STATE OF NEW MEXICO

OFFICE OF BROADBAND ACCESS & EXPANSION

Office of Broadband Access and Expansion
Department of Information Technology
State of New Mexico

Michelle Lujan Grisham, Governor
Howie Morales, Lieutenant Governor

New Mexico Broadband Plan Update

January 1, 2023

Version 1.0

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List of Abbreviations and Acronyms

ACP	Affordable Connectivity Program
ACS	American Community Survey
ALGE	Acequia and Land Grant Education
ARPA	American Rescue Plan Act
BAT	Broadband Action Team
BEAD	Broadband Equity, Access, and Deployment
BLM	Bureau of Land Management
Bps	Bits per second
BSL	Broadband Serviceable Location
BTOP	Broadband Technology Opportunities Program
CAI	Community Anchor Institution
CARES Act	Coronavirus Aid, Relief and Economic Security Act
CCA	Competitive Carriers Association
CFR	Code of Federal Regulations
CMC	Connecting Minority Communities
CNMC	Connect New Mexico Council
CNMEC	Central New Mexico Electric Cooperative
CPE	Consumer Premise Equipment
CSF	Critical Success Factors
CTIA	Cellular Telecommunications Industry Association
DDOS	Distributed Denial of Service
DE	Digital Equity
DEA	Digital Equity Act
DEP	Digital Equity Plan
DOH	Department of Health
DoIT	Department of Information Technology
DSL	Digital Subscriber Line
ED	Economic Development
EDAC	Earth Data Analysis Center
FCC	Federal Communications Commission
FTE	Full Time Equivalent
FTTP	Fiber to the Premises
FY	Fiscal Year
G2G	Government to Government
Gbps	Billions of bits per second
GEER	Governor's Emergency Education Relief (Fund)
GHz	Gigahertz
GIS	Geographic Information System
GMS	Grants Management System
HED	Higher Education Department
Hh	Household
ICI	Information and Communication Technology
IDS	Intrusion Detection Service
IIJA	Infrastructure Investment and Jobs Act
IP	Internet Protocol
IPRA	Inspection of Public Records Act
IPS	Intrusion Protection Service
IRU	Indefeasible Right of Usage
ISP	Internet Service Provider

JANPA	Jicarilla Apache Nation Power Authority
KPI	Key Performance Indicator
MBA	Master of Business Administration
MNO	Mobile Network Operator
MOU	Memorandum of Understanding
NAP	Network Access Points
NDIA	National Digital Inclusion Alliance
NEPA	National Environmental Policy Act
NMAC	New Mexico Administrative Code
NMDFA	New Mexico Department of Finance and Administration
NMDoIT	New Mexico Department of Information Technology
NMDOT	New Mexico Department of Transportation
NMHU	New Mexico Highlands University
NMLA	New Mexico Library Association
NMM	Northern New Mexico
NMRSUSF	New Mexico Rural State Universal Service Fund
NMSA	New Mexico Statutes Annotated
NOFO	Notice of Funding Opportunity
NOPR	Notice of Proposed Rulemaking
NTIA	National Telecommunications and Information Administration
OBAE	Office of Broadband Access and Expansion
P3	Public-Private Partnership
PEN	Pueblo Education Network
POP	Points of Presence
PPP	Public Private Partnership
PRC	Public Regulation Commission
PROP	Permits, Right of Ways, and Pole Attachments
PSAP	Public Safety Access Pont
PSCOC	Public School Capital Outlay Council
PSFA	Public Schools Facilities Authority
RDOF	Rural Digital Opportunities Fund
READY	Regional Engagement for Adoption and Digital Equity
RFI	Request for Information
ROW	Rights of Way
RUS	Rural Utilities Service
SB	Senate Bill
SCP	Senior Certified Professional
SEC	Socorro Electric Cooperative
SEN	Statewide Education Network
SFIS	Santa Fe Indian School
SHLB	Schools, Health and Libraries Broadband (Coalition)
SHRM	Society for Human Resource Management
SME	Subject Matter Expert
SQL	Structured Query Language
STIP	Statewide Transportation Improvement Plan
TAP	Technical Assistance Program
TDS	Telecommunications and Data Systems
TIA	Telecommunications Industry Association
UNM	University of New Mexico
USCS	United States Code Service
WNM	Western New Mexico

Message from the Director, Office of Broadband Access and Expansion, Kelly Schlegel

Dear Fellow New Mexicans,

New Mexico stands out nationally and among its neighbors for myriad positive qualities and attributes – the breathtaking and diverse landscapes, our rich Native American heritage, the enormous geographic size, heavy degree of rurality, 300+ days of everlasting sunshine, and the spirit of acceptance and warmth among our residents – whether they live in our many small, rural towns or few large cities. These distinct strengths create promising opportunities, and in some cases, unique challenges.

One of these challenges has been the lack of broadband availability and lower adoption rates relative to the national average. These gaps undermine the collective strengths of our State and limit the opportunity to advance economically and socially for those on the wrong side of the digital divide. I always say broadband touches everything, so improved broadband connectivity can help every person, business, and institution in New Mexico.

In July 2022, Governor Michelle Lujan Grisham appointed me as the first director of the Office of Broadband Access and Expansion (OBAE). Her mandate to me was very simple – connect all New Mexicans with affordable, reliable, high-speed Internet and break down every barrier that limits them from taking advantage of the rich online resources. My office has been working tirelessly to achieve these objectives. This Broadband Plan provides the most comprehensive update regarding a detailed set of initiatives to bridge the digital divide and make New Mexico the most connected State.

A critical driver for these outcomes will involve the unprecedented grant funding pool being developed to support private investment for infrastructure expansion, and fund digital equity and inclusion programs. Their success will require detailed planning, multistakeholder collaboration, diligent execution, and accountability all around the table, so to speak.

An OBAE grant program is underway that subsidizes broadband infrastructure projects across unserved and underserved communities. Five awards were recently announced, and more projects will be funded in the near term. The Broadband Plan highlights several other initiatives, which our Office is proud to announce and deliver upon.

This Plan will be complemented by an ambitious Digital Equity Plan and Five-Year Action Plan (for infrastructure) that the federal government requires to obtain funding from the Infrastructure Investment and Jobs Act. These plans will be completed later this year. In parallel, our Office is working with the Federal Communications Commission to increase the accuracy of the serviceable locations and broadband availability of the location-centric broadband maps.

But our unconnected neighbors cannot wait for more planning and want to see results, well, yesterday! We hear you, and this Plan discusses a number of short-term initiatives to foster broadband networks in unserved and underserved areas and enable adoption.

Thank you for placing your trust in me and my Office, and we look forward to working together to achieve the Governor's vision of making New Mexico the most connected State.

Sincerely,

Kelly Schlegel
Director, Office of Broadband Access and Expansion

1.0 Executive Summary

The Office of Broadband Access and Expansion (OBAE) is required to provide an annual update to the Governor and Legislature on the statewide Three-Year Broadband Plan ("Plan"). The Statute directs OBAE to develop an assessment of broadband services across New Mexico.

The 2023 Plan meets this requirement and also provides a comprehensive overview of the State's broadband strategy. The Plan defines the key strategic goals, or guideposts, to measure progress over the next three years and beyond. Second, it provides an update regarding the State of broadband availability and adoption. Third, it summarizes recent progress made toward advancing the strategic goals. Fourth, the Plan discusses the major strategic priorities to achieve these goals. Fifth, it defines the specific initiatives and action items for 2023 – many of which extend into 2024-2025. Finally, it highlights the critical success factors that must be in place to implement these initiatives and reach the goals effectively.

Goals

The Plan aims to achieve four major goals. These include the following:

Goal 1) Universal Availability of Terrestrial-Based High-Speed, Scalable Broadband Networks

New Mexican residents and businesses should have access to terrestrial-based high-speed broadband networks that reliably deliver at least 100/20 Mbps (download/upload) by 2029 – the time period when planned grant-funded broadband networks should be deployed. This speed constitutes the current federal definition of "served". All terrestrial networks funded by the State's grant programs should offer at least 100/100 Mbps unless the applicant can demonstrate extraordinary circumstances limiting this speed. In such cases, the networks must offer 100/20 Mbps and be scalable to at least 100/100 Mbps. To meet the 100/100 Mbps standard, New Mexico aims to prioritize fiber-based networks – given their distinct advantages of being sustainable, "future ready" and the relatively lower operating and upgrade expenditures. For those highly remote communities where terrestrial networks cannot be deployed due to extraordinarily high costs or technical barriers, the State will consider initiatives to foster non-terrestrial solutions.

Goal 2) Widespread Adoption AND Meaningful Usage of the Internet

All New Mexicans should have the opportunity to adopt the Internet by 2026. This can occur at home, an office, a community institution, or through a mobile device. All New Mexicans should be offered the support to overcome adoption challenges – which may include programs to enable affordability, obtain devices, receive digital literacy training, or have high-quality access at a nearby community institution.

Secondly, all New Mexican broadband adopters should meaningfully use the Internet's myriad of valuable digital applications to advance their social and economic standing – i.e., health, education, workforce, civic and social services, etc. The quality and innovation of online resources increase every year, thereby yielding valuable tools for both residents (e.g., e-learning, telehealth, workforce skills development, etc.) and businesses (e.g., online marketplaces, cloud-hosted applications performing real-time functionality, etc.)

Goal 3) Advancement of Next-Generation Statewide Networks

Last-mile broadband networks are critical, but not alone in importance. New Mexico's ambition of being the most connected State necessitates several other pieces, including: a) a Statewide Education Network (SEN) that connects all interested public schools and public libraries together through scalable, reliable, affordable

and secure Internet, and a sister initiative, the Pueblo Education Network (PEN) which is focused on Tribal controlled schools and libraries; b) all New Mexican communities should reside in close proximity to open-access middle-mile networks that offer reasonably priced, high-speed lit services and dark fiber to facilitate backhaul and support private links for government, large enterprises, data centers, educational institutions, and others requiring at least 1 Gbps connectivity; c) universal mobile 5G coverage that spans across all rural communities and highly-trafficked roadways; d) networks architectures that offer resiliency, redundancy, and security. The end result will involve an interconnected network system that provides widespread connectivity, safety and security, resiliency, and customer choice through public-private collaboration.

Goal 4) Program Stewardship

The end result of universal broadband availability, widespread adoption, and meaningful usage, along with complementary statewide next-generation networks will constitute a generational achievement that will involve heavy public investment and time. The public expects accountability from both the government agencies issuing the funds and the awardees (grantees) receiving the funds. Thus, the 3-year Plan recognizes the immense value of program stewardship. OBAE leadership and staff are committed to the utmost transparency and accountability of its programs. Moreover, OBAE will actively monitor our awardees and hold them accountable for all programmatic and compliance requirements.

State of Broadband in New Mexico

❖ State of Broadband Availability

OBAE finds that approximately 12.6% of New Mexico's one million residential and business addresses are unserved – meaning they lack access to networks offering 25/3 Mbps service. Moreover, approximately 25% of all New Mexican residential and business addresses lack access to wireline networks offering at least 100/20 Mbps –the threshold for the use of federal funding to build new broadband infrastructure.

EDAC data indicates that, from 2020 to 2022, the total number of "net" unserved locations (i.e., lacking 25/3 service) in New Mexico has not changed much – about 128,000 now as compared to an estimated 126,000 locations then – but the State has actually seen significant changes in those two years. The State added about 75,000 new addresses. About 60,000 addresses were newly served by wireline (fiber or cable) or "licensed" fixed wireless service providing reliable connections of 25/3 or more. At the same time, about 59,000 addresses that would have been considered served in 2020 are now considered unserved because they only have unlicensed fixed wireless service, which does not meet the definition of reliable broadband in the federal government's Broadband Equity, Access and Deployment (BEAD) funding program. These data points will be closely reviewed, and likely revised, within the context of the location fabric data provided by the FCC.

OBAE continues to collect and review data regarding the state of broadband available across all communities and Tribal areas. The federal government has recently completed its first phase of identifying serviceable locations, as well as broadband availability based on input from service providers. OBAE and the EDAC teams, supported by a professional consulting firm, are challenging this data, which appears to miss many serviceable locations and overstates the percentage of "served" premises.

❖ State of Broadband Adoption and Usage

The digital divide encompasses not just access to Internet services (and the infrastructure and technologies that provide them) but also the adoption and meaningful use of those services. An estimated 19.5 percent of New Mexico residents report that they do not use the Internet. The State's non-adoption level is in line with national averages[1] and compares favorably to New Mexico's neighbors, Arizona and Texas, which report 20.1 percent and 23.0 percent, respectively. Nevertheless, this rate is unacceptable and the Broadband Plan includes several initiatives to foster digital equity and inclusion.

There is wide variability in Internet adoption rates within the State. There is a clear lack of adoption specifically along the western edge of the State. The rates of wireline non-adoption are particularly notable in McKinley and Catron counties. Outside of the western edge, there also is a high degree of non-adoption in Mora County (75 percent). In contrast, Los Alamos County stands out with its low (16 percent) level of residents who do not subscribe to wireline Internet service.

Key adoption challenges include:

1. **Lack of device ownership:** New Mexico lags behind the national average in desktop and laptop computer ownership. At 40.9 percent, New Mexico has the largest portion of residents not using a laptop or desktop computer in the nation.[2] Given that smartphones and tablets are still not as capable as a desktop or laptop (particularly because of their small screens and lack of functionality), and cellular service contracts are often more expensive than home Internet service, this represents a significant barrier for the State in terms of achieving adoption and meaningful use of the Internet.

2. **Affordability issues:** An estimated 450,000 New Mexico households (54 percent) may be eligible for the federal Affordable Connectivity Program (ACP) subsidy for Internet service,[3] which is available to low-income households and recipients of many types of federal aid. The program pays a $30 monthly subsidy per household, $75 per Tribal household. By comparison, as of November 1, 2022, the FCC reports that only 142,156 New Mexico households (31 percent of the eligible base) are receiving the subsidy for Internet services.[4] New Mexico's ACP enrollment rate exceeds the national average (25.6 percent of eligible residents) and the enrollment rates of neighboring states, but affordability remains an issue for many residents.

3. **Lack of digital skills and literacy:** The existing data reflect that New Mexico is largely on pace with neighboring states and the nation when it comes to residents' digital skills and literacy. Across a wide variety of online activities, New Mexico residents report a level of engagement similar to residents of other states. Notably, less than a third of New Mexico residents report using the Internet to take classes and participate in job training, telecommute to (or remotely) work, or search for a job—

[1] Digital Equity Act Population Viewer, https://arcg.is/8vGLv (accessed December 21, 2022).
[2] NTIA. Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=a0013a9dcbb9419e855f563d78e892ef.
[3] Estimates are based on 2021 American Community Survey reported data on household income and participation in assistance programs such as the Supplemental Nutrition Assistance Program, Medicaid, Supplemental Security Income, and public assistance income. This estimation does not take into account qualification via Tribal assistance programs, and therefore may underestimate the size of eligible populations throughout the State.
[4] "ACP Enrollment and Claims Tracker," USAC. https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/.

suggesting a considerable opportunity for new economic activity if this type of Internet use can be expanded. New Mexico is not an outlier in this regard; those levels are roughly the same for Americans nationwide.

❖ **Next-Generation Networks**

Stakeholder input and market observances continue to demonstrate critical gaps with regard to middle-mile, 5G mobile broadband coverage, network resiliency and security. Two requests for information (RFIs) around middle-mile, in 2022, revealed that unserved and underserved communities lack access to affordable and high-capacity links for lit and/or dark fiber services. Moreover, several communities across the State are dependent upon a single backhaul link; in other cases, the middle-mile network does not provide open access. Several rural communities and highly trafficked roadways have poor or no signal from 5G networks. In addition, recent network outages impacting schools, and entire communities, substantiate the need for greater investment in network resiliency. Finally, cybersecurity remains a priority given the increasing sophistication of bad actors to infiltrate broadband networks.

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Key Achievements (2022)

The year 2022 witnessed significant progress in advancing the needle on broadband availability and adoption. This progress reflected contributions from all stakeholders – including government (federal, state, Tribal, local), non-profit organizations, and industry. Notable initiatives spanned across the major goals.

Program	Results
Broadband Infrastructure Expansion	
Connect New Mexico Pilot Program	• Launched the $123 million grant program; awarded $37.2 million to connect over 13,000 unserved and underserved residents and businesses.
NM Public Regulation Commission Annual Broadband Program	• The Public Regulation Commission provided $23.74 million in grants to nine broadband service providers.
NTIA Tribal Broadband Connectivity Program	• Nine Tribal entities received awards over $169 million.
RUS ReConnect Program	• Six broadband providers received grant awards of approximately $139 million.
FCC Rural Digital Opportunity Fund (RDOF)	• The largest RDOF awardee (Resound Networks) received final clearance to apply $55.2 million to connect over 18,000 locations in New Mexico.
NTIA BEAD Funding	• Received $5 million funding from the NTIA Initial Planning Funds to develop a five-year broadband deployment plan – enabling the future allocation of hundreds of millions in grants which the State will manage.
Broadband Adoption and Meaningful Usage	
State Digital Equity Program Planning Grant (NTIA)	• Received $728K funding for the State Digital Equity Planning Grant Program to develop Digital Equity Plan – enabling the future allocation of tens of millions for the State Digital Equity Capacity Grant Program.
Affordable Connectivity Program (ACP)	• Signed up over 142,000 households (18% of state's households).
Community Engagement	• Supported 150+ community engagement events including working group meetings, community listening sessions, workshops, forums, and local and Tribal stakeholders sessions took place to build awareness, inspire action,

	and mobilize local, regional, and statewide support for broadband improvement and BEAD and Digital Equity planning.
Tribal Government	• Supported nine engagements with 23 Tribes (or 100% of the Tribal nations in New Mexico) to foster digital equity and inclusion.
Next Generation Statewide Networks	
Statewide Education Network	• Completed a major procurement for Phase1 of the SEN that could connect at least 150,000 students and teachers
Pueblo Education Network	• Received NTIA funding to connect students from 19 Pueblos and two Tribes
NTIA Middle-Mile Investment Program	• OBAE and several entities filed applications to request tens of millions of grant funds to deploy middle-mile. • OBAE issued two RFIs and identified key middle-mile gaps.
Governance	
Connect New Mexico Council	• Launched the Council in January 2022, established a monthly meeting cadence, formed six working groups, and promoted and supported over 60 stakeholder and working group meetings.
OBAE Organization and Operations	
OBAE Leadership Appointment and Staff Growth	• OBAE is now positioned with a full-time director, seven staff members, and four consultants which collectively have accomplished and/or advanced several initiatives.
State Broadband Map	• Mobilized a campaign to validate the FCC's fabric level data regarding broadband availability.
Public Affairs	• Launched new website to centralize all broadband programs, initiatives, newsletters (office and Tribal), resources (ConnectNewMexico.org)

Strategic Priorities and Key Initiatives

The Broadband Plan includes 13 key strategic priorities that advance the goals above. These priorities involve 22 major initiatives, along with an action plan and key performance indicators to measure progress. These priorities and key initiatives were developed based on internal deliberation, federal and state government mandates, and stakeholder input received throughout the year 2022. Each of these initiatives involves a comprehensive set of strategies and action items.

