

# RURAL INFRASTRUCTURE NEEDS STUDY | 2021

## New Mexico

### **Pivotal New Mexico**

Terry Brunner  
Jennifer Jackson, MBA  
Raffaele Moore

### **Bohannon Huston, Inc.**

Aaron Sussman, AICP  
Brendon Grey

### **Bureau of Business and Economic Research**

Michael O'Donnell, Ph.D.  
Rose Roher  
Suzan Reagan

### **The Grant Plant**

Wendy McCoy  
Amorena Almand



# INTRODUCTION

July 31, 2021

Raúl E. Burciaga, Director  
Legislative Council Service  
411 State Capitol  
Santa Fe, NM 87501  
(505) 986-4600

Re: Interim Report for A Study of Critical Rural Infrastructure Needs and Funding Recommendations

Mr. Burciaga and the Legislative Council Service Staff:

Attached is the Interim Report for the Rural Infrastructure Needs study, solicited by the Legislative Council Service in support of improving state and community decision making and planning to close infrastructure needs gaps. This report provides a county-level overview of four infrastructure areas: 1. Broadband, 2. Electrical, 2. Drinking water, and 4. Sewer. Further, it previews funding resources that communities may currently be underutilizing.

A Final Report is forthcoming later this year, which will include deeper analysis of the characteristics of high need areas, highlight best practices from other states, provide estimates on the cost to close infrastructure gaps, a more comprehensive listing of funding resources, and offer recommended strategies to help to close these gaps. In the 21<sup>st</sup> century, it is imperative that we provide a basic-level of infrastructure to New Mexico's residents, while also planning ahead to make the state's system more resilient. Resiliency is critical as we face drier and hotter weather, which poses threats to infrastructure systems across the state.

We know that communities' current and projected needs are high. But, over the course of this project, we hope to provide evidence, resources, and recommendations that are actionable and have a truly positive impact on the lives of our rural neighbors. There are proven approaches the state and communities can take to overcome challenges and better position ourselves for the future. New Mexico can and should strive to be an innovator in solving its infrastructure challenges in ways that are both cost-efficient and forward-looking.

I invite feedback as I am the project team continue with this project throughout the year. Please contact me at 505-226-0171 ext. 709 or by email at [terry@pivotalnm.org](mailto:terry@pivotalnm.org).

Respectfully,



Terry Brunner, CEO

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# PROJECT OVERVIEW

Pivotal New Mexico (Pivotal), in partnership with the University of New Mexico's Bureau of Business and Economic Research (BBER), Bohannon Huston, Inc. (BHI), and The Grant Plant (TGP), is undertaking a comprehensive study of New Mexico's rural infrastructure. The team encompasses broad and relevant competencies for this multi-faceted project, with experience ranging from engineering design and costing out infrastructure projects, to identifying funding and developing sustainability plans, to research and policy advisement. Pivotal has experience with designing and executing complex projects, conducting in-depth funding research, developing plans to sustain projects, and drafting recommendations for policy and practices. BBER brings well-regarded data and policy analysis competencies. The support provided by BHI ensures that estimates and recommendations are feasible and rooted in experience designing and constructing major infrastructure projects across the region. TGP is a state leader in finding and securing funding for public entities and nonprofits.

What follows on the pages of this Interim Report is a high-level overview of the four infrastructure areas, including data tables and maps illustrating infrastructure access at the county level. This report represents the groundwork for a more detailed Final Report to come later in the year, which will delve more deeply into specifics on how New Mexico can tackle its infrastructure challenges. With a large geographic area, highly dispersed populations, and many residents who are low income and struggle to pay for utilities, New Mexico faces significant challenges in achieving the goal of adequate infrastructure for all by 2030. However, there are approaches and funding sources that can help to close access and affordability gaps. Below is a summary of the project scope of work and team. Each of the scope of work areas below will feature as a chapter in the final report.

## DEFINITION OF RURAL

This report employs a broad definition of rural. For the purposes of data collection, we have included any county-level region of under 50,000 people, which largely conforms to the USDA cutoff for what constitutes rural. This broad treatment of the term "rural" encompasses the U.S. Census designations of "nonmetro noncore" and "nonmetro micropolitan areas," which include "small urban clusters."

Individual funders may apply more specific definitions, so always read eligibility criteria closely before applying for funding. Funders that define rural by population may have a threshold of anywhere from 2,500 to 50,000. To be certain an area is eligible, read the notes in the Funding Opportunities chapter of this report and always consult the funder website where available.

# FINAL PROJECT SCOPE OF WORK

The Final Report will contain six chapters, covering project scope of work areas as follows:

1. Demographic information relating to infrastructure needs in New Mexico: Tables and maps will show the needs at the county level, with census tract-level information on highest-need rural areas, including basic demographic profiles.
2. Policies and best practices of other states that have succeeded in improving infrastructure: Through research and interviews with state and industry leaders, this chapter will illustrate models and best practices on how other states are closing their infrastructure gaps using creative partnership models and innovative funding. It will consist of three areas of information: 1. Initiatives for infrastructure development undertaken by other states; 2. Strategies and practices employed by other states and their successes and failures; and 3. Qualitative data obtained through interviews of policymakers and administrators.
3. Estimated costs to achieve basic infrastructure: Because each community has its unique needs, this chapter will include various scenarios and estimated cost ranges.
4. Cataloguing financial opportunities: A preview of funding resources is contained in this Interim Report, with a more robust database of public and private loans and contracts, loans, and other funding mechanisms to come in the Final Report.
5. Affordability analysis of infrastructure investments and impact on costs to consumers: The corollary to building new infrastructure is ensuring that residents can afford the service. The final report will analyze existing programs that New Mexico could utilize more widely to decrease utilities costs, as well as recommendations on other ways to help consumers.
6. Recommendations and action steps: To tie together all research and findings, the Final Report will offer strategies for being more effective at fully infrastructure projects and related policy recommendations to help close the state's infrastructure gaps by 2030.

The project pulls together a strong team of area experts. Below are details on each of the partner agencies and their roles on this project.

<b>Summary of Project Team Partners and Roles</b>	
 <p><b>PIVOTAL</b> new mexico</p>	<ul style="list-style-type: none"> <li>• Planning, project oversight;</li> <li>• Contractually obligate funds, track and report on budget expenditures;</li> <li>• Schedule and conduct interviews;</li> <li>• Oversee and conduct research, and supplement partner work as needed;</li> <li>• Lead data collections; keep team on task and on schedule;</li> <li>• Support funding research and recommendations;</li> <li>• Provide insights on braiding funding streams for initial project construction, and resources of supporting long-term affordability;</li> <li>• Lead development of recommendations and action steps to achieve 2030 infrastructure goals; and</li> <li>• Prepare deliverables to be shared with the legislature, to include interim report, technical memos, presentations, final report, and additional products as requested.</li> </ul>

 <p>BUREAU OF BUSINESS &amp; ECONOMIC RESEARCH</p>	<ul style="list-style-type: none"> <li>• Oversee demographic data collection and analysis;</li> <li>• Weigh in on policy considerations as needed; and</li> <li>• Assemble data tables, explanatory text and annotations, and any additional context as required.</li> </ul>
	<ul style="list-style-type: none"> <li>• Oversee infrastructure cost estimate development;</li> <li>• Share relevant information from project experience on funding considerations, infrastructure systems design/ implementation, and life cycle and maintenance costs;</li> <li>• Provide insight on project feasibility from an engineer's perspective; and</li> <li>• Provide graphic design and mapping support.</li> </ul>
 <p>THE GRANT PLANT, INC.</p>	<ul style="list-style-type: none"> <li>• Conduct prospect research on available funding sources for infrastructure construction, and to support long-term affordability;</li> <li>• Create tables and overviews of findings, organized by funder type (public, private, debt instrument, etc.); and</li> <li>• Offer recommendations on which funding sources to prioritize.</li> </ul>

## RURAL INFRASTRUCTURE STUDY TIMELINE

This project is scheduled to take place in phases over the course of 2021, with meeting and reporting milestones as follows:

- June 15: Contract signed; work begins
- June 21: Kickoff meeting with the Rural Economic Opportunities Task Force (REOTF)
- July 19-20: Presentation to the REOTF (Mora)
- **July 31: Interim Report due to the Legislative Council Services**
- August 4-5: Presentation at the REOTF/Indian Affairs Committee (Gallup)
- October 7-8: (Pending LCS approval) Presentation to the REOTF (Chaparral)
- November 8: (Pending LCS approval) Presentation to the REOTF (Santa Fe)
- **December 15: Final Report due to the Legislative Council Services**

# INFRASTRUCTURE AREA SUMMARIES

## BROADBAND IN NEW MEXICO

Access to broadband has never been more important. A reliable internet connection is integral to economic productivity, political and civic engagement, educational attainment, and access to quality health care. Yet, New Mexico lags behind its neighbors in broadband access, hampering the state's economy and well-being and education and economic opportunities of community members.

Broadband access is provided largely by the private sector, but should be increasingly thought of as a public good as quality internet access is so critical for participating in today's economy. Leaving rural areas disconnected means residents are unable to compete. This section discusses the state of broadband in New Mexico and the potential role of the public sector in expanding access.

### *BROADBAND SUMMARY*

Broadband refers to technology that provides a high-speed connection to the Internet, with speeds measured in megabits per second (Mbps). The Federal Communications Commission (FCC) has set the nationwide broadband threshold to be a 25 Mbps download speed and 3 Mbps upload speed; this is the threshold below which the FCC has determined connection speeds cannot convey the full economic and social benefits of internet access.

A broadband network can employ either wireline technology networks, which transmit data using wires or cables either laid underground or strung aerially, or wireless networks, which transmit data through the air via antennas and radio waves.<sup>1</sup> New Mexicans rely on a combination of wireline and wireless technology for their Internet connections.

### *EXISTING BROADBAND POLICIES*

In New Mexico, most broadband services are provided by private, for-profit companies. The State's role to-date in regulating broadband is limited. However, recent legislation signals an intention to take a more active role. In 2021, the Legislature created the Office of Broadband Access and Expansion, which is administratively attached to the Department of Information Technology. The office will coordinate broadband activities throughout the state, engage in strategic planning, and maintain broadband coverage maps and data.

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<sup>1</sup> Wireline technology types: 1. Digital subscriber lines (DSL) transmit data over copper telephone lines and offer the slowest connection speeds. 2. Cable connections use the same cables that transmit television signals and offers speeds greater than DSL. 3. Fiber optic connections offer the fastest broadband speeds. Fiber optic cables transmit signals through small glass filaments and are not susceptible to weather corrosion or outside signal interference.

Wireless technology types: 1. Fixed wireless uses antennas on poles or towers to transmit data through to individual homes and businesses, offering speeds comparable to DSL and cable. 2. Satellite broadband connections transmit data between antennas on the ground and orbital satellites with speeds comparable to cable. 3. Mobile wireless service uses a different portion of the radio spectrum to send signals directly to consumers and is commonly used in cellphones, like 4G.

The Legislature also recently enacted the Connect New Mexico Act, which established the Connect New Mexico Council. The Council is directed to develop a digital equity plan and administer a competitive grant program. Eligible awardees include local governments, state agencies, public educational institutions, tribal governments, and certain private entities working in a public partnership. The bill does not contain an appropriation for the grant program. The New Mexico Department of Transportation (NMDOT) also plays a role in regulating broadband. NMDOT issues permits for utility installation, including fiber optic cables and other infrastructure in state-owned highway rights-of-way.

## *BROADBAND COVERAGE AND INFRASTRUCTURE NEEDS*

A 2020 analysis of broadband infrastructure contained in the New Mexico Broadband Strategic Plan found that approximately 13% of New Mexican homes and businesses do not have access to broadband infrastructure.<sup>2</sup> These locations do not have either DSL, cable, fiber, or wireless service available, meaning they lack any of the basic infrastructure needed to connect to the internet. Further, analysis of five-year 2015-2019 ACS estimates indicate that approximately 20% of New Mexico households do not have an internet connection of any kind, with challenges especially prevalent in rural communities. The 2021 FCC Broadband Deployment Report found that rural communities in New Mexico have the lowest access to broadband in the nation.<sup>3</sup> Most of the homes and businesses in question are in sparsely populated regions where the capital costs outweigh potential business profit. Based on engineering estimates contained in the Broadband Strategic Plan, the cost to provide high-speed wireline and wireless service to all New Mexicans is between \$2 and \$5 billion.<sup>4</sup>

Even households that have some type of internet connection may not have sufficiently fast speeds to work, learn, or access services from home. A 2020 analysis of internet usage data found that more than 70% of New Mexican households do not have an internet connection at speeds of 25 Mbps / 3 Mbps.<sup>5</sup> These homes might use the internet for some tasks, but cannot join work meetings, attend class, or receive health care due to low connection speed. The combination of lack of broadband infrastructure, unavailability of high-speed connections in some places, and high subscription costs means that many New Mexicans are not experiencing the economic and productive benefits of broadband.

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<sup>2</sup> The analysis was published in the 2020 New Mexico Broadband Strategic Plan and considers a premises unserved if it is unable to receive 25 Mbps/ 3 Mbps service speeds via wireline, cable, DSL, or fixed wireless technology. The authors estimate service using a combination of ISP self-reported information, FCC data, and data available in publicly available databases.

<sup>3</sup> FCC Fourteenth Annual Broadband Deployment Report, <https://www.fcc.gov/document/fcc-annual-broadband-report-shows-digital-divide-rapidly-closing>. The FCC collected data on broadband availability from ISPs nationwide on their service territories, coverage, speed, and technology. The data are self-reported by ISPs on the Form 477. This data source typically exaggerates actual coverage because if one subscriber can be served in an area, the service provider can declare the entire area served even if there are no other households that receive service.

