Bureau operates a network of 18 air quality monitoring stations in New Mexico. The City of Albuquerque operates a network of 5 air quality monitoring stations within the Albuquerque metropolitan area. The networks provide data to the US EPA AirNow website. There are 0 air quality monitoring stations in the selected area.

### Ozone

Ozone is important in maintaining the Earth's atmosphere, but ground-level ozone is a major air pollutant that is harmful to human health and the environment. Ozone is a primary and secondary pollutant under the federal Clean Air Act. Levels over 50 parts per billion (ppb) present increasing risk to sensitive groups.[xvii] The data shown below for the selected area is current from the US EPA AirNow website.

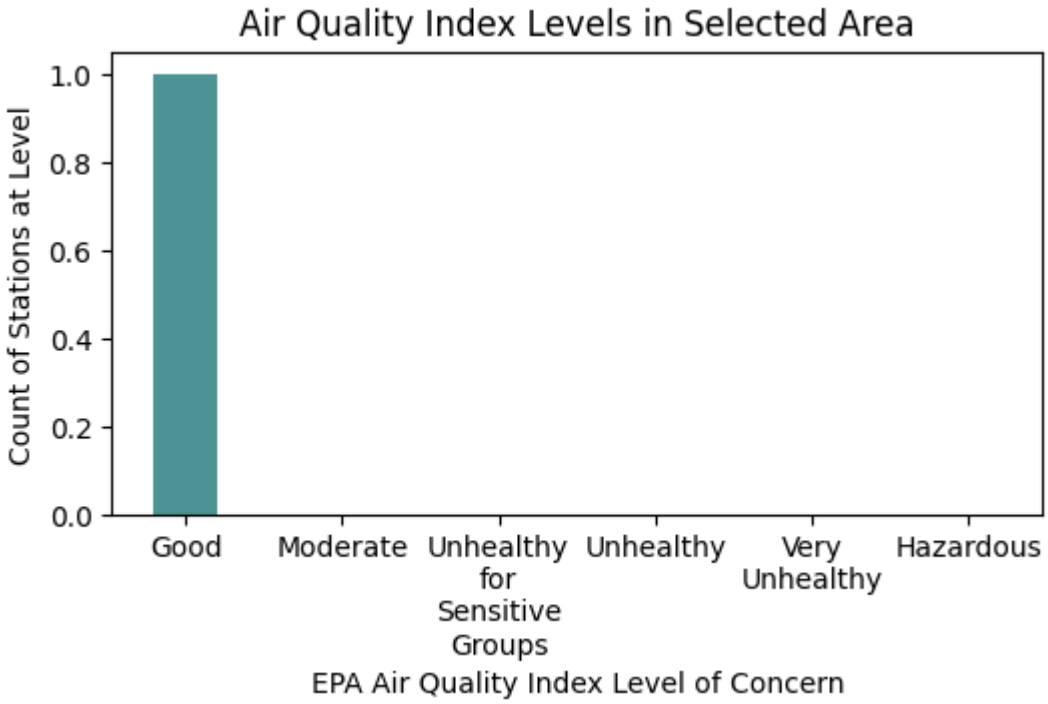
There are no air quality monitoring stations to provide data for the selected area.

### PM 2.5 Levels

Particulate matter smaller than 2.5 micrometers (PM2.5) is a primary pollutant under the federal Clean Air Act. Long-term exposure to PM2.5 is related to a variety of adverse health conditions. Each 10 ug/m3 elevation in PM2.5 is related to an 8% increase in lung cancer mortality, a 6% increase in cardiopulmonary mortality, and a 4% increase in death from general causes.[xviii] shown below for the selected area is current from EPA AirNow website. The area selected included PM 2.5 levels of Good as of 2023-08-28 14:00:00.

## Air Quality Index

Ground-level ozone, PM 2.5, and heat are precursors to smog formation. Vulnerable populations include people with cardio-vascular disease and asthma. Children and elderly and outdoor workers are especially vulnerable. When air quality gets into unhealthy levels, local air pollution agencies will declare an action day. Current site data from EPA AirNow website; data in this report reflects levels as of Mon 08/28/2023 03:00 PM MDT.



AQI Basics for Ozone and Particle Pollution

| Daily AQI Color | Levels of Concern | Values of Index | Description of Air Quality |
|---|---|---|---|
| Green | Good | 0 to 50 | Air quality is satisfactory, and air pollution poses little or no risk. |
| Yellow | Moderate | 51 to 100 | Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution. |
| Orange | Unhealthy for Sensitive Groups | 101 to 150 | Members of sensitive groups may experience health effects. The general public is less likely to be affected. |
| Red | Unhealthy | 151 to 200 | Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects. |
| Purple | Very Unhealthy | 201 to 300 | Health alert: The risk of health effects is increased for everyone. |
| Maroon | Hazardous | 301 and higher | Health warning of emergency conditions: everyone is more likely to be affected. |

*Source: AirNow, https://www.airnow.gov/aqi/aqi-basics/*

## 2019 Gas Venting

Gas venting is the discharge of unburned gases into the atmosphere, often carried out to maintain safe conditions during oil and gas operations. Gas flaring indicates the combustion of gas without energy recovery in an open flame that burns at the top of flare stacks in oil production sites. Both venting and flaring are reported in units of MCF; 400 MCF of natural gas is equal to 400,000 cubic feet of natural gas. In New Mexico, well-related production, injection, and disposition volumes are reported monthly by each operator in electronic format using the Oil Conservation Division (OCD) C-115 Operator's Monthly Report Form. The volumes included on these monthly C-115 reports include any venting and flaring amounts related to oil and gas wells. Note that flaring and venting volumes on the C-115 report are not reported at the individual well level; they are summed and reported at the level of the parent well property. A well property includes a collection of one or more wells operated by a single operator having a related ownership structure.

Emissions from gas venting include methane and other hydrocarbons that are classified by US Environmental Protection Agency (EPA) as air toxics.[xix] Toxic and hazardous air pollutants may cause cancer, birth defects, and aggravate conditions such as asthma and cardiovascular

disease. Venting gases can contain hydrogen chloride, benzene or toluene, dioxin, or compounds like asbestos, or elements such as cadmium, mercury, and chromium.[xx] The EPA has classified 187 air pollutants as hazardous.[xxi] Routine flaring and venting of natural gas in New Mexico is now restricted under new rules adopted by the New Mexico Oil Conservation Commission in 2021. [xxii] There is no venting data for the selected area.

## Sensitivity Factors

Poor air quality has health impacts for all, but some factors can increase the risk of negative outcomes. This section presents data on underlying health conditions and demographic factors most relevant to air quality impacts. In addition to these factors, it is important to note that communities impacted by industrial emissions from nearby facilities face higher pollution burdens than other neighborhoods, and in many cases impacted the most impacted communities are communities of color and low-income areas. The pollution burden born by these communities worsens environmental conditions, increasing chronic illness and health impact.[xxiii]

### Underlying Health Conditions

Individuals with pre-existing cardiac or respiratory disease are at risk of disease exacerbations due to decreased air quality. In addition, according to the American Public Health Association's Climate Change Health and Equity report, people with disabilities (mobility, sensory, cognitive) may be at greater risk during emergency conditions, disrupting individuals' ability to adequately manage their chronic conditions.[xxiv] The table below summarizes the prevalence of asthma, cardiovascular disease, obesity, and diabetes in the selected area. See the Wildfire section for data on prevalence of people with disabilities in the selected area.

| Health Condition | Prevalence in Selected Area |
|---|---|
| Rate of Asthma | 23.88 |
| Rate of Cardiovascular disease | 17.70 |
| Obesity-Percentage Overweight | 54.00 |
| Diabetes-Percentage | 6.40 |
| Disability-Percentage | 32.00 |
| Food insecurity-Percentage | 15.00 |

### Demographic Factors

Elderly people, infants, children, and youth face greater vulnerability to poor air quality due to their distinct biologically based sensitivities, exposures, and limited adaptive capacity.[xxv] Outdoor workers, including agricultural workers, are also vulnerable due to a higher exposure to air pollutants.

| Demographic Factor | Prevalence in Selected Area (%) | Percentile Relative to State |
|---|---|---|
| Children under 10 years of age | 7.48 - 12.95 | 14.70 - 56.40 |
| Elderly over 65 years of age | 19.18 - 31.02 | 66.10 - 93.90 |
| Outdoor workers | 7.15 - 15.71 | 34.90 - 73.50 |
| Agricultural Workers | 2.29 - 7.37 | 42.90 - 72.30 |