Strategic Priorities	Major Initiatives for 2023
Goal: Universal Broadband Availability	
❖ Grant Funding to Enable Broadband Deployment	• Connect New Mexico Pilot Program (Award Finalization and Post-Award Management) • Connect New Mexico Fund (Program Launch and Awards Issuance) • Five-Year Action Plan for NTIA BEAD Program
❖ Current and Accurate Broadband Maps	• Robust Data for Spatial Data Management and Analytics • Evolutions of the State Broadband Map • Launch of Analytic and Decision Support Tools to Empower All Stakeholders
❖ Removing Deployment Barriers Related to Permits,	• Permit and Rights of Way Streamlining • Modernization of Pole Attachment Policies and Practices

Rights Of Way and Pole Attachments (PROP)	• NMDOT Rights of Way Fee Waiver Program for In-Kind Fiber and/or Conduit Contribution
❖ Workforce Development	• "All Hands on Deck": Statewide Broadband Workforce Development Strategy
❖ Technical Assistance Programs	• Technical Assistance Programs to Empower Local Communities
Goal: Broadband Adoption and Meaningful Usage	
❖ Participation in NTIA Programs for Digital Equity	• Development of the Digital Equity Plan
❖ Broadband Affordability	• Robust Participation in the FCC Affordable Connectivity Program
❖ Digital Equity and Inclusion for Tribal Communities	• Tribal Community Digital Inclusion Program
Goal: Next-Generation Statewide Networks	
❖ Statewide Middle-Mile Networks	• Launch of Statewide Education Network • Public-Private Investment Program for Priority Middle-Mile Routes
❖ Coverage Expansion of 5G Mobile Broadband	• Rural 5G Coverage Acceleration
❖ Network Resiliency and Security	• Statewide Network Resiliency and Security Program
Goal: Program Stewardship	
❖ OBAE Transparency and Accountability	• Rulemaking for Broadband Grant Programs • OBAE Annual Progress Report • Program Evaluation and Socioeconomic Impact Assessment
❖ Grantee Accountability for All Programmatic and Compliance Requirements	• Comprehensive System to Foster Grantee Accountability

Critical Success Factors

The ambitious set of strategic priorities and initiatives for 2023 are dependent upon several critical success factors (CSFs) – which involve the set of financial resources, policies, and external developments that enable the implantation. For each section, the CSFs are listed. They are generally categories into the following groups:

Categories		Critical Success Factors
Multistakeholder Collaboration for Broadband Mapping Accuracy		• ISP Cooperation in Sharing Accurate Mapping Data • FCC acceptance of challenges from OBAE mapping team • NTIA BEAD formula based on 2nd iteration of FCC map
Legislative Appropriations and Authority	Budget	• Provide additional state funds to subsidize private investment for rural-based network deployments where the business plans are not otherwise financially viable and sustainable. - Note: Preliminary estimate is that the State requires up to $5.5 billion for broadband infrastructure – depending upon

		assumptions regarding: technology, ability to leverage of existing assets, accuracy of broadband mapping data, etc. - The potential funding from the BEAD program, along with the known amounts from the Connect New Mexico Pilot Program and Connect New Mexico Fund, provide approximately 10% of this required amount. - The 25% minimum matching contribution will partially lower the level of required grant funding for network deployment across unserved and underserved communities. - The State may need up to $3.6 billion in grant funding to achieve universal availability. - The Legislature should: a) immediately increase the Connect New Mexico Fund by $500 million for both last- and middle-mile expansion; b) then further replenish the Connect New Mexico Fund (in FY 2025) based on a refined analysis on the capital requirements that will be part of the Five-Year Action Plan due to NTIA in August 2023. • Continue to support mapping and data collections efforts to provide data to federal government for funding formulas • Create fund to purchase, store, and utilize capital supplies that are difficult to source with supply chain issues and reduce costs for quantity purchases.
	Policy	• Creation of Public Corporation (or other non-profit entity) to support investment in middle-mile projects • Consolidate current funding and place less restrictions on funding uses. • Appropriate previous funding with passage of Constitutional Amendment 2. • Support expansion of electrical/telephone easements and ROW to broadband and establish a fund to allowing resourcing of permits • Clarification of Section 63-9K NMSA 1978. • Bring Statewide Education Network operations from PSFA to OBAE • Support OBAE and/or Public Corporation to enter into Public Private Partnerships (P3)
	Staff	• Personnel resources for FY 2024 – increasing OBAE to 21 general fund positions from 6.5 general fund positions • Expectation for increased growth in FY25 and beyond
Workforce		• Funding for workforce needs assessment, addressing stakeholders and provider, such as employers, training organizations, educational institutions, and industry associations • Workforce Development allows for a cohesive strategic plan that will shape employment in many rural communities across New Mexico as well as larger metropolitan area • Plan will address federal requirement of BEAD and DE federal funds

Complementary Strategic Planning Activities

OBAE has initiated a parallel effort to develop two detailed strategic plans for broadband deployment and digital equity to enable the federal allocation of grant funds. Specifically, the Infrastructure Investment and Jobs Act (IIJA) established the Digital Equity and Broadband Equity Access and Deployment (BEAD) programs, which are administered by NTIA. Both initiatives require extensive data collection, public engagement, and rigorous analytics to make universal access to reliable, affordable, high-performance broadband a reality for all New Mexicans. The coordinated effort will result in complementary State Digital Equity and Five-Year Action plans.

Office of Broadband Access and Expansion: Poised to Bridge the Digital Divide

The year 2022 constituted OBAE's first year with an operational staff of seven staff members and four consultants. This team contributed to several of the aforementioned achievements. The year 2023 will be a momentous year given the significance of the strategic priorities discussed. OBAE's DNA comprises of the following:

- Mission: Passionate leadership to drive bold, equitable, and inclusive broadband solutions
- Vision: Achieve bold, affordable broadband solutions for New Mexicans that honor the state's rich heritage and elevate quality of life for all
- Values: Seven values defining OBAE's people, processes, planning, and programs: 1) bold; 2) honest; 3) curious; 4) innovative; 5) respectful; 6) collaborative; 7) analytically rigorous

Key Milestones and Dates

The following table lists specific dates (or time periods) regarding the major milestones for the initiatives identified in the Three Year Plan.

Priorities and Initiatives		Target Month or Dates
Broadband Infrastructure Funding		
Connect New Mexico Pilot Program	• Announcement of Wave 2 Awards	February 2023
	• Wave 3 Applications Due	February 27, 2023
	• Issuance of All Awards	June/July 2023
Connect New Mexico Fund	• Program Launch	Summer 2023
NTIA BEAD Program	• Completion of Five-Year Action Plan	August 28, 2023
	• Initial Proposal	180 days post announcement of Notice of Available Amounts
Broadband Maps		
Robust Data for Spatial Data Management and Analytics	• Serviceable Location Fabric Challenges	Dec. 2022 – Mar. 2023 June – Sept. 2023 Ongoing Bi-Annually
	• Service Availability Challenges	Nov. 2022 – Jan. 2023 May – Jul. 2023 Nov. 2023 – Jan. 2024 Ongoing Bi-Annually

	• Second Filing of Service Availability to FCC and OBAE by Providers of Fixed or Mobile Broadband Service	March 1, 2023
	• State Broadband Map 2.0	Summer 2023
	• Mapping Dashboard by County	Summer 2023
	• Third Filing of Service Availability to FCC and OBAE by Providers of Fixed or Mobile Broadband Service	September 1, 2023
Digital Equity and Inclusion		
State Digital Equity Plan	• Completion of State Digital Equity Plan	August 1, 2023
NTIA Digital Equity Plan	• Completion of Digital Equity Plan for NTIA	4th Quarter 2023
Stakeholder Engagement Events		
Legislative Events	• Broadband for New Mexico Day at the Roundhouse	February 15, 2023
Tribal Engagement	• Quarterly Tribal Convenings	Recurring
Regional Engagement	• Regional Convenings	Recurring
Training and Meetings	• Training/Meetings with Target Populations	Recurring
Governance		
Connect New Mexico Council	• Council Meetings	Monthly Recurring
Working Groups	• Six Working Groups	Monthly/Bi-Monthly
OBAE Transparency and Accountability		
Rulemaking for Grant Program Rules	• Public Comments: Due Date	January 30, 2023
	• Response to Written or Oral Comments: Due Date	February 10, 2023
OBAE Reports (filing dates)	• Three-Year Broadband Plan Update for 2023-2025	January 1, 2023
	• Three-Year Broadband Plan Update for 2024-2026	January 1, 2024
	• Annual Performance Report	January 1, 2024

2.0 Document Overview

2.1 Legislative Directive

The 2023 Broadband Plan ("Plan") addresses the Statutory obligation, and also provides a comprehensive overview of the State's broadband strategy. This Plan also provides an update on the progress of broadband development in the State and complies with the Office of Broadband Access and Expansion's (OBAE) statutory obligation under the "Broadband Access and Expansion Act" (Senate Bill 93).[5] The specific requirements follow in the table below, along with how this document fulfils the requirements.

Overview of Senate Bill 98 Regarding Strategic Plan		
General Directive	• *On or before January 1, 2022, the broadband office shall develop and provide to the governor and the legislature a three-year statewide broadband plan.* • *On or before January 1, 2023, and on or before January 1 of each year thereafter, the broadband office shall update and revise the statewide broadband plan developed pursuant to this section for the ensuing three years and report the updated and revised statewide broadband plan to the governor and the legislature.*	
	Specific Requirements	**OBAE Approach to Meeting Requirement**
Specific Output	• *In its initial plan pursuant to Subsection D of this section and in its annual revised and updated plan pursuant to this subsection, the broadband office shall provide an assessment of broadband service across the State compared to the standards established by the various federal broadband regulatory and assistance programs.*	• Plan discusses the state of broadband availability – based on an estimate of unserved and underserved premises determined by broadband mapping data. • The definition of unserved and underserved reflects federal rules delineated by federal agencies that develop broadband policy and/or administer broadband grant programs – including the Federal Communications Commission, National Telecommunications and Information Administration, and U.S. Department of Treasury.
Process Requirements	• *In the development of the statewide broadband plan, the broadband office shall request advice and provide opportunities for meaningful input from each local and Tribal government within New Mexico, and all state agencies and public educational institutions shall cooperate with and provide relevant broadband-related information collected or developed by the*	• The Office of Broadband Access supported 150+ stakeholder meetings. These are listed in the Appendix.

[5] See Section 3, paragraphs D – F. SB 93, SB0093 (nmlegis.gov).

	agencies as requested by the broadband office.	
Implementation	• *The broadband office shall implement the statewide broadband plan.*	• Sections 9.0 – 12.0 list key program initiatives, strategies and action items for the underlying strategic goals.

2.2 Topics and Relevant Sections

The flow of the document follows. First, the Plan defines the key strategic goals that provide guideposts to measure progress over the next three years. Second, it provides an update regarding the state of broadband availability and adoption. Third, it summarizes recent progress made toward advancing the strategic goals. Fourth, the Plan discusses the major strategic priorities to achieve these goals. Fifth, it defines the specific initiatives and action items for 2023 – many of which extend into 2024-2025. Finally, it highlights the critical success factors that must be in place to effectively implement these initiatives and reach the goals. Key subjects and the related sections follow below.

Topic	Key Sections
• Complementary strategic planning efforts - Digital Equity Plan: Overview, process, timetable, and deliverables - Five Year Action Plan: Overview, process, timetable, and deliverables	3.0
• Four major goals - Universal Broadband Availability - Broadband Adoption and Meaningful Usage - Statewide Next Generation Networks - Program Stewardship	4.0
• State of Broadband in New Mexico - State of Broadband Availability - State of Adoption and Usage	5.0
• State of Adoption in New Mexico - Internet service adoption rates - Affordable Connective Program enrollment rates - Key barriers to adoption	6.0
• Recent Developments to Advance Broadband: Government & Market Intervention - Federal, state, and other awards received to foster broadband deployment and adoption	7.0
• Overview of the Office of Broadband Access and Expansion - Vision, Mission, Values - Organization Structure - Key OBAE Achievements	8.0
• Broadband Availability: Strategic Priorities and Initiatives - Recognizes five priorities and 11 initiatives, and a strategic plan for each.	9.0
• Broadband Adoption and Meaningful Usage: Strategic Priorities and Initiatives - Recognizes three priorities and three initiatives, and an action plan for each.	10.0

3.0 Complementary Strategic Planning Efforts in New Mexico

OBAE has initiated two parallel efforts to develop detailed strategic plan for broadband deployment and digital equity to receive federal grants. Specifically, the IIJA established the Digital Equity and Broadband Equity Access and Deployment (BEAD) programs, which are administered by NTIA. Both initiatives require extensive data collection, public engagement, and rigorous analytics to make universal access to reliable, affordable, high-performance broadband a reality for all New Mexicans. The plans must be coordinated and will result in the complementary State Digital Equity and Five-Year Action plans. OBAE has received federal funding to develop these plans. Details follow below.

3.1 NTIA BEAD Program: Five-Year Action Plan

The BEAD program establishes a $42.45 billion fund to expand broadband access through planning, infrastructure deployment, and adoption programs. The funds will be directly provided to all 50 states and U.S. territories. The receipt of these BEAD funds is contingent upon the development of a Five-Year Action Plan. NTIA allocated $5 million in Initial Planning Funds to New Mexico to develop the Five-Year Action Plan.

OBAE had designed a BEAD program planning process (i.e., infrastructure efforts) within the structure created by the federal government. There will be a two-year planning cycle for infrastructure. It will begin with the development of a Five-Year Action Plan that will be completed by late-August 2023, based on extensive data collection and stakeholder engagement in 2022 and first half of 2023.

The Five-Year Action Plan will be followed by an additional plan known as the “Initial Proposal” toward the end of 2023 based on federal timelines. The Initial Proposal, which also will be submitted to NTIA for review and approval, will include detailed plans for how OBAE will structure and conduct a rigorous grant-making effort designed to maximize the use of the new federal BEAD infrastructure funds to get infrastructure to unserved parts of the State.

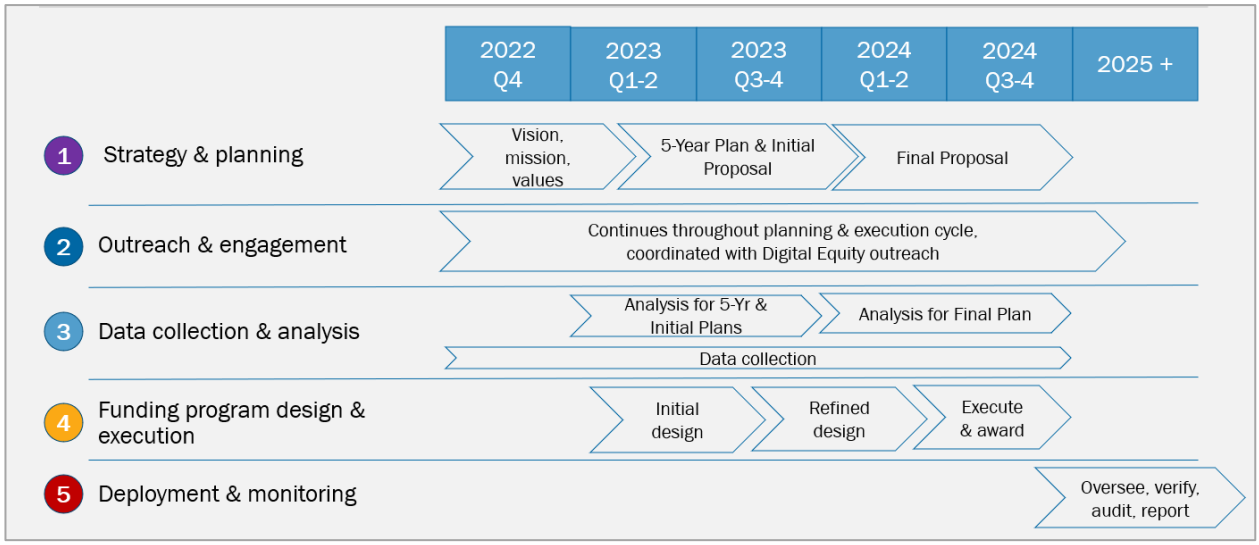
OBAE’s efforts in this regard will include extensive engineering at a statewide level but also a detailed county level, so that the State can make informed decisions about how it can use the BEAD funds to maximize State public policy goals within the confines of federal requirements. To the extent that tradeoffs are necessary, the planning efforts will seek to understand those tradeoffs and the benefits and challenges of all feasible technology approaches.

Once NTIA has approved the State’s Initial Proposal, OBAE will receive a portion of the federal funding and be in a position to conduct the planned grant program as proposed during 2024. OBAE hopes to start making awards in 2024 on a contingent basis—and will prepare and submit to NTIA a Final Proposal reflecting the outcome of the grant process toward the end of 2024. Once the Final Proposal is accepted, OBAE’s contingent awards will be made final, and federal funds will start to flow to grantees through OBAE.

New Mexico has applied for and intends to maximize its award through a presentation of refined mapping data and the pursuit of all competitive opportunities. With regard to the BEAD, NTIA has not yet determined New Mexico’s allocations. The federal allocation process, which is based on formulas established in the IIJA and presented later in this Plan, should be completed by June 2023 and that New Mexico’s allocation will become clear at that time. It is preliminarily anticipated that New Mexico’s BEAD infrastructure allocation will be several hundred million dollars or more.

The Five-Year Action Plan developed using Initial Planning Funds must (a) be informed by collaboration with local, regional, and Tribal (as applicable) entities, as well as unions and worker organizations, (b) detail the Eligible Entity's investment priorities and associated costs, and (c) align the State or Territory's planned spending with its economic development, community benefit, workforce, telehealth, digital equity, and other related efforts. At a minimum, an Eligible Entity's Five-Year Action Plan must meet a 13-point checklist list which is stated in the Appendix. The following graphic illustrates the high-level timeline for BEAD planning.

Figure 1: Estimated timeline for BEAD planning



3.2 Digital Equity Plan

The Digital Equity Act (DEA) --- part of the IIJA of 2021 – created a $2.75 billion fund to establish three grant programs to promote digital equity and inclusion. The first of these involves the State Digital Equity Act Planning Program to develop digital equity plans. New Mexico has received its full allocated amount, which will support the development of New Mexico's Digital Equity Plan (DEP). The DEP must be completed by November 2023.

The DEP will concern such critical issues of equity and opportunity as affordability, access to devices, training and skills, consumer safety, online privacy, and the accessibility of web-based government content. The DEP will help New Mexico identify barriers to digital equity and outline specific measures aimed at addressing those barriers. The DEP is required in order for New Mexico to participate in the State Digital Equity Capacity Grant Program and implement the initiatives delineated in the DEP. This program aims promote the achievement of digital equity, support digital inclusion activities, and build capacity for efforts by states relating to the adoption of broadband by residents of those states.

In building the DEP, OBAE will apply a five-phase methodology to: (1) create a preliminary baseline assessment of the current state of digital equity programs across New Mexico; (2) analyze the needs and barriers to digital equity for all residents, including covered populations; (3) create measurable objectives to advance digital equity and create impact on statewide economic development, education, health, civic

engagement, and essential services that form the basis of an implementation strategy; (4) draft, review, submit for feedback, and revise the plan; and (5) implement, sustain and improve the approach over time.

- **Defining Our Approach**

In many states, including New Mexico, a vast and deeply rural State with rugged terrain, many people remain without Internet access. The 2021 Census Bureau Community Survey indicates that 20% of New Mexico households lack a broadband connection at home. Taken together, broadband access and adoption data reflects the multiple inter-locking challenges posed by social, economic, educational, and geographic factors that can significantly impact the ability of households to adopt and use broadband. In the coming months, OBAE and the CNMC will conduct studies to identify and refine data on broadband access and adoption. This data is shifting and will continue to guide the national conversation. Conversations include improving broadband access and adoption to one premised on digital equity and structured around a model of digital inclusion practices to address the range of factors and influences that perpetuate the digital divide.
The Digital Equity Act (DEA) of 2021 was created to advance digital equity in every state and set up legislative requirements to guide the states in charting Digital Equity Plans. The Notice of Funding Opportunity (NOFO), released by NTIA in May, added specifications to frame the processes and goals for Digital Equity Plans and articulated a focus on indicators that include both access and digital inclusion. NTIA specifications entail:

- Focus on the under-served and unserved "covered populations" of incarcerated, seniors, low-income, rural, disabled, low literacy, Veterans, minorities;
- Identification of barriers to digital equity faced by each of the covered populations, including economic, learning, access to devices, and IT support;
- Setting measurable objectives and goals for decreasing these key barriers to digital equity; and
- Setting measurable objectives for assessing the impact of digital equity on key sectors, including education, economic, workforce, health, civic and social engagement, and essential services.

Additional requirements for the plan are listed in Table 1.

Digital Equity Vision Statement
Digital Equity Goals
Asset Inventory
Collaboration with stakeholders
Incorporation of existing local digital equity plans and initiatives
List of organizations that contributed to the planning process
Coordination strategy and plan
Stakeholder engagement plan
Conduct a community organization asset and capacity assessment
Identify digital equity barriers and assets by target population

Provide an explanation of impact of digital inclusion on key sectors
Identify and describe a holistic implementation strategy and plan
Explain how the implementation strategy will address gaps and meet goals
Implementation timeline
Sustainability and continuity

Table 1: Requirements of the NTIA Digital Equity Grant NOFO

- **Foundational Activities**

Through the OBAE, New Mexico has begun preliminary work needed to create a State Digital Equity Plan. During this foundational phase of the project, New Mexico has been constructing a baseline for the State in the five areas of digital equity (1) broadband access; (2) accessible and inclusive online content; (3) digital literacy; (4) personal data and cyber security; (5) devices and tech support. The OBAE is building an interagency digital equity team to identify, engage and support this initial phase of the project. The team will inventory State stakeholder organizations and establish an Outreach Strategy to engage key stakeholders throughout the process.

4.0 Strategic Goals

4.1 Universal Availability of High-Speed, Scalable Broadband Networks

The strategic goals of universal availability follow below, along with the rationale for the specific target. These goals involve: a) speed threshold; b) timing; c) preferences for grant-funded projects.