<sup>4</sup> New Mexico Department of Information Technology, "State of New Mexico Broadband Strategic Plan and Rural Broadband Assessment, June 2020, [https://www.doit.state.nm.us/broadband/reports/nmbbp\\_strategic20200616Rev2Final.pdf](https://www.doit.state.nm.us/broadband/reports/nmbbp_strategic20200616Rev2Final.pdf).

<sup>5</sup> Data on broadband usage speed was estimated by Microsoft's Airband Initiative and published by the U.S. Department of Commerce National Telecommunications Information Administration (NTIA). Microsoft gathered usage information each time a device receives an update or connects to a Microsoft service. This allows insight into the percentage of people in an area that use the internet at broadband speeds based on the FCC definition of 25 Mbps/3 Mbps.

Figure 1 on the following page shows the proportion of households without an internet connection. Note that there are five counties (Guadalupe, McKinley, Mora, Harding, and Rio Arriba Counties) where more than 40% of households do not have an internet connection, mostly in rural northern regions of the state. See also Table 1 on page 12 for detailed data by county.

Figure 2 shows the share of households without high-speed internet connections (defined as 25 Mbps / 3 Mbps broadband connection) by county. At present, there are eight counties in the state where less than 10% of households have access to a 25 Mbps / 3 Mbps or higher broadband connection. These counties, again, are predominantly sparsely populated and located in the north and southwestern portions of the state, distant from the state's high-speed internet backbone, which runs from Albuquerque to Las Cruces.<sup>6</sup>

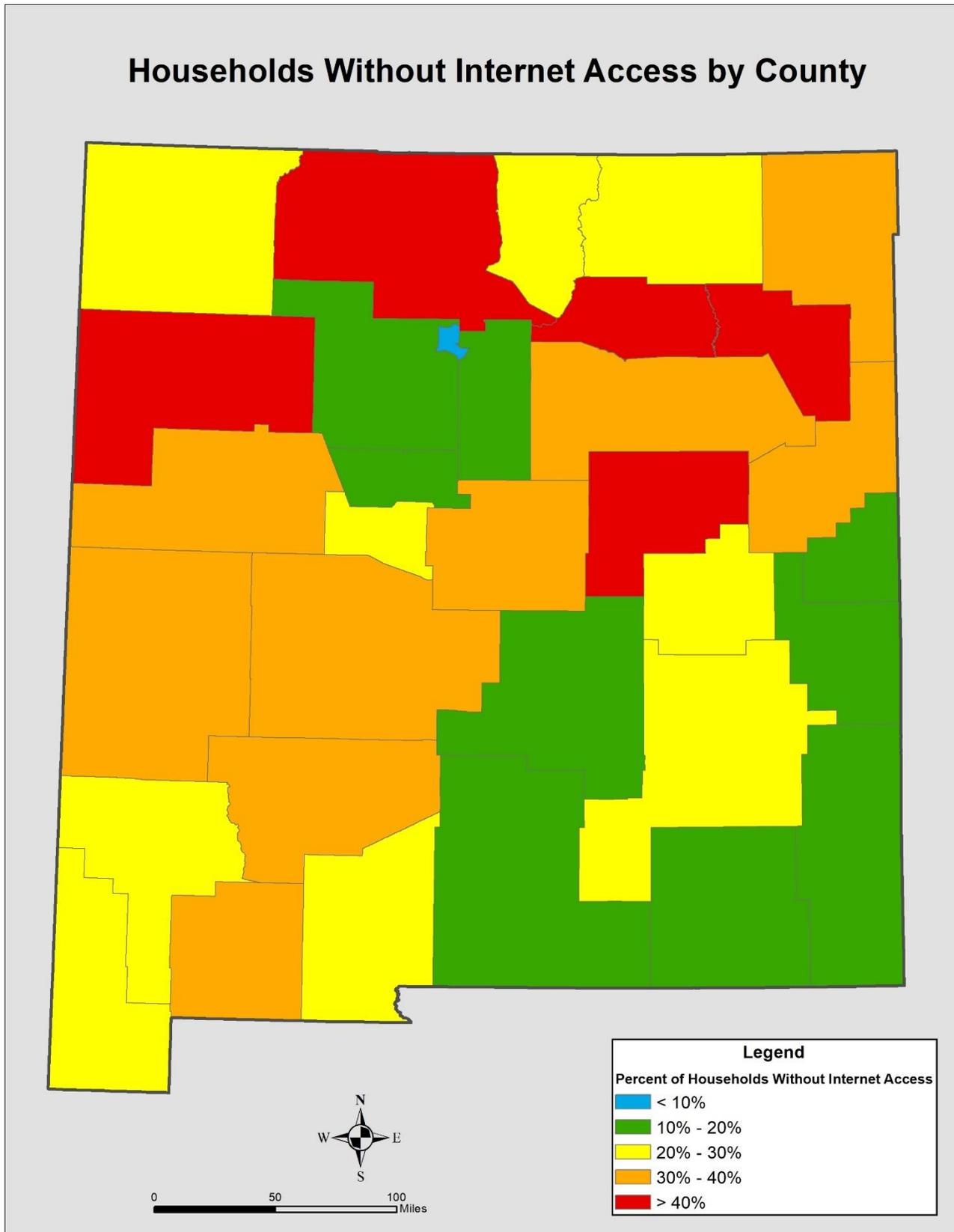
### KEY TAKEAWAYS: BROADBAND ACCESS IN NEW MEXICO

- 13% of New Mexican homes and businesses do not have access to broadband infrastructure.
- More than 70 % of New Mexican households do not have an internet connection at speeds of 25 Mbps / 3 Mbps.
- Approximately 20% of New Mexico households do not have an internet connection at all.
- Rural communities in New Mexico have the lowest access to broadband in the nation.

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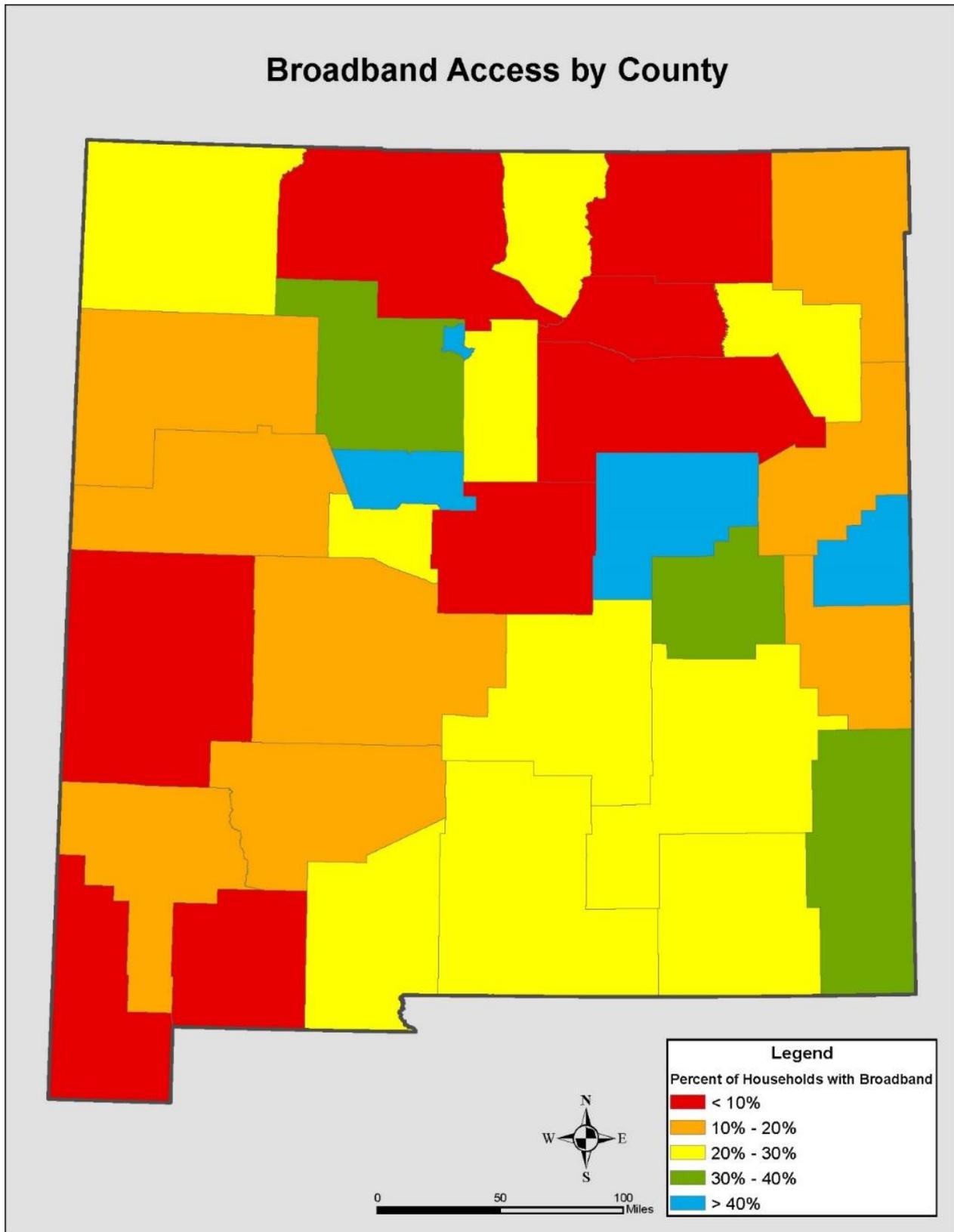
<sup>6</sup> A backbone is broadband infrastructure that makes it less expensive to expand service along a corridor.

Figure 1: Internet Access by County<sup>7</sup>



<sup>7</sup> Map source: NTIA and U.S. Census

Figure 2: Broadband Access by County<sup>8</sup>



<sup>8</sup> Map sources: NTIA and U.S. Census

*Table 1: Household Broadband and Internet Access by County*

County	Total Households	Percent w/ Internet	Percent w/ Broadband*	Total Households w/ Internet	Total Households w/ Broadband
Bernalillo County	267,699	84.3%	42.0%	225,670	112,434
Catron County	1,325	65.0%	1.0%	861	13
Chaves County	23,284	74.3%	22.0%	17,300	5,122
Cibola County	8,708	62.5%	11.0%	5,443	958
Colfax County	5,853	70.5%	7.0%	4,126	410
Curry County	18,548	83.0%	42.0%	15,395	7,790
De Baca County	672	71.6%	35.0%	481	235
Dona Ana County	77,842	77.4%	23.0%	60,250	17,904
Eddy County	21,251	82.1%	27.0%	17,447	5,738
Grant County	11,851	75.0%	14.0%	8,888	1,659
Guadalupe County	1,384	42.8%	<i>No reliable data</i>	592	<i>No reliable data</i>
Harding County	211	55.5%	24.0%	117	51
Hidalgo County	1,679	76.8%	4.0%	1,289	67
Lea County	22,523	81.4%	32.0%	18,334	7,207
Lincoln County	7,566	81.2%	30.0%	6,144	2,270
Los Alamos County	7,931	92.6%	43.0%	7,344	3,410
Luna County	8,904	66.0%	5.0%	5,877	445
McKinley County	20,942	49.4%	11.0%	10,345	2,304
Mora County	1,713	55.0%	7.0%	942	120
Otero County	23,634	81.3%	28.0%	19,214	6,618
Quay County	3,040	60.2%	19.0%	1,830	578
Rio Arriba County	12,730	59.9%	5.0%	7,625	637
Roosevelt County	6,814	82.0%	20.0%	5,587	1,363
Sandoval County	51,001	86.4%	31.0%	44,065	15,810
San Juan County	43,387	71.2%	29.0%	30,892	12,582
San Miguel County	11,609	61.5%	7.0%	7,140	813
Santa Fe County	61,921	83.2%	27.0%	51,518	16,719
Sierra County	5,555	66.0%	14.0%	3,666	778
Socorro County	4,520	62.1%	12.0%	2,807	542
Taos County	12,103	71.2%	21.0%	8,617	2,542
Torrance County	5,644	66.7%	6.0%	3,765	339
Union County	1,395	64.2%	20.0%	896	279
Valencia County	27,010	74.4%	21.0%	20,095	5,672

\*Note: Broadband is defined as 25 Mbps / 3 Mbps connection speed.

## *BEST PRACTICES AND RECOMMENDATIONS*

### Recommendations from the State's Broadband Strategic Plan

The 2020 New Mexico Broadband Strategic Plan includes nine recommendations for meeting the broadband infrastructure need in the state. These include:

1. Establish and fund a grant program to expand rural broadband.
2. Prioritize fiber-based broadband construction in new development.
3. Include broadband in COVID-19 recovery planning.
4. Provide local technical assistance to companies and communities for broadband planning.
5. Prepare to leverage existing and future broadband funding.
6. Support local anchor institutions like libraries and schools to aggregate broadband demand.
7. Elevate and fund the state's broadband office.
8. Develop a digital equity plan alongside the state's broadband strategic plan.

### National Best Practices

State leaders can prioritize smart broadband investments by targeting funding toward practices known to promote longevity, impact, and long-term returns. This includes redirecting funding away from copper cable infrastructure and toward fiber network construction to increase bandwidth capacity for sustained future growth. By prioritizing fiber, the state can build a long-lasting foundation of reliable broadband infrastructure. See the Appendix for a summary of New Mexico's broadband providers and the primary technology type currently used.

National best practices highlight three key features in state efforts to expand broadband access, as follows:

1. Centralize broadband coordination through a broadband office. The state is already acting on this with the creation of the Office of Broadband Access and Expansion.
2. Support local communities through planning and technical assistance. Many rural New Mexican communities do not have the necessary expertise, staff, or financial resources to conduct broadband planning, much less apply for competitive funding. The state, working through its centralized broadband office, can help by engaging in strategic and technical planning.
3. Provide subsidies to internet service providers or local governments through competitive grants. Such grants can help to offset the cost to private companies of expanding internet service. Key components of grant programs include evaluation criteria, clear accountability measures for recipients, and an emphasis on high-speed technology, such as fiber optic networks.