## Adaptive Capacity Factors

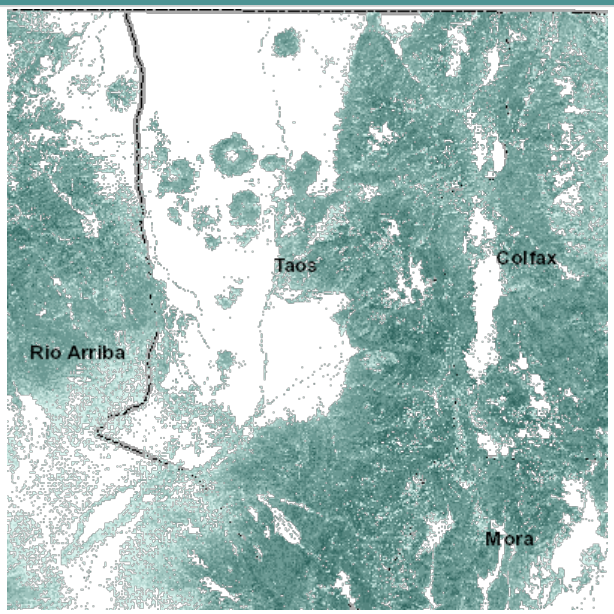
### Tree canopy

Trees and other plants help cool the environment, making vegetation a simple and effective way to reduce urban heat islands. They may also contribute to improved air quality.[xxvi] The image below shows the percent tree canopy in the selected area.

Tree Canopy

| Legend | |
|---|---|
| | 1 - 10% |
| | 10-20% |
| | 20-30% |
| | 30-40% |
| | 40-50% |
| | 50-55% |
| | 55-60% |
| | 60-65% |
| | 65-71% |

Map



# Drought

Climate change is expected to worsen drought conditions in the southwest. Water scarcity will make it difficult for communities to provide water and wastewater, protect water quality, and maintain healthy aquatic environments. The following sections present selected data on the hazard, sensitivity, and adaptive capacity factors related to drought in the selected area.

## Hazard Data

### Drought Indicators

**Drought Monitor**

Drought is the absence of water. According the National Oceanic and Atmospheric Administration (NOAA), drought slowly sneaks up and impacts many sectors of the economy and operates on many different time scales. There are four types of drought:

1. Meteorological drought happens when dry weather patterns dominate an area. This can happen rapidly over a short time period.
2. Hydrological drought occurs when low water supply becomes evident, especially in streams, reservoirs, and groundwater levels, usually after many months of meteorological drought. This type of drought takes longer to develop and recover from.
3. Agricultural drought happens when crops become affected.
4. Socioeconomic drought relates the supply and demand of various commodities to drought.

The U.S. Drought Monitor is a map released every Thursday, showing parts of the U.S. that are in drought. The Monitor depicts drought integrated across all time scales and differentiates between agricultural and hydrological impacts. This information can help local communities in planning and resource use.

**Precipitation and Temperature Change Indicators**

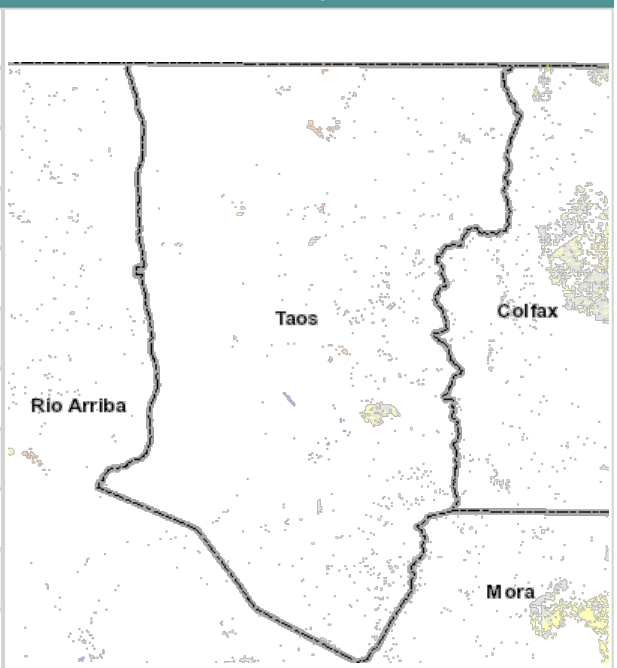
Drought is a function of both a lack of precipitation and increased heat, which can lead to more evaporation and evapotranspiration (evaporation from plants and surfaces). The table below summarizes projected precipitation data for the selected area. See the Heat section for projected data on temperature.

| Seasonal range | Average projected change in precipitation (%) |
|---|---|
| September-November | 0 |
| June-August | -6.29 |
| March-May | -20.20 |
| December-February | 2.00 |

## Land Cover Change 2001-2016

Land Cover is the observed biophysical cover including native vegetation, soils, exposed rocks, and water bodies. Land cover change can change the amount of absorption of moisture in an area.

Land Cover Change

| Legend | | Map |
|---|---|---|
| | ag hay/pasture change |  |
| | barren change | |
| | cultivated crop change | |
| | forest-theme change | |
| | hay/pasture change | |
| | herbacous wetland change | |
| | no-change | |
| | persistent grass and shrub change | |
| | urban change | |
| | water change | |
| | wetland within class change | |
| | woody wetland change | |



## Sensitivity Factors

There are several factors that make people more sensitive to drought and drought conditions.

## Agriculture

Agricultural drought impacts the ability to farm successfully. Agricultural workers are dependent on agricultural activities for their livelihood.

| Demographic Factor | Prevalence in Selected Area (%) | Percentile Relative to State |
|---|---|---|
| Agricultural Workers | 2.29 - 7.37 | 42.90 - 72.30 |

## Food

Food insecurity is related to socioeconomic drought. Drought conditions may increase the cost of food, thereby intensifying household food insecurity. Food insecurity is also associated with chronic illness. Agricultural drought can impact all dimensions of food security: food availability, accessibility, use and food systems stability.

| Demographic Factor | Prevalence in Selected Area (%) |
|---|---|
| Percentage of Children in Food Insecure Households | 24.90 |
| Percentage in Food Insecure Households | 15.00 |

## Water

Water availability and access indicates the extent of hydrological and agricultural drought. Drought can impair the quality and quantity of surface water drinking water sources through many mechanisms including: lower stream flows and higher concentration of pollutants from stagnation, increase salinity, higher surface water temperatures, and increase contaminated run-off from post wildfire areas. Below are some important indicators of access to clean water.

#### Important Watersheds for Surface Drinking Water

The most important watersheds are those serving the most people on public water systems drawn from surface water sources and providing the most water.

| Importance Level | Number of Watersheds in Selected Area at Level |
|---|---|
| 0 - 10 | 24 |
| 11 - 20 | 12 |
| 21 - 30 | 11 |
| 31 - 40 | 19 |
| 41 - 50 | 3 |
| 51 - 58 | 3 |
| 59 - 66 | 0 |
| 67 - 75 | 0 |
| 76 - 83 | 0 |
| 84 - 100 | 0 |

**Impaired Waters**

Water bodies like streams, rivers or lakes are used for recreation and fishing or may provide water for drinking or irrigation. When water bodies are contaminated by pollutants, they are considered impaired. These impairments can harm wildlife habitats and prevent recreational and other uses of the water body.

| Demographic Factor | Percentile Relative to State |
|---|---|
| Impaired Waters | 79.90 - 98.90 |

## Adaptive Capacity

### Wetlands with wetlands action plans (WAPs)

Wetlands provide values that no other ecosystem can. These include natural water quality improvement, flood protection, shoreline erosion control, opportunities for recreation and aesthetic appreciation and natural products for our use at no cost. A ciénega is a wetland system unique to the American Southwest. Ciénagas are alkaline, freshwater, spongy, wet meadows with shallow-gradient, permanently saturated soils in otherwise arid landscapes that often occupy nearly the entire widths of valley bottoms.

| Wetlands in Area of Interest with Action Plans | Plan Documentation | Cienaga (yes/no) |
|---|---|---|
| Conejos | https://www.env.nm.gov/surface-water-quality/wp-content/uploads/sites/25/2017/07/San-Antonio-and-Los-Pinos-Watersheds-WAP.pdf | No |
| Alcalde Velarde Valley | https://www.env.nm.gov/wp-content/uploads/sites/25/2017/07/Wetland-and-Riparian-Management-Plan-Alcalde.Velarde-Valley-Upper-Rio-Grande-New-Mexico.pdf | No |
| Moreno Valley | https://www.env.nm.gov/wp-content/uploads/sites/25/2017/07/Moreno-WAP-Final-8-28-16.pdf | No |
| Comanche Creek | https://www.env.nm.gov/wp-content/uploads/sites/25/2017/07/WAP_CCW_6_2_16_FINAL.pdf | No |
| Lava Spring Cienegas | https://www.env.nm.gov/wp-content/uploads/sites/25/2017/07/WAP-Arid-Land-Cienegas-NM-2018-Final-for-Printing.pdf | Yes |
| Pilar Cienega | https://www.env.nm.gov/wp-content/uploads/sites/25/2017/07/WAP-Arid-Land-Cienegas-NM-2018-Final-for-Printing.pdf | Yes |
| Glen Woody Cienegas | https://www.env.nm.gov/wp-content/uploads/sites/25/2017/07/WAP-Arid-Land-Cienegas-NM-2018-Final-for-Printing.pdf | Yes |

# Flooding

In New Mexico, climate change is expected to decrease overall precipitation, but may increase the intensity of rain events and the percentage of precipitation falling as rain instead of snow. These factors will increase the risk of flooding, especially flash flooding, on drought-hardened and wildfire transformed soils across the state.