- **Universal Access of 100/20 Mbps:** All New Mexico residents and businesses should have access to terrestrial-based high-speed broadband networks that reliably deliver at least 100/20 Mbps (download/upload) by 2029. This goal is adopted for two main reasons. First, a guaranteed speed of at least 100/20 Mbps enables our constituents to have a high-quality experience when using bandwidth-consuming applications, such as video conferencing, watching high-definition videos, or transferring large files. Real-time video conferencing applications are critical for distance learning, telemedicine, and teleworking. Second, this threshold reflects the federal definition of a "served" location.
    - Infrastructure Investment and Jobs Act (IIJA): This Act instructs the NTIA, for the Broadband Equity, Access, and Deployment program, to award funding in a way that gives priority to projects that will provide service to unserved locations (defined as those without access to 25/3 Mbps service), then to underserved locations (defined as those without access to 100/20 Mbps service), and next to community anchor institutions (defined as those without gigabit connections).[6] The BEAD program constitutes the single-largest national funding program, ever, to support last-mile broadband.
    - FCC Proceeding: FCC Chairwoman Jessica Rosenworcel has proposed to raise the minimum speed for broadband to 100/20 Mbps. This constitutes the standard adopted in the Rural Digital Opportunities Fund (RDOF) – the most recent FCC universal service auction. The Chairwoman also proposed to set a national futuristic, non-binding, goal of 1 gigabit per second downstream and 500 Mbps upstream speeds. The FCC had last raised the broadband standard in 2015, when it set the minimum speed for advanced services at 25/3 Mbps.[7]
- **Target Date of 2029:** This goal should be achieved by 2029, when award recipients from current and planned grants programs should have their networks fully deployed, tested, and ready for commercial service.

➢ **Grant Funded Infrastructure Projects**

OBAE recognizes that all technologies are required to bridge the digital divide fully. Nevertheless, OBAE has an obligation to ensure grant-funded projects deliver high-speed, reliable Internet today and for the long term. From a technology perspective, these projects should be "future ready", or "future proof" to accommodate increases in bandwidth consumption at both the individual user level and the community. Moreover, the networks should meet the needs of the comprehensive community – including businesses and community institutions. Grant-funded projects should also support the backhaul needs of other local and regional networks, such as 5G mobile, public safety, or community Wi-Fi. From a business case perspective,

[6] https://www.congress.gov/bill/117th-congress/house-bill/3684/text

[7] https://www.fcc.gov/document/chairwoman-rosenworcel-proposes-increase-minimum-broadband-speeds

recurring expenditures should not jeopardize the financial viability of the awardee, or pose uncertain risks. For these reasons, other targets include:

- **Scalability:** All grant-funded broadband deployment projects by the State will be scalable to service of at least 100/100 Mbps – meeting present day and future needs.
- **Fiber Prioritization:** New Mexico aims to prioritize fiber-based networks – given their distinct advantages of being long-term sustainable, "future ready" and their lower recurring expenses relative to fixed wireless.
- **Role of Non-Terrestrial Networks**: For those highly remote communities where terrestrial networks cannot be deployed due to extraordinarily high costs or technical barriers, the State will work on initiatives to foster non-terrestrial solutions.

4.2 Widespread Internet Adoption and Meaningful Usage

The digital divide encompasses not just access to Internet services (and the infrastructure and technologies that provide them) but also the adoption and meaningful use of those services. Several preconditions are necessary for individuals to make meaningful use of the Internet, including:

- ❖ Access to affordable service
- ❖ Ownership of a sufficient and appropriate device (such as a laptop or large-screen tablet)
- ❖ Working knowledge of how to use the Internet (also known as "digital literacy")
- ❖ Basic understanding of online privacy and security issues

Within each of the preconditions for meaningful use, there exists a diverse array of challenges to overcome. This is particularly true for communities that have few reliable service offerings or in which a large portion of residents are not able to afford service (i.e., barriers chiefly related to infrastructure and affordability). But residents who have access and can afford service might face other challenges that have the same effect of preventing their adoption of broadband. In that light, the State establishes the following goals for Internet adoption and meaningful use:

- **Adoption:** All New Mexicans should have the opportunity to adopt the Internet by 2026. This can occur at home, an office, community institution, or through a mobile device. All New Mexicans should be offered the support to overcome adoption challenges – which may include programs to enable affordability, obtain devices, receive digital literacy training, or have high-quality access at a nearby community institution.

- **Meaningful Usage:** Secondly, all New Mexican broadband adopters should meaningfully use the Internet's myriad of valuable digital applications to advance their social and economic standing – i.e., health, education, workforce, civic and social services, etc. The quality and innovation – across content, applications, communication tools – continue to progress for both residents (e.g., e-learning, telehealth, workforce skills development, etc.) and businesses (e.g., online marketplaces, cloud hosted applications performing real-time functionality, etc.)

4.3 Statewide Deployment of Next-Generation Statewide Networks

Last-mile broadband networks are critical, but not alone in importance. New Mexico's ambition of being the most connected State necessitates several other pieces. These include: 1) a statewide education network (SEN) and a Pueblo education network (PEN) that offer scalable, reliable, affordable and secure Internet to all

schools; 2) statewide middle-mile networks offering high-capacity backhaul to last-mile networks; 3) high-speed mobile broadband networks (e.g., 5G) that have quality coverage across all rural communities and well-trafficked roadways; 4) network architecture that is "fail proof" due to being both resilient and redundant. Unfortunately, the communities facing the greatest gaps toward these goals are primarily rural-based. Reversing course would yield an interconnected network system that fosters the earlier goal of universal access and adoption, while fostering public safety, network security, resiliency, and competition.

- **Statewide Education Networks**: The Statewide Education Network (SEN) aims to connect all interested public schools and public libraries together through scalable, reliable, affordable and secure Internet. All such institutions should join the SEN by 2027.
- **Pueblo Education Network**: The Pueblo Education Network (PEN) focuses on connecting Tribes and Pueblos, and preserving native language, culture, and local education.
- **Middle-Mile**: all New Mexican communities should reside in close proximity to open-access middle-mile networks that offer reasonably priced, high-speed lit services and dark fiber to facilitate backhaul and support private links for government, large enterprises, data centers, educational institutions, and others requiring at least 1 Gbps connectivity. Such networks offer several benefits.
    - Catalyst for last-mile network deployment and upgrades involving fiber or next-generation fixed wireless;
    - Catalyst for the coverage expansion for mobile and public safety networks (e.g., FirstNet) which require high-speed backhaul;
    - High-capacity bandwidth solution for: a) community institutions which often require 1 Gbps; b) research and education networks – across higher-ed and K-12 – face growing bandwidth needs;
    - Enabler for Intelligent Transport Systems when crossing major roadways; and
    - Requirement for hyperscale data centers requiring ultra-high-speed fiber backbone networks with redundant pathways.
- **Advanced Generation Mobile Broadband:** Mobile broadband services are used by more than 84% of the U.S. population. 5G networks are 100 times faster than 4G networks and offer decreased latency, improved reliability, and high capacity. This performance can enable remote learning, telehealth, telework, precision agriculture, and other services and applications. Every major New Mexican roadway and rural community should have a strong signal to support 5G mobile data and voice coverage from the mobile network operators currently serving a particular community or region.
- **Network Resiliency and Security**: Broadband networks constitute an essential utility for most New Mexicans. Network downtimes thwart the productivity of residents, businesses, and institutions, and can have serious consequences in achieving essential objectives and functions. It's imperative that all network elements – last-mile, middle-mile, SEN, mobile – remain operational and withstand external threats – e.g., environmental, human error, criminal, etc. Recent wildfires, and their potential frequency due to climate change, unfortunately, make network resiliency a critical priority. The network designs should reflect best practices around: a) redundancy through backup paths and systems that minimize downtime; b) defense against physical attacks (man-made or environmental); c) defense against cyberattacks; d) long-term sustainability.

4.4 Program Stewardship

The end-state of universal broadband availability, widespread adoption and meaningful usage, and statewide next-generation networks will constitute a generational achievement. A centerpiece to reach these goals and support the underlying initiatives involves hundreds of millions of public investment allocated by the government to private entities. OBAE, and other supporting agencies, are responsible for design and authorization of the funds. The beneficiaries of the funds are responsible for meeting all programmatic obligations and compliance requirements. Both sides must always remain accountable to the public and act as a good steward of these precious funds. Two key pillars behind this stewardship include:

- **OBAE Transparency and Accountability**: OBAE is transparent to the public regarding the purpose, scope, design, and implementation of the strategy as presented in this plan, and the specific programs and projects funded. Moreover, OBAE is able to share the results of the plan and the program.
- **Grantee Accountability for All Programmatic and Compliance Requirement**s: The beneficiaries of the funds meet all programmatic and compliance requirements, and provide the public performance and progress reports.

5.0 State of Broadband Availability in New Mexico

5.1 State of Broadband Availability

- **Background: Analytical Approach**

This Three-Year Statewide Broadband Plan (Plan) builds on the earlier strategic plan's extensive data collection and analysis to lay the groundwork for the State's Five-Year Action Plan as required by the National Telecommunication and Information Administration's (NTIA) Broadband Equity, Access, and Deployment (BEAD) grant program. Because of time constraints, this report does not take into account the new broadband map released by the FCC. Subsequent analysis is necessary to compare the State's data to the FCC data, both in terms of differences in the address fabric (i.e., locations) and differences in service availability claims.[8]

As requested by DoIT, CTC performed a comparison of the 2020 and 2022 datasets provided by the Earth Data Analysis Center (EDAC) at the University of New Mexico, as described below. The research and analysis conducted in preparation of this Plan suggest that, while the total number of unserved locations in New Mexico has not changed much since 2020—about 128,000 now as compared to an estimated 126,000 locations then. However, there are, in fact, significant changes in broadband availability between 2020 and 2022. This is because of two main factors:

1) The addition of census blocks to the served category, primarily because of new fiber and high-speed wireline service constructed in rural parts of the State
2) Removal of census blocks from the served category because of new definitions of broadband from the FCC and NTIA that now exclude unlicensed fixed wireless service as a reliable broadband technology

Due to new definitions of broadband-capable technologies established in federal grant programs (item 1 above), about 59,000 locations that would have been considered served in 2020 are no longer considered served in 2022 because they have Internet services provided using unlicensed fixed wireless technologies. About 60,000 additional locations are now served by fiber (these are primarily in small towns outside the metro areas).

- **Data Sets**

At the direction of NM DoIT, CTC was provided the latest broadband service datasets from EDAC. EDAC's information represents a combination of data provided by a limited number (14) of Internet service providers (ISP) to OBAE in the Fall of 2022, and the last-available Form 477 data published by the FCC at the end of 2021. This information was used to analyze the changes to New Mexico's broadband service map since the 2020 strategic plan. Unfortunately, because the FCC publishes the census block data up to a year from the date they are received, our analyses reflect this lag. This is a critical area of improvement for New Mexico which this strategic plan is intended to address, both on the legislative and data information management fronts.

[8] For example, preliminary review of the FCC data indicates the inclusion of a large number of locations the FCC considers served by T-Mobile fixed wireless service. T-Mobile did not participate in EDAC's mapping and therefore is not included in the State's maps.

Both the 2020 and 2022 EDAC data, like the FCC Form 477 data, count the addresses within each census block. If one or more addresses in the block are served, the entire block is considered served. This can create an overestimate of served addresses, as well as served areas. Experience in other states indicates that increasing the thresholds for considering a block served may significantly reduce the service area and the number of served addresses—especially in rural areas that have relatively large census blocks.

Because the new FCC map illustrates service availability by address and not census block, it will be possible to have a more granular understanding of service, relative to previous FCC maps. (Note: The analysis using addresses will be completed for the Five-Year Action Plan due in August 2023).

This report evaluates the availability of broadband service (defined as at least 25 Mbps downstream and 3 Mbps upstream, or 25/3) delivered by fiber, coaxial cable, DSL, or licensed-spectrum fixed wireless technologies.[9] This set of technologies compares most closely to the "Model 2" of the 2020 report, which was a more broadly inclusive model that, relative to Model 1, included DSL and wireless 25/3 service and is therefore more in line with the standards to be used by NTIA to determine availability.

- **Impact of Federal Policy Definition of Served Premises**

This report seeks to prepare the State for analysis using the new FCC map and therefore seeks to best align definitions with that map. With this in mind, one necessary change relative to the EDAC maps is that unlicensed fixed wireless is no longer considered capable of delivering broadband speeds. Because many of the locations in Model 2 in the 2020 report were unlicensed fixed wireless, one of the most significant changes from the previous report was to remove those locations from the served category.

The exclusion of unlicensed fixed wireless technology in this analysis reflects new rules established by NTIA in its 2022 Notice of Funding Opportunity[10] for the BEAD program.

By way of background, the IIJA authorized the BEAD and requires NTIA to determine the "reliable" broadband technologies that are eligible for BEAD grants. NTIA's NOFO notes that "reliable broadband service" means "broadband service that meets performance criteria for service availability, adaptability to changing end-user requirements, length of serviceable life, or other criteria, other than upload and download speeds…."[11]

This definition of reliability means that unlicensed wireless technology, often used to deliver Internet service to locations in rural environments, is not considered a future-proof technology by the NTIA—and locations currently serviced by this technology are considered unserved for purposes of BEAD grant eligibility. Please note that fixed wireless technology using licensed spectrum is acceptable, so locations receiving that type of service are considered served.

- **Key Findings on Unserved Premises**

[9] The FCC and EDAC do not include satellite as a type of reliable broadband service. The State may still decide to invest in improved wireline technology in areas served by satellite, DSL, or fixed wireless—but those would be lower-priority investment areas than unserved locations.
[10] "NOFO: BEAD Program," NTIA, https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf.
[11] BEAD NOFO at footnote 10.

The research and analysis conducted in preparation of this Plan suggest that, while the total number of unserved locations in New Mexico has not changed much since 2020—about 128,000 now as compared to an estimated 126,000 locations then (Table 1)[12]—new definitions of broadband and new fiber network deployment activity have significantly altered the broadband service map in New Mexico since 2020.

Table 1: Estimated unserved locations and total addresses (2020 – 2022)

Data year	Total number of addresses[13]	Estimated number of unserved addresses	Estimated percentage of unserved addresses
2020	940,000	126,000	13.4%
2022	1,015,000	128,000[14]	12.6%

Figure 1 and Figure 2 (below) depict the State's unserved areas in 2020 and December 2022, respectively, based on the broadband definition of 25/3 Mbps. In all maps, Tribal areas are illustrated with hatch-marked shading. Areas served by unlicensed fixed wireless technology are included as served locations in 2020 but as unserved locations in the 2022 map, due to the definition of reliable broadband in NTIA's BEAD NOFO (see Section 2).

Further analysis of the 2022 EDAC data identified the following distribution of service technologies available to the State's roughly 1 million addresses (Table 2). The numbers do not add to 100 percent, because some locations have more than one type of service.

Table 2: Estimated technology distribution among served addresses

Technology	Number of addresses	Percent of addresses served
Licensed fixed wireless	68,952	7%
Cable	713,044	70%
DSL	558,344	55%
Fiber	260,730	26%

Figure 3 illustrates only the locations across the State that were labeled as served in 2020 but are now considered unserved (e.g., locations served by unlicensed fixed wireless and other areas where service availability has changed). A total of 58,889 addresses previously would have been considered served but are now considered unserved. These locations are primarily those that were considered served by unlicensed fixed wireless and are no longer considered served by reliable broadband service. It is notable that many of the addresses in this category are in the area surrounding Albuquerque and Santa Fe. Although these areas are less built-up than the cities themselves, the addresses are still relatively highly clustered. Therefore, it can be estimated that the added unserved areas contain both clustered addresses and widely spread-out addresses—and may not markedly change the breakdown of unserved locations between those two types of address densities.[15]

[12] The number of unserved locations is based on an analysis of state, ISP, and federal data. About 75,000 new addresses are also identified in the 2022 data.
[13] Homes and businesses.
[14] Including locations with unlicensed fixed wireless.
[15] A more detailed evaluation will require a GIS analysis of densities and routes requiring construction, which is beyond the scope of this report.

Figure 4 depicts the areas that have become served by reliable broadband technology since 2020—a total of 60,028 addresses since. These locations now have fiber service or other wireline or licensed fixed wireless service providing speeds of 25/3 or more.
The new served areas are distributed throughout the State, mostly in and around small cities and towns. We note that Figure 4 likely overstates the added service area, because it displays full census blocks and, as discussed, a block is considered fully served in the EDAC map if one or more addresses are served, even if the rest of the block is unserved or empty.

The providers that have added service are shown in Table 3 in the Appendix. While many providers have added service, the largest components of the added service are the upgraded DSL service provided by Lumen, fiber-to-the-premises constructed by ENMR, and cable broadband provided by TDS.