Other effective strategies include:

- "Dig once" legislation, that requires state transportation departments to alert internet service providers of planned roadwork so that providers can lay fiber optic cables in ground already opened for roadwork. New Mexico has a dig once policy on the books.
- Require state grant recipients to build infrastructure that is scalable at speeds of 100 Mbps.
- Formalize procedures to encourage adoption through digital literacy and inclusion programs in communities with low broadband adoption rates.

# ELECTRICAL COVERAGE IN NEW MEXICO

## *BACKGROUND*

The electricity supply chain involves three basic stages: generation, transmission, and distribution. In New Mexico, coal and natural gas continue to make up the majority of in-state electricity generation. However, proportions are declining in favor of renewable energy sources such as solar, wind, hydroelectric, and geothermal. Renewables comprised 27% of the state's net electricity generation in 2020, up from 6% in 2011. This shift has in part been occurring because of market forces – renewables are getting cheaper – and in part due to legislation. In 2019, the state set an ambitious renewable energy target by enacting the Energy Transition Act (ETA). The act requires investor-owned utilities to have 50% of electricity retail sales from renewable resources by 2030, 80% by 2040, and 100% by 2045.

Transmission lines move electricity from the generation site to electrical substations, which then distribute power to homes and business. Transmission lines extend over long distances from remote generation areas to areas with homes and businesses. Most of New Mexico's transmission lines were built in the 1960s and 1970s, meaning they are aging and represent a significant hurdle to upgrading and expanding the state's electricity generation portfolio. For example, most of state's wind-rich regions have limited transmission infrastructure, making it difficult to transmit energy from where it is generated to the households that need it.

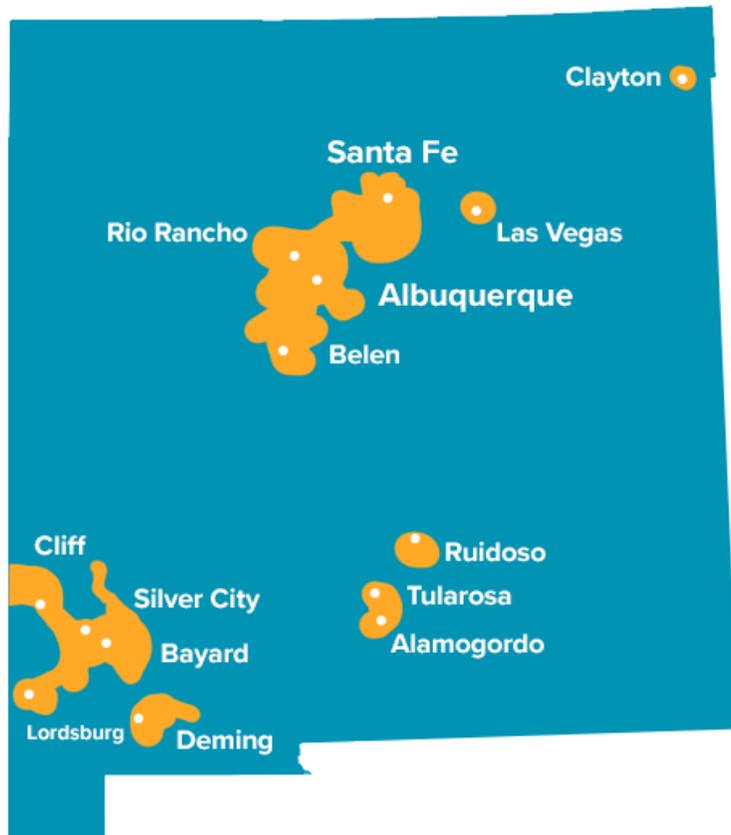
Distribution is the final step in the supply chain. This phase involves carrying power from the transmission system directly to customers by lowering the voltage level with the use of transformers. In urban areas transformers are built underground whereas in rural areas transformers are mounted on utility poles.

## *SERVICE PROVIDERS AND REGULATION*

Regulatory authority over the electricity system is shared between states and the federal government. States and local governments are responsible for regulating local distribution and retail sales of electricity within a state. They also regulate the generation, transmission, and distribution systems. The federal government, through the Federal Energy Regulatory Commission (FERC), regulates wholesale electricity sales and interstate transmission of electricity. In New Mexico, the Public Regulation Commission (PRC) regulates electric utilities. All utilities in the state are required to provide adequate and reliable electricity service to customers at fair prices.

There are three investor-owned electric utilities that serve approximately 70% of New Mexicans. These are the Public Service Company of New Mexico (PNM), El Paso Electric (EPE), and Southwestern Public Service Company (SPS). Each of the three have been granted the ability to generate, transmit, and distribute electricity in specific geographic areas of the state. For example, PNM serves the regions highlighted in orange in Figure 3 below.

Figure 3: PNM Service Areas<sup>9</sup>



These large utilities companies, however, concentrate service in urban areas. Rural communities are generally served by rural electric distribution cooperatives. About 20% of all New Mexico residents are served by one of 16 rural cooperatives, each of which is not-for-profit and is owned by the customers. Fourteen of the rural electrical cooperatives belong to the New Mexico Rural Electric Cooperative Association, which represents cooperative member interests. The two non-members are also the state's largest rural cooperatives—Kit Carson and Jemez Mountains Electric Coops. The PRC regulates rural cooperatives, but they are not subject to the same level of scrutiny as investor-owned utilities. Figure 4 shows the geographic service areas of cooperative electricity providers in the state.

Additionally, there are six municipally-owned utilities in New Mexico, including the cities of Farmington, Gallup, and Los Alamos. About 7% of customers are served by these municipally-owned utilities. Table 2 shows the state's largest electrical utilities companies.

<sup>9</sup> Map source: PNM, <https://www.pnm.com/about-pnm>.

Figure 4: Rural Cooperative Service Areas<sup>10</sup>

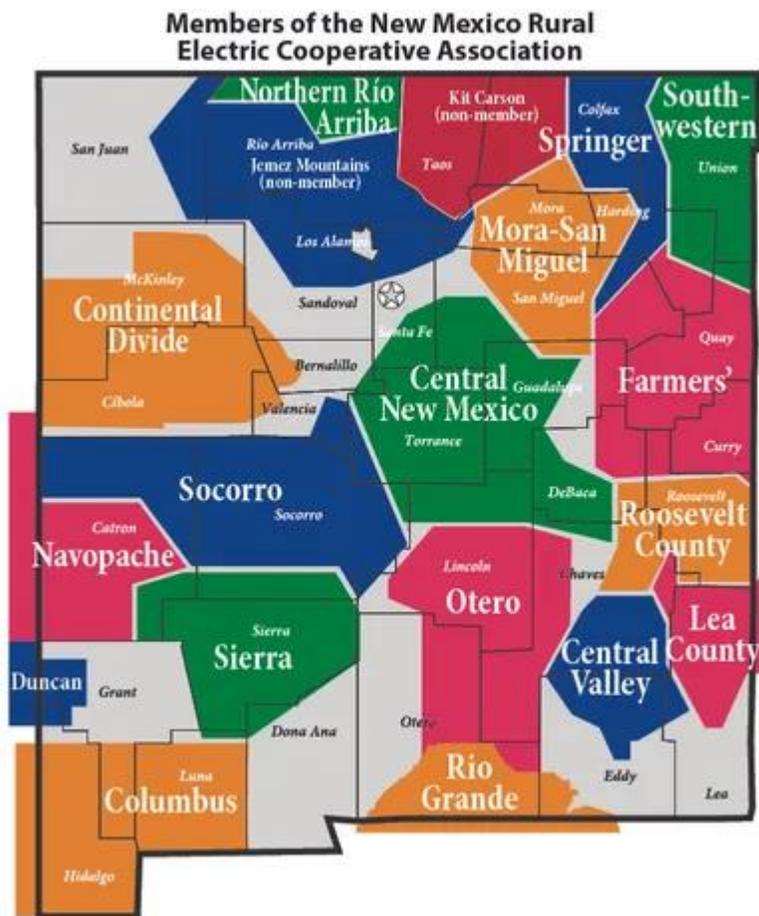


Table 2: Largest Electric Utilities in New Mexico

Utility Name	Ownership Type	Counties Served	Customers Served
Public Service Co. of NM	Investor Owned	Bernalillo, Valencia, Otero, Grant, Union, Luna, San Miguel, Hidalgo, Santa Fe, Lincoln	471,935
Southwestern Public Service Co.	Investor Owned	Quay, Curry, Roosevelt, Lea, Eddy, Chaves	96,964
El Paso Electric Co.	Investor Owned	Dona Ana	88,405
City of Farmington	Municipal	San Juan	34,986
Jemez Mountains Electric Coop, Inc	Cooperative	Rio Arriba, Santa Fe, Sandoval, McKinley, San Juan	25,509
Kit Carson Electric Coop	Cooperative	Taos, Colfax, Rio Arriba	24,654

<sup>10</sup> Map source: New Mexico Rural Electric Cooperative Association, <https://www.nmelectric.coop/coops>.

While county-level data were not available in time for the publication of this Interim Report, statewide data show that New Mexico has a persistent gap between the number of electricity customers and housing units. According to the U.S. Energy Information Administration (US EIA), New Mexico has the second highest proportion of housing units without electricity subscription in the Mountain West region at 4.57%, see Table 3 below.<sup>11</sup> This percentage aligns with BBER’s preliminary research for this report.

*Table 3: Share of Housing Units by State without Electricity Subscription<sup>12</sup>*

State	Electricity Customers (Housing Units)	Total Housing Units	Share of Housing Units without Electricity Subscription
New Mexico	895,086	937,920	4.57%
Arizona	2,853,183	3,003,286	5.00%
Oklahoma	1,777,156	1,731,632	0%
Colorado	2,370,164	2,386,475	0.68%
Wyoming	274,881	276,846	0.71%
Montana	516,054	510,180	0%
Utah	1,116,145	1,087,112	0%
Idaho	763,841	723,594	0%
Nevada	1,204,996	1,250,893	3.67%

## MODERNIZING ELECTRIC INFRASTRUCTURE

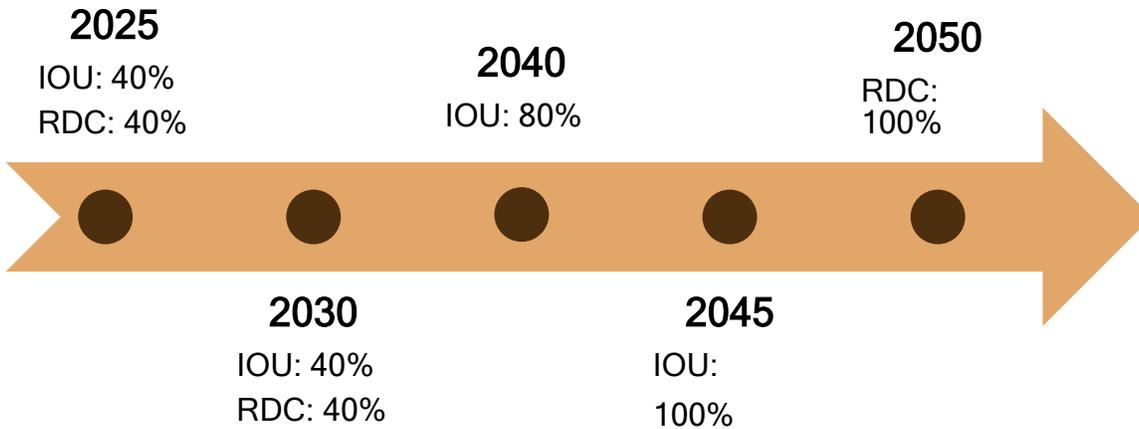
Rural electric cooperatives have until 2050 to meet the 100% renewable energy requirement mandated in the state’s 2019 Energy Transition Act. Figure 5 shows the renewable energy timeline per the Energy Transition Act. To ensure they are on track, utilities are required to submit an annual procurement plan detailing how they plan to meet benchmarks for the coming year. These targets create economic opportunities for the state. However, they will require upgrades to the electric grid and investment in transmission infrastructure to modernize systems to be more resilient, responsive, and interactive. These planning practices also help utilities and public officials to better manage the electric grid.

<sup>11</sup> The EIA does not track the exact number of houses lacking an electricity subscription. It is also important to note that the discrepancy between total housing units and electricity customers is not necessarily indicative of a gap in infrastructure and may be a function of socioeconomic circumstances for some households, meaning an inability to pay.

<sup>12</sup> Data Source: U.S. Energy Information Administration, Form 861 and 2019 five-year ACS estimates.

*Figure 5: Energy Transition Act renewable energy milestones*

*Investor-Owned Utility - IOU Rural Distribution Cooperative - RDC*



In recognition of the updates that need to be made, in 2020 the legislature enacted the Grid Modernization Roadmap Act, which directed the state Energy and Resource Management Department to study ways to modernize New Mexico’s electric grid. Specifically, the act tasked the state with finding policies to promote renewable energy, increase energy storage capacity, improve demand side management and energy efficiency, increase distribution and transmission system resilience, and study the effect of microgrids on the system.