## Hazard Data

The following sections describe data that can help communities understand the risk of flooding events occurring in the selected area.

### FEMA Disaster Declarations

The President of the United States can make a major disaster declaration, including for any area that has been impacted by a natural disaster event, where the situation exceeds the response capabilities of the local community. Presidential declarations allow that jurisdiction access to federal aid programs for recovery.[xxviii] The Federal Emergency Management Agency (FEMA) is the central point of contact for federal disaster response. FEMA keeps data on major disaster declarations from 1950 onward. This report indicates the prevalence of past major flood disaster declarations in your area. This can be an indication of the flood hazard risk in the selected area as well as the likelihood of a future flood event.

| County | Total Disaster Declarations | |
|---|---|---|
| Fema Disaster Declarations | - | - |

and Fema Disaster Declarations could not be retrieved in the area of interest.

### FEMA Special Flood Hazard areas

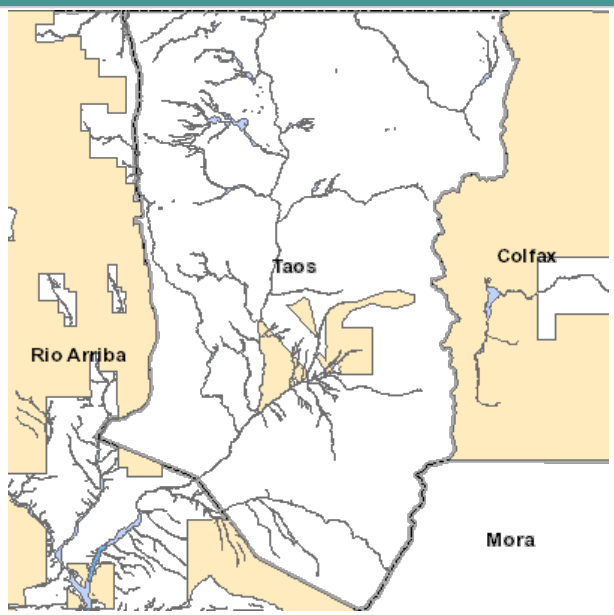
FEMA Special Flood Hazard Areas (SFHA) were delineated for the purposes of establishing the National Flood Insurance Program (NFIP). This program was set up to help insure buildings located in floodplains (as indicated by the Flood Insurance Rate Map (FIRM)). Most homeowners' insurance does not cover flood damage. Flood insurance is a separate policy that can cover buildings, the contents in a building, or both. The NFIP provides flood insurance to property owners, renters, and businesses, and having this coverage helps them recover faster when floodwaters recede. The NFIP works with communities required to adopt and enforce floodplain

management regulations that help mitigate flooding effects. (https://www.fema.gov/flood-insurance).

**Note:** The maps are highly resource-intensive to make and consequently, there are parts of the country (less densely populated areas) where these floodplains have yet to be delineated. This includes large sections of New Mexico.

Flood hazard areas identified on the Flood Insurance Rate Map (FIRM) are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or (unfortunately, because it is misleading) "100-year flood." SFHAs are labeled as Zone AE, Zone A, Zone AO, or Zone AH, Moderate flood hazard areas, labeled Zone X are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. Zone D are areas of unknown flood risk. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone X (unshaded) (https://www.fema.gov/glossary/flood-zones).

Special Flood Hazard Zones

| Legend | | Map |
|---|---|---|
| | A |  |
| | AE | |
| | AH | |
| | AO | |
| | D | |



## Sensitivity Factors

There are several factors that make people more sensitive to flooding events.

## Sensitive Sites

This section describes some potentially hazardous landscape and underground features that are associated with industrial and petroleum/fueling activities. It is important to understand the location of these sites and their potential, especially if overwhelmed by floodwaters, to contaminate soil and water. These sites are regulated by the Environmental Protection Agency (EPA) and the New Mexico Environment Department (NMED). All data comes from NMED.

| Type of Site | Description | Count |
|---|---|---|
| Petroleum storage tanks above ground | Gas stations and other petroleum storage facilities with tanks aboveground. | 7 |
| Petroleum storage tanks underground | Gas stations and other petroleum storage facilities with tanks underground. | 7 |
| Hazardous Waste Facilities | Hazardous waste generators and treatment, storage, and disposal facilities permitted by NMED Hazardous Waste Bureau. | - |
| NPL – Superfund sites | Superfund sites are polluted locations in the United States requiring a long-term response to clean up hazardous material contaminations. They were designated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. NPL stands for National Priorities List and indicates that this site warrants clean-up. Given the number of contaminated sites in the country and the complexity and resource-intensity of clean-up, sites are prioritized based primarily on their Hazardous Ranking System Score. | - |
| Active Oil and Gas wells | Surface drilling location of energy production wells (oil, gas, CO2), including injection and saltwater disposal wells in New Mexico. Well locations aggregated to tracts. | 7 |
| Inactive Oil and Gas wells | Surface drilling location of inactive energy production wells (oil, gas, CO2), including injection and saltwater disposal wells in New Mexico. Well locations aggregated to tracts. | 7 |
| Groundwater discharge permits | Ground Water Discharge Permits address a wide variety of discharges including domestic wastewater facilities, large capacity septic tank leach fields, reclaimed wastewater reuse, power generating plants, commercial laundries (when not served by sanitary sewers), commercial land farms for treatment of contaminated soil, industrial discharges, and ground water remediation systems. | 7 |
| EPA Brownfields | Brownfields are properties whose redevelopment is complicated by the presence or potential presence of hazardous substances or petroleum products. | 1 |

### Impervious surface cover

Impervious surfaces prevent rainwater from seeping into the ground or slowly seeping into streams. As watersheds become urbanized (i.e., vegetation is replaced by asphalt, concrete, and other impervious surface cover) the likelihood of flooding increases. When there is less surface area for stormwater to infiltrate the ground the increased volume of stormwater may overwhelm streams. Depending on the landscape, stormwater may flow at increased speeds and arrive at stream beds faster. If not properly mitigated with drainage (e.g., storm sewers, ditches), impervious surface cover can cause more frequent flooding. There is no impervious surface data for the selected area.

### Housing

Housing quality, rental rates, and affordability all relate to climate vulnerability. The housing quality data set is based on a combination of median age of homes, lack of complete plumbing facilities, and number of mobile homes (whether rented or owned); a higher value represents lower quality and higher vulnerability, and a lower value represents higher quality and less vulnerability. Manufactured homes may be susceptible to greater flooding damage. Affordability can be a factor in multiple ways. In some cases, flood-prone areas may have lower land and home values, making them more affordable and creating an income disparity in flooding vulnerability. Conversely, “waterfront” property can be more desirable, leading to increased development in flood-prone areas.