Figure 2: Unserved areas – EDAC dataset 2020

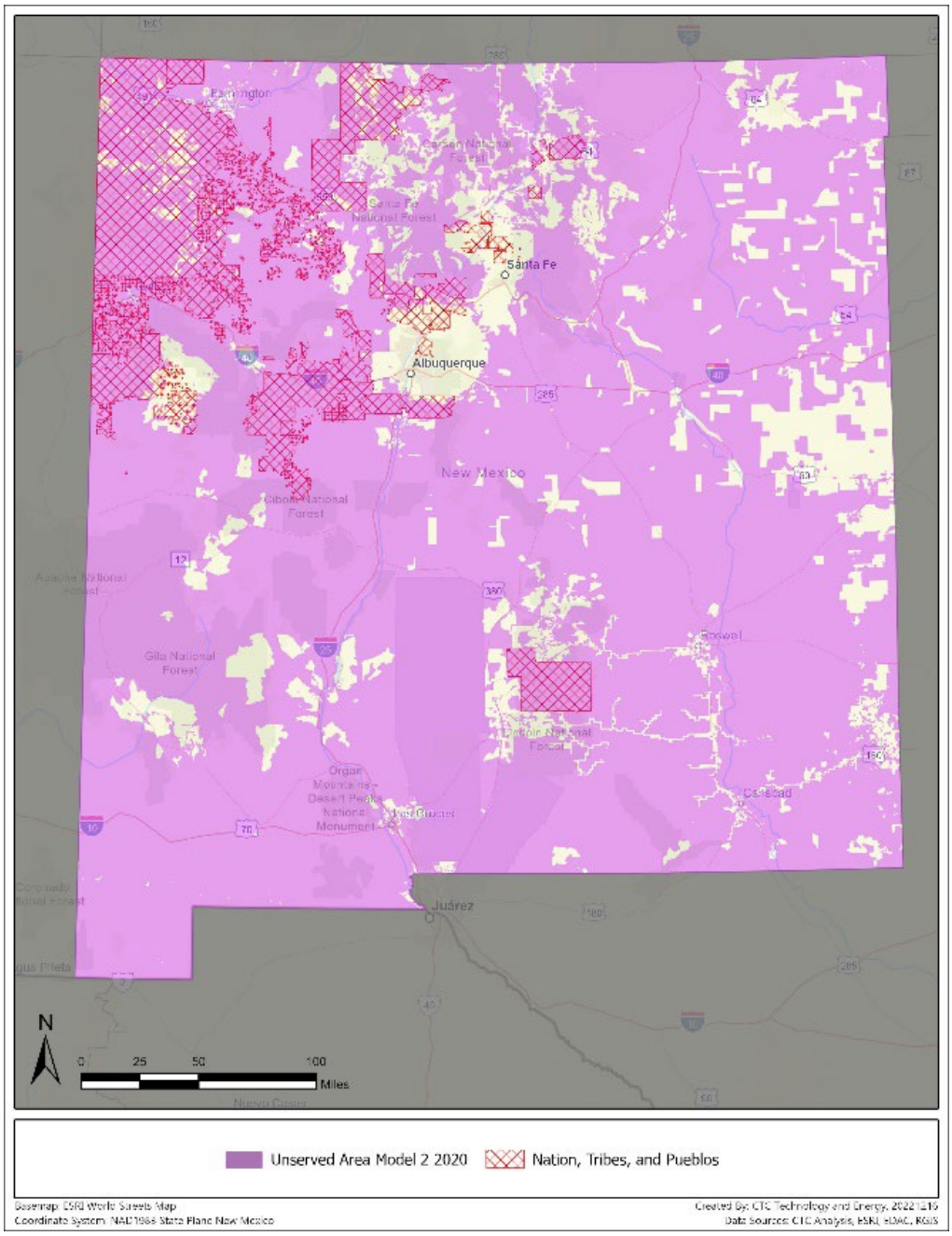


Figure 3: Unserved area – EDAC dataset 2022

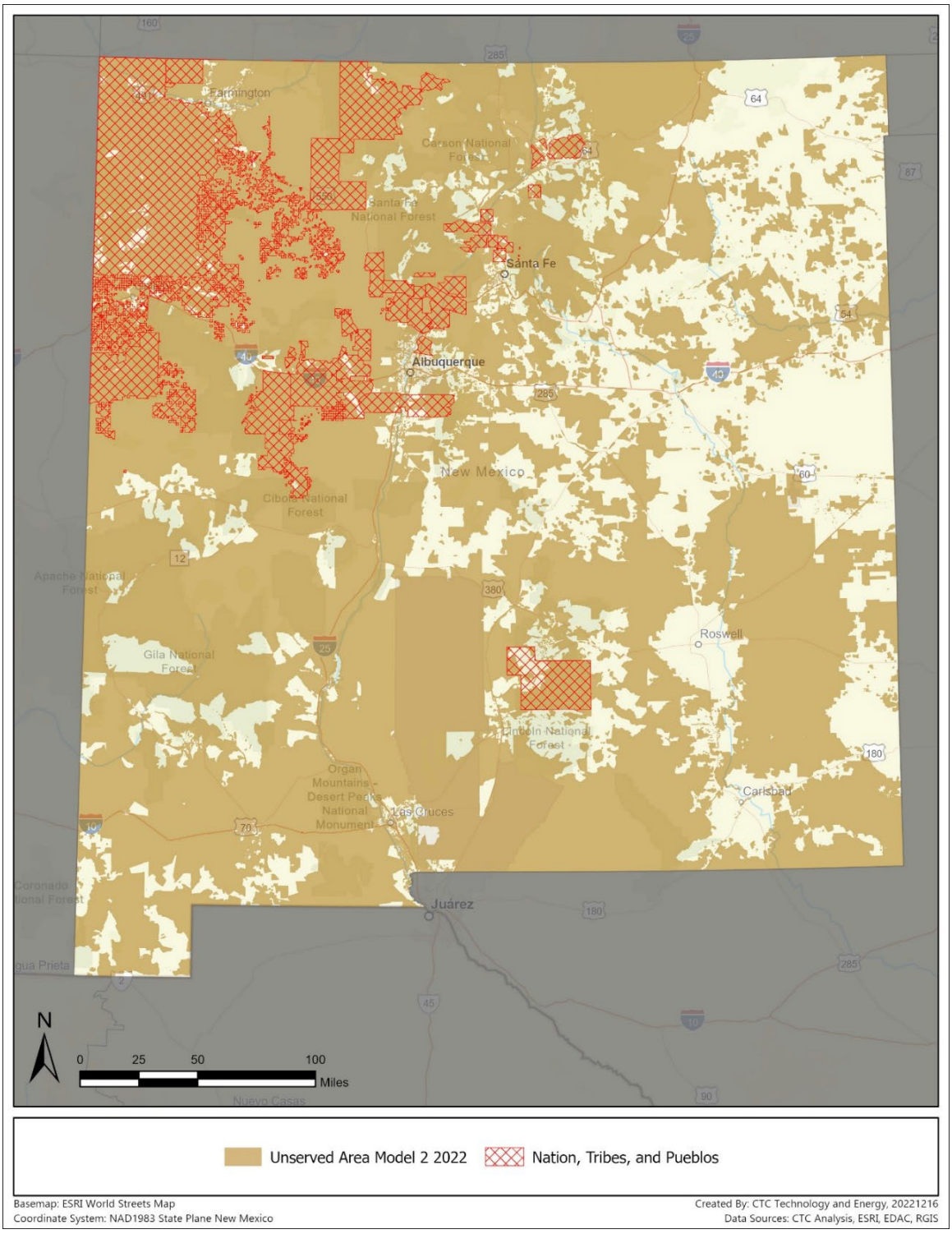


Figure 4: Areas no longer considered served – EDAC dataset 2022

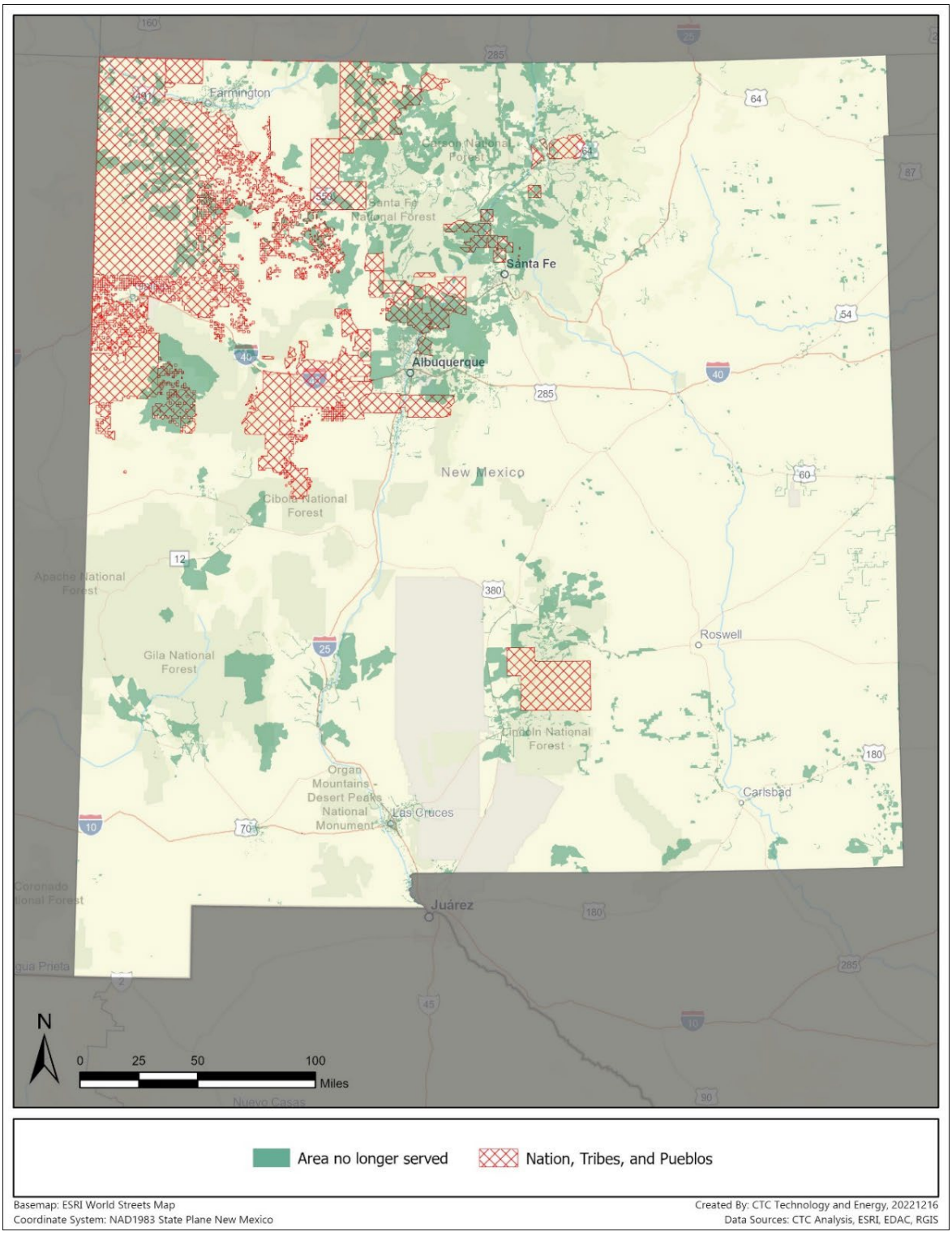
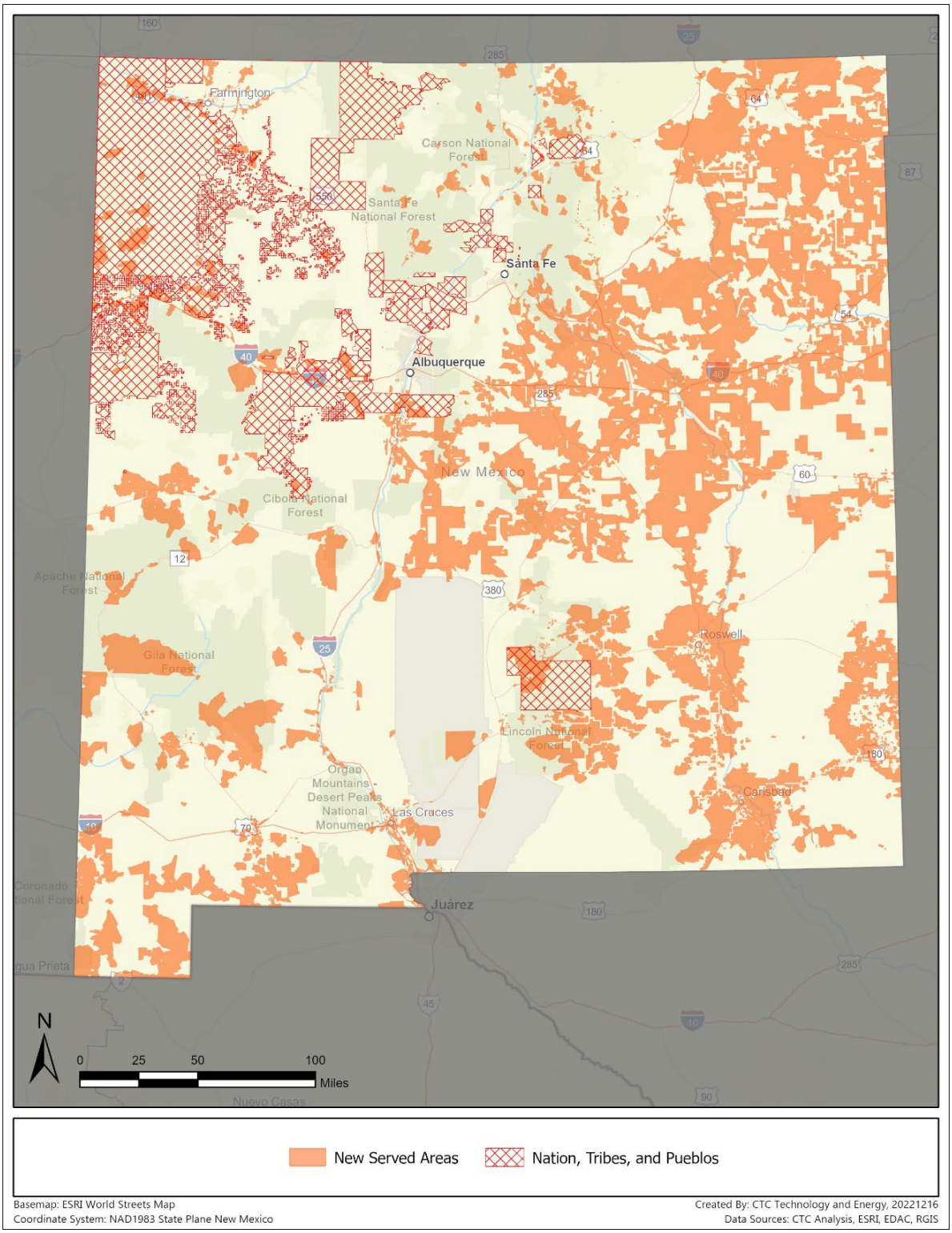


Figure 5: Served areas added from EDAC (2020 to 2022)



5.2 Estimated Capital Cost to Connect Unserved Locations

CTC also analyzed how the estimated cost of constructing broadband to unserved New Mexicans might have changed, relative to the 2020 estimate. Based on this review of the EDAC maps, the main difference is due to the increases of unit costs for labor and materials, which increased the cost by approximately 30 percent. These changes are due to supply chain issues caused by the Covid-19 pandemic, inflation, and increased demand with the new explosion of broadband construction. Based on an analysis of unit pricing from bids in comparable projects between the two time periods, taking into account both fiber construction and electronics, the aggregate increase in cost per address is approximately 30 percent.

This section presents an estimate of the cost to construct broadband infrastructure to connect the unserved locations in New Mexico as compared to the cost estimates developed in 2020. Supply chain issues, inflation, and other factors have significantly increased the cost of fiber network construction in the past few years.

➢ **Cost analysis methodology**

Recognizing the impact of housing density on network deployment costs, the following assumptions were made regarding clustered and low-density premises in the 2020 report. These terms are used similarly in this analysis and are reflected in the cost ranges below.

- **Clustered**: Homes located near each other. Approximately half of the unserved premises are relatively closely clustered.
- **Low-density**: Widely spread-out homes and businesses. For the most widely spread-out homes and businesses in New Mexico (i.e., in areas where there are no existing towers for mounting fixed wireless antennas), density is often so low that a fixed tower might only serve one or a few premises with broadband speeds—meaning that the cost of fixed wireless would then approach the usually higher cost of fiber.
- **Low-end costs:** Assumes an incumbent provider constructs fiber-to-the-premises (FTTP)—leveraging its existing assets such as fiber, conduit, and aerial pole attachments to reduce the amount of new construction required.
- **High-end costs:** Assumes an entity, most likely a new provider, constructs a wholly new FTTP network entirely underground.

The 2020 Broadband Strategic Plan estimated the total cost for outside plant construction, core electronics, and subscriber costs for the clustered unserved premises (Table 4). These costs and the methodology are provided in more granular detail in Appendix A.

Table 3: Estimated capital costs for component categories in clustered areas (2020)

Component	Low-End Cost (2020)	High-End Cost (2020)
Outside Plant Construction	$190 million	$475 million
Core Electronics	$15 million	$15 million
Subscriber Costs (CPE and Drop)	$31 million	$86 million
Total	**$236 million**	**$576 million**

To update these costs, the project team analyzed the costs for various types of material (e.g., conduit, fiber, handholes, and electronics) and labor in both 2020 and 2022 and compared how much they have changed. Pricing for material and labor have seen varying levels of change since the distribution of the 2020 Broadband Strategic Plan, with some types of material seeing price increases as high as 300 percent. The team then categorized the material and labor pricing into the same three component types from the 2020 cost estimate: outside plant construction, core electronics, and subscriber costs (consisting of customer premises equipment and subscriber drops). These were then used to develop an average percentage change in costs for each of the three cost components. The team calculated a mean percentage change for each of the categories, based on the component changes weighted by the cost and number of each component. The average percentage changes are in Table 5:

Table 4: Percent change in components of broadband capital cost due to changes in unit costs

Category	Percent Change
Fiber plant labor and materials	30%
Core electronics	33%
Subscriber drop labor and materials	19%

➢ **Results**

We estimate that the per location cost to build broadband connectivity to unserved locations across the State has increased approximately 28 percent since 2020. Because the unserved locations are still a mixture of clustered locations (best suited for fiber) and low-density locations (best suited for wireless), and the number of unserved addresses is within 1 percent of the 2020 number, we extrapolate the 2020 costs as follows. Table 6 shows the 2020 and 2022 estimated total costs for serving clustered and low-density premises.

Table 5: Estimated total capital cost to connect unserved locations (2020 – 2022)

Density	Low-End Cost		High-End Cost		Percent Increase 2020 – 2022
	2020	2022	2020	2022	
Fiber or cable to clustered premises	$236 million	$302 million	$576 million	$738 million	28%
Fiber or cable to low-density premises	$1.5 billion	$1.9 billion	$3.7 billion	$4.7 billion	
Total	$1.7 billion	$2.2 billion	$4.3 billion	$5.5 billion	

6.0 State of Broadband Adoption and Meaningful Usage

6.1 Overview

The digital divide encompasses not just access to Internet services (and the infrastructure and technologies that provide them) but also the adoption and meaningful use of those services. In that light, evaluating broadband adoption patterns among residents who have access to reliable, high-speed broadband options is critical for articulating a data-driven policy framework for the State.

Several preconditions are necessary for individuals to make meaningful use of the Internet, including:

1. Access to affordable service
2. Ownership of a sufficient and appropriate device (such as a laptop or large-screen tablet)
3. Working knowledge of how to use the Internet (also known as "digital literacy")
4. Basic understanding of online privacy and security issues

Within each of the preconditions for meaningful use, there exists a diverse array of challenges to overcome. This is particularly true for communities that have few reliable service offerings or in which a large portion of residents are not able to afford service (i.e., barriers chiefly related to infrastructure and affordability). But residents who have access and can afford service might face other challenges that have the same effect of preventing their adoption of broadband. For example, a community where the vast majority of residents have access to Internet service but lack basic digital skills (which is frequently caused by a lack of education or prior exposure) would also likely have low broadband adoption rates.

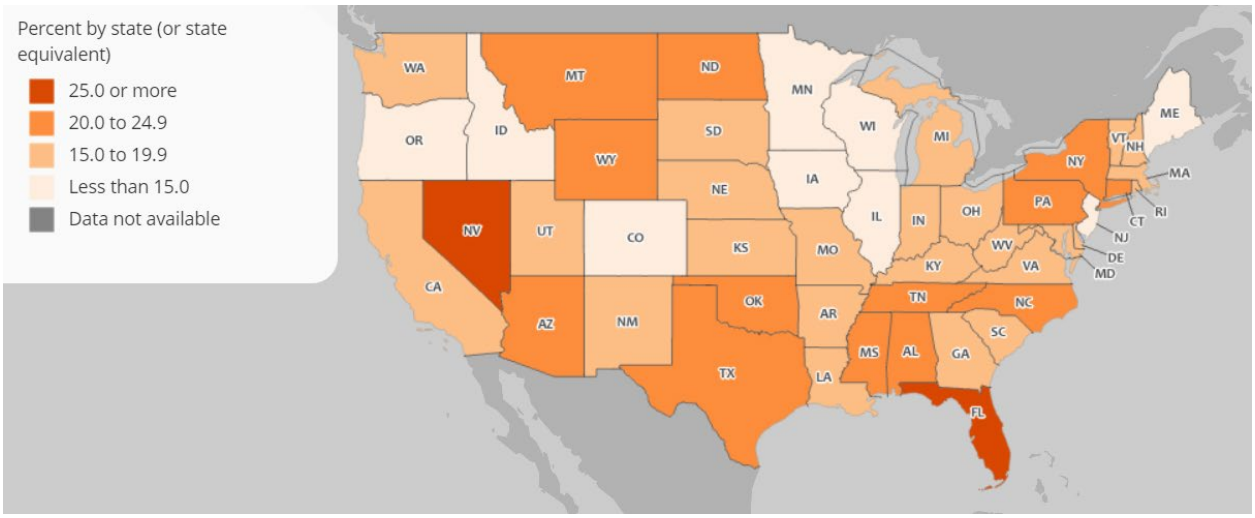
Considering how each of these issues intersects with demographic groups further illustrates the many facets of the evaluation. For example, some older adults might have the financial means to purchase a computer but might lack the confidence in their ability to effectively use the device. Similarly, a disabled adult may be able to afford broadband service but lack digital literacy—or the Internet content they seek may not be available in an accessible format. As a result, a full and rigorous investigation of demographic groups' relationships to the necessary preconditions for meaningful adoption and use is necessary to derive actionable and equitable insights from a digital equity study.

The following sections make an initial assessment of the extent to which New Mexican residents are adopting and meaningfully using the Internet. This discussion also serves as an initial framework and baseline for tracking broadband adoption in the future. A robust and precise set of metrics will be developed in forthcoming State efforts, as the State is engaged in developing a Digital Equity Plan that will establish measurable objectives related to broadband adoption. OBAE plans extensive community engagement and data collection in 2023.

6.2 Internet Service Adoption Rates

An estimated 19.5 percent of New Mexico residents report that they do not use the Internet. This level is in line with national averages[16] compares favorably to New Mexico's neighbors, Arizona and Texas, which report 20.1 percent and 23.0 percent, respectively (Figure 1).

Figure 6: Percentage of population 3 years and older who do not use the Internet[17]



Source: Digital Equity Act Population Viewer, based on 2021 NTIA/Census Current Population Survey - (Internet Use Survey)

There is wide variability in Internet adoption rates within the State, both in terms of all Internet subscriptions (Figure 2) and wireline Internet subscriptions (Figure 3). There is a clear lack of adoption specifically along the western edge of the State. The rates of wireline non-adoption are particularly notable in McKinley and Catron counties. Outside of the western edge, there also is a high degree of non-adoption in Mora County (75 percent). In contrast, Los Alamos County stands out in that a very small percentage of residents (16 percent) do not subscribe to wireline Internet service (Figure 4).

[16] Digital Act Population Viewer, https://arcg.is/8vGLv (accessed December 21, 2022).
[17] Ibid.