Other strategies to meet state renewable energy targets involve expanding the state’s transmission line infrastructure. A 2020 study by the New Mexico Renewable Energy Transmission Authority found transmission infrastructure could be increased from 2,500 megawatts (MW) of renewable capacity to 11,500 MW by 2030.<sup>13</sup> The 11,500 MW would satisfy New Mexico’s clean energy goals and even position the state as a clean energy exporter. In addition, the private investment in development, construction, and operation of new renewables and transmission would be predicted to create 3,700 development jobs through 2032 and 800 permanent jobs. Some utilities are well ahead of targets. Kit Carson Electric Cooperative, for instance, is on track to meet 100% of daytime peak energy requirements with solar by 2022.<sup>14</sup>

## **USE OF RENEWABLES TO BRIDGE ELECTRICITY GAPS**

Distributed energy resources (DERs) are an avenue to meet the state renewables target. DERs allow electricity consumers to serve as energy producers, managers, and market participants. In 2020, distributed solar generation made up 18% of all solar electricity generated in the state and 4% of all renewable energy. Some utility customers like renters or people with low income may not have access to the economic and environmental benefits of an installation on their home, however. One of the ways the Legislature has sought to help is the Community Solar Act in 2021, allowing subscribers to

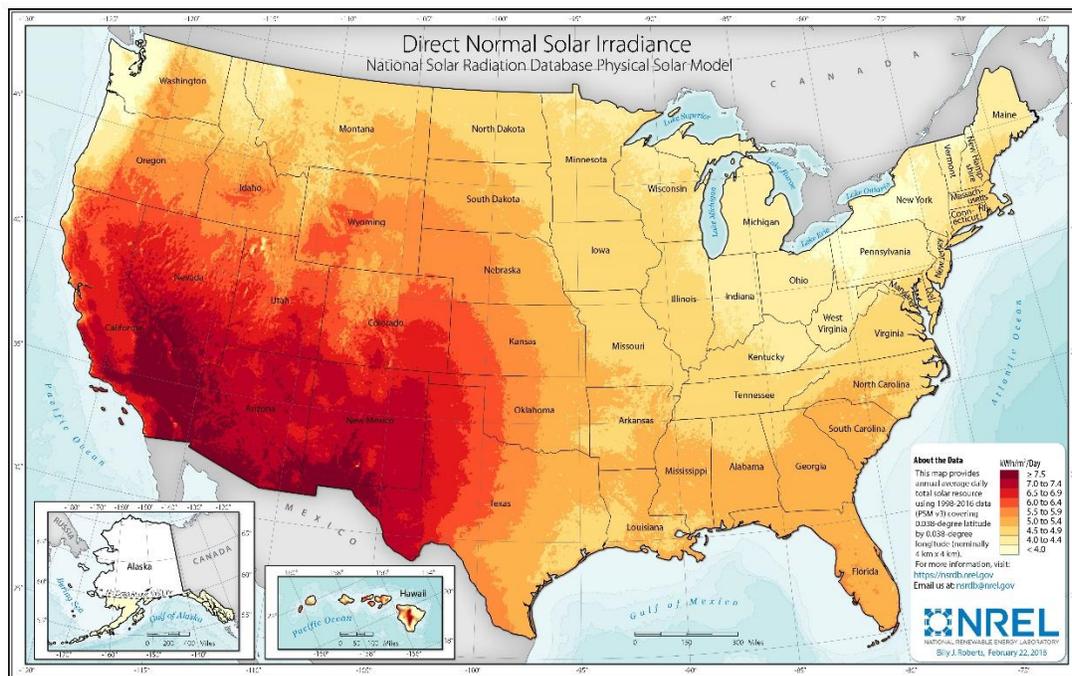
<sup>13</sup> New Mexico Renewable Energy Transmission Authority, “New Mexico Renewable Energy Transmission and Storage Study,” June 2020, <https://nmreta.com/nm-reta-transmission-study/>.

<sup>14</sup> Kit Carson Electric Cooperative, 2019 Media Kit, <https://kitcarson.com/wp-content/uploads/2019/11/2019-KCEC-Media-Kit-November.pdf>.

operate community solar projects. The Community Solar Act has potential to allow many more people to have the benefit of solar without an installation on their home, and may help utilities, including rural cooperatives, move closer to renewable energy targets.<sup>15</sup> The pilot goes into effect in April 2022 and will test when this kind of project will allow customers to opportunity to access the benefits of distributed energy investments through larger, community-based projects.<sup>16</sup> However, the legislation requires that solar installations be grid-tied, meaning it is not yet the solution for rural and remote areas that are not serviced by an electrical utility.

In general, DERs show strong potential of helping New Mexico meet energy demands, as New Mexico ranks high for renewable energy potential from wind, geothermal, and solar. See Figure 6, which shows solar energy production for the United States. In addition to having ample sunshine statewide, solar installations are relatively affordable to install and, as batteries continue to improve, increasingly will not need to be tied into the electrical grid. This means, solar installations could play a role in providing electricity to areas where it is too expensive to expand the existing grid to serve a small number of households. According to the Alliance for Rural Electrification, mini-grid and stand-alone systems powered by renewable energy, including solar, are becoming more financially viable.<sup>17</sup> The National Renewable Energy Laboratory estimates that 50% of residential and commercial rooftops in the United States are suitable for solar PV installations, meaning that this resource is underutilized relative to potential.<sup>18</sup>

**Figure 6: Solar Potential by State<sup>19</sup>**



<sup>15</sup> SB 84-- Community Solar Act, 2021, <https://www.nmlegis.gov/Legislation/Legislation?chamber=S&legType=B&legNo=84&year=21>

<sup>16</sup> Community solar is becoming a more popular model; 39 states have some sort of community solar legislation.

<sup>17</sup> Alliance for Rural Electrification, <https://www.ruralelec.org/grid-electricity-systems>

<sup>18</sup> National Renewable Energy Laboratory, Community Solar, December 2020, <https://www.nrel.gov/state-local-tribal/community-solar.html>

<sup>19</sup> Map Source: National Renewable Energy Laboratory

## KEY TAKEAWAYS: THE ELECTRICAL GRID IN NEW MEXICO

- 4.57% of New Mexico households are without an electricity subscription, the majority in rural and remote areas.
- Much of the state's electricity is served via publicly-traded companies, meaning that the cost to extend services to rural households often does not outweigh the benefit from a profit-oriented perspective.
- 20% of New Mexico residents are served through rural electric cooperatives.
- The state has ambitious renewable energy targets, with rural cooperatives required to produce 100% of electricity from renewable sources by 2050.
- Expanding transmission line infrastructure could convert New Mexico to a clean energy exporter, while creating 3,700 jobs.

# WATER/ WASTEWATER IN NEW MEXICO

## BACKGROUND

In spite of the majority of New Mexicans having access to drinking water and sewer, the issue of water system connectivity remains perhaps New Mexico's most urgent infrastructure problem because water access is so central to health and life. The drinking water needs gap, both in terms of access and necessary repairs and upgrades, in New Mexico are estimated at least \$1.4 billion.<sup>20</sup> Broadening the lens to include all water projects, the current need is \$4 billion.<sup>21</sup> Addressing gaps and planning for future system resiliency can be even more challenging than other infrastructure areas because water systems, both nationally and in New Mexico, are highly fragmented. More than 88% of New Mexicans get water from community water systems, which tend to be small and highly localized.<sup>22</sup> In fact, New Mexico's water utilities tend to be so small that 66% of the state's 570 water systems serve under 500 people, and only 5% serve more than 10,000 people.<sup>23</sup> There are 250 rural communities in New Mexico dependent on a single source of water. The forms that water utilities in New Mexico can take are diverse (see text box on the following page for summaries), further complicating initiatives to close gaps, connect systems, and fund infrastructure.

## STATE-IDENTIFIED GOALS

To oversee and set goals for this largely disconnected group of water systems is a series of authorities. The state has 16 water planning regions, which all perform planning and prepare their own reports. The Office of the Engineer also produces the State Water Plan (SWP) every two years, which sets overarching goals and priorities.<sup>24</sup> The state's Legislative Finance Committee also recently analyzed water funding in the state and provided recommendations on how to improve funding strategies.<sup>25</sup> In the 2018 SWP, which is the most recent, the New Mexico Office of the State Engineer (OSE) laid out ten overarching goals related to water infrastructure in the state.<sup>26</sup> They are:

1. Maintain and operate properly functioning water systems.
2. Maintain and operate properly functioning wastewater systems.
3. Develop water and wastewater systems of sufficient capacity.
4. Replace use of potable water for non-potable use with alternative sources, such as treated effluent or desalination of brackish water, when possible and economically feasible.
5. Protect communities from floods.

<sup>20</sup> New Mexico Infrastructure Report Card, <https://infrastructurereportcard.org/state-item/new-mexico/>.

<sup>21</sup> New Mexico Legislative Finance Committee Program Evaluation Unit, State-Funded Water Projects (June 23, 2021), [https://www.nmlegis.gov/Entity/LFC/Documents/Program\\_Evaluation\\_Reports/State-Funded%20Water%20Projects.pdf](https://www.nmlegis.gov/Entity/LFC/Documents/Program_Evaluation_Reports/State-Funded%20Water%20Projects.pdf).

<sup>22</sup> Utton Transboundary Resource Center, "Community Water Systems," <https://uttoncenter.unm.edu/resources/research-resources/community-water-systems.pdf>.

<sup>23</sup> New Mexico Legislative Finance Committee, State-Funded Water Projects (June 23, 2021).

<sup>24</sup> New Mexico Office of the State Engineer, 2018 New Mexico State Water Plan, <https://www.ose.state.nm.us/Planning/swp.php>.

<sup>25</sup> New Mexico Legislative Finance Committee Program Evaluation Unit, State-Funded Water Projects (June 23, 2021), [https://www.nmlegis.gov/Entity/LFC/Documents/Program\\_Evaluation\\_Reports/State-Funded%20Water%20Projects.pdf](https://www.nmlegis.gov/Entity/LFC/Documents/Program_Evaluation_Reports/State-Funded%20Water%20Projects.pdf).

<sup>26</sup> These 10 goals are not the only ones laid out by the OSE. The SWP also includes goals relating to data collection, accessibility, and monitoring, drought policy, watershed management, water supply and demand, water conservation, water quality, and water planning. These additional goals, specifically those around drought policy, watershed management, water supply and demand, and water conservation, emphasize the urgent need for New Mexico to address the set of challenges the state is facing with regard to its water infrastructure and supply.

6. Protect water quality.
7. Protect human health.
8. Reduce costs of infrastructure management.
9. Improve system efficiency, including reducing energy costs to pump water, or treat wastewater, or other actions which reduce costs and improve the delivery systems.
10. Promote equitable investment in water infrastructure.

Generally speaking, the goals contained within the SWP are concerned with expanding access to those not currently served by water infrastructure, strengthening existing water infrastructure, and preparing the state for long term water sustainability. The State is well aware of the need to invest in water infrastructure and regularly undergoes detailed analysis into confronting issues.

## WATER UTILITIES ORGANIZATIONAL TYPES

**Mutual Domestic Water Consumer Associations (MDWCA):** An organizational structure that is common in New Mexico, but not as popular elsewhere. The New Mexico Sanitary Projects Act in 1947 authorized the creation of MDWCAs. This act was created out of recognition that unsanitary surface water and shallow wells were contributing to high infant mortality rates and excess deaths in the state. MDWCAs tend to be very small and run by an individual or small group. As a local government entity, MDWCAs are eligible for public funding.

**Water Cooperatives:** Water Cooperatives are consumer-owned and board-governed utilities formed to provide safe, reliable and sustainable water service at a reasonable cost. Water Cooperatives are considered nonprofit corporations and are granted Federal tax-exempt status under IRC section 501(c)(12), which requires that they operate on a nonprofit basis and meet the 85% income from members rule. Water cooperatives are most often found in suburban and rural areas that are located too far from municipal water companies to receive service.

**Municipal and County Utilities:** Public water supply system or water supply network including water treatment facilities, water storage facilities (reservoirs, water tanks and water towers) and a pipe network for distributing the treated water to customers including residential, industrial, commercial or institutional establishments.

**Private utilities:** While water is frequently thought of as a public utility, private water companies serve an estimated 73 million people nationally. Private water companies have existed for hundreds of years, but have grown more popular as governments seek to downsize budgets and services. While this type of organization is not without its criticisms, private water utilities have widespread support from the Conference of Mayors Urban Water Council, the National League of Cities, the Brookings Institution, and the White House. They can provide proven options for municipalities facing urgent water infrastructure and operational needs.