The percentage of households renting also affects a community’s ability to respond and recover to flooding. Renters may be less able to respond to a disaster or mitigate impacts to their home and must rely on property owners to provide repairs or restore services if their home is damaged. Unaffordable housing prices can also lead to a higher percentage of households renting instead of owning their homes.

| Sensitivity Factor | Percentile Relative to State |
|---|---|
| Housing Quality | 46.50 - 89.70 |
| Housing Rentals | 11.20 - 65.40 |
| Housing Affordability | 11.20 - 97.30 |

## Adaptive Capacity Factors

### Vehicle access

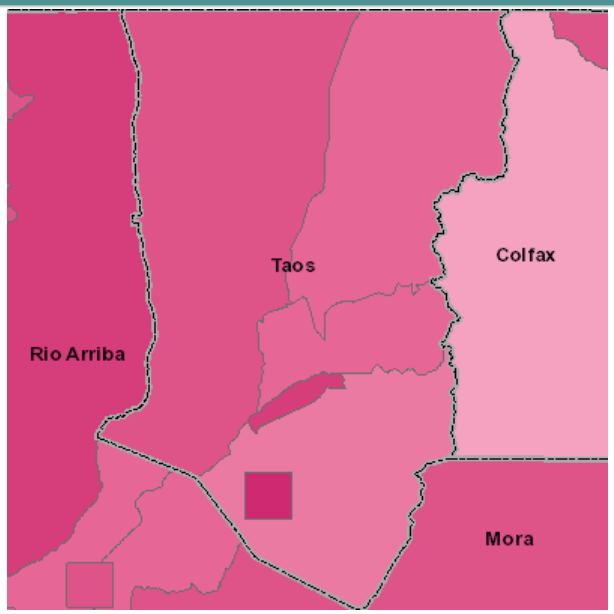
Access to a vehicle affects a person’s ability to evacuate in the event of a natural disaster. This data comes from the US Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

B25044 – Tenure by Vehicles Available category. The data is displayed in percentiles. This communicates how the selected area ranks compared to other areas in the state of New Mexico.

Without Vehicle Access

| Legend | |
|---|---|
| | 0-10 |
| | >10-20 |
| | >20-30 |
| | >30-40 |
| | >40-50 |
| | >50-60 |
| | >60-70 |
| | >70-80 |
| | >80-90 |
| | >90-100 |

Map



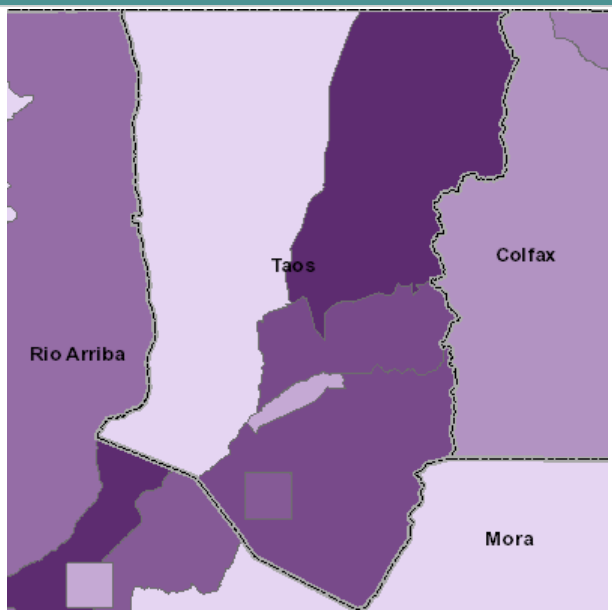

## Telephone access

Telecommunications access can significantly affect a community's capacity to respond to climate disasters. This data comes from the US Census Bureau, 2014-2018 American Community Survey 5-Year Estimates Tenure by Telephone Service Available by Age of Householder, Table B25043. Lack of access to telecommunications can influence the resilience of vulnerable communities. This social vulnerability can be a factor in preparing for, responding to, and recovering from disasters.[xxix]

With Telephone Access

| Legend | |
|---|---|
| | 0-10 |
| | >10-20 |
| | >20-30 |
| | >30-40 |
| | >40-50 |
| | >50-60 |
| | >60-70 |
| | >70-80 |
| | >80-90 |
| | >90-100 |

Map



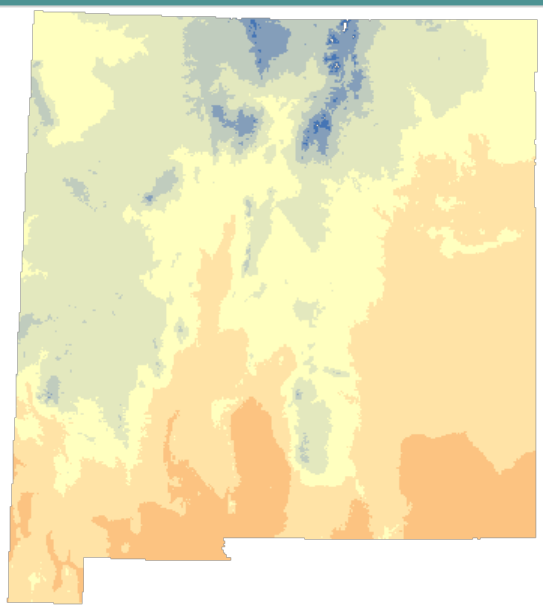
# Heat

Climate change is expected to increase temperatures in New Mexico, increasing the risk of extreme heat events. A recent report from the Department of Health has predicted a 70% increase in the number of heat-related illness cases seen in emergency rooms and admitted as inpatients by 2030.[xxx] Increasing heat has health implications and affects ecosystem health in many ways.

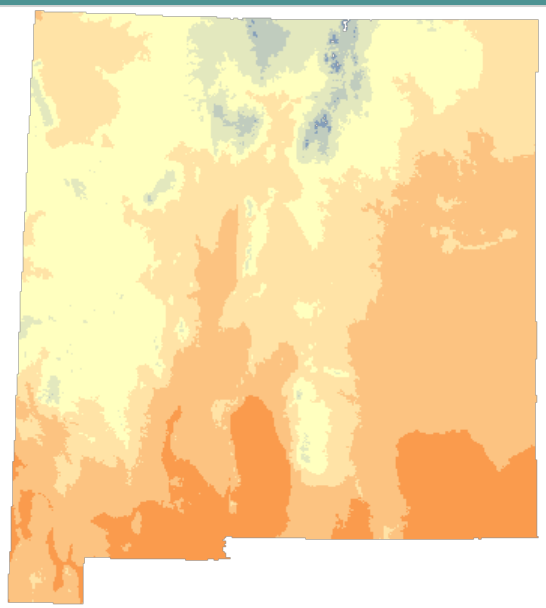
## Hazard Data

Climate projections indicate likely increases in average temperatures in New Mexico. This may manifest in higher typical temperatures as well as longer and more extreme heat waves. The following data show the historical average mean, minimum, and maximum annual temperatures, and the projected temperature change by 2050, 2070, and 2099, on average, for the selected area. All data are in degrees Fahrenheit.

30 year Mean Temperature (Fahrenheit)

| Legend | | Map |
|---|---|---|
| | 32 - 35 |  |
| | >35-40 | |
| | >40-45 | |
| | >45-50 | |
| | >50-55 | |
| | >55-60 | |
| | >60-65 | |

Average Projected Temperature 2021-2050 (Fahrenheit)

| Legend | | Map |
|---|---|---|
| | 37 - 40 |  |
| | >40-45 | |
| | >45-50 | |
| | >50-55 | |
| | >55-60 | |
| | >60-65 | |
| | >65-70 | |

## Sensitivity Factors

### Underlying Health Conditions

Exposure to extreme heat can overwhelm a person's ability to thermoregulate, resulting in physiologic heat stress. Underlying health conditions may lead to higher susceptibility to heat-related illnesses. The table below shows the prevalence of asthma, cardiovascular disease, obesity, and diabetes in the selected area, as well as how this compares to the rest of the state. All health data are calculated at the county level.

| Health Condition | Prevalence in Selected Area |
|---|---|
| Rate of Asthma | 23.88 |
| Rate of Cardiovascular disease | 17.70 |
| Obesity-Percentage Overweight | 54.00 |
| Diabetes-Percentage | 6.40 |
| Disability-Percentage | 32.00 |
| Food insecurity-Percentage | 15.00 |

## Population Characteristics

Age and occupation can also affect individuals' susceptibility to heat stress. Older people, especially those living alone, can be vulnerable as well as young children. Agricultural workers and other outdoor workers also face increased health risks from increases in temperature. These data are presented in the Air Quality Section above (age) and the Wildfire section below (elderly living alone).

| Demographic Factor | Percentage | Percentile |
|---|---|---|
| Children under 10 years of age | 7.48 - 12.95 | 14.70 - 56.40 |
| Elderly over 65 years of age | 19.18 - 31.02 | 66.10 - 93.90 |
| Elderly living alone | 12.20 - 20.90 | 53.00 - 92.00 |
| Outdoor workers | 7.15 - 15.71 | 34.90 - 73.50 |

## Energy, Food, and Infrastructure

Energy and water access are critical for mitigating the effects of extreme heat. Households with high energy burden (high energy costs relative to household income) may not be able to cool indoor spaces effectively. Poor housing quality often correlates with low insulation levels which can lead to high energy costs and may also correlate with lack of air conditioning (see Housing Quality data in Flooding section). Areas with high percentages of impervious surfaces, particularly paved surfaces, can also be urban heat islands where ambient temperatures can be hotter than other parts of a community. The data below on energy burden represents US Department of Energy estimates of the fraction of household income spent on energy costs.

| Sensitivity Factor | Percent of Income Spent on Energy Costs |
|---|---|
| Energy burden | 4.00 - 7.00 |

Another important factor not included in this tool is access to running water. Dehydration is one potentially dangerous type of heat-related illness and easy access to clean water can help people stay hydrated.