Figure 7: Map of New Mexico households without any Internet subscription

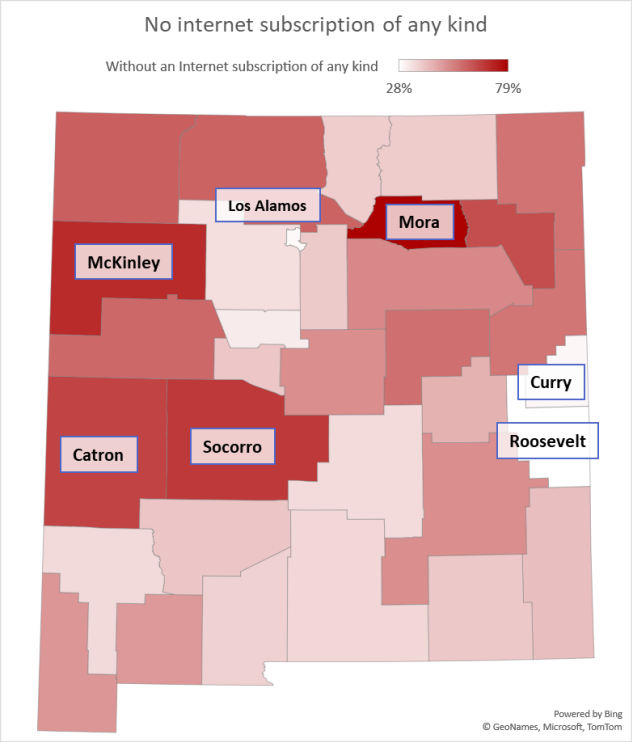


Figure 8: Map of New Mexico households without wireline Internet subscriptions

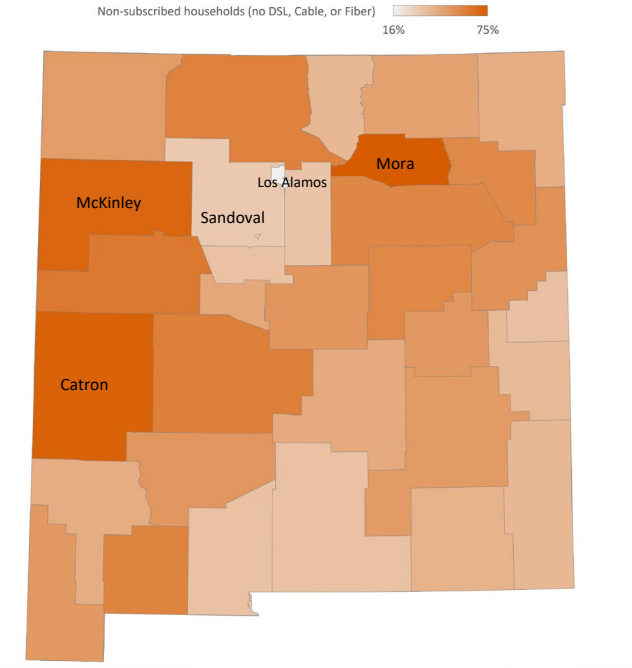
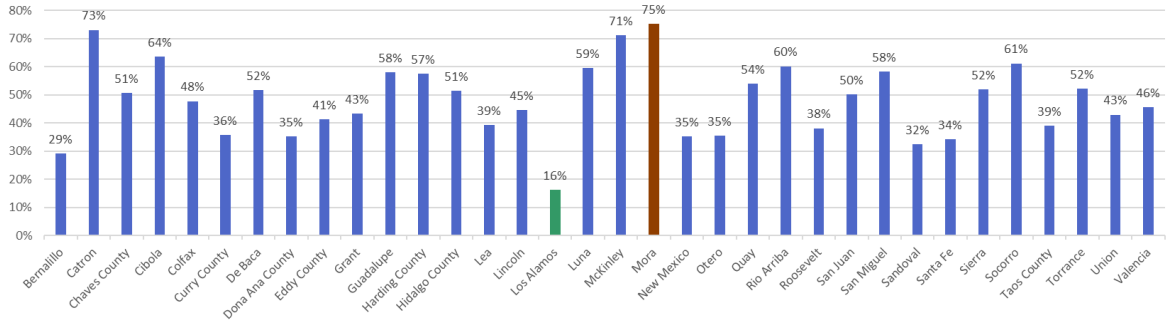


Figure 9: New Mexico households without wireline Internet subscriptions (by County)[18]



6.3 Correlation with Income

Across New Mexico, Internet subscriptions are heavily correlated with household incomes. Only about 40 percent of households making less than $75,000 annually have a wireline Internet subscription—compared to roughly 80 percent of households with higher incomes.[19]

These rates become even lower for very-low-income households, both for wireline Internet subscriptions (Figure 5) and all Internet subscriptions (Figure 6). The lowest of those rates can be found in that western block. Additionally, the gap between Internet subscription rates among low-income and middle-income households varies across the State (Figure 7); the difference is largest in Catron County (Figure 8).

Figure 10: Lowest-income households without a wireline Internet subscription

[18] American Community Survey, 5-year estimates (2016-2021).
[19] ACS 2021 one-year estimate.

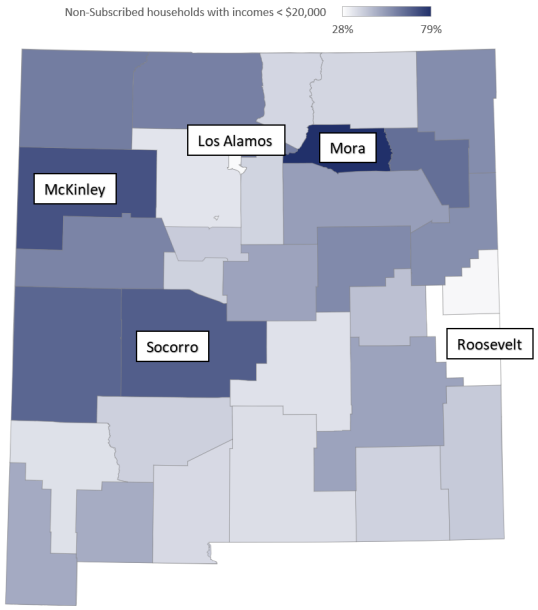


Figure 11: Lowest-income households without Internet subscriptions of any kind

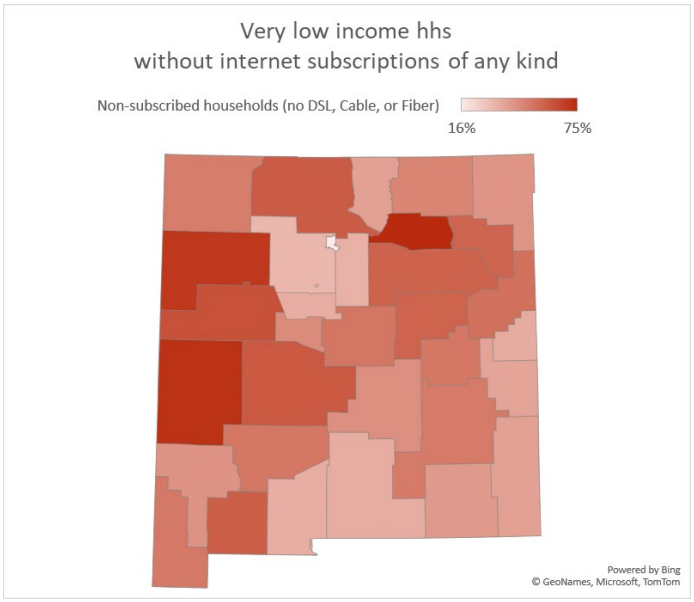


Figure 12: Map of subscription inequality between lowest and highest-income households

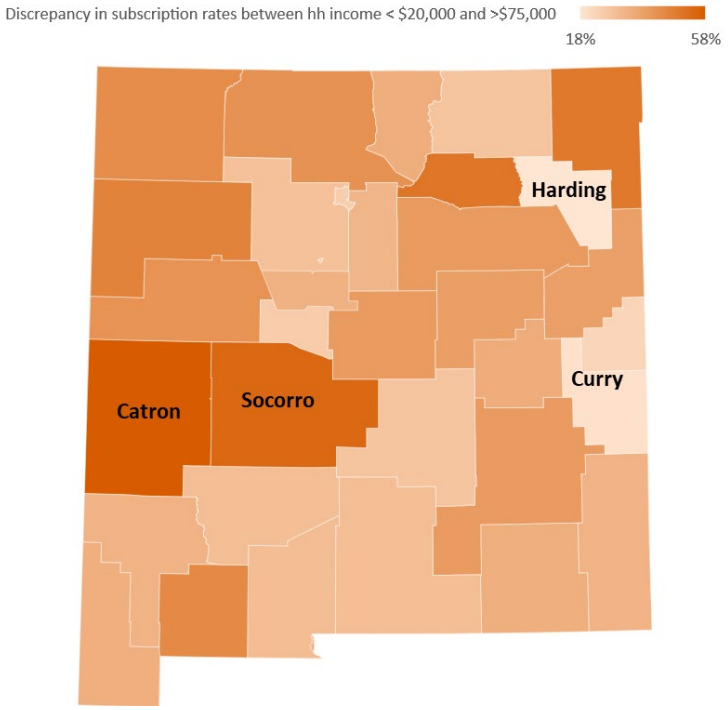
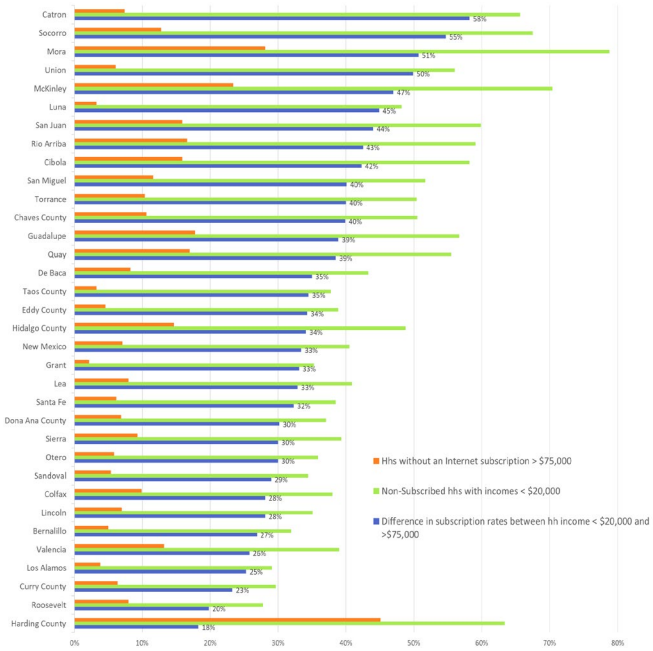


Figure 13: Comparison of subscription rates between lowest and highest income households

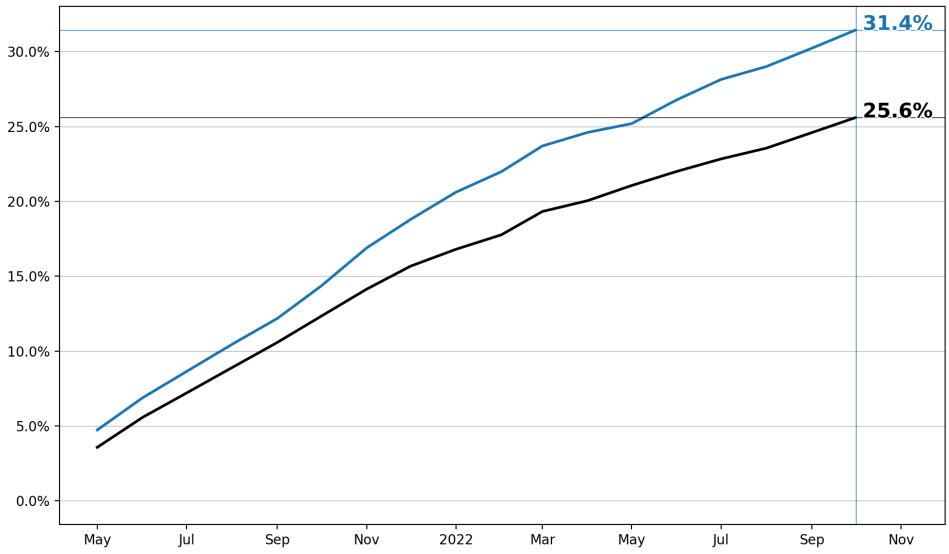


6.4 Affordable Connectivity Program Enrollment

The federal Affordable Connectivity Program (ACP), which provides a monthly subsidy toward home Internet subscriptions, presents an opportunity for many low-income residents to purchase a quality broadband subscription more affordably. However, the ACP is known to be chronically undersubscribed. Understanding the existing enrollment patterns in the State can help to describe the way income interacts with subscription rates.

As of November 1, 2022, the FCC reports that 142,156 New Mexican households (31 percent) are receiving the ACP subsidy for Internet services.[20] While this figure is substantial, it is important to contextualize that an estimated 450,000 households (54 percent of all State households) may be eligible.[21] So, while New Mexico's ACP enrollment rate exceeds the national average (25.6 percent of eligible residents; see Figure 9) and the enrollment rates of neighboring states,[22] substantial additional benefits that could be realized by State residents if enrollment rates were to increase.

Figure 14: ACP enrollment in New Mexico and nationally

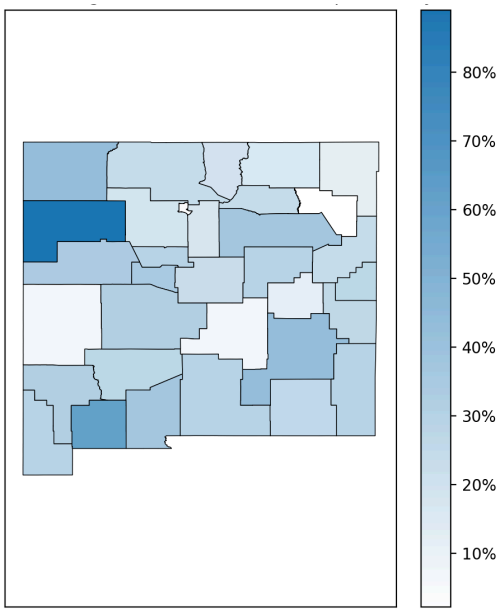


Within the State, enrollment rates vary by county (Figure 10). Perhaps most notable, only seven percent of eligible households have enrolled in Catron County, which has the largest gap in Internet service adoption rates between low- and middle-income households. The high enrollment rate in McKinley County may be due, in part, to the large number of households on Tribal land there; the ACP has additional criteria through

[20] "ACP Enrollment and Claims Tracker," USAC. https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker/.
[21] Estimates are based on 2021 American Community Survey reported data on household income and participation in assistance programs such as the Supplemental Nutrition Assistance Program, Medicaid, Supplemental Security Income, and public assistance income. This estimation does not take into account qualification via Tribal assistance programs, and therefore may underestimate the size of eligible populations throughout the State.
[22] "ACP Enrollment and Claims Tracker," USAC.

which eligibility may be achieved by households on "Qualifying Tribal lands,"[23] which may have lowered barriers to enrollment.

Figure 15: Map of ACP enrollment in New Mexico



The relatively low enrollment rates across the United States are largely ascribed to a lack of knowledge of the program and a lack of accessibility in the sign-up process; many households without Internet may need to travel to an area outside of their home in order to even start the registration process. As a result, many local governments, non-profits, and other invested entities engage in active outreach to candidate populations to make them aware of the program and assist in the sign-up process.

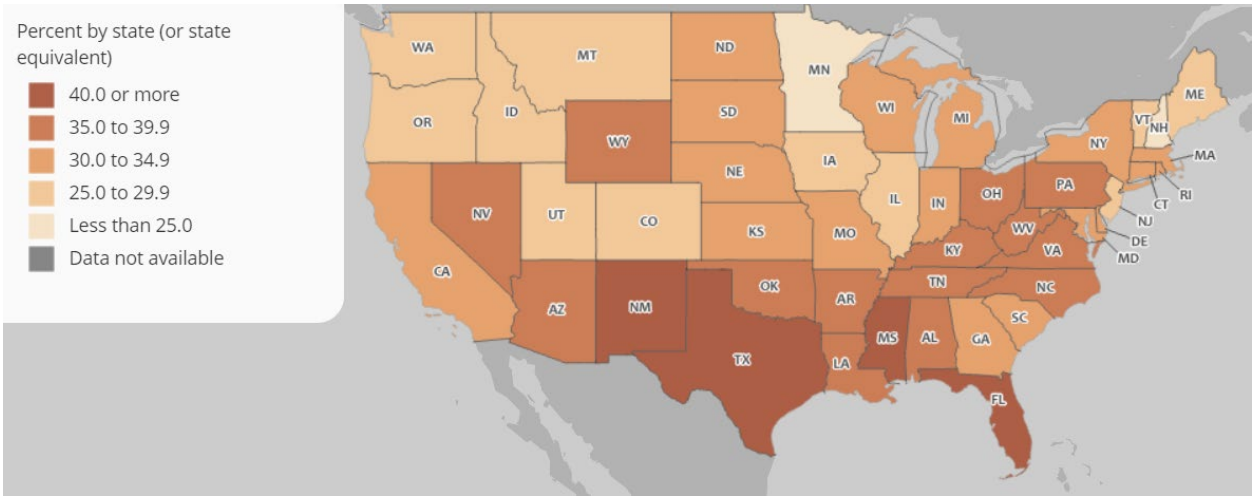
While outreach may increase ACP enrollment in some areas, there will always be a portion of the eligible population who are uninterested or unwilling to participate. This may be the case if a household feels no need to use the Internet, receives satisfactory service from a cellular provider, receives free Internet access through a communal source, or does not trust federal subsidy programs.

6.5 Device Ownership

New Mexico lags behind the national average in desktop and laptop computer ownership. At 40.9 percent, New Mexico has the largest portion of residents who don't use a laptop or desktop computer in the nation.[24] Given that smartphones and tablets are still not as capable as a desktop or laptop (particularly because of their small screens and lack of functionality), and cellular service contracts are often more expensive than home Internet service, this represents a significant barrier for the State in terms of achieving adoption and meaningful use of the Internet.

[23] "ACP: What are Qualifying Tribal Lands?" https://www.affordableconnectivity.gov/do-i-qualify/enhanced-Tribal-benefit/#qualifying-lands.
[24] NTIA. Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=a0013a9dcbb9419e855f563d78e892ef.

Figure 16: Portion of population not using a device[25]



6.6 Digital skills and literacy

The existing data reflect that New Mexico is largely on pace with neighboring states and the nation when it comes to residents' digital skills and literacy. Across a wide variety of online activities, New Mexico residents report a similar level of engagement as compared to residents of other states.

Notably, less than a third of New Mexico's residents report using the Internet to take classes and participate in job training, telecommute to (or remotely) work, or search for a job—suggesting a considerable opportunity for new economic activity if this type of Internet use can be expanded. (New Mexico is not an outlier in this regard; those levels are roughly the same for Americans nationwide.)

Table 6: Comparison of digital activities in New Mexico and other states[26]

Digital activity	NM	Gap from nation	USA	AZ	CO	UT
Uses Email	90%	-2%	92%	92%	95%	96%
Uses Online Financial Services Like Banking, Investing, Paying Bills	76%	2%	74%	79%	83%	83%
Uses Online Social Networks	74%	0%	75%	74%	73%	77%
Shops, Makes Travel Reservations, or Uses Other Consumer Services Online	74%	0%	74%	79%	85%	82%
Participates in Online Video or Voice Calls or Conferencing	65%	-1%	66%	64%	71%	74%
Takes Class or Participates in Job Training Online	30%	4%	26%	25%	33%	36%
Telecommutes Using the Internet	28%	0%	28%	28%	35%	29%
Searches for a Job Online	20%	-1%	21%	20%	22%	20%

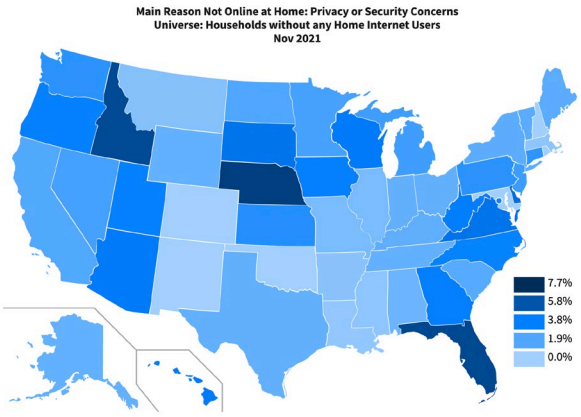
Because the field of digital literacy is relatively young, there is a need for more data collection—specifically surrounding confidence in digital skills and frequency of use. Additionally, data should be collected to understand how digital literacy relates to demographic traits such as income, age, race, and education.