**Sources:** *Water & Waste Digest, University of Wisconsin Center for Cooperatives, Utton Transboundary Resource Center, National Association of Water Companies*

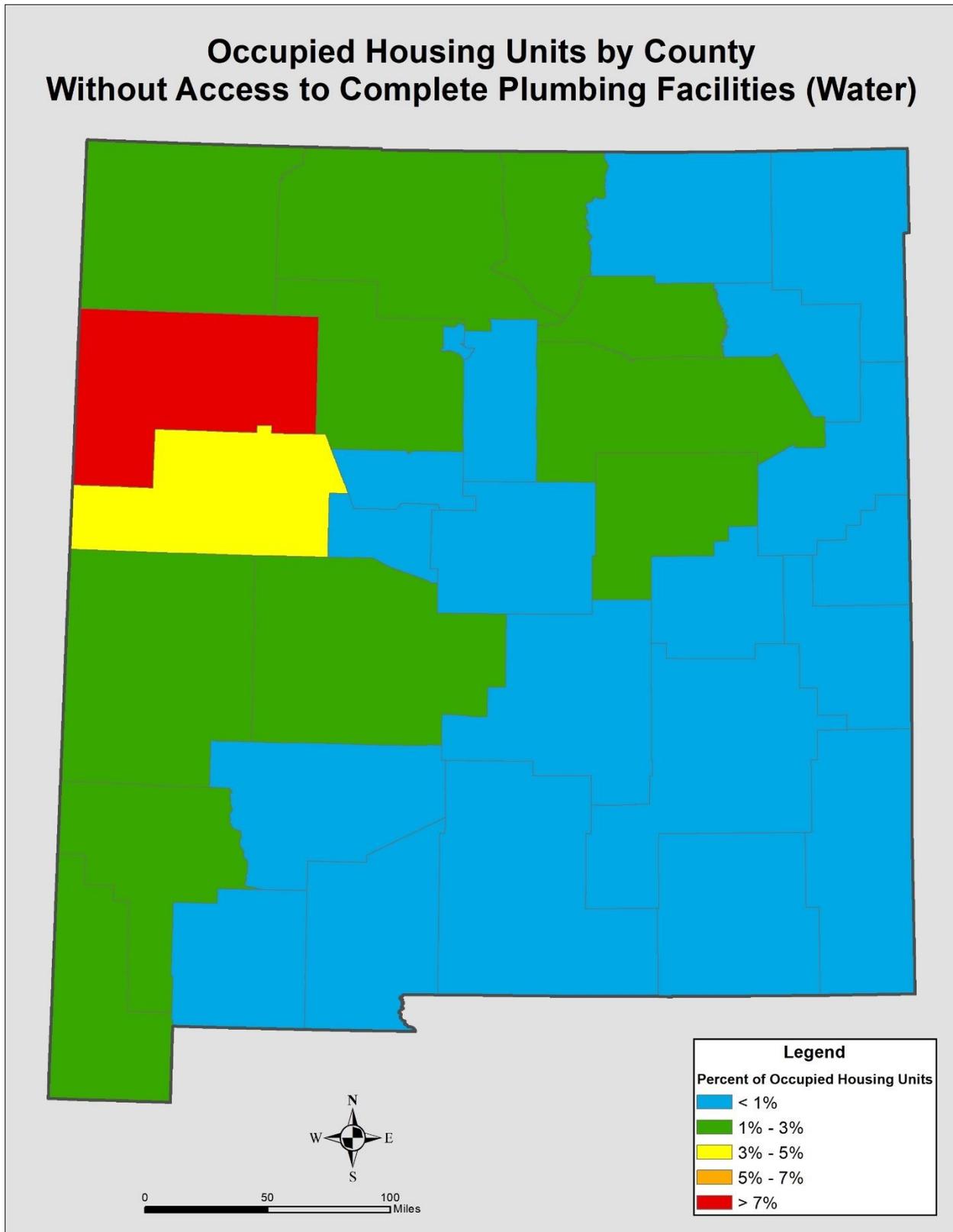
As mentioned, basic access across most parts of the state is higher than for the other infrastructure areas being studied. Figures 7 and 8 show county-level maps of drinking water and sewer access in New Mexico for all households. Notice a high degree of overlap between the two maps, which shows that, generally speaking, households that have water in their taps generally have full plumbing in their houses. The primary geographic areas of concern when it comes to providing drinking water and sewer are Cibola and McKinley Counties. In these counties, basic access is undoubtedly a major problem. We heard the about the repercussions of water access issues in 2020, when rural households on the Navajo Nation and elsewhere struggled to abide by hygiene recommendations during the height of the COVID-19 pandemic because of a lack of running water.

However, outside of this pocket of high need, basic water and sewer access are not the major issues contributing to the high estimated costs to address water infrastructure issues. In fact, statewide, only 1% of people lack access to drinking water in their homes, and 1.2% lack sewer. Across New Mexico, the more critical concern is upgrading existing water systems, building resiliency into these systems to anticipate hotter and drier conditions, and ensuring that the water supply is high-quality.

Table 4 underscores the discrepancies on water access in rural areas by looking at the numbers of occupied households that lack access to drinking water in their taps. This table contrasts the overall percentage of all county residents lacking access with those located in rural areas only. Data are highlighted where the percentage of people lacking access to water goes up by more than a percentage point when urban areas are excluded. These gaps represent thousands of households without reliable access to water. Cibola, McKinley, and San Juan Counties alone report 3,052 households that do not have water.

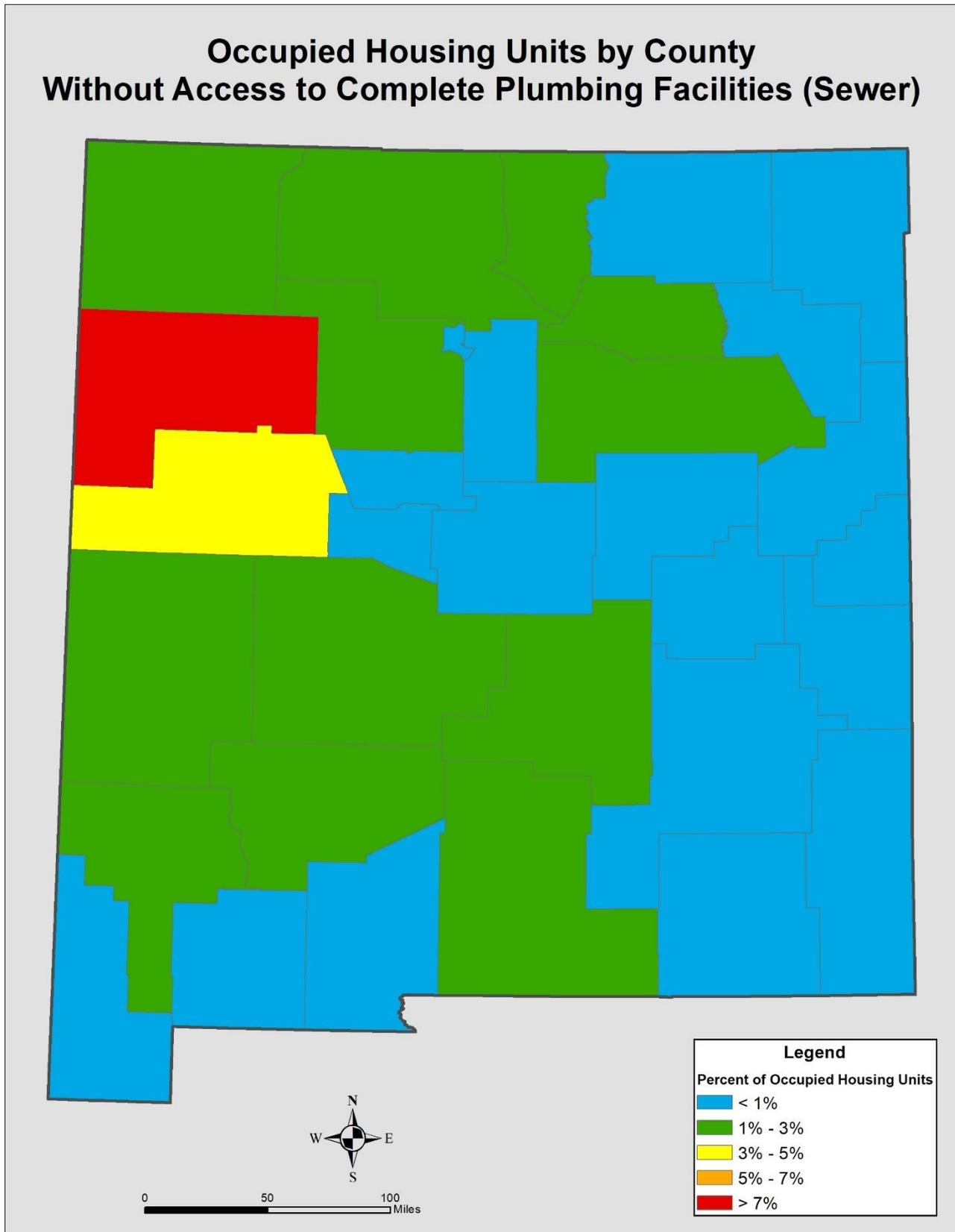
The final report will dig deeper into these rural pockets of low-connectivity, which occur even in counties that appear to have a high level of overall access. It is critical that households have plumbing and running water, which are not just conveniences of modern life, but critical to maintaining health.

Figure 7: Drinking Water Access by County<sup>27</sup>



<sup>27</sup> Map source: U.S. Census, American Community Survey, 2019

Figure 8: Sewer Access by County<sup>28</sup>



<sup>28</sup> Map source: U.S. Census, American Community Survey, 2015-2019

*Table 4: Drinking Water Access for Occupied Housing Units<sup>29</sup>*

County	Total Occupied Housing Units	Occupied Housing Units (Rural)	% Lacking Complete Plumbing (All)	% Lacking Complete Plumbing (Rural)
Bernalillo	267,699	11,828	0.4%	1.7%
Catron	1,325	1,325	1.1%	1.1%
Chaves	23,284	5,778	0.9%	0.8%
Cibola	8,708	4,326	3.8%	5.7%
Colfax	5,853	2,374	0.0%	0.0%
Curry	18,548	3,804	0.3%	0.3%
De Baca	672	672	0.0%	0.0%
Doña Ana	77,842	2,333	0.9%	1.3%
Eddy	21,251	5,878	0.5%	1.0%
Grant	11,851	7,633	1.9%	2.7%
Guadalupe	1,384	513	1.7%	1.6%
Harding	211	211	0.0%	0.0%
Hidalgo	1,679	1,679	1.3%	1.3%
Lea	22,523	3,662	0.4%	0.2%
Lincoln	7,566	3,727	0.1%	0.1%
Los Alamos	7,931	126	0.0%	0.0%
Luna	8,904	3,572	0.2%	0.3%
McKinley	20,942	12,176	9.9%	19.3%
Mora	1,713	1,713	2.6%	2.7%
Otero	23,634	8,515	0.7%	1.1%
Quay	3,040	1,386	0.6%	0.0%
Rio Arriba	12,730	7,405	1.4%	2.1%
Roosevelt	6,814	2,699	0.2%	0.6%
Sandoval	51,001	10,421	1.1%	4.1%
San Juan	43,387	16,801	2.4%	5.3%
San Miguel	11,609	6,214	2.0%	3.1%
Santa Fe	61,921	19,028	0.4%	0.7%
Sierra	5,555	2,606	0.7%	0.6%
Socorro	4,520	2,008	1.4%	3.3%
Taos	12,103	9,410	1.1%	1.5%
Torrance	5,644	5,644	0.5%	0.5%
Union	1,395	447	0.1%	0.4%
Valencia	27,010	10,800	0.3%	0.3%

<sup>29</sup> U.S. Census, American Community Survey, 2015 and 2019

## *WATER SYSTEM CHALLENGES*

New Mexico faces a number of challenges to ensuring the sustainability of drinking water access and infrastructure. Several of those, such as water rights disputes with other states, poor financial capacity and/or low managerial and technical capacity of systems, and limited federal funding represent ongoing tests to the integrity of New Mexican water systems. Others, however, such as projected population growth and an increasing gap between supply and demand for water, constitute a longer-term threat to the sustainability of New Mexican water systems.

### **Water Rights Disputes**

As a landlocked state, New Mexico is surrounded by other states with claims to the same water sources. As a result, New Mexico is involved in eight interstate water compacts. Each of these compacts requires New Mexico to access only a predetermined amount of water from a given water basin. While egalitarian in theory, interstate compacts have proved detrimental to New Mexico's water supply. They limit the ability for New Mexico to use and store sufficient water to meet the demand of its population and can cause confusion when obligations change in response to water shortages in other states. Moreover, New Mexico has had ongoing disputes over water rights with other states even with these compacts in place. Texas is an especially notable challenge for New Mexico water supply. According to Texas state law, any municipality that owns access to even part of an aquifer is "entitled to use the aquifer to benefit its citizens without regard to the hydrological effects on anyone else." We can see the effects of this policy in a town like Jal, where the supply of drinking water has been seriously diminished due to the presence of a pipeline built by the nearby city of Midland, Texas draining the shared aquifer.

### **Financial Capacity**

One of the most significant challenges to rural water systems in New Mexico is low levels of financial capacity. In short, rural water systems often do not generate enough revenue through their rate structures to adequately cover their costs, including staff, insurance, legal and financial services, certified operators, expansion, scheduled or emergency repairs, and technology upgrades. Insufficient financial capacity can also prevent water systems from accessing the credit that they need to expand, which is especially significant given the expected growth of the state's population in the coming decades.

### **Managerial and Technical Capacity**

Related to inadequate financial resources, rural water systems throughout the state often lack the trained and certified staff needed to ensure that operations are conducted professionally. Some, especially small utilities, even rely on volunteers to run and maintain the systems. Relying on staff with the proper training and certification puts the technical capacity and the long-term sustainability of rural water systems in jeopardy.

### **Limited Federal Funding**

The sustainability of water systems in New Mexico is further threatened by the fact that federal funding for water infrastructure in New Mexico and nationally has been insufficient for proper maintenance. According to the United States Water Alliance, federal funding for water systems has "flatlined" since the 1980s, meaning the cost of water system expansion and maintenance falls to state and local governments. The Biden Administration, however, does appear to be poised to deliver a sizeable

infrastructure plan through Congress, which will likely mean an increase in federal dollars to rural water infrastructure. Even so, the fact remains that rural water systems across New Mexico are in desperate need of funding and an injection of federal dollars will not be enough to cover all of the outstanding costs.

## Supply and Demand Gap

As a result of the above challenges, New Mexico faces a supply - demand gap with regard to water systems, particularly those in rural areas. By 2030, the State Water Plan estimates that the high-water demand projection will be in excess of the average water supply. By 2050, even the low water demand projection will exceed the average water supply, and by no small margin. For example, the Legislative Finance Committee projects that existing water supplies in Eastern New Mexico may only meet 12% of demand by 2060. Already in 2010, the state's demand for water exceeded the water supply in drought times; a significant fact given that more than half of the state is currently experiencing extreme or exceptional drought conditions with little expectation of abatement.

The State Water Plan does, however, offer several important caveats regarding supply and demand that must be considered. The first is that supply and demand cannot be viewed as entirely independent of one another. Demand often depends on supply, particularly in terms of agricultural applications in rural communities. The second is that short-term variability in supply is addressed by legal and policy action, meaning that water supply projections will shift over time as the state passes new water conservation laws, as agriculture becomes more efficient, and as people change habits.

## IMPROVING SYSTEM RESILIENCY

Despite the challenges that water systems in New Mexico face, there are already several strategies currently underway to strengthen these systems. These include the regionalization of water systems, efforts to bank water, and a concerted effort to address both the supply and demand of consumable water. Together, these efforts pertain to the core issue at hand—of water access—because without a sustainable system, every resident's water supply may be in jeopardy.