# Heat Adaptive Capacity Factors

## Communication and Transportation Access

Access to phone or other reliable modes of communication can help those experiencing heat related illness call for help if necessary. Access to transportation, both vehicles and transit services, can increase individuals' ability to seek medical attention or get to cooler locations, such as a park with green space or a pool or splash pad. See the Flooding section for data on phone and vehicle access.

| Adaptive Capacity Factor | Value in Selected Area (%) | Tract Percentile |
|---|---|---|
| With Phone access | 91.00 - 100.00 | 5.00 - 93.00 |
| Without Vehicle access | 2.42 - 10.12 | 28.70 - 82.30 |

## Tree Canopy

Trees and other plants help cool the environment, making vegetation a simple and effective way to reduce urban heat islands. See Air Quality section for additional data on this factor for the selected area.

# Wildfire

In New Mexico, climate change is predicted to increase mean temperatures and reduce precipitation. In vulnerable watersheds, hot temperatures and dry conditions will increase the likelihood of high-severity wildfires. Climate change will extend and exacerbate the intensity of the fire season in New Mexico as drought conditions become more prevalent. Wildfires linked to climate change can affect people's health in several ways. Smoke exposure increases hospitalizations for acute respiratory distress and cardiovascular disease.[xxxi]

## Hazard Information

A community's risk to wildfire is based on several factors: likelihood, intensity, exposure, and susceptibility. Factors that contribute to a wildfire occurring are weather, topography, and ignition. Climate change will increase wildfire risk throughout many regions of New Mexico. Extended drought and fuel loading create conditions for catastrophic wildfire. Communities can take measures to reduce fire exposure and become fire adapted through structural preparation, and fuels reduction projects. Wildfire risk is also determined by the fire history of the area. In developing strategies, homeowners and planners need to consider how the risks and hazards of wildfire can be mitigated by increasing wildland-urban interface 'defensible space' around resources of value. The datasets on percent of land area by wildfire risk level and communities at the risk of wildfire can give some indication of the likelihood for wildfire. The information contained in this section is not granular enough to establish individual parcel risk and is thus best used for comparing relative risk. Individual landowners should consult with their local fire management officials.

### Post fire flooding

Catastrophic wildfire occurs when vegetation is consumed at a high-intensity leaving the forest floor susceptible to erosion and is referred to as the burn scar area. The burn scar area is where topsoil, duff, woody materials and ash from the catastrophic wildfire event can intensify post-fire flooding. Largescale erosion from burn scars can lead to the degradation of water resources for an entire region due to sediment transport. This type of sedimentation is due in part to soil damage during catastrophic wildfire. Organic components of the soil are lost and burnt which creates a soil condition called "hydrophobic." Hydrophobic soils lack the ability to infiltrate water which in turn can increase the potential for post wildfire flooding events by a four-hundred fold increase. Monsoon rainstorms can amplify the poor soil condition with high volumes of precipitation which is then transported during flood events settling in arroyos, ditches and flood control infrastructure.

Vegetation loss from wildfire can also increase flooding potential and water stress. When New Mexico's coniferous dominated forest communities burn, their natural ability to absorb and deflect the precipitation load is lost. The combination of vegetation loss, hydrophobic soils and monsoon rainstorms can lead to highly destructive flooding events called "debris flows." Debris flows are a long-term risk to watersheds that have experienced wildfire. Loss of life, damage to property and significant infrastructure impacts are commonplace when debris flow flooding events occur. More than 30% of the State's water supply is affected adversely by debris flow-laden runoff throughout the Upper Rio Grande watershed. Debris flows move high amounts of sediment leading to sedimentation issues, including temporary dams or sediment plugs along existing waterways which can have further flooding impacts to downstream ecosystems and communities when the dams or plugs fill and break, resulting in a flood wave. The waterway is also damaged limiting its functionality as a both a natural water storage and/or water delivery conveyance for communities, thus increasing water stress.[xxxii] The "At-Risk Watersheds" layer under Wildfire Risk illustrates areas which could be at risk for impacts including post-fire flooding. This layer was developed by the Nature Conservancy.

## NM State Fire History

Wildfire is an important force in maintenance and evolution of New Mexico's forest and grasslands. Historic fire return intervals show frequent low-intensity fires in ponderosa with lower incidence in higher elevation aspen and mixed conifer forests. The average fire return interval for New Mexico forests is between 10 and 100 years.[xxxiii] Given New Mexico has 2.7 million acres classified as forest, the average annual burned from all causes based on these fire return intervals is likely to be between 27,000 to 270,000 acres. Fire suppression has created a 'fire-deficit', creating potential for large high-intensity, wildfires that threaten human life and property, and creating damage that can last for years. Federal and state fire management agencies have adopted new policies, including prescribed burning, fuels reduction, and allowing natural caused fires to burn for habitat management.[xxxiv]

## Vegetation and Fuel Reduction Treatments

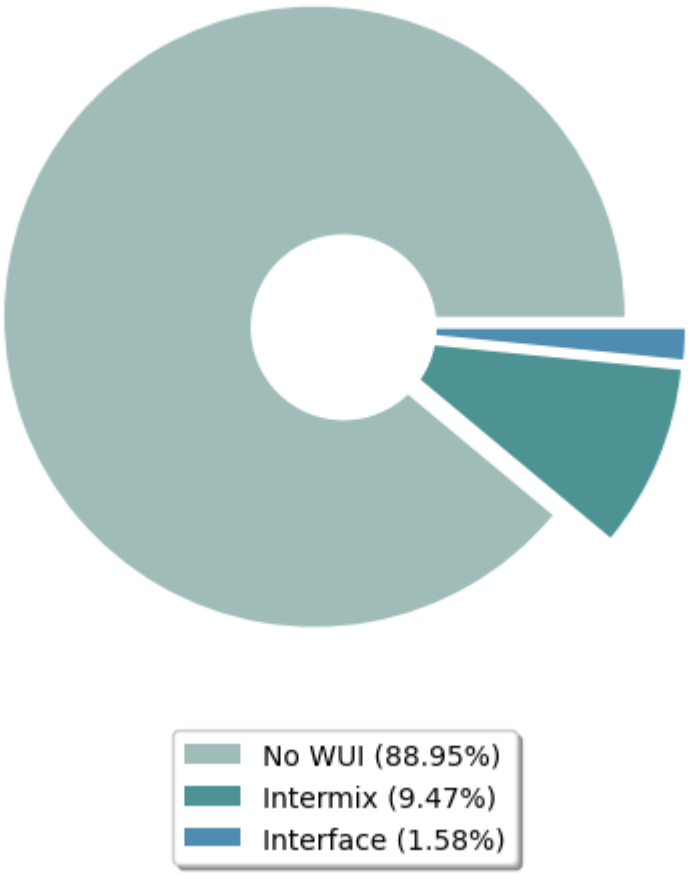
Wildfire managers can reduce the potential for large wildfire hazard potential through programs of fuel load reduction programs including prescribed burning, thinning, and minimizing the impacts on riparian corridors. New Mexico passed the Prescribed Burning Act that clarifies liability for private landowners to conduct prescribed burns.[xxxv]

| Sensitivity Factor | Value in Selected Area(%) | Description |
|---|---|---|
| Vegetation treatments | 47.35 | Percent of land area that has received vegetation and fuel reduction treatment |

## Wildland Urban Interface

Wildland Urban Interface (WUI) are areas where development has spread into forestland or other natural lands. The WUI density of houses can be low as one house per 40 acres.[xxxvi] Relative risk to communities adjacent to and in wildlands is related to level of vegetive fuels, weather, and ignition sources. Homeowners are the most important factor in preventing loss of a house in a wildfire. Pre-fire mitigation include increasing 'defensible space' and planning for evacuation.

The data below show the breakdown of land including two types of WUI: intermix and interface. Intermix WUI are areas where housing and vegetation intermingle; interface WUI are areas with housing in the vicinity of contiguous wildland vegetation.[xxxvii]



# Sensitivity Factors

## Sensitive Sites

Uncontrolled wildfire poses threat to human life and property. Sensitive sites such as industrial sites and facilities may pose special considerations to first responders and the community at large living near hazardous facilities. The presence of factors that increase environmental health risks, may include materials that are explosive, ignitable, corrosive, or toxic. See the Flooding section for a list of sensitive sites in the selected area.