[25] NTIA. Digital Equity Act Population Viewer. https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=a0013a9dcbb9419e855f563d78e892ef.
[26] US Census Bureau. November 2021, Current Population Survey, Computer and Internet Use Supplement.

6.7 Security and privacy

New Mexico lacks accessible data about the effect of online security and privacy issues on broadband adoption in the State. The little available data show that, of households that do not currently subscribe to Internet services, none indicate having made that decision due to concerns about security and privacy (Figure 12). This does not imply that those unsubscribed households had robust knowledge of security and privacy best practice. It also does not alter any understanding of the actual rates by which New Mexico's residents are falling prey to security or privacy vulnerabilities.

Figure 17: Privacy or security concerns as primary reason for lack of broadband adoption[27]



6.8 Next Steps

New Mexico has received funding from the NTIA to develop both a Five-Year Action Plan for broadband infrastructure and a State Digital Equity Plan, both of which will address broadband access and use issues. Over the next year, DoIT will develop a framework for measurable objectives in line with the above analysis and establish parameters for data collection. A Digital Equity grant program will then be designed to address adoption and meaningful-use projects; the grant program will be aligned to DoIT's objectives so the State can track progress in different areas of digital participation.

The State should focus on collecting qualitative and quantitative data to enable design of effective strategies and measurement of changes and progress over time. In particular, the State should plan to conduct a statistically valid residential survey to develop data regarding barriers to meaningful use of broadband by low-income and rural households throughout New Mexico. The survey should include a representative sampling of New Mexico residents as a means of enabling a detailed, statistically meaningful analysis of challenges and needs across the critical areas of digital equity—including access, adoption, devices, technical support, and digital skills and literacy, as well as data privacy and cybersecurity.

[27] US Census Bureau. November 2021, Current Population Survey, Computer and Internet Use Supplement.

7.0 Recent Developments to Advance Broadband: Government & Market Intervention

7.1 Landscape of Federal Awards

A. NTIA Tribal Broadband Connectivity Program

➢ **Overview**

The Department of Commerce's National Telecommunications and Information Administration awarded nine New Mexico Tribal entities with grants totaling over $169 million through the Tribal Broadband Connectivity Program. [28]

Awardee	Amount	Description
Jicarilla Apache Nation Power Authority	$6.9M	• Install middle-mile Dense Wave Division Multiplexing optical transport equipment to connect the Apache Nugget Casino (existing tower location) with JANPA's headquarters using about 80 miles of existing fiber. Install 55 miles of fiber under and above ground to connect 1,051 Native American households, 116 unserved Native American businesses, and 25 Native American community anchor institutions with up to 1 Gbps of reliable and affordable Internet service.
Mescalero Apache Telecom	$43.9M	• Construct new middle mile fiber optic transport to Points of Presence (POP) at El Paso, TX, to enable connection to the Texas Lone Star Network. Provide reliable, affordable Internet access (up to 1 Gbps) to 835 unserved Native American households, 336 businesses, and 29 community anchor institutions. Add 14 towers to the seven existing ones to deploy 2.5 GHz spectrum service, provide cellular services, and increase FirstNet public safety network access.
Santa Fe Indian School (SFIS)	$57.3M	• The Pueblo Education Network proposes constructing 336 miles of new fiber optic infrastructure for 19 Pueblos, Navajo and Apache Tribes of New Mexico, Zuni Tribe, Pueblo of Acoma, Pueblo of Isleta, Pueblo of Jemez, Pueblo of Santo Domingo, and the Pueblo of Zia. Project enables Tribal members, businesses, Tribal government entities, and anchor institutions to connect to affordable Internet services. Network connects the 700 students in grades seven to 12.
Santo Domingo (Kewa) Pueblo	$12.8M	• The project proposes to deploy a 15-mile middle-mile fiber network connecting the Santo Domingo Pueblo lands with the regional Internet exchange located in Albuquerque. The project will also construct six 150' monopole towers to deliver qualifying wireless service to Tribal members living in outlying areas and adjacent communities and retrofit two existing communications

[28] https://www.ntia.doc.gov/press-release/2022/biden-administration-awards-more-146-million-expand-high-speed-Internet-access

		towers with the necessary equipment to provide qualifying wireless service to Tribal households in the Pueblo Plaza area.
Pueblo of Isleta	$26.0M	• The project proposes to install fiber directly connecting 1,526 unserved Native American households, 54 community anchor institutions, and 10 businesses with fiber-to-the-home and/or fixed wireless to the home 25 Mbps/3Mbps service
Pueblo of Zia	$4.7M	• The project proposes to install fiber to directly connect 228 unserved Native American households and 13 unserved community anchor institutions with qualifying broadband service with up to 1Gbps symmetrical speeds.
Pueblo of San Ildefonso	$4.9M	• The project proposes to install fiber and fixed wireless to directly connect 255 unserved Native American households with qualifying broadband service with up to 1000 Mbps symmetrical speeds
Picuris Pueblo	$3.7M	• Installs fiber directly connecting 79 unserved Native American households, 15 Tribal offices, two Tribal businesses, and three community anchor institutions with qualifying broadband service with up to 1Gbps symmetrical speeds.
Pueblo of Santa Clara	$9.1M	• Installs fiber directly connecting 600 unserved Native American households with fiber to the home service of 1 Gbps symmetrical and 50/10 Mbps wireless service.

B. RUS ReConnect Program

Overview

RUS awarded several New Mexican ISP's funding from the ReConnect Program.[29] The ReConnect Program offers loans, grants, and loan-grant combinations to Eligible Organizations to increase broadband availability in areas of rural America that currently do not have sufficient access to broadband. The expansion of broadband services and infrastructure will fuel long-term rural economic development and opportunities in rural America. Funding can be used for projects that are financially sustainable and cash flow positive. The projects can be both terrestrial and fixed wireless.

Awardee	Amount	Description
Continental Divide Electric Cooperative, Inc	$3.68M Grant	• This fiber-to-the-premise network will connect 606 people (249 households), eight businesses, 34 farms and two public schools to high-speed Internet in Cibola and McKinley counties. Project spans 115 square miles. Continental will make high-speed Internet affordable by participating in the Federal Communications Commission's Emergency Broadband Benefit and Affordable Connectivity Plans. This project will serve the Laguna Pueblo, the Acoma Pueblo, and the Acoma Off-Reservation Trust Land Tribal entities as well as socially vulnerable communities in Cibola and McKinley counties.

[29] https://www.usda.gov/reconnect/round-three-awardees

E.N.M.R. Telephone Cooperative	$14.80M Grant	• This fiber-to-the-premises (FTTP) network will connect people, businesses and farms to high-speed Internet in Chaves, Colfax, De Baca, Guadalupe, Harding, Lincoln, San Miguel, Socorro, Torrance and Union counties. Network spans 73 square miles and connects 32 households. E.N.M.R. will make high-speed Internet affordable by offering price plans that match the pricing offered to all other FTTP Cooperative members. All three plans will include free Wi-Fi service. This project will serve socially vulnerable communities in Colfax, De Baca, Guadalupe, San Miguel and Socorro counties.
Kit Carson Electrical Cooperative	$23.6M Grant	• The fiber-to-the-premises (FTTP) will connect 2,693 people, 42 businesses, 34 farms and eight educational facilities to high- speed Internet in Rio Arriba County, New Mexico. Kit Carson Electric Cooperative Inc. will make high-speed Internet affordable by participating in the FCC's Affordable Connectivity and the Lifeline programs.
Leaco Rural Telephone Cooperative Inc.	$24.99M Grant	• The fiber-to-the-premises (FTTP) network will connect 2,970 people and 56 businesses to high-speed Internet in Chaves and Lea counties in New Mexico. Leaco Rural Telephone Cooperative Inc. will make high-speed Internet affordable by implementing the FCC's Affordable Connectivity and Lifeline programs. This project will serve socially vulnerable communities in Chaves County. Project area spans 476 square miles and involves 903 households.
WNM Communications Corporation	$24.93M Grant	• The fiber-to-the-premises (FTTP) network will connect 3,093 people, 30 businesses, five farms and four educational facilities to high- speed Internet in Grant and Luna counties in New Mexico. WNM Communications Corporation will make high-speed Internet affordable by participating in the FCC's Affordable Connectivity and Lifeline programs. This project will serve socially vulnerable communities in Luna County. Project area spans 75.2 square miles and involves 1,176 households.
WNM Communications Corporation	$34.8M Grant	• Project involves a fiber-to-the-premises network to connect 678 people, 10 businesses and a farm to high-speed Internet in Catron, Grant, and Hidalgo counties in New Mexico. Western New Mexico Telephone Company will make high-speed Internet affordable by participating in the FCC's Affordable Connectivity and Lifeline programs.
Tularosa Basin Telephone Company, Inc.	$11.65M Grant	• The fiber-to-the-premises (FTTP) network will connect 466 people, 28 businesses and 16 farms to highspeed Internet in Lincoln and Otero counties. Tularosa will make high-speed Internet affordable by participating in the Federal Communication Commission's Lifeline and Affordable Connectivity Programs. The discounts provided by these programs will enable qualifying households to receive service as low as $4.20 per month. This project will serve the Mescalero Reservation and the socially vulnerable community of Otero County. Project area spans 195.4 square miles and involves 223 households.

C. FCC RDOF Program

Resound Networks was the largest RDOF Phase One recipient in New Mexico – based on both locations and the subsidy amount. Resound had been awarded $55,183,614.20 over 10 years to deploy this network. In December 2022, the FCC provided final clearance for Resound to proceed after a lengthy review of its business model. Resound intends to utilize fiber and fixed wireless technology, using predominantly licensed spectrum, to bring high-speed broadband to more than 18,000 locations throughout 18 counties in New Mexico. Resound will leverage existing carrier-grade network in eastern New Mexico to begin construction on the network expansion in December 2023.

D. NTIA Connecting Minority Communities Program (CMC)

New Mexico Highlands University (NMHU) in Las Vegas, New Mexico received an award from the NTIA Connecting Minority Communities Pilot Program (CMC) for "Building Sustainable Technology and Equity Connected Communities through Youth and Adult Workforce Development: the Acequia and Land Grant Education" (ALGE).

Awardee	Grant Amount	Description
New Mexico Highlands University in Las Vegas, NM	$2.9M	"Building Sustainable Technology and Equity Connected Communities through Youth and Adult Workforce Development: the Acequia and Land Grant Education" (ALGE) will use digital technology to deliver a culturally responsive curriculum to underserved populations in Northern New Mexico (NMM), and culturally sustaining pedagogy to teachers of students in underserved populations. The CMC grants, directed by NTIA's Office of Minority Broadband Initiatives, cover costs such as the purchase of high-speed Internet service and eligible equipment, the hiring and training of information technology personnel, and innovation and workforce development efforts.

7.2 Landscape of State Awards

A. Public Regulation Commission

The NMPRC provides $23.74 million in grants to nine broadband service providers. The Commission Broadband Program focuses on the selection of projects that will prioritize unserved, underserved, and served areas, in that order. The NMPRC works closely with Eligible Telecommunication Companies that register with the PRC to receive funding. Funding can be used for new broadband construction as well as to upgrade existing services underlying equipment or cable.

Awardee	Amount	Description
Baca Valley Telephone Co., Inc.	$74.7K	• Fiber-Optic to the Home/Premise Project 25/3Mbps 21 homes
Commnet Wireless, LLC	$3.31M	• Broadband service utilizing 3G/4G cellular technology and WISP technology. 25/3 Mbps up to 7,700 homes

ENMR	$1.39M	• Fiber-Optic to the Home/Premise Project 25/3Mbps 50 homes
New Mexico Surf	$4.283M	• Broadband service utilizing 3G/4G wireless cellular technology. 200/100 Mbps to 4,830 homes
NTUA Wireless, LLC	$1,467M	• Fiber-Optic /Microwave Distribution Network reaching all Home/Premise Projects 25/3 Mbps to 2,638 homes
Peñasco Valley Telephone Cooperative, Inc. ("PVTC")	$160.7K	• Fiber-Optic Distribution Network that includes aerial fiber cable designed to reach all Home/Premise Projects 25/3 Mbps to 378 homes
Sierra Communications	$3.384M	• Fiber-Optic to the Home/Premise Project 25/3 Mbps to 5,500 homes
Smith Bagley, Inc. (SBI)	$8.126M	• Cellular Technology/Fixed Wireless/Tower Build 25/3Mbps to 5,500 homes
Windstream Communications Southwest	$1.544M	• Fiber-Optic to the Home/Premise Project 1/1 Gbps to 1,200 homes

B. Connect New Mexico Pilot Program (ARPA Capital Projects Fund)

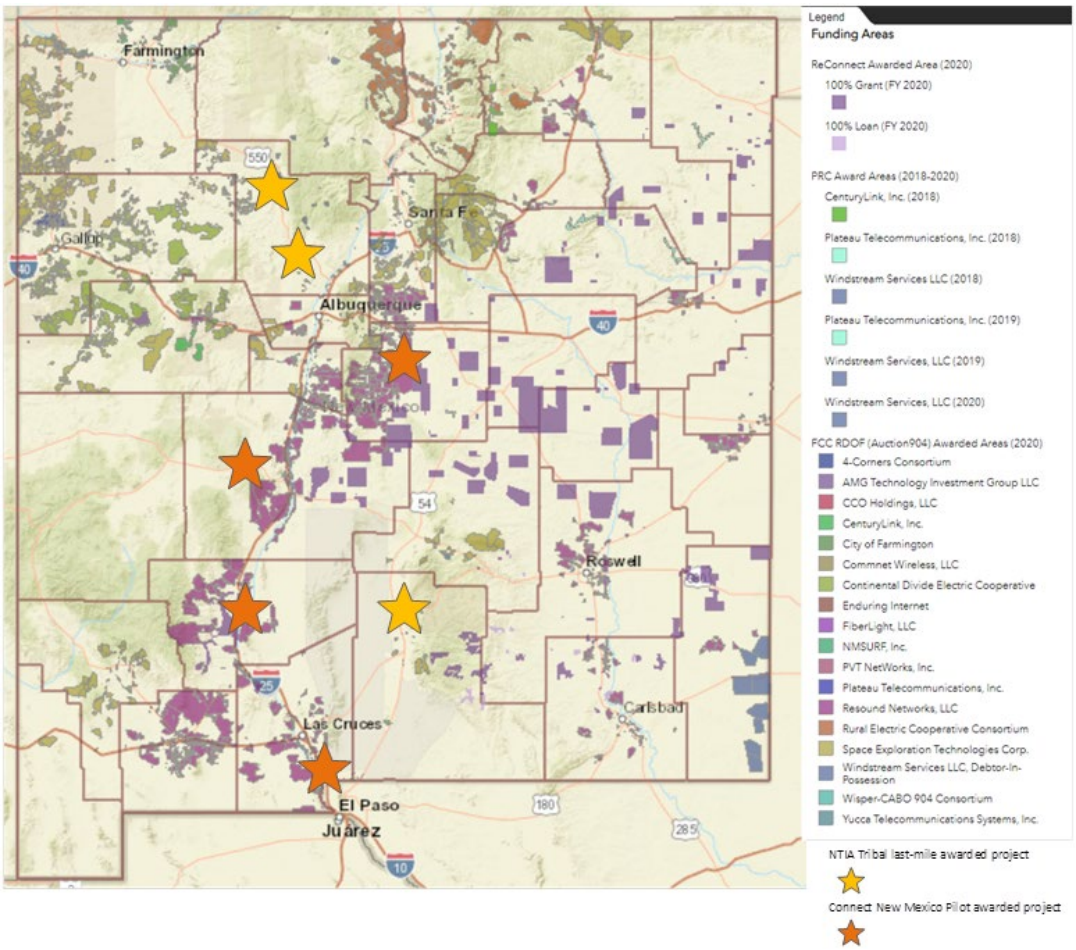
OBAE launched the Connect New Mexico Pilot Program on August 10, 2022 – with the release of the Notice of Funding Opportunity, Application, and Scoring Guide. The program includes three waves of funding with the following deadlines: Wave One (September 23), Wave Two (December 9), and Wave Three (February 27, 2023). The program aims to foster the deployment of broadband access (solutions) across unserved and underserved areas in New Mexico through sustainable, scalable networks and financially viable business plans and serve the comprehensive community with high-quality, reasonably priced solutions.

OBAE received 16 applications for Wave One from a total of 11 applicants. These applications involved a project budget of $151.3 million – comprising $89.9M in grant funding and leveraged with $61.4 million in matching funds. OBAE announced five awards from four applicants that involve a total budget of $64.938 million, of which $37.2 million (57%) is grant funded.

Awardee	Grant Amount	Description
Central New Mexico Electric Cooperative	$6.57M	• Involves an 86-mile fiber network to connect over 2,031 premises (1643 households, 388 businesses, and 28 community institutions) across Estancia and Mountainair. The project constitutes CNMEC's entry into the broadband market. The scalable fiber technology offers symmetrical 1 Gbps to largely unserved customers, all of whom are existing electric customers. Project budget involves $8.76 million – 75% of which is grant funded.
Comcast	$17.095M	• Involves two projects in Dona Ana County that bring fiber to the premise and offer 1 Gbps to over 8,000 largely residential premises, with businesses and community institutions also connected. Project budget involves $34.2 million of which 50% of which is grant funded. Connected communities involve: a) Phase 1: Berino, La Mesa, Chamberino and the

		City of Anthony, Vado; b) Phase 2: Chaparral, La Union, Santa Teresa, Sunland Park.
Socorro Electric Cooperative, Inc. (SEC)	$5.096M	• Involves a 50-mile fiber network to connect approximately 300 premises the community of Magdalena in Socorro County – broken between a middle-mile span and last-mile segment of 31 and 19 miles, respectively. The project constitutes SEC's entry into the broadband market. The scalable fiber technology offers symmetrical 1 Gbps to unserved customers, all of whom are existing electric customers. Project budget involves $7.475 million – 68% of which is grant funded.
SWC Telesolutions (subsidiary of Sacred Wind)	$8.48M	• Involves 49-mile fiber network connecting 2,932 largely residential premises across the communities of Truth or Consequences and Williamsburg in Sierra County – evenly divided between unserved and underserved premises. Project is 100% last-mile, and leverages existing middle-mile. The scalable fiber technology offers symmetrical 1 Gbps. Project budget involves $14.51 million – 58% of which is grant funded.

➢ **Map of Grant Funded Awards (2022)**



7.3 Landscape of Other Awards

A. New Mexico Broadband Collective - New Mexico Broadband Equity Fund

The New Mexico Broadband Collective, made up of a diverse group of funders, Tribal, nonprofit, and government representatives across the State to support a statewide approach to ensuring that broadband services are available to all New Mexicans. Rural communities, Native communities, and other communities of color are most impacted by the lack of broadband connectivity. The Broadband Collective, which was established with leadership and stewardship support from Los Alamos National Laboratory Foundation, New Mexico Community Foundation, and New Mexico Groundworks, recognizes the necessity of a statewide approach to coordinate efforts to ensure all New Mexicans have access to broadband.The Broadband Collective comprises various workgroups focused on: providing funding and technical assistance to support community and regional efforts; ensuring there is equitable and effective use of technology statewide; engaging in advocacy; and coordinating federal and State broadband resources and opportunities. The New Mexico Community Foundation is the home of the New Mexico Broadband Equity Fund for the Broadband Collective. In June 2022, the Broadband Collective granted $355,000 to six organizations and Tribes and awarded an additional $100,000 to three organizations and Tribes in the fall of 2022. [30]

Awardee	Amount	Description
Colores United (Luna County)	$75K	• To increase connectivity by amplifying Wi-Fi at key locations in Columbus, New Mexico, such as the town library, city hall, senior center, Borderlands Café and other locations, over two years. The town of Columbus has a population of 1,600 residents, many of whom do not have access or reliable access to Wi-Fi.
El Valle de Anton Chico Library (San Miguel and Guadalupe County)	$35.5K	• To purchase equipment and supplies that will allow the library to implement various programs, including coding for girls, early literacy and bilingual programs, as well as basic computer applications to support the community.
Jicarilla Apache Nation Power Authority (Rio Arriba and Sandoval County)	$19.7K	• To upgrade the Tribal office's computer systems. The JAN is working to upgrade the fiber optic infrastructure throughout the entire community and the Tribal office computer system upgrades are needed to better integrate the technology for the overall broadband improvements.
Picuris Pueblo (Taos County)	$59.9K	• To develop, install and operate high-speed broadband service that would be 100 percent owned and operated by the Pueblo The Pueblo has been closed since the COVID-19 pandemic began, and many residents, especially Tribal students, do not have access. The Tribal utilities department will take the lead on this two-year project.
Pueblo of Cochiti (Sandoval County)	$40.5K	• To expand the Pueblo's IT department, which is currently comprised of two people; and the completion of fiber to homes of Cochiti Pueblo residents. The Pueblo is home to approximately 1,800 residents, all of whom are served by a single T1 connection.