## Regionalization

Regionalization refers to the process by which multiple water systems in relatively close geographic proximity agree to some degree of cooperation.<sup>30</sup> Cooperative measures can range from sharing of equipment in emergencies to fully physically interconnecting infrastructure.<sup>31</sup> Regionalization has proven to be an effective strategy in improving the financial and technical capacity of water systems, supporting improved planning, maintenance, and administration.<sup>32</sup> Further use of regionalization to de-fragment New Mexico's water systems would be a benefit.<sup>33</sup>

<sup>30</sup> Utton Center Transboundary Resources Center, "Community Water Systems," *Water Matters!*, The University of New Mexico, 2015, <https://uttoncenter.unm.edu/resources/research-resources/water-matters-2015---full-pdf.pdf>, 13-9.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> "Program Evaluation: State Funded Water Projects," New Mexico Legislative Finance Committee, 20.

Regionalized water systems help to ensure that funding for infrastructure is less piecemeal and that dollars from the state can be efficiently and reliably put to use.<sup>34</sup> They also lessen the need for volunteer operators and allow for certified operators to impact a larger number of people.<sup>35</sup> Customers of these water systems also tend to experience improved service due to the heightened financial, managerial, and technical capacities. Regional water systems are especially useful in addressing serious issues in small, rural water systems that prevent them from expanding to serve new residents such as run-down infrastructure, poor water source quality, and insufficient staffing or financial resources.<sup>36</sup>

Regionalization has been a state priority for more than a decade and there are several large-scale regional partnerships among water systems in the state. Table 5 highlights 16 of the most significant.

**Table 5: Highlighted Regional Water Systems<sup>37</sup>**

Water System	County/Counties Served
Eastern New Mexico Rural Water System	Curry, Quay, Roosevelt
The Mariposa Alliance	McKinley <sup>38</sup>
San Juan County Rural Water Association	San Juan
San Juan Water Commission	San Juan
Rio Embudo MDWCA	Rio Arriba
Santa Cruz River Valley Association	Rio Arriba
El Rito Regional	Rio Arriba
Santa Cruz Region MDWCA	Rio Arriba
Greater Glorieta Community MDWCA	Santa Fe
Valdez MDWCA	Taos
Lower Des Montes MDWCA	Taos
Union De Llano MDWCA	Taos
Lower Rio Grande Public Water Works Auth.	Southern Doña Ana
Sangre De Cristo Regional	Guadalupe
ABQ-Bernalillo County Water Users Auth.	Bernalillo

## Banking Water

Included in the State Water Plan is a set of recommendations from the Regional Water Planning Steering Committee around ways to fortify New Mexico's water systems. Increasing the flexibility of water banking is among these recommendations.<sup>39</sup> However, as of 2018, only three of New Mexico's 16 defined water regions had submitted plans for additional water banking measures. There is clearly ample room to develop additional water banking measures, and the state should encourage rural

<sup>34</sup> Ibid.

<sup>35</sup> New Mexico Office of the State Engineer, *New Mexico State Water Plan Part II: Technical Report*, 47.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Daniel B. Stephens and Associates, Inc., "McKinley County Small Water Systems Regionalization Plan: Phase IIB Summary Report," July 26, 2010, [http://www.nwnmcog.com/uploads/1/2/8/7/12873976/mckinley\\_phase\\_iib\\_7-26-2010.pdf](http://www.nwnmcog.com/uploads/1/2/8/7/12873976/mckinley_phase_iib_7-26-2010.pdf).

<sup>39</sup> New Mexico Office of the State Engineer, *New Mexico State Water Plan Part II: Technical Report*, 2B-3. The full list of recommendations can be found in Appendix 2B.

water systems to invest in banking water to improve long-term resiliency and ease variations in supply.

## Address Supply and Demand Issues

While both of the above strategies represent important tools to make communities more water-secure, they cannot alone solve the water infrastructure crisis that the state currently faces. To maintain long-term stability among rural water systems, New Mexico will have to address both the supply and demand sides of the water equation. There is a serious need for projects that increase the drinking water supply in the state. These could include underground storage and recovery projects (USRs), desalination projects, drilling new wells, importing water from alternative groundwater basins or surface water supplies, treatment projects for effluent, and the transfer of water rights from agricultural sources to municipal sources.<sup>40</sup> The State Water Plan also references several draught mitigation strategies that would be increase the available supply of potable water.<sup>41</sup> Meanwhile, demand-side strategies could include infrastructure investments that allow water systems to use water more efficiently, reducing evaporative losses from surface water sources, and decreasing the use of potable water for nonessential purposes.<sup>42</sup>

### KEY TAKEAWAYS: WATER AND SEWER IN NEW MEXICO

- Around 99% of households have access to water; however, rural pockets exist where thousands of households remain disconnected to drinking water and sewer.
- Federal funding alone will not close the gap in New Mexico's water infrastructure needs, but it can help if New Mexico communities fully utilized available grants and loans.
- The state has already produced in-depth studies and reports on water, including recommendations on how to improve water project funding.
- Improving efficiency and system sustainability are just as important as connecting households when planning for New Mexico's future.

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<sup>40</sup> Ibid, 70.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

# FUNDING OPPORTUNITIES

With a relatively small population spread over a large geographic area, funding infrastructure can be a complicated and expensive task. However, the state as a whole, and individual rural communities, can employ strategies and pursue more diverse funding sources to help fully fund projects and close gaps. Many communities are well-aware of the capital outlay process but may be less familiar with the full range of tools at their disposal. To start, the major types of funding resources are defined below.

## FUNDING RESOURCES DEFINITIONS

**Bond:** A bond is a fixed income instrument that represents a loan that functions as an I.O.U. between the lender and borrower that includes the details of the loan and its payments. Bonds are used by companies, municipalities, states, and sovereign governments to finance projects and operations. Owners of bonds are debtholders, or creditors, of the issuer.

**Contract:** A binding agreement to procure goods and/or services between a buyer and a seller to provide goods or services in return for consideration (usually monetary). Payment based on deliverables and milestones; may need to submit invoices and/or receipts. Reporting is generally frequent.

**Cooperative agreement:** Assistance is in the form of an award, but with substantial sponsor involvement, typically described in a set of specific terms. Payment is generally awarded in a lump sum. Reporting terms laid out in the agreement.

**Grant:** Assistance is in the form of an award, with generally little involvement by the funder. The award instrument refers to general terms and conditions. Payment is usually awarded in a lump sum. Reporting is most commonly annual.

**Loan:** A type of credit vehicle in which a sum of money is lent to another party in exchange for future repayment of the value or principal amount. In many cases, the lender also adds interest and/or finance charges to the principal value which the borrower must repay in addition to the principal balance.

**Loan Guarantee:** A loan guarantee is a contractual obligation between the government, private creditors and a borrower—such as banks and other commercial loan institutions—that the Federal government will cover the borrower's debt obligation in the event that the borrower defaults.

**Mill levy:** A mill levy is a property tax. It is applied to a property based on its assessed value. The rate of the tax is expressed in mills and is equal to one dollar per \$1,000 dollars of assessed value. The tax is applied by local governments and other jurisdictions to raise revenue to cover its budget and to pay for public services such as schools.

**Sources:** *Department of Energy, Investopedia, Purdue University* 

## BROADBAND AND ELECTRIC

Funding for broadband and electric infrastructure can be complicated because many electric and broadband projects are carried out by private or member-owned utilities companies, not government entities. Because expanding into rural and remote areas can be highly expensive, profit-motivated companies may be disinterested in doing so given the low potential return on investment. Additionally, the state has 16 rural electric cooperatives, each with their own service area. These separate systems, combined with the complexity of funding public-private initiatives with state dollars (see the discussion of the Anti-Donation Clause below), can make funding electrical and broadband projects complicated.

A way to address gaps right now is to use American Rescue Plan Act (ARPA) funds, as other states are doing, for broadband and other critical infrastructure projects. States and municipalities have received funds, and federal agencies are also releasing competitive grant opportunities. After a year of working from home where many of us realized how critical reliable internet is in the 21<sup>st</sup> century, broadband, in virtually every state, has leapt to the top of priority lists. Electricity and internet are simply requirements for doing almost any kind of business in the 21<sup>st</sup> century. States that are using the once-in-a-lifetime relief funds for broadband include Virginia, which is committing \$700 million in rural broadband, North Carolina \$750 million, and California is looking at a billion-dollar investment from relief funds.<sup>43</sup>

## WATER

With nearly 600 water utilities statewide, and the vast majority serving fewer than 500 people, the water system is highly fragmented. Communities in New Mexico are in a generally weak position to self-fund water projects, meaning that external funds are almost always needed. This is in part due to the small size of systems and limited capacity both to pursue and to administer funds. Many small water systems, particularly mutual domestics, are also hesitant to raise rates for consumers.<sup>44</sup> These factors make securing all manner of funding difficult. Small systems do not qualify for large amounts of credit. Competitive grant and contract funds require a lot of time, managing deadlines, and understanding fine print that can be difficult for smaller systems to manage.

The water funding systems both within New Mexico and nationally are disconnected, with many funding sources, few of which coordinate on deadlines, scoring criteria, or other details, meaning that water systems and communities may not even be aware of the full spectrum of funding for which they qualify, much less have the capacity to pursue every application needed to fully fund a project. Further, the decentralized structure of water funding means that some resources have more demand than dollars, while others (mostly loans) have excess capacity. For instance, the state would do well to fully expend its revolving loan fund allocation. If the state does not use these dollars, it risks losing them, further weakening New Mexico's position when it comes to a major infrastructure need.

<sup>43</sup> Claudia Grisales, "Virginia Shifts \$700 Million In Relief Funds To Boost Rural Broadband Access," NPR, July 16, 2021, <https://www.npr.org/2021/07/16/1016838329/virginia-shifts-700-million-in-relief-funds-to-boost-rural-broadband-access>.

<sup>44</sup> New Mexico Legislative Finance Committee, State-Funded Water Projects, 2021; [https://www.nmlegis.gov/Entity/LFC/Documents/Program\\_Evaluation\\_Reports/State-Funded%20Water%20Projects.pdf](https://www.nmlegis.gov/Entity/LFC/Documents/Program_Evaluation_Reports/State-Funded%20Water%20Projects.pdf).

Because the state does not have a uniform means of objectively prioritizing water projects across agencies, there is no way to even sort all of the water projects in-process and planned. This means that truly urgent projects in smaller communities may get overlooked for those that are higher profile.

## ANTI-DONATION CLAUSE

A factor to keep in mind when considering state funding is New Mexico's Anti-Donation Clause. Anti-aid clauses are broadly designed to limit government corruption by blocking the improper use of state funds in private enterprise. There are three types: 1. anti-credit clauses, which prevent state governments from loaning their credit to a private business entity, 2. anti-stock clauses, which prevent state governments from becoming a stockholder in a private venture, and 3. anti-gift or anti-donation clauses. Forty-five states have some sort of Anti-Donation Clause on the books, but New Mexico has one of the strictest. Only nine state constitutions prohibit aid in all three forms at both the state and local levels of government. A team of research scholars at George Mason University's Mercatus Center who surveyed the status of anti-donation clauses nationally found that New Mexico's anti-aid provisions are effective at providing a legal bullwork. However, the comprehensive nature of the state's Anti-Donation Clause limits how dollars can be used and combined when funding major public-private projects. In a mixed economy, prohibiting public investment in anything that aids private enterprise limits the opportunities to braid funding streams on major infrastructure projects, which may involve a private utility company, for instance, as a critical piece of the project.

**Source:** Matthew D. Mitchell, Robin Currie, and Nita Ghei, "A Summary of the History and Effects of Anti-Aid Provisions in State Constitutions," Mercatus Center, George Mason University (December 2019), <https://www.mercatus.org/publications/corporate-welfare/summary-history-and-effects-anti-aid-provisions-state-constitutions>

## GENERAL FUNDING CONSIDERATIONS

In a funding climate where resources are disjointed, the state places restrictions on how funds can be combined via the Anti-Donation Clause, and many communities and utilities systems are not fully aware of the funding that is available to them, many simply rely on the state's capital outlay system. However, this is frequently not an answer to infrastructure problems. Urgent projects are only partially funded year after year—pushing out deadlines for critical infrastructure upgrades and connections. Competitive grants are also problematic because frequently the smallest communities lack the human resources to respond to competitive bids.

The good news is that the federal government is recognizing the importance of infrastructure investments as a foundational part of a healthy economy. The Cares Act and ARPA both have represented opportunities to invest in infrastructure in the name of economic recovery, with few strings attached. ARPA funds, currently with communities and states, is a boon for areas that are historically

strapped for cash to fund major projects. For instance, the Navajo Tribal Utility Authority (NTUA) alone invested \$76.8 million of Cares Act funds into infrastructure, including: 288 communication projects, 277 water/wastewater infrastructure projects, and 1,199 electric infrastructure projects. The NTUA is planning an additional \$707 million in infrastructure projects over three years with ARPA funds. This includes \$220 million for water, \$216 million for broadband, and \$213 million for electrical (and additional \$39 million for off-the-grid solar). Statewide, New Mexico was allocated \$2.456 billion in funds, with \$703 million going to local governments. Many states are making investments in the hundreds of millions or even billions to support improved infrastructure. New Mexico should do the same to improve the lives of its most underserved residents, while simultaneously boosting the attractiveness of the state for businesses and new arrivals.

Fully funding projects within a reasonable time-frame in order to ensure that costs and technologies do not change, and to address urgent needs of communities is paramount. Considerations to ensure that more projects get off the ground and completed are in the section that follows.

# FUNDING OPPORTUNITIES SUMMARIES

On the next page are the preliminary summary tables of funding sources, which communities and the state can consider when looking to fund large infrastructure projects in the areas of broadband, electrical, and water.