## Health Impacts

Smoke from wildfire and prescribed fires can irritate lung tissue even in healthy people. Symptoms of smoke exposure usually include irritation of eyes, nose and throat or breathing discomfort. More severe symptoms may include chest tightness, wheezing, shortness of breath, and coughing.[xxxviii]

See the Air Quality section for data on asthma prevalence and the percentage of populations more vulnerable to negative impacts from smoke inhalation including children under ten years of age, elderly over 65 years of age, and outdoor workers. Farm workers, firefighters, and other outdoor laborers are at greater risk of exposure to worsening air quality from wildfire which exacerbates asthma, allergies, and other respiratory illnesses.[xxxix]

## Mobility

Those needing assistance during wildfire forced evacuations are especially vulnerable. The data below provide a summary of the prevalence and relative percentile for the selected area of elderly people living alone and people with disabilities, two groups that are at high risk when rapid evacuation is necessary.

| Demographic Factor | Prevalence in Selected Area (%) | Percentile Relative to State |
|---|---|---|
| Elderly Living Alone | 12.20 - 20.90 | 53.00 - 92.00 |

| Demographic Factor | Prevalence in Selected Area (%) |
|---|---|
| People with Disabilities | 32.00 |

### Important Watersheds for Surface Drinking Water

New Mexico's watersheds are important sources of drinking water and provide other ecological functions and services. Large wildfires can impair watersheds and associated infrastructure. Resiliency can be increased by programs of fuel load reduction programs including prescribed burning, thinning, and minimizing the impacts on riparian corridors. See the Flooding section for a summary of important watersheds in the selected area.

Surface water sources can be affected by wildfire. If a water system depends on a single water source, destruction of this source by wildfire poses a major challenge for the community. Systems that are certified for surface water consumption have difficulties returning to surface water use after a long break post-fire. Sediment loading and clogging of drinking water intakes and galleries from surface runoff has been observed in several municipal systems in post-fire situations in New Mexico. Wildfires have increased expenses and efforts for water systems; federal and state assistance is crucial for recovery post-fire.[xl]

## Adaptive Capacity

Several factors can increase communities' adaptive capacity to respond to and recover from wildfires.

### Vehicle Access

Access to a vehicle affects a person's ability to evacuate in the event of a natural disaster. This data comes from the US Census Bureau, 2014-2018 American Community Survey 5-Year Estimates B25044 - Tenure by Vehicles Available category. The data is displayed in percentiles. This communicates how your area of interest ranks compared to other areas in the state of New Mexico.

### Telephone Access

Telecommunications access can significantly affect a community's capacity to respond to climate disasters. This data comes from the US Census Bureau, 2014-2018 American Community Survey 5-Year Estimates Tenure by Telephone Service Available by Age of Householder, Table B25043. Data for the selected area for this factor is provided in the Air Quality section.

# REST Services

The GIS data utilized in this Map is available for use via ESRI ArcServer REST services. These services can be utilized with any GIS software. These services are available at the following locations:

- The New Mexico Climate Risk Map REST Service Directory: https://edacarc20.unm.edu/arcgis/rest/services/NMEMNRD
- The New Mexico Climate Risk Map REST Image Services Directory: https://edacarc20.unm.edu/arcgis/rest/services/NMEMNRD_Images

# Primary Data Sources

1. Asian, Black, Hispanic, Native American, and White Ethnicity - Race; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: B02001.
2. Poverty - Ratio of Income to Poverty Level in the Past 12 Months; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: C17002.
3. Linguistic Isolation - Household Language by Household Limited English-Speaking Status; Universe: Population 16 years and over; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: C16002.
4. Population Children under 10 years of age Percentile - U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table B01001 SEX BY AGE.
5. Population Elderly Over 65 years of Age Percentile - U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table B01001 SEX BY AGE.
6. Elderly Household Living Alone Percentile - Households and Families; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: S1101.
7. Educational Attainment Percentile - Educational Attainment and Employment Status By Language Spoken at Home for The Population 25 Years and Over; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: B16010.
8. Unemployment Percentile - Employment Status for The Population 16 Years and Over; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: B23025.
9. Agricultural and Outdoor Workers Percentile - Industry by Occupation for the Civilian Employed Population 16 Years and Over; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: C24050_001E; C24050 Agriculture, forestry, fishing and hunting, and mining; C24050_003E Construction.
10. Access to Vehicle Percentile - Tenure by Vehicles Available; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: B25044.
11. Access to Telephone Percentile - Tenure by Telephone Service Available by Age of Householder; U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: B25043.
12. Energy Access Tenure by House Heating Fuel - U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: B25117.
13. Housing Quality is a combination of factors including median age of homes, lack of complete plumbing facilities, and number of mobile homes (whether rented or owned). U.S. Census Bureau, 2018 American Community Survey 5-Year Estimates; Table ID: B25016, B25035, B25033.
14. Rates of Asthma - NMIBIS - Asthma ED Visits, 2008-2018 - Age-adjusted Rates, Asthma Emergency Department Visits Per 10,000 Population.
15. Rates of Cardiovascular Disease - NMIBIS -Myocardial Infarction (MI) ED Visits, 2008-2016 - Age-adjusted Rates, Acute Myocardial Infarction Emergency Department Visits Per 10,000 Population.

16. Diabetes Prevalence - NMIBIS -Diagnosed Diabetes Age-Adjusted Prevalence by County, New Mexico, 2015-2017.
17. Percentage with Disability - NMIBIS -New Mexico's Behavioral Risk Factor Surveillance System (BRFSS) Disability, Age-adjusted-2016, 2017, 2018.
18. Percentage in Food Insecure Households - NM_IBIS Food Insecurity Rate by Year, All Persons, New Mexico, and U.S. 2009-2017.
19. Percentage of Children in Food Insecure Households - NM_IBIS Food Insecurity Rate by County, Children Age 0 to 17 Years, New Mexico 2017
20. Obesity Prevalence - NMIBIS -New Mexico's Behavioral Risk Factor Surveillance System (BRFSS) Data - Overweight or Obese, Age-adjusted 2018, 2017, 2016.
21. Impaired Waters - These are assessed springs, streams, and lakes for the 2018 reporting cycle to the EPA under the Clean Water Act Section 305(b). Impaired waters were counted by Census tract and then percentiles created. Data was created by the New Mexico Environment Department, Surface Water Quality Bureau and found here: https://x-23.env.nm.gov/arcgis/rest/services/aqb/aqb_emissions/FeatureServer .
22. Air Monitoring Stations - New Mexico Environment Department Air Quality Bureau serves the stations at https://x-23.env.nm.gov/arcgis/rest/services/aqb/aqb_emissions/FeatureServer .
23. Ozone and PM 2.5 levels - EPA AirNow Air Quality Monitoring Data Air Now Data and served here https://services.arcgis.com/cJ9YHowT8TU7DUyn/arcgis/rest/services/Air_Now_Current_Monitors_Ozone/FeatureServer .
24. CDC 2018 Social Vulnerability Index (SVI) - Created by the Centers for Disease Control and Prevention (CDC) / Agency for Toxic Substances and Disease Registry (ATSDR) / Geospatial Research, Analysis, and Services Program (GRASP). It is served here https://services3.arcgis.com/ZvidGQkLaDJxRSJ2/arcgis/rest/services/CDC_Social_Vulnerability_Index_2018/FeatureServer .
25. Average Energy Burden (percent income) - Low Income Energy Affordability Data Tool, US Department of Energy, Office of Energy Efficiency & Renewable Energy https://lead.openei.org/assets/files/LEAD-Factsheet.pdf .
26. Active & Inactive Oil and Gas Wells - The Oil Conservation Division (OCD), NMEMNRD maintains well locations throughout the State of New Mexico. Well data downloaded 11/30/2022 from ftp://164.64.106.6/Public/OCD/OCD GIS Data/Geodatabase/ . Wells summed by tract and Percentiles created.
27. Gas Venting - The Oil Conservation Division (OCD), NMEMNRD serves gas venting data at https://gis.emnrd.state.nm.us/arcgis/rest/services/OCDPUB/Venting_Flaring/MapServer/0 .
28. EPA Brownfields, New Mexico Environment Department, Ground Water Quality Bureau serves the data here: https://x-23.env.nm.gov/arcgis/rest/services/gwqb/brownfields/MapServer/0
29. Ground water Discharge Permits - New Mexico Environment Department issues ground water discharge permits. Data accessed 11/30/2020. The data is served here: https://x-23.env.nm.gov/arcgis/rest/services/gwqb/ground_water_discharge_permits/FeatureServer .