[30] https://www.newmexicofoundation.org/new-mexico-broadband-collective-fund

Pueblo of Laguna Utility Authority (Cibola County)	$71.5K	• To continue to expand the reach of broadband in the Laguna Pueblo community. The COVID-19 pandemic necessitated a need for network upgrade, as the current system serves 500 Tribal members.
REDINet (Santa Fe and Rio Arriba County)	$44.7K	• For system equipment that will allow the group to have an uninterrupted power supply. REDINet is a high-speed, open access community broadband network located in Northern New Mexico and owned and operated by a consortium of local and Tribal governments. The consortium was set up to bring broadband services at affordable prices to constituencies.
True Kids 1 (Taos County)	$33K	• For a "laptop library" and to train a "Student Squad," comprised of students in Taos County schools on different operating systems and to support reduced and free Internet service for community members. The students will then trains others including senior citizens, families and community members.
Yee Ha'oolniidoo (San Juan and McKinley Counties)	$75K	• To primarily bridge the digital divide in the Navajo communities of Ramah and Sheep Springs. This grant will support a community planning process, broadband needs assessment, and strategic plan.

B. Digital Navigators Award – NDIA

Pueblo of Jemez is a sub-grantee included in NDIA's Digital Navigators Award. Digital navigators at the 18 selected sub-grantee organizations will help thousands of residents to gain much-needed access to the Internet, devices, and digital skills training. "These grants are about more than just funding. By launching the National Digital Navigator Corps, we are extending the digital navigator model to areas of the United States lacking resources," said Angela Siefer, executive director of NDIA. "These digital navigators will open doors to thousands of residents to transform their lives by engaging in online opportunities, including education, workforce, citizen participation, and social activities." NDIA is partnering closely with AMERIND Critical Infrastructure to engage and support Tribal members of the National Digital Navigator Corps. [31]

Awardee	Description
Pueblo of Jemez (Sub-Grantee)	Funding and support will go toward hiring community-based digital navigators alongside programmatic and technical support to further develop NDIA's digital navigator model for rural and Tribal communities.

[31] https://www.digitalinclusion.org/blog/2022/09/07/ndia-awards-18-national-digital-navigator-corps-grants-in-rural-Tribal-areas/

8.0 Office of Broadband Access and Expansion: Overview and 2022 Results

8.1 Background

In 2021, the New Mexico Broadband Access and Expansion Act created the State's Office of Broadband Access and Expansion, established its charge, and set in law various powers and duties of the office. OBAE is administratively attached to the Department of Information Technology, but serves as an independent entity. In addition to submitting an annual report to the legislature articulating the office's approach – the New Mexico Statewide Broadband Plan – and progress toward universal broadband access, OBAE's mandate includes the following.

- Establish standards for quality of service for homes, businesses, and public institutions;
- Create and maintain an official, publicly accessible online New Mexico broadband access map showing broadband availability and quality of service for homes, businesses, and public institutions on a county-by-county basis;
- Create and maintain a repository for broadband data and information in New Mexico on a county-by-county basis, including:
    - the number of homes and businesses that do not have access to broadband service;
    - the number of homes and businesses that have broadband service that falls below the quality of service standards established by the broadband office; and
    - the locations of broadband infrastructure currently owned or projected for construction by the State or local governments on a county-by-county basis;
- Provide broadband-related technical and planning assistance to local governments, public education institutions, and state agencies;
- Identify and communicate relevant federal broadband funding opportunities for local and Tribal governments, public education institutions, and state agencies; and
- Support regional broadband planning and engagement.

8.2 Vision, Mission, and Values

OBAE recognizes its enormous responsibility, and the heavy level of effort to achieve the aforementioned goals and strategic priorities. The Office's leadership and staff have developed the following vision, mission statement, and set of values – based on a collaborative effort and several work sessions.

First the team went through a tutorial on vision, mission, and value setting. The team learned that mission and vision statements are closely related but serve slightly different purposes. In general, a mission statement describes the Office's purpose: the "what" and "how" of OBAE, while the vision statement focuses more on the "why" or the meaning behind OBAE's actions and long-term goals to reach a future state. The biggest difference between mission and vision statements is in the timeframe. A mission statement outlines all the things the office is doing in the present to reach its goals, while a vision statement describes what OBAE is building for the future. OBAE's values are a reflection of the beliefs, philosophies, and principles that guide its operations. They impact the employee experience we deliver as well as the relationship developed with customers, partners, and stakeholders.

As part of the exercise, the team broke into two groups to define a draft of the vision, mission, and values for the Office. After a couple hours of brainstorming, the two groups produced candidate visions, missions and values that were so similar that it was easy to refine and reach consensus. In short, the mission statement

serves as a roadmap of strategic planning to work toward OBAE's vision statement and foundational principles.

Vision	• Achieve bold, affordable broadband solutions for New Mexicans that honor the State's rich heritage and elevate quality of life for all.
Mission	• Passionate leadership to drive bold, equitable, and inclusive broadband solutions
Values	• Bold • Honest • Curious • Innovative • Respectful • Collaborative • Analytically Rigorous

8.3 Key Achievements at OBAE in 2022

The year 2022 constituted many "firsts" for OBAE, including: full year of operations; the leadership of a full-time Director; launching a grant program; hiring a team that can fully support the broad set of mandates provided by the New Mexico Broadband Access and Expansion Act.

OBAE Achievements	
Office Foundation	
Expert Engagement	• OBAE began 2022 with the guidance of expert consultants to help establish the Connect New Mexico Pilot Program and submitted grant and program proposals to the U.S. Department of the Treasury. The office requested and received $123 million.
Leadership Appointment	• Native New Mexican Kelly Schlegel was appointed by Governor Michelle Lujan Grisham as director of the Office of Broadband Access and Expansion (July 2022). She quickly prioritized key initiatives, obtained hiring authority, and engaged in frequent collaboration with the Governor's office to ignite significant momentum toward the goal of universal connectivity for all New Mexicans.
Funding mechanism	• In June, OBAE submitted its letter of intent and initial application for BEAD and digital equity funding. • Director Schlegel spearheaded the submission of the full application for federal BEAD and digital equity program support, in accordance with federal request deadlines. • OBAE submitted a state-led application for NTIA Middle Mile Grant program funds, cultivating a vision for robust statewide middle mile infrastructure, and submitted its final grant and program plans for Treasury's Capital Projects Fund. • In December, OBAE secured almost $129 million in federal funding for New Mexico in grant funding to support broadband planning, deployment and digital equity, among other critical broadband initiatives.
Broadband Team	• Director Schlegel prioritized standing up a New Mexico broadband team, hiring a staff of consultants and employees including a deputy director, operations manager and project

	and compliance experts representing over 111 years of broadband and IT experience among them.
Connect New Mexico Council	• OBAE facilitated monthly meetings of the 14 member Connect New Mexico Council, which provides guidance to leadership for broadband policy including digital equity and inclusion, mapping, and engagement. • In the second quarter, the Connect New Mexico Council completed work on the establishment of broadband grant program in administrative rule. • In October, the office collaborated with the council to submit the first in a series of annual updates to the New Mexico Legislature to assess and summarize access to and quality of services across the State.
Education Networks	
Statewide Education Network	• Connecting New Mexico's students for better educational outcomes is a primary obligation of OBAE and through the initiation of a joint powers agreement, the office began the process to assume management of the State Education Network. The network is responsible for technology infrastructure and upgrades to ensure reliable connectivity for students and teachers, K – 12 and beyond.
Connecting Two Dozen Schools	• Planning began in November to connect approximately two dozen schools, with additional phases projected to build out or upgrade higher education nodes for improved access to educational resources.
Higher Education Networks	• OBAE leadership participates in regular weekly and biweekly public education and higher education collaborative meetings to pursue ongoing efforts for uniform connectivity for all New Mexico's schools and students.
Grant Distribution and Fiscal Oversight	
Capital Project Fund	• In the final quarter of 2022, OBAE secured almost $123 million dollars in federal funding for New Mexico to improve and enhance existing Internet coverage as well as deploy broadband resources and infrastructure throughout the State in areas where it is lacking.
Connect New Mexico Pilot Program	• Through a deliberative merit review process, OBAE recently awarded $37.2 million dollars in grant funding to local communities and service providers to connect over 13,000 underserved and unserved residents and businesses in rural New Mexico to critical Internet resources. This pilot program will be instructive to the development of the $80 million Connect New Mexico Fund program.
Tribal Engagement and Funding Opportunities	
Tribal Outreach Specialist	• Forging important relationships with New Mexico Tribes and Pueblos, OBAE hired a Tribal outreach specialist to support Tribal Broadband outreach and engagement.
Tribal Convening	• The inaugural New Mexico Tribal Broadband Convening, the first in a series, was hosted in September 2022, with several additional outreach events since to engage and assess broadband needs among sovereign nations.
Government to Government Summits	• OBAE regularly participated in Government-to-Government Summits to maintain productive partnerships and ensure awareness about opportunities for Tribes and Pueblos.
Outreach and Engagement	
Proactive outreach	• In April, OBAE published a request for information seeking feedback from various stakeholders including public agencies and private providers to assess their needs with regard to middle mile, assets and plans for future investments.
Community Visits	• In the second half of 2022, OBAE leadership and representatives traveled to all regions of the State to engage local communities regarding broadband improvement opportunities. Cities and towns included: Roswell, Jal, Hobbs, Clovis, Taos, Socorro, Las Cruces, Los

	Alamos, Elephant Butte, Magdalena, Truth or Consequences, Isleta, Alcalde, Albuquerque, Gallup.
Broadband Subscription Discounts	• New Mexico has consistently ranked among the top states in the nation for facilitating access for low-income households to acquire affordable Internet services as part of the Affordable Connectivity Program.
Information Sessions and "Office Hours"	• OBAE staff has a myriad of information sessions and "Office Hours" associated with various funding opportunities in order to answer questions and provide technical assistance for grant applicants.
Broadband Mapping	• In a matter of weeks, OBAE staff spearheaded a New Mexico public education effort to ensure accurate broadband maps as part of the Federal Communications Commission mapping challenge. The initiative included paid and organic outreach to hundreds of thousands of New Mexicans and the establishment of a call center to provide technical assistance for submitting a map challenge.

8.4 Organization

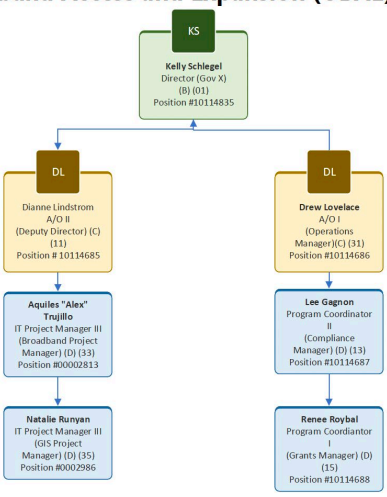
- **Internal Staff**

OBAE established its staff operations this year, moving from contractors and borrowed FTE from the Department of Information Technology, to an in-house staff of dedicated employees in November. Director Schlegel has an MBA and ended a distinguished forty-year career with the Boeing Company as an Executive Program Director. Deputy Director Dianne Lindstrom previously worked to improve the State Education Network for the Public Schools Facilities Authority and is an Electrical Engineer and Project Manager by trade. Drew Lovelace rounds out OBAE's internal leadership. He previously served at the State Personnel Office and Department of Transportation as a Project Manager. Drew holds an MBA and a Society for Human Resources Management (SHRM) Senior Certified Professional (SCP) certification.

- **Current Staffing Model**

In addition to the leadership, the Office has three full time employees and shares one employee with the DoIT. Alex Trujillo is a Broadband Project Manager, Lee Gagnon is a Compliance Officer, and Renee Roybal is a Grants Manager. Natalie Runyan is the State's Geospatial Information Officer (GIO), and has been detailed to both OBAE and DoIT.

Office of Broadband Access and Expansion (OBAE) (9800000000)



➢ Special Advisor from State Government

Ovidiu Viorica has 25 years of telecommunications and infrastructure construction experience and has more than 8 years' experience in all aspects of broadband deployment. He serves as the Lead Program Manager for the Statewide Education Network and liaison to the Pueblo Education Network (PEN) in the Public School Facility Authority, responsible for broadband connectivity for New Mexico's 840 public schools. His vast broadband knowledge earned him a seat as a representative on the Connect New Mexico Council leading the Permits, Rights of Way and Pole Attachments working group (PROP). He also ensures that federal e-rate funding is appropriately leveraged by each school to help establish the broadband infrastructure. As part of the Joint Powers Agreement between OBAE and PSFA, Ovidiu is a de facto internal advisor on Broadband to OBAE, especially middle and last mile deployment, and he is the advisor to the Broadband Director on Network Architecture and leveraging the SEN and PEN as a key backbone to the State's Middle Mile.

➢ Expert Advisors and Consultants

The Office also has several consultants.

- Matt Schmit has served as Senior Advisor to the Governor, and previously served as Interim Director before Ms. Schlegel was appointed. His efforts have been instrumental toward establishing OBAE, defining near-term priorities and strategies, and meeting several federal deadlines to obtain funding for current programs. He played a key role in establishing the Connect New Mexico Pilot Program.
- Sandeep Taxali serves as Program Advisor. He brings a 23-year career in the telecom sector across multiple technologies (fiber, wireless and satellite) and organizations (e.g., service providers, federal government with the FCC and NTIA, and the United Nations). He has 12 years of experience in developing and managing federal, State, and international broadband infrastructure grant programs. He helped design the Connect New Mexico Pilot Program, formulates strategic priorities and programs, and spearheads several initiatives, including this Three-Year Broadband Plan and the State's application to NTIA for the Middle Mile Broadband Infrastructure Program.

- Essam El-Beik serves as an Advisor on middle-mile strategy and programs, and brings State experience in designing and operating statewide education and middle-mile networks. He contributed to the State's application to NTIA for the Middle Mile Broadband Infrastructure Program, and led the RFI process and review of comments to help develop priority routes.
- Kim Kruzel serves as organizational and operational strategist, and applies expertise she garnered as the result of a 30+ years career with the U.S. Navy to help OBAE effectively and efficiently execute its mission.
- CTC Technology and Energy provide engineering, technical, and economic advisory services to OBAE. CTC developed the 2020 Broadband Strategic Plan and Rural Broadband Assessment, and provided the analysis in this Three Year Broadband Plan for the degree of unserved/underserved locations and capital budget analysis.
- Finley Engineering has also provided technical, strategic, and federal policy advisory services. Finley helped the State identify priority middle-mile routes, associated cost analysis, and PPP strategies for a statewide middle-mile network. Finley also helped OBAE prepare the NTIA application for the Middle-Mile Grant Program.

OBAE works with a broadband team of New Mexico-based consultants and organizations that bring deep community relationships and decades of experience to the State's broadband initiatives.

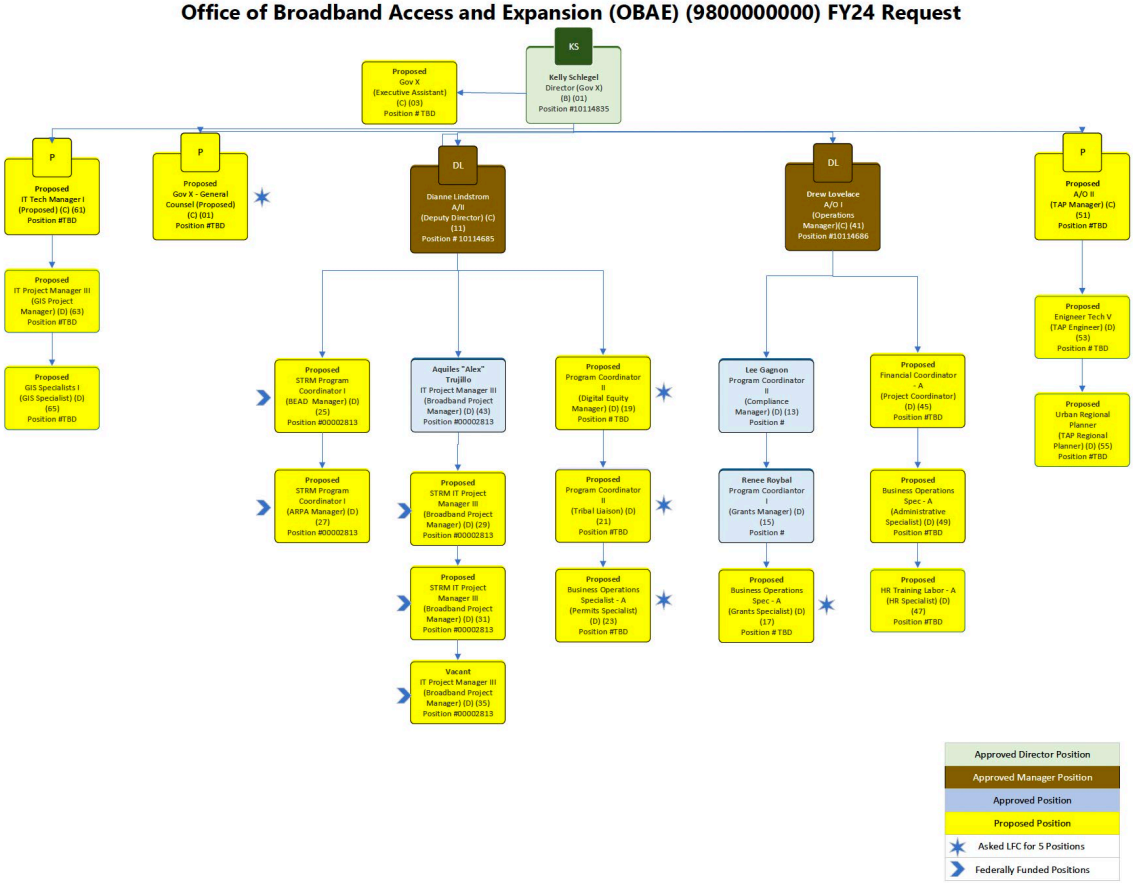
- Jennifer Nevarez is a nonprofit leader, credentialed educator, and regional driver for improving Tech access education, employment, and enterprise development in New Mexico. She brings more than 25 years of professional experience in community-serving program development, education, and coalition-building to the New Mexico Broadband and Digital Equity planning process and to support the extensive stakeholder engagement and coordinated community action needed to identify and address local broadband challenges with creative and collective solutions.
- Stephine "Steph" Poston, is the owner of a Native American, woman-owned, full-service communications firm, with nearly 30 years of experience executing highly effective community engagement and capacity-building initiatives for and with Tribal communities.
- Kitty Clemens is the owner of a consultancy based in Silver City, which supports clients in the areas of community and economic development, destination marketing, public engagement, entitlement of large-scale public works projects, and sustainable destination stewardship. She has more than 20 years' experience primarily serving rural towns and villages in New Mexico, Colorado, and Montana.

- **Required Staffing Model**

The Office has identified key growth areas to meet its deliverables, Statutory requirements, and strategic goals. During the budgeting process, OBAE initially requested five positions in addition to its current 6.5 FTE. During this past Fall, leadership recognized meeting its mission would necessitate significant increases in staff to meet its mission in FY24 and execute the initiatives defined in this Broadband Plan.

OBAE made an additional request through the Governor's budget for 14.5 more full time positions (FTEs). Please note that the 19.5 positions included the previously asked for five positions. OBAE also seeks to create five federally funded positions to manage the projects associated with the ARPA, BEAD, DE, and MM projects. To meet the Office's obligations, OBAE envisions five departments. In total OBAE seeks to have a total of 26 FTEs in FY24 – 21 FTEs funded by the general fund and five FTEs supported with federal funding.

Office of Broadband Access and Expansion (OBAE) (9800000000) FY24 Request



9.0 Broadband Availability: Key Priorities, Initiatives and Strategies

9.1 Strategic Priority: Grant Funding to Enable Broadband Deployment

Overview: A key obstacle preventing the deployment of high-speed, reliable broadband through terrestrial-based networks – especially in rural communities, involves the lack of a financially viable business case funded through private capital. The challenges include the high costs of network deployment and operations and the low population densities that limit the revenue opportunity and spread these costs across fewer customers. Grant funding is required to offset this financial gap.

OBAE's focus for 2023 involves three major initiatives. First, OBAE aims to complete the selection of all awards for the Connect New Mexico Pilot Program. Second, it aims to launch and complete funding for the Connect New Mexico Fund. Third, it aims to develop the Five-year Action Plan for the BEAD program.