## Rural Infrastructure Study: Preliminary Funding Results

Funding Agency	Program Purpose	Eligible Applicants	Funding Range	Assistance				Limitations	Timeline				Deadline / Cycle History
				Grant / Coop. Agt.	Loan / Debt Financing	Tax Credit	Bond		Quarter 1	Quarter 2	Quarter 3	Quarter 4	
<b>Broadband Prospects</b>													
U.S. Department of Agriculture, Rural Utilities Service (RUS):  <i>Community Connect Grant Program</i>	Provides financial assistance to eligible applicants that will provide broadband service in rural, economically challenged communities where service does not exist.	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>■ Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li>■ For-profit organizations</li> </ul>	Awards range from \$100,000 - \$3,000,000 for at least two years.  Match: 15%	Grant				Eligibility is limited to rural areas that lack any existing broadband speed of at least 10 Mbps downstream and 1 Mbps upstream.			*		Annual release  Most recent deadline: 23-Dec-20
U.S. Department of Agriculture, Rural Utilities Service:  <i>Distance Learning and Telemedicine (DLT) Grant Program</i>	Helps rural residents tap into the enormous potential of modern telecommunications and the Internet for education and health care, two of the keys to economic and community development.	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li>■ For-profit organizations</li> </ul>	Awards range from \$100,000 - \$3,000,000 for at least two years  Match: 15%	Grant				Rural areas with populations of 20,000 or less.		*		Annual release  Most recent deadline: 04-June-21	
U.S. Department of Agriculture, Rural Utilities Service:  <i>Rural Placemaking Innovation Challenge (RPIC)</i>	Supports entities that provide planning support, technical assistance, and training to foster placemaking activities in rural communities. Funds can be used to create plans to enhance capacity for broadband access.	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>■ Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li>■ For-profit organizations</li> </ul>	Awards range up to \$250,000.  Match: 15%	Grant				Recipients must be located in rural areas (population less than 50,000) and must not be contiguous and adjacent to a non-rural city.			*	Deadline: 26-July-21  One previous competition was held in 2020.	

<p>U.S. Department of Agriculture, Rural Utilities Service:</p> <p><i>Telecommunications Infrastructure Loans &amp; Loan Guarantees</i></p>	<p>Financing is available for the construction, maintenance, improvement and expansion of telephone service and broadband in rural areas.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>■ Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	<p>Direct loans range \$2,183,000 - \$13,659,000 and average \$7,921,000.</p> <p>Guaranteed loans range \$2,183,000 - \$20,360,000 and average \$11,271,500.</p>		Loan		<p>Eligible service areas must: be completely contained within a rural area or composed of multiple rural areas; at least 15 percent of households in the area are unserved; no part of the area has three or more “incumbent service providers”; no part of the area overlaps with the service area of current RUS borrowers or service areas funded by RUS.</p>	*	*	*	*	<p>Rolling application period</p>
<p>U.S. Department of Commerce, Economic Development Administration, American Rescue Plan Act:</p> <p><i>Build Back Better Regional Challenge</i></p>	<p>Grants help regions develop economic development strategies and implement those strategies to create regional growth clusters, helping economies recover from the pandemic, including telecommunications infrastructure (e.g., broadband) and water and sewer system improvements.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> <li>■ Inst. of Higher Education</li> </ul>	<p>Phase 1: grants of up to \$500,000 will be awarded; Phase 2: finalist coalitions will receive awards ranging from \$25,000,000 - \$75,000,000.</p>		Grant		<p>Eligibility is limited to regional coalitions composed of a combination of the listed eligible entities.</p>				*	<p>19-Oct-21</p>
<p>U.S. Department of Commerce, Economic Development Administration, American Rescue Plan Act:</p> <p><i>Economic Adjustment Assistance Program</i></p>	<p>Grants support communities as they respond to, and recover from, the economic impacts of the pandemic, including water and sewer system improvements and telecommunications infrastructure (e.g., broadband).</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> <li>■ Inst. of Higher Education</li> </ul>	<p>Awards range from \$500,000 - \$5,000,000. Project periods range from 12 - 48 months.</p> <p>Match: Awards are expected to fund at least 80%, and up to 100%, of project costs.</p>		Grant		<p>Under the EAA program, EDA is not authorized to provide grants or cooperative agreements to individuals or to for profit entities. Requests from such entities will not be considered for funding.</p>	*			<p>15-Mar-22</p>	

<p>U.S. Department of Commerce, National Telecommunications and Information Administration:</p> <p><i>Broadband Infrastructure Program</i></p>	<p>Grants support covered partnerships for covered broadband projects, defined as competitively and technologically neutral projects for the deployment of fixed broadband service that provides qualifying broadband service in an eligible service area.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li><input type="checkbox"/> Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li>■ Utilities companies</li> <li><input type="checkbox"/> Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	<p>Awards typically range from \$5,000,000 - \$30,000,000 for a one-year period.</p>	<p>Grant</p>		<p>Eligible applicants are covered partnerships, defined as a partnership between: (A) a State, or one or more political subdivisions of a state; and (B) a provider of fixed broadband service.</p>		<p>*</p>	<p>17-Aug-21</p>
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Funding Agency	Program Purpose	Eligible Applicants	Funding Range	Assistance				Timeline				Deadline / Cycle History		
				Grant / Coop. Agt.	Loan / Debt Financing	Tax Credit	Bond	Quarter 1	Quarter 2	Quarter 3	Quarter 4			
<b>Electric Prospects</b>														
U.S. Department of Agriculture, Rural Utilities Service (RUS):  <i>Electric Infrastructure Loan &amp; Loan Guarantee</i>	Finances construction of electric distribution, transmission, and generation facilities, including system improvements to improve electric service in rural areas; and demand side management, energy efficiency programs, and on-grid and off-grid renewable energy.	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>■ Tribal agencies</li> <li>■ Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	The average Federal Financing Bank loan guarantee is \$32,668,948. Other ranges are not specified.		Loan					*	*	*	*	Rolling application period
U.S. Department of Agriculture, Rural Utilities Service:  <i>Energy Efficiency and Conservation Loan Program (EECLP)</i>	Loans finance energy efficiency and conservation projects for commercial, industrial, and residential consumers.	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>■ Tribal agencies</li> <li>■ Utilities companies</li> <li>■ Nonprofit organizations</li> <li>■ For-profit organizations</li> </ul>	Past awards have ranged from \$4,000,000 - \$46,000,000.		Loan					*	*	*	*	Rolling application period

<p>U.S. Department of Agriculture, Rural Utilities Service:</p> <p><i>High Energy Cost Grant Program</i></p>	<p>Provides assistance for energy facilities, including renewable energy systems and energy efficiency improvements, serving extremely high energy cost communities.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>■ Tribal agencies</li> <li>■ Utilities companies</li> <li>■ Nonprofit organizations</li> <li>■ For-profit organizations</li> </ul>	<p>Awards range from \$100,000 - \$3,000,000.</p>		Loan		<p>Eligible areas must qualify as extremely high-cost energy communities, meeting one or more of the following energy cost eligibility benchmarks (see solicitation for definitions):</p> <ul style="list-style-type: none"> <li>* Extremely High Average Annual Household Expenditure for Home Energy</li> <li>* Extremely High Average per unit Energy Costs</li> </ul>		*	*	<p>Most recent deadline: 06-Jul-21</p> <p>Annual release (during spring / summer in recent years)</p>
<p>U.S. Department of Agriculture, Rural Utilities Service:</p> <p><i>Rural Energy for America Program (REAP) Energy Audit &amp; Renewable Energy Development Assistance</i></p>	<p>Grants or loan guarantees assist rural small businesses and agricultural producers by conducting and promoting energy audits and providing renewable energy development assistance.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>□ Tribal agencies</li> <li>■ Utilities companies</li> <li>□ Nonprofit organizations</li> <li>□ For-profit organizations</li> </ul>	<p>The maximum aggregate amount of an energy audit and REDA grant in a federal fiscal year is \$100,000.</p>	Grant	Loan		<p>Eligible small businesses must be located in rural areas. Rural areas are any areas other than: (1) a city or town that has a population of greater than 50,000 inhabitants; and (2) the urbanized area contiguous and adjacent to such a city or town.</p>	*	*	*	<p>Deadline: 31-Jan-22</p> <p>Applications accepted throughout the year.</p>
<p>U.S. Department of Agriculture, Rural Utilities Service:</p> <p><i>Rural Energy Savings Program (RESP)</i></p>	<p>Loans support entities who provide energy efficiency services in rural areas to help consumers implement cost effective, energy efficiency measures.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li>■ Tribal agencies</li> <li>■ Utilities companies</li> <li>■ Nonprofit organizations</li> <li>■ For-profit organizations</li> </ul>	<p>Awards range from \$200,000 - \$13,000,000 and average \$3,034,147.</p>		Loan		<p>Limited to rural areas. Rural, for this program, is generally any area that has a population of 50,000 or fewer inhabitants, or any other area designated eligible by statute. Contact the program officer to confirm eligibility.</p>	*	*	*	<p>Rolling application period</p> <p>Applications accepted on a first come first serve basis until funding is no longer available.</p>

<p>U.S. Department of Commerce, Economic Development Administration, American Rescue Plan Act:</p> <p><i>Build Back Better Regional Challenge</i></p>	<p>Grants help regions develop economic development strategies and implement those strategies to create regional growth clusters, helping economies recover from the pandemic, including telecommunications infrastructure (e.g., broadband) and water and sewer system improvements.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> <li>■ Inst. of Higher Education</li> </ul>	<p>Phase 1: grants of up to \$500,000 will be awarded; Phase 2: finalist coalitions will receive awards ranging from \$25,000,000 - \$75,000,000.</p>	Grant				<p>Eligibility is limited to regional coalitions composed of a combination of the listed eligible entities.</p>			*	<p>19-Oct-21</p>
<p>U.S. Department of Commerce, Economic Development Administration, American Rescue Plan Act:</p> <p><i>Economic Adjustment Assistance Program</i></p>	<p>Grants support communities as they respond to, and recover from, the economic impacts of the pandemic, including water and sewer system improvements and telecommunications infrastructure (e.g., broadband).</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> <li>■ Inst. of Higher Education</li> </ul>	<p>Awards range from \$500,000 - \$5,000,000. Project periods range from 12 - 48 months.</p> <p>Match: Awards are expected to fund at least 80%, and up to 100%, of project costs.</p>	Grant				<p>Under the EAA program, EDA is not authorized to provide grants or cooperative agreements to individuals or to for profit entities. Requests from such entities will not be considered for funding.</p>		*	<p>15-Mar-22</p>	

Funding Agency	Program Purpose	Eligible Applicants	Funding Range	Assistance				Limitations	Timeline				Deadline / Cycle History
				Grant / Coop. Agt.	Loan / Debt Financing	Tax Credit	Bond		Quarter 1	Quarter 2	Quarter 3	Quarter 4	
<b>Water Prospects</b>													
New Mexico Environment Department, Construction Programs Bureau:  <i>Clean Water State Revolving Fund</i>	Provides low-interest loans to eligible entities for a wide range of wastewater and storm water projects that protect surface water and groundwater resources.	<input type="checkbox"/> State government <input checked="" type="checkbox"/> Local government <input checked="" type="checkbox"/> Tribal government <input type="checkbox"/> Tribal agencies <input type="checkbox"/> Utilities companies <input checked="" type="checkbox"/> Nonprofit organizations <input checked="" type="checkbox"/> For-profit organizations	Loans available for up to 100% of eligible costs; interest rates of 0% to 1% for public entities, and 2.375% for private entities.		Loan			Private entities are eligible only for limited types of projects.	*	*	*	*	Rolling application period
New Mexico Finance Authority:  <i>Colonias Infrastructure Fund</i>	Helps certain communities in southern New Mexico that lack basic infrastructure for water and wastewater, solid waste disposal, flood and drainage control, roads and housing.	<input type="checkbox"/> State government <input checked="" type="checkbox"/> Local government <input type="checkbox"/> Tribal government <input type="checkbox"/> Tribal agencies <input type="checkbox"/> Utilities companies <input type="checkbox"/> Nonprofit organizations <input type="checkbox"/> For-profit organizations	Awards range from \$50,000 - \$2,500,000	90% Grant	10% Loan			Limited to communities in southern New Mexico.		*			Annual release  Most recent deadline: 03-Mar-21
New Mexico Finance Authority:  <i>Drinking Water State Revolving Loan Fund (DWSRLF)</i>	Provides low-cost financing for the construction of and improvements to drinking water facilities throughout New Mexico to protect drinking water quality and the public health.	<input type="checkbox"/> State government <input checked="" type="checkbox"/> Local government <input type="checkbox"/> Tribal government <input type="checkbox"/> Tribal agencies <input type="checkbox"/> Utilities companies <input type="checkbox"/> Nonprofit organizations <input type="checkbox"/> For-profit organizations	Loans of up to 30 years at fixed, below-market rates; ranges not specified.		Loan			Loans are limited to local government entities.	*	*	*	*	Rolling application period