30. Waste Treatment Plants - New Mexico Environment Department, Surface Water Quality Bureau tracks the National Pollution Discharge Elimination System(NPDES) Permits which includes Waste Treatment Plants. The data is served here: https://x-23.env.nm.gov/arcgis/rest/services/swqb/npdes_permits/MapServer .
31. Wetlands with wetlands action plans (WAPs) - the New Mexico Environment Department Surface Water Quality Bureau and served here: https://x-23.env.nm.gov/arcgis/rest/services/swqb/wap/MapServer .
32. Outstanding National Resource Waters USFS Wilderness Lakes and Wetlands - the New Mexico Environment Department, Surface Water Quality Bureau and served here: https://x-23.env.nm.gov/arcgis/rest/services/swqb/onrw/MapServer .
33. Hazardous Waste Facilities - New Mexico Environment Department Hazardous Waste Bureau https://x-23.env.nm.gov/arcgis/rest/services/hwb/hazardous_waste_facilities/MapServer/0
34. Leaking Petroleum Tank Sites, New Mexico Environment Department Petroleum Storage Tank Bureau data accessed 1/20/2020. https://x-23.env.nm.gov/arcgis/rest/services/pstb/leaking_petroleum_storage_tank_sites/MapServer/0 .
35. Petroleum Underground Storage Tanks Sites - New Mexico Environment Department Petroleum Storage Tank Bureau data accessed 11/20/2020. https://x-23.env.nm.gov/arcgis/rest/services/pstb/petroleum_storage_tank_facilities/MapServer/1 .
36. Petroleum Above Ground Storage Tanks Sites- New Mexico Environment Department Petroleum Storage Tank Bureau data accessed 11/20/2020. https://x-23.env.nm.gov/arcgis/rest/services/pstb/petroleum_storage_tank_facilities/MapServer/0 .
37. Superfund Sites - U.S. Environmental Protection Agency, data served by the New Mexico Environment Department. https://x-23.env.nm.gov/arcgis/rest/services/epa/superfund_sites/MapServer/0 .
38. The wildfire hazard potential (WHP) data are from Wildfire risk data is from the USDA Forest Service, Fire Modeling Institute (FMI), Missoula Fire Sciences Laboratory. Dillon, Gregory K. 2018. Wildfire Hazard Potential (WHP) for the conterminous United States (270-m GRID), version 2018 classified. 2nd Edition. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2015-0046-2 .
39. Communities at Risk from Wildfire - New Mexico State Forestry, Energy, Minerals and Natural Resources Department Forestry Division. New Mexico Communities at Risk Assessment Plan. https://gis.emnrd.state.nm.us/public/rest/services/SFDPUB/Fire_Management/MapServer/3 .
40. NM State Fire History - fire locations developed and maintained by the New Mexico Energy, Minerals, and Natural Resources, State Forest, data served here: https://gis.emnrd.state.nm.us/public/rest/services/SFDPUB/New_Mexico_Wildfire_History/MapServer/22 .
41. At-Risk Watersheds - most at-risk watersheds as identified by the Nature Conservancy Rio Grande Water Fund Comprehensive Plan for Wildfire and Water Source Protection. 2014.
42. Large Historical Wildfire Perimeters, large wildfires on federal lands, data from National Interagency Fire Center.
43. Wildland Urban Interface (WUI) data - http://silvis.forest.wisc.edu/data/wui-change/ Radeloff, Volker C.; Helmers, David P.; Kramer, H. Anu; Mockrin, Miranda H.; Alexandre,

Patricia M.; Bar Massada, Avi; Butsic, Van; Hawbaker, Todd J.; Martinuzzi, Sebastián; Syphard, Alexandra D.; Stewart, Susan I. 2017. The 1990-2010 wildland-urban interface of the conterminous United States - geospatial data. 2nd Edition. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2015-0012-2 .

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## About Census Data and Census Tracts

Summary excerpted from US Census Bureau documentation.

"Census Tracts are small, relatively permanent statistical subdivisions of a county or equivalent entity that are updated by local participants prior to each decennial census as part of the Census Bureau's Participant Statistical Areas Program. The Census Bureau delineates census tracts in situations where no local participant existed or where state, local, or tribal governments declined to participate. The primary purpose of census tracts is to provide a stable set of geographic units for the presentation of statistical data.

Census tracts generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area; however, the spatial size of census tracts varies widely depending on the density of settlement. Census tract boundaries are delineated with the intention of being maintained over a long time so that statistical comparisons can be made from census to census. Census tracts occasionally are split due to population growth or merged as a result of substantial population decline.

Census tract boundaries generally follow visible and identifiable features. They may follow nonvisible legal boundaries, such as minor civil division (MCD) or incorporated place boundaries in some states and situations, to allow for census-tract-to-governmental-unit relationships where the governmental boundaries tend to remain unchanged between censuses. State and county boundaries always are census tract boundaries in the standard census geographic hierarchy. Tribal census tracts are a unique geographic entity defined within federally recognized American Indian reservations and off-reservation trust lands and can cross state and county boundaries. Tribal census tracts may be completely different from the census tracts and block groups defined by state and county (see "Tribal Census Tract")."

# Acknowledgements and Disclaimer

This local data summary report for Taos County was generated from the New Mexico Climate Risk Map tool at https://nmclimaterisk.org/. The information is being provided as is and without warranty of any kind either express, implied or statutory. The user assumes the entire responsibility and liability related to their use of this information. No responsibility is assumed for damages or other liabilities due to the accuracy, availability, use or misuse of the information herein provided. By accessing this website and/or data contained within, you herby release the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), the Earth Data Analysis Center, University of New Mexico, and all data providers from liability. EMNRD's Energy Conservation and Management Division funded and managed the development of this tool. EMNRD would like to acknowledge the contributions of data and staff time at additional state agencies including the New Mexico Environment Department, Department of Health, Department of Homeland Security and Emergency Management, Office of the State Engineer, and Interstate Stream Commission.

# Appendix

This appendix provides census tract-level data for all applicable datasets referenced in this report.

| Race or Ethnicity | Range of Prevalence in Selected Area (%) | Range of Percentile in Selected Area | GEOID |
|---|---|---|---|
| Hispanic | 63.25 | 74.00 | 35055952700 |
| Hispanic | 48.71 | 55.50 | 35055952300 |
| Hispanic | 78.97 | 89.70 | 35055940000 |
| Hispanic | 61.69 | 72.00 | 35055952600 |
| Hispanic | 54.75 | 62.30 | 35055952100 |
| Hispanic | 47.20 | 53.30 | 35055940100 |
| Hispanic | 42.58 | 44.80 | 35007950700 |

| Race or Ethnicity | Range of Prevalence in Selected Area (%) | Range of Percentile in Selected Area | GEOID |
|---|---|---|---|
| Native American | 0.98 | 22.20 | 35055952700 |
| Native American | 0.52 | 13.10 | 35055952300 |
| Native American | 15.07 | 85.30 | 35055940000 |
| Native American | 5.23 | 69.80 | 35055952600 |
| Native American | 0.69 | 16.30 | 35055952100 |
| Native American | 16.11 | 85.50 | 35055940100 |
| Native American | 1.38 | 28.80 | 35007950700 |

| Race or Ethnicity | Range of Prevalence in Selected Area (%) | Range of Percentile in Selected Area | GEOID |
|---|---|---|---|
| Black | 0.51 | 18.20 | 35055952700 |
| Black | 0.00 | 0.00 | 35055952300 |
| Black | 0.00 | 0.00 | 35055940000 |
| Black | 1.02 | 0.00 | 35055952600 |
| Black | 0.00 | 0.00 | 35055952100 |
| Black | 0.42 | 15.20 | 35055940100 |
| Black | 1.10 | 37.60 | 35007950700 |

| Race or Ethnicity | Range of Prevalence in Selected Area (%) | Range of Percentile in Selected Area | GEOID |
|---|---|---|---|
| Asian | 0.00 | 0.00 | 35055952700 |
| Asian | 0.00 | 0.00 | 35055952300 |
| Asian | 0.14 | 5.30 | 35055940000 |
| Asian | 0.57 | 28.90 | 35055952600 |
| Asian | 0.00 | 0.00 | 35055952100 |
| Asian | 0.30 | 15.50 | 35055940100 |
| Asian | 0.63 | 31.60 | 35007950700 |

| Race or Ethnicity | Range of Prevalence in Selected Area (%) | Range of Percentile in Selected Area | GEOID |
|---|---|---|---|
| White | 88.99 | 77.40 | 35055952700 |
| White | 95.95 | 97.50 | 35055952300 |
| White | 70.49 | 27.10 | 35055940000 |
| White | 85.72 | 65.50 | 35055952600 |
| White | 95.60 | 96.70 | 35055952100 |
| White | 77.74 | 43.40 | 35055940100 |
| White | 83.77 | 57.90 | 35007950700 |

| Demographic Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Children under 10 years of age | 7.89 | 16.70 | 35055952700 |
| Children under 10 years of age | 9.32 | 25.80 | 35055952300 |
| Children under 10 years of age | 10.83 | 36.20 | 35055940000 |
| Children under 10 years of age | 12.95 | 56.40 | 35055952600 |
| Children under 10 years of age | 11.73 | 45.50 | 35055952100 |
| Children under 10 years of age | 7.48 | 14.70 | 35055940100 |
| Children under 10 years of age | 8.50 | 20.70 | 35007950700 |

| Demographic Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Elderly over 65 years of age | 29.55 | 93.10 | 35055952700 |
| Elderly over 65 years of age | 27.33 | 89.50 | 35055952300 |
| Elderly over 65 years of age | 22.56 | 79.60 | 35055940000 |
| Elderly over 65 years of age | 19.18 | 66.10 | 35055952600 |
| Elderly over 65 years of age | 31.02 | 93.90 | 35055952100 |
| Elderly over 65 years of age | 21.36 | 75.60 | 35055940100 |
| Elderly over 65 years of age | 25.42 | 86.70 | 35007950700 |

| Demographic Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Outdoor workers | 15.71 | 73.50 | 35055952700 |
| Outdoor workers | 11.77 | 57.80 | 35055952300 |
| Outdoor workers | 8.98 | 45.00 | 35055940000 |
| Outdoor workers | 12.44 | 60.70 | 35055952600 |
| Outdoor workers | 7.15 | 34.90 | 35055952100 |
| Outdoor workers | 11.29 | 55.70 | 35055940100 |
| Outdoor workers | 15.52 | 72.10 | 35007950700 |

| Demographic Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Agricultural Workers | 5.65 | 67.80 | 35055952700 |
| Agricultural Workers | 3.15 | 54.70 | 35055952300 |
| Agricultural Workers | 2.31 | 43.70 | 35055940000 |
| Agricultural Workers | 2.52 | 46.90 | 35055952600 |
| Agricultural Workers | 3.70 | 60.00 | 35055952100 |
| Agricultural Workers | 2.29 | 42.90 | 35055940100 |
| Agricultural Workers | 7.37 | 72.30 | 35007950700 |

| Sensitivity Factor | Percentile Relative to State | GEOID |
|---|---|---|
| Housing Quality | 79.80 | 35055952700 |
| Housing Quality | 87.50 | 35055952300 |
| Housing Quality | 89.70 | 35055940000 |
| Housing Quality | 46.70 | 35055952600 |
| Housing Quality | 58.00 | 35055952100 |
| Housing Quality | 77.40 | 35055940100 |
| Housing Quality | 46.50 | 35007950700 |

| Sensitivity Factor | Percentile Relative to State | GEOID |
|---|---|---|
| Housing Rentals | 33.50 | 35055940000 |
| Housing Rentals | 15.80 | 35055952100 |
| Housing Rentals | 65.40 | 35055952600 |
| Housing Rentals | 11.20 | 35055952700 |
| Housing Rentals | 49.70 | 35055940100 |
| Housing Rentals | 36.10 | 35055952300 |
| Housing Rentals | 51.00 | 35007950700 |

| Sensitivity Factor | Percentile Relative to State | GEOID |
|---|---|---|
| Housing Affordability | 86.80 | 35055952700 |
| Housing Affordability | 97.30 | 35055952300 |
| Housing Affordability | 35.70 | 35055940000 |
| Housing Affordability | 72.60 | 35055952600 |
| Housing Affordability | 11.20 | 35055952100 |
| Housing Affordability | 45.70 | 35055940100 |
| Housing Affordability | 39.00 | 35007950700 |

"Without Vehicle Access "

| Adaptive Capacity Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Without Vehicle Access | 10.12 | 82.30 | 35055940000 |
| Without Vehicle Access | 5.28 | 55.40 | 35055952100 |
| Without Vehicle Access | 8.68 | 77.50 | 35055952600 |
| Without Vehicle Access | 3.63 | 42.70 | 35055952700 |
| Without Vehicle Access | 5.52 | 57.40 | 35055940100 |
| Without Vehicle Access | 6.39 | 63.20 | 35055952300 |
| Without Vehicle Access | 2.42 | 28.70 | 35007950700 |

| Adaptive Capacity Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| With Telephone Access | 98.00 | 68.00 | 35055940000 |
| With Telephone Access | 100.00 | 93.00 | 35055952100 |
| With Telephone Access | 96.00 | 22.00 | 35055952600 |
| With Telephone Access | 99.00 | 78.00 | 35055952700 |
| With Telephone Access | 99.00 | 75.00 | 35055940100 |
| With Telephone Access | 91.00 | 5.00 | 35055952300 |
| With Telephone Access | 97.00 | 40.00 | 35007950700 |

| Sensitivity Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Linguistic Isolation | 3.67 | 43.50 | 35055952700 |
| Linguistic Isolation | 0.00 | 0.00 | 35055952300 |
| Linguistic Isolation | 5.33 | 60.30 | 35055940000 |
| Linguistic Isolation | 4.13 | 49.40 | 35055952600 |
| Linguistic Isolation | 3.08 | 37.40 | 35055952100 |
| Linguistic Isolation | 7.02 | 69.40 | 35055940100 |
| Linguistic Isolation | 5.91 | 64.20 | 35007950700 |

| Sensitivity Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Poverty | 44.98 | 56.40 | 35055952700 |
| Poverty | 55.97 | 75.90 | 35055952300 |
| Poverty | 51.76 | 69.60 | 35055940000 |
| Poverty | 50.81 | 67.90 | 35055952600 |
| Poverty | 37.65 | 40.40 | 35055952100 |
| Poverty | 44.49 | 55.40 | 35055940100 |
| Poverty | 46.91 | 61.30 | 35007950700 |

| Sensitivity Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Educational Attainment | 15.18 | 57.80 | 35055952700 |
| Educational Attainment | 6.10 | 22.60 | 35055952300 |
| Educational Attainment | 16.69 | 62.10 | 35055940000 |
| Educational Attainment | 8.24 | 30.00 | 35055952600 |
| Educational Attainment | 14.44 | 55.50 | 35055952100 |
| Educational Attainment | 8.54 | 31.20 | 35055940100 |
| Educational Attainment | 11.96 | 44.20 | 35007950700 |

| Sensitivity Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Employment | 4.49 | 64.10 | 35055952700 |
| Employment | 2.51 | 29.50 | 35055952300 |
| Employment | 4.90 | 69.60 | 35055940000 |
| Employment | 5.57 | 77.40 | 35055952600 |
| Employment | 6.75 | 85.60 | 35055952100 |
| Employment | 3.14 | 44.20 | 35055940100 |
| Employment | 5.81 | 79.50 | 35007950700 |

| Sensitivity Factor | Prevalence in Selected Area (%) | GEOID |
|---|---|---|
| Energy burden | 6.00 | 35055940000 |
| Energy burden | 6.00 | 35055952100 |
| Energy burden | 4.00 | 35055952600 |
| Energy burden | 4.00 | 35055952700 |
| Energy burden | 4.00 | 35055940100 |
| Energy burden | 7.00 | 35055952300 |
| Energy burden | 7.00 | 35007950700 |

| Sensitivity Factor | Prevalence in Selected Area (%) | Percentile Relative to State | GEOID |
|---|---|---|---|
| Elderly living alone | 20.90 | 92.00 | 35055952700 |
| Elderly living alone | 20.10 | 91.00 | 35055952300 |
| Elderly living alone | 15.80 | 76.00 | 35055940000 |
| Elderly living alone | 13.30 | 62.00 | 35055952600 |
| Elderly living alone | 19.00 | 88.00 | 35055952100 |
| Elderly living alone | 13.80 | 65.00 | 35055940100 |
| Elderly living alone | 12.20 | 53.00 | 35007950700 |

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# Layers of interest with no data

The following layers returned no results for the area of interest

- Ozone Level
- Hazardous Waste Facilities
- NPL – Superfund sites

# Broken or changed layers of interest

The following layers could not be retrieved

- (source: )