<p>U.S. Department of Agriculture, Rural Utilities Service (RUS):</p> <p><i>Water and Waste Disposal Loan &amp; Grant Program</i></p>	<p>Provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	<p>Loans average \$2,354,392; Grants average \$1,284,000; Guaranteed loans average \$1,415,325.</p>	Grant	Loan		<p>Areas that may be served include:</p> <ul style="list-style-type: none"> <li>* Rural areas and towns with populations of 10,000 or fewer - check eligible addresses</li> <li>* Tribal lands in rural areas</li> <li>* Colonias</li> </ul>	*	*	*	*	<p>Rolling application period</p>
<p>U.S. Department of Commerce, Economic Development Administration, American Rescue Plan Act:</p> <p><i>Build Back Better Regional Challenge</i></p>	<p>Grants help regions develop economic development strategies and implement those strategies to create regional growth clusters, helping economies recover from the pandemic, including telecommunications infrastructure (e.g., broadband) and water and sewer system improvements.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> <li>■ Inst. of Higher Education</li> </ul>	<p>Phase 1: grants of up to \$500,000 will be awarded; Phase 2: finalist coalitions will receive awards ranging from \$25,000,000 - \$75,000,000.</p>	Grant			<p>Eligibility is limited to regional coalitions composed of a combination of the listed eligible entities.</p>			*	<p>19-Oct-21</p>	
<p>U.S. Department of Commerce, Economic Development Administration, American Rescue Plan Act:</p> <p><i>Economic Adjustment Assistance Program</i></p>	<p>Grants support communities as they respond to, and recover from, the economic impacts of the pandemic, including water and sewer system improvements and telecommunications infrastructure (e.g., broadband).</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li><input type="checkbox"/> Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> <li>■ Inst. of Higher Education</li> </ul>	<p>Awards range from \$500,000 - \$5,000,000. Project periods range from 12 - 48 months.</p> <p>Match: Awards are expected to fund at least 80%, and up to 100%, of project costs.</p>	Grant			<p>Under the EAA program, EDA is not authorized to provide grants or cooperative agreements to individuals or to for profit entities. Requests from such entities will not be considered for funding.</p>	*			<p>15-Mar-22</p>	

<p>U.S. Department of Interior, Bureau of Reclamation:</p> <p><i>WaterSMART Grants: Drought Contingency Planning Grants</i></p>	<p>Grants support entities to leverage their money and resources by cost sharing drought contingency planning to build resilience to drought in advance of a crisis.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li>■ Utilities companies</li> <li><input type="checkbox"/> Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	<p>Awards range up to \$200,000 over a two-year period.</p> <p>Match: 50%</p>	Grant			<p>Applicants must be located in a western U.S. state or territory.</p>		*	<p>Most recent deadline: 06-Jan-21</p> <p>Typically released annually (anticipated in winter of 2022).</p>
<p>U.S. Department of Interior, Bureau of Reclamation:</p> <p><i>WaterSMART Grants: Drought Resiliency Projects</i></p>	<p>Supports projects that build long-term resilience to drought and reduce the need for emergency response actions.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li>■ Utilities companies</li> <li><input type="checkbox"/> Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	<p>Award options:</p> <p>* Group I: Up to \$500,000 over two years.</p> <p>* Group II: Up to \$1,500,000 over three years.</p>	Grant			<p>Applicants must be located in a western U.S. state or territory.</p>		*	<p>Most recent deadline: 05-Aug-20</p> <p>Typically released annually (anticipated in summer / early fall of 2021).</p>
<p>U.S. Department of Interior, Bureau of Reclamation:</p> <p><i>WaterSMART Grants: Small-Scale Water Efficiency Projects (SWEPP)</i></p>	<p>Supports small-scale water efficiency projects that conserve and use water more efficiently, mitigate conflict risk in areas at a high risk of future water conflict, and accomplish other benefits that contribute to water supply reliability.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li>■ Utilities companies</li> <li>■ Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	<p>Awards range up to \$75,000 over a two-year period.</p> <p>Match: 50%</p>	Grant			<p>Applicants must be located in a western U.S. state or territory.</p>		*	<p>Most recent deadline: 18-Mar-21</p> <p>Annual release (anticipated in spring of 2022)</p>
<p>U.S. Department of Interior, Bureau of Reclamation:</p> <p><i>WaterSMART Grants: Water and Energy Efficiency Grants</i></p>	<p>Grants support (1) Water conservation projects resulting in quantifiable and sustained water savings or improved water management; and (2) Projects that increase the use of hydropower in managing and delivering water.</p>	<ul style="list-style-type: none"> <li>■ State government</li> <li>■ Local government</li> <li>■ Tribal government</li> <li><input type="checkbox"/> Tribal agencies</li> <li>■ Utilities companies</li> <li><input type="checkbox"/> Nonprofit organizations</li> <li><input type="checkbox"/> For-profit organizations</li> </ul>	<p>Awards range up to \$500,000 for Funding Group I; \$2,000,000 for Funding Group II.</p> <p>Match: 50%</p>	Grant			<p>Applicants must be located in a western U.S. state or territory.</p>		* *	<p>Most recent deadline: 17-Sept-20</p> <p>Annual release (anticipated fall / winter of 2021)</p>

# EARLY TAKEAWAYS

## PRELIMINARY RECOMMENDATIONS

### *ALLOCATE FUNDING EFFICIENTLY*

- Develop a funding system for infrastructure projects; applicants that pass an intake and screening process for projects will be considered for both federal and state funds. Score projects for urgency and need, aim to reduce funding gaps and increase the number of projects that are fully funded.
- Use ARPA funds to the extent feasible to invest in infrastructure—water, sewer, and broadband infrastructure are allowable costs. Advise communities on how to utilize these funds to address infrastructure gaps.
- Alert communities to and prepare for additional infrastructure funds in the near future through the infrastructure package currently with the Senate.
- Fully utilize available revolving loan funds; these are federal dollars that operate on a use-it-or-lose-it basis.

### *USE PUBLIC POLICY AS A TOOL*

- Do not make funding hard to get. Competitive grants mean that communities that are least-positioned to win out lose over and over again, creating a vicious cycle.
- Replenish the state's infrastructure fund.
- Use capital outlay more strategically, funding at a higher level for the highest need projects to have more tangible results quickly.

### *EMPOWER COMMUNITIES*

- Provide technical assistance and supports to communities so they learn about the full spectrum of dollars available, and to help them learn how to assemble a competitive application.
- Help communities and utilities plan for regionalization, particularly with water, to support reliable access and lower consumer prices.
- Encourage communities to look beyond capital outlay, including to debt instruments, to help projects get funded more quickly and stay on budget.

### *PLAN FOR THE LONG TERM*

- In rural remote areas, consider various emerging energy concepts.
- Assist communities in providing relief and services immediately through planning for the expansion of local facilities as anchors for crucial services such as Wi-Fi in libraries and equipping shelters with improved heating and cooling.
- Improving utilities is only the first step. Planning for maintenance and ongoing consumer affordability are also critical.
- Combine utilities assistance with other programs, like SNAP, to create efficiencies and a more comprehensive suite of support services while reducing consumer utilities costs.

# APPENDICES

## REFERENCES

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# NOTES ON DATA USED

## *RURAL INDICATORS: BROADBAND, WATER, SEWER*

To arrive at the data tables to support this project, BBER used two different methods to calculate the indicators of rural areas within New Mexico. The first step to both methods was to download the data tables from <https://data.census.gov/> for the 443 places within New Mexico. This included census designated places (CDPs), cities, and villages. According to the U.S. Census Bureau, places with fewer than 2,500 inhabitants are considered rural areas. Thus, the places were marked either as rural or urban based on the population statistics. The next step was to associate each place with its respective county based on the geography.

BBER then proceeded with the following two methods:

- Add numbers of rural places to get county totals: Filter out all places with fewer than 2,500 inhabitants, then add the numbers to obtain the rural area totals for each county. This method allows BBER to look at the individual places that made up the totals as well.
- Subtract totals of urban areas from the total for the respective county: Filter out all the places that have more than 2,500 inhabitants, then subtract the total urban area for each county from the previous downloaded county totals from the U.S. Census.

Due to the sampling and estimate methodology employed by the Census, there is a margin of error for each of the estimates given, which yields results that do not perfectly match mathematically. The individual spreadsheets indicate which Census tables were used for the data.

## *ELECTRICAL UTILITIES DATA*

Access to electricity is not asked in the Census data. Further, electrical providers have geographic overlap throughout the state. This makes determining the county-level access a complicated process. Methodologically, BBER must reach out to all of the providers that service more than one county and ask for subscriber numbers.

Data in this report a combination of Census data (number of occupied housing units), Energy Information Administration data (number of customers per utility and type of utility), and research into each provider's coverage by county (internet searches and phone calls).

- ACS 5-Year Estimates. 2019. TableID: B25048. Census data on occupied housing units by county.
- Energy Information Administration. 2019. "Annual Electric Power Industry Report." EIA-861 detailed data files; residential customers only.
- Provider coverage by area, internet searches, phone calls to providers.

Providers report they have county-level data, but none had it readily available in time for this report. More detailed data at the county level will be forthcoming in the final report.

## DEFINITIONS

### *Access to Running Water (American Community Survey [ACS], 2019)*

This question measures access to water resources and plumbing facilities. Complete plumbing facilities is defined as (a) hot and cold running water AND (b) a bathtub or shower. These facilities must be located inside the housing unit but not in the same room. A housing unit is classified as lacking complete plumbing facilities when either of the two facilities is not available.

### *Access to Sewer (ACS 2015)*

Prior to the 2016 ACS, the question included an additional criterion: a flush toilet inside the housing unit. Complete plumbing facilities were defined as (a) hot and cold running water, (b) a bathtub or shower, and (c) a flush toilet. All three facilities had to be located inside the housing unit but not in the same room. A housing unit was classified as lacking complete plumbing facilities when either of the three facilities was not present.

The Rural Community Assistance Partnership (RCAP) has used this data to assess the availability of water and sewer facilities in the U.S. A correlation between lacking complete plumbing facilities and monthly cost for water and sewer facilities was determined.

### *Access to Broadband (ACS 2019)*

This set of questions measures computer and internet usage, as well as broadband coverage. Housing units are classified as having no access to the internet when residents cannot connect to or use the internet using either paid or free services.

The Federal Communications Commission (FCC) uses this data as a proxy for measuring access to broadband. Additionally, they use the data to find out how households react to newer generations of broadband technology (whether deployment is successful).

The Nation National Telecommunications and Information Administration (NTIA) also uses this data to measure broadband access and identify groups that underuse broadband technology.

New Mexico Department of Information Technology Office of Broadband has used these data to assess broadband availability in rural communities. They also identify funding issues and challenges of broadband programs.

# INTERNET SERVICE PROVIDERS IN NEW MEXICO BY TECHNOLOGY TYPE

Provider Name	Technology
Cable One, Inc.	Cable
Charter Communications, Inc.	Cable
Comcast Cable Communications, LLC	Cable
EarthLink Business, LLC	Cable
PVT Networks, Inc.	Cable
Spectrotel, Inc.	Cable
Suddenlink Communications	Cable
TDS Broadband Service LLC	Cable
APXNET	Cable
Chaparral CableVision	Cable
63	DSL (Asymmetric)
Bulls Eye Telecom	DSL
Birch Communications Inc.	DSL
Baca Valley Telephone Company, Inc.	DSL (Asymmetric)
CenturyLink, Inc.	DSL (Asymmetric)
Copper Valley Telephone, Inc.	DSL (Asymmetric)
Cyber Mesa Computer Systems Incorporated	DSL (Asymmetric)
Delcom, Inc.	DSL (Asymmetric)
E.N.M.R. Telephone Cooperative	DSL (Asymmetric)
EarthLink Business, LLC	DSL (Asymmetric)
Frontier Communications Corporation	DSL (Asymmetric)
Global Capacity LLC	DSL
La Jicarita Rural Telephone Cooperative	DSL (Asymmetric)
Leaco Rural Telephone Cooperative	DSL (Asymmetric)
Lobo Internet	DSL (Asymmetric)
McLeodUSA Telecommunications Services, L.L.C.	DSL (Asymmetric)
Mescalero Apache Telecom, Inc.	DSL (Asymmetric)
NetFortris	DSL
Penasco Valley Telephone Coop	DSL (Asymmetric)
Roosevelt County Rural Telephone Cooperative, Inc.	DSL (Asymmetric)
Sacred Wind Communications Inc.	DSL (Asymmetric)
Spectrotel, Inc.	DSL (Asymmetric)
Tularosa Communications, Inc	DSL (Asymmetric)
Valley Telephone Cooperative, Inc.	DSL (Asymmetric)
Valor Telecommunications of Texas, LLC	DSL (Asymmetric)
Windstream	DSL
Yucca Telecom	DSL
WNM Communications	DSL (Asymmetric)

Provider Name	Technology
CenturyLink, Inc.	Fiber
Affiniti, LLC	Fiber
Baca Valley Telephone Company, Inc.	Fiber
Charter Communications, Inc.	Fiber
Cogent Communications Group	Fiber
Cyber Mesa Computer Systems Incorporated	Fiber
Delcom, Inc.	Fiber
Kit Carson Electric Cooperative	Fiber
La Jicarita Rural Telephone Cooperative	Fiber
Level 3 Communications, LLC	Fiber
Mammoth Networks	Fiber
MCI Communications Corporation	Fiber
McLeodUSA Telecommunications Services, L.L.C.	Fiber
Panhandle Telecommunications Services LLC	Fiber
TDS Broadband Service LLC	Fiber
Tularosa Communications, Inc.	Fiber
Yucca Telecommunications Systems	Fiber
Zayo Group, LLC	Fiber
Windstream	Fiber
Continental Divide Electric Cooperative, Inc.	Fiber
E.N.M.R. Telephone Cooperative	Fiber
FastTrack Communications, Inc.	Fiber
Leaco Rural Telephone Cooperative	Fiber
PVT Networks, Inc.	Fiber
Unite Private Networks, L.L.C.	Fiber
NMSURF	Fiber
Kit Carson	Fiber
Valley Telephone Cooperative, Inc.	Fiber
63	Fiber
Black Mesa Wireless LLC	Fiber
Call One, Inc.	Fiber
Comcast Cable Communications, LLC	Fiber
DPAccess, LLC	Fiber
Futurum Communications Corp.	Fiber
Plateau Telecommunications, Inc.	Fiber
Roosevelt County Rural Telephone Cooperative, Inc.	Fiber
Sierra Communications	Fiber
Transtelco, Inc.	Fiber
U.S. TelePacific Corp.	Fiber
Valor Telecommunications of Texas, LLC	Fiber
Visionary Communications, Inc	Fiber