9.1A	**Connect New Mexico Pilot Program: Finalization of Awards and Launch Post-Award Monitoring**
Overview	
Description	• This program allocates $123M in grant funds to foster broadband availability across unserved and underserved areas (areas lacking 100/20 Mbps through wireline). • The funds are granted by the Department of Treasury through the American Rescue Plan Act (ARPA) of 2021, Coronavirus Capital Projects Fund, and authorized by New Mexico House Bill 2. Program materials can be found on the OBAE website. [32] • Networks must deliver 100 Mbps symmetrical speeds and supports low latency to enable real-time, interactive applications. In the event of geographic, topographic, or excessive cost barriers, an applicant may propose at least 100/20Mbps with scalability to 100 Mbps symmetrical. Project involves last-mile networks, and complementary facilities– e.g., middle-mile, community Wi-Fi networks. • Program involves three waves of funding.
Objectives	• Fund sustainable, scalable networks and financially viable business plans and serve the comprehensive community with high-quality, reasonably priced solutions.
2022 Recap	• Developed program materials and launched program – including NOFO, application, scoring guide. • Received approval from Treasury Department to proceed with program. • Launched Wave One (received 16 applications) and issued five awards amounting to $37.2 million. • Launched Wave Two and received 12 applications.
2023 Action Plan	

Key Strategies	Key Action Items
• Complete all application reviews and finalize awards.	• Select awards for Wave Two and announce awards in February. • Launch Wave Three and announce awards by June/July 2023.
• Develop an internal system to support funds disbursement,	• Launch Grants Management System by March/April 2023.

[32] https://www.doit.nm.gov/programs/broadband/connect-new-mexico-pilot-program/

monitoring, reporting, and communication.	• Develop tools to support awardee usages of system (e.g., guidebook, webinar, FAQs, etc.)
• Closely monitor awardee performance in meeting programmatic and compliance requirements.	• Develop detailed reporting requirements (e.g., quarterly and annual progress performance reports). • Conduct frequent checkpoint calls. • Develop a site visit plan and perform site visit awardees engaging in network deployment. • File required reports with U.S. Department of Treasury.
• Develop and apply lessons learned to future programs.	• Engage in stakeholder outreach for feedback. • Develop and publish report on key findings. • Integrate feedback into the BEAD Initial Proposal.
Implementation	
KPIs	• 100% funds allocated and matched by significant degree of private capital • 100% compliance with Treasury rules by OBAE (Recipient) and awardees (sub-recipient) • Completion of "Lessons Learned" report • Debriefed all applicants who were not selected to receive funding • Quarterly and annual progress performance reports submitted on-time
Critical Success Factors	• Robust pool of applications for Wave Three • External challenges and risks can be mitigated (e.g., supply chain, PROP, etc.)

9.1B	**Launch of the Connect New Mexico Fund**
Overview	
Description	• The "Connect New Mexico Fund" was established in December 2021 by the Connect New Mexico Act from appropriations, gifts, grants and donations. [33] The fund of $70 million can be awarded to local governments, state agencies, public educational institutions, and Tribal governments. • The program's design and rules for the Connect New Mexico Fund will be established in year 2023 – once a formal rulemaking process has been completed and the Connect New Mexico Council approves the program design (e.g., purpose, objectives, eligibility criteria, process to apply for funds, evaluation criteria, etc.). • The Connect New Mexico Act directs the Connect New Mexico Council to evaluate the extent to which a proposal achieves the following factors. - Meets or exceeds the baseline standards established by the FCC; leverages existing infrastructure; complements or coordinates with the statewide broadband plan; leverages regional collaboration; fosters digital inclusion; stimulates in-state economic development, including the creation of jobs and apprenticeships; leverages in-kind or financial support from local agencies or entities, federal assistance funding or federal Coronavirus Aid, Relief, and Economic Security Act, federal Consolidated Appropriations Act, 2021 or federal American Rescue Plan Act of 2021 funding. • OBAE was assigned to adopt the rules which establishes the application procedure; required qualifications for projects; and the purposes for which the grants may be used.

[33] See House Bill 10, December 21, 2021.

Objectives	• Launch and fully allocate the Connect New Mexico Fund to projects that fulfill the Statutory objectives.
2022 Recap	• The focus in 2022 had been on the Connect New Mexico Pilot Program. The lessons learned from this program will be applied to the Connect New Mexico Fund.

2023 Action Plan	
Key Strategies	**Key Action Items**
• Promulgate and publish final rules.	• Finalize rule standards and practices for the development, challenge, application, award and administration of subject grant programs.
• Develop program design.	• Determine key eligibility factors (service area, match requirement, entity type, open access for middle-mile spans). • Define programmatic requirements (e.g., performance, buildout timeline, services, pricing, open access, etc.)
• Apply lessons learned and best practices from Pilot Program.	• Explain key differences relative to Pilot Program and justification.
• Develop program materials.	• Draft Notice of Funding Opportunity, application, scoring guide, and guidelines.
• Ensure robust pool of applications.	• Host webinars and office hours • Provide awareness through all channels
• Evaluate projects through merit review process.	• Determine review team structure

Implementation	
KPIs	• Fund launched by summer 2023 • 2:1 ratio of funds requested vs. funds available which means strong participation to enable selection of highest quality projects based • Match contribution meets and exceed the minimum requirement (e.g., 25%)
Critical Success Factors	• Rulemaking for Grant Program Rules is completed by May 2023. • Connect New Mexico Council approves program strategy, design, and materials.

9.1C	**Development of Five Year Plan (BEAD)**
Overview	
Description	• The BEAD Program—created by the IIJA and administered by the NTIA—provides federal funding to the State to support broadband deployment, mapping, and adoption projects. • The funds that will be allocated to New Mexico will constitute the largest sum in history for broadband deployment to unserved and underserved communities. The funds will be determined based on a formula stated in the table below. • To unlock this funding, the State must complete a Five-Year Action Plan. The Plan involves a multi-step process to develop a comprehensive strategy to connect unserved and underserved residential and business locations, and provide gigabit connections to community anchor institutions such as libraries and community centers lacking such connectivity. • The Five-Year Action Plan must address a 13-point checklist (see table below).

	• BEAD requires the State to design a grant program that: - prioritizes projects designed to provide fiber connectivity directly to the end user; - requires funded projects to offer a low-cost option to eligible subscribers prioritizes proposals that improve affordability to ensure that networks built using taxpayer dollars are accessible to all Americans; ensures that the State has plans to address middle-class affordability; - require at least a 25% matching contribution and incentivize higher contributions (a lower contribution may be allowed in certain specific circumstances delineated in the BEAD NOFO such as projects in designated "high-cost areas" and other cases in which NTIA has waived the matching requirement) • New Mexico must complete the Five Year Action Plan by August 29, 2023. • The State is required to engage with local stakeholders so they can note their local needs and inform the State's process—including through the development of detailed broadband availability data. • The following phased approach will guide the development of the Plan: a. Strategy and planning, including stakeholder outreach b. Data collection and analysis that will be used to develop optimal scenarios for funding c. Design and deployment of the BEAD funding program d. Following public comment and the last round of stakeholder socialization, the State will finalize and submit the BEAD Five-Year Action Plan.
Objectives	• The State and its stakeholders will seek to collaboratively develop the State's vision for addressing its broadband needs and articulating its BEAD grant program priorities. Those guiding principles will then inform the structure of the State's planned grant program— with a goal of connecting all unserved locations across New Mexico.
2022 Recap	• Received $5 million funding from the NTIA Initial Planning Funds

2023 Action Plan	
Key Strategies	**Key Action Items**
• Engage in a detailed situational assessment (*Strategy and Planning Phase*)	• Assess and document the organizational structure and staff capacity of the State broadband office within OBAE. • Identify and create an inventory of stakeholders and establish a detailed outreach strategy to achieve extensive, statewide engagement, participation, and contribution for the BEAD planning efforts. • Provide educational materials and training for key stakeholders to help them contribute to the planning process. • Conduct stakeholder and community outreach to gather qualitative input and insight into the data collected on New Mexico's infrastructure and broadband needs. • Design and conduct surveys of identified stakeholders, particularly local governments and other entities that are best positioned to provide data and insights regarding the existence and capabilities of broadband infrastructure and services.
• Collect data and engage in a variety of analyses to evaluate different scenarios to achieve universal	• Develop a funding utilization model for the Five-Year Plan with a goal of achieving universal services with the allocated funds awarded through the BEAD program.

access. (*Data Collection and Analysis*)	• Identify and determine the eligibility of community anchor institutions to help prioritize funding.
• Design the BEAD funding program and implementation approach. (Design and Deployment)	• Develop the New Mexico BEAD Grant Program – including how potential subgrantees should submit technical portions of project proposals, program specifications, descriptions, and coverage analysis. • Draft the BEAD Five-Year Action Plan. • Draft the BEAD Initial Proposal, which will be submitted as an NTIA deliverable in compliance with BEAD Program requirements.
Implementation	
KPIs	• Five-year plan completed by due date of August 28, 2023. • Meet all the elements of the 13-point checklist established by the NTIA. • NTIA approval of the Five Year Plan.
Critical Success Factors	• The FCC accepts the challenges presented by the State regarding the potential overstating of availability and understanding of serviceable locations.

➢ **Formula to Determine Amount that New Mexico Will Receive**

Formula
New Mexico will receive a sum that reflects the following formula: • A minimal initial allocation of $100 million. • A "High Cost Allocation" that will be calculated by (i) dividing the number of unserved locations in high-cost areas in the Eligible Entity by the total number of unserved locations in high-cost areas in the United States and (ii) multiplying the quotient obtained by $4.245 billion. NTIA will provide further information regarding its designation of high-cost areas in future guidance and/or related documents. NTIA will provide further information regarding its designation of high-cost areas in future guidance and/or related documents. • A remaining funds allocation that subtracts the amount expended for the prior categories from the total national pool of $41.601 billion and then applies a percentage that is computed by dividing the number of unserved locations in the Eligible Entity by the total number of unserved locations in the United States.

➢ **13 Point Checklist for BEAD Program Requirements**

13 Point Checklist
1. Provide details of the existing broadband program or office within the Eligible Entity, including any activities that the program or office currently conducts, any previous entity- wide plans or goals for availability of broadband, and any prior experience awarding broadband deployment grants. 2. Identify the funding that the Eligible Entity currently has available for broadband deployment and other broadband-related activities, including data collection and local planning, and the sources of that funding, including whether the funds are from the Eligible Entity or from the federal government. 3. Identify existing efforts funded by the federal government, including the Universal Service Fund, or an Eligible Entity to deploy broadband and close the digital divide.

4. Identify the current full-time and part-time employees of the Eligible Entity who will assist in implementing and administering the BEAD Program and the duties assigned to those employees, as well as any existing contracted support, and any planned expansion of employees or contractors.
5. Identify known or potential obstacles or barriers to the successful implementation of the BEAD Program and the Eligible Entity's corresponding plans to address them.
6. Include an asset inventory that catalogues broadband adoption, affordability, equity, access, and deployment activities occurring within the Eligible Entity and identifies and provides details regarding any relevant partners, such as community-based organizations and CAIs that may inform broadband deployment and adoption planning.
7. Include a description of the Eligible Entity's external engagement process, demonstrating collaboration with local, regional, and Tribal (as applicable) entities (governmental and non- governmental) and reflective of the local coordination requirements outlined herein, including outreach to underrepresented communities and unions and worker organizations. The engagement required must be undertaken both during the development of the Five-Year Action Plan itself and following submission of the plan, reflecting ongoing collaboration throughout the BEAD Program.
8. Incorporate available federal, Eligible Entity, or local broadband availability and adoption data, including but not limited to Affordable Connectivity Program enrollment data. Other federal broadband federal data sources include the NTIA Internet Use Survey, the NTIA Indicators of Broadband Need Map,30 and the American Community Survey.
9. Identify local and regional broadband service needs and gaps within the Eligible Entity's boundaries, including unserved or underserved locations and CAIs without gigabit service, and/or any plans to make these determinations where service availability is unclear.
10. Provide a comprehensive, high-level plan for providing reliable, affordable, high-speed Internet service throughout the Eligible Entity, including:
    a. The estimated timeline and cost for universal service
    b. The planned utilization of federal, Eligible Entity, and local funding sources,
    c. Prioritization of areas for federal support,
    d. Any consideration afforded to the use of public-private partnerships or cooperatives in addressing the needs of the Eligible Entity's residents,
    e. Strategies to address affordability issues, including but not limited to strategies to increase enrollment in the Affordable Connectivity Program by eligible households; and
    f. Strategies to ensure an available and highly skilled workforce (including by subgrantees, contractors, and subcontractors) to minimize project disruptions, including any plans to ensure strong labor standards and protections, such as those listed in Section IV.C.1.e; and plans to attract, retain, or transition the skilled workforce needed to achieve the plan's goals, including describing the involvement and partnerships of sub-grantees, contractors, and sub-contractors with existing in- house skills training programs, unions and worker organizations; community colleges and public school districts; supportive services providers; Registered Apprenticeship programs and other labor-management training programs, or other quality workforce training providers.
11. Identify digital equity and inclusion needs, goals, and implementation strategies, including ways in which the Eligible Entity plans to utilize BEAD funding, Digital Equity Act funding and/or other funding streams in concert to remedy inequities and barriers to inclusion. Accordingly, the Five-Year Action Plan should set forth a vision for digital equity, include the results of a needs assessment for underrepresented communities and an asset inventory of ongoing digital equity activities, and detail holistic strategies around affordability, devices, digital skills, technical support, and digital navigation. This requirement may be satisfied by the completion of a State Digital Equity Plan under the Digital Equity Act.32 Please refer to the Digital Equity Act State Planning Grant Program NOFO for the requirements and deadlines applicable to that program.

12. Detail alignment of the Five-Year Action Plan with other existing and planned economic development, telehealth, workforce development, related connectivity efforts, and other Eligible Entity priorities.
13. Describe technical assistance and additional capacity needed for successful implementation of the BEAD Program.

9.2 Strategic Priority: Robust Data for Spatial Data Management and Analytics

➢ Overview

Underpinning OBAE's goals is an understanding of the location, characteristics, and status of broadband initiatives across the State. This kind of understanding involves ingesting and managing information from a variety of stakeholders, spanning from individual end-users to service providers to decision-makers. Whether that information is used simply in an informational map or incorporated into data models for complex planning and decision-support, a robust information management system must be in place.

The OBAE has very specific requirements to provide public information in the form of maps as defined in Section 63-9J NMSA 1978. OBAE also has implied needs for data management and analytics to support many other functions such as quality review and analysis of the State's grants program awards; developing data-informed definitions of abstract concepts such as digital equity and high-cost areas, and putting those places on a map; and providing awareness among stakeholders and across initiatives to ensure efficiency and effectiveness.

OBAE's focus for information management and analytics in 2023 and beyond involves three major initiatives:

- Audits of federal data used for funding and decision-making;
- Evolution of the primary, public-facing, informational broadband map to ensure greater awareness and usability;
- Implementation of an information architecture that better supports the OBAE's initiatives and those if its key stakeholders.

9.2A	Challenge of FCC Broadband Serviceable Location Fabric and Broadband Availability Data
Overview	
Description	• The Federal Communications Commission (FCC) manages a national database of broadband serviceable locations (BSLs) and broadband availability at those locations. These data are used by various funding entities to establish need and priorities. Each year, the FCC publishes two versions of each dataset, and it is incumbent on the states to ensure their accuracy and completeness. • This initiative began in earnest in the Fall of 2022 and will continue for as many years as is needed to ensure New Mexico its fair share of needed funding from the Federal government. • An analysis in 2022 found significant issues with these data, with large numbers of households and businesses missing completely and others sorely mis-represented as being already served by broadband, when in fact they may have little to no suitable service at all. This led to substantial advocacy at the highest levels of government about

	the suitability of FCC's data for funding decisions being made about New Mexico. These issues could have implications on the order of hundreds of millions of dollars.
Objectives	• To have the FCC reflect accurate data for serviceable locations and broadband availability so that New Mexico receives appropriate funding. • Support improvements in the quality of local data including accuracy, completeness, and timeliness. • Expand awareness of the importance of the FCC data.
2022 Recap	• Identified and submitted over 30,000 locations, suspected as missing, to the FCC. • Developed a standard operating procedure and data analysis methodology to ensure consistency and accuracy in data corrections submitted to the FCC. • Established data sharing and management protocols for use of local data sources. • Communicated with FCC and NTIA leadership, regional and national organizations, and Congress about flaws in the FCC data and the publication timelines. • Initiated an outreach program to have local governments and stakeholders review availability data and file challenges on the FCC's website. • Subscribed to Ookla's statewide database of speedtest data to facilitate analyses.

Action Plan

Key Strategies	Key Action Items
• Use and improve local data sources that are most useful for understanding missing or inaccurate needs.	• Maintain a repository of data or data services with standard update cycles, using data-sharing agreements when needed. • Host web platform for Local Government Division of NM Department of Finance and Administration to support data updates to NM911 addresses. • Outreach to county assessors on value of parcel data • Support efforts by others to build baseline, statewide inventories of relevant data like structures and addresses.
• Engage with New Mexico's service providers to ensure data timeliness and accuracy.	• Maintain and improve a secure data upload site where providers submit data. • Feedback loop with providers on data transmissions and issues.
• Engage local and regional representatives as FCC data challenge advocates.	• Technology transfer sessions with local, regional and Tribal entities on methodologies, tools, and data that they can then share with their own constituents. • Identify key collaborators to join and contribute content to the Broadband Community Mapping Hub. • Map-centric dashboard of challenge status by county, to document progress and encourage key stakeholder engagement at all levels.
• Engage the public, individuals, and businesses, to perform their own data challenges.	• Provide alternative interfaces that support self-advocacy when the FCC map is inadequate – paper surveys, online survey forms, web maps. • Compile bulk-challenges as necessary to represent entities not able or willing to challenge the FCC directly.
• Continue to engage FCC and other federal entities on New Mexico's needs.	• Regularly analyze data and submit challenges as necessary, focusing on any areas not already being covered by other entities.

	• Define and report on New Mexico's "High-Cost Areas" to the NTIA. • Continue pushing FCC to publish annual challenge deadlines and related funding dependencies.
Implementation	
KPIs	• Dashboard of Challenge Status by County published by March 2023, and continuously updated as new data are available. • Participate in and meet each FCC Data Challenge deadline (January 13, 2023 and expected in March and September 2023).
Critical Success Factors	• Service providers contribute geospatial distribution and subscription data directly to the State. • New Mexico implement regulatory frameworks to support cooperation by providers and to support data protections for proprietary data from IPRA.

9.2B	**Evolution of the State Broadband Map**
Overview	
Description	• New Mexico has had a statewide Broadband Mapping Program (https://nmbbmapping.org/mapping/) for over a decade and has had an online informational map for almost as long. The map has provided a dependable, centralized location for data used by multiple initiatives and stakeholder types. However, this map no longer meets the evolving and complex needs of New Mexico. • Two significant changes in 2021 (and the resulting outcomes in 2022) require a new approach to the existing map: establishment of the OBAE, and a shift by the FCC to collecting data for point locations instead of census blocks. The new map will need to incorporate an updated data model that provides point-level information on both serviceable locations and availability, but also incorporate the growing number of other variables important for understanding the state of broadband in New Mexico.
Objectives	• Maintain public-facing interfaces that are responsive to the evolving needs of the communities who use them. • Build systems of data and technologies that most efficiently deliver the latest information.
2022 Recap	• Hired a new Mapping Program manager who began review of existing maps and data. • Conducted a systems audit of existing data and applications, and drafted an improvement plan which includes system infrastructure, data management, and mapping application needs. • Initiate amendment to an existing contract with the Earth Data Analysis Center to accommodate the expanded vision of mapping needs. • Implemented a web-hosted mapping solution for OBAE to centralize map hosting across initiatives.
2023 Action Plan	
Key Strategies	Key Action Items
• Encourage more end-user awareness, engagement, and understanding.	• Integrate maps and tools with the main OBAE website • Evolve the one map approach to address specific needs with new maps and tools

	• Develop standards for mapping and application templates and branding for consistency across the user experience. • Improve upon layer naming, symbology, and descriptions, including metadata for all data.
• Enhance user adoption and participation by improving data quality and dependability.	• Follow a standard data update cycle, that is ideally real-time or quarterly, but no longer than bi-annually. • Establish data-sharing agreements, formalize data delivery mechanisms, and adopt data standards when necessary to improve usability of incoming data. • Establish a routing protocol for data providers to submit comments, suggestions, and corrections to published data.
• Continuously improve data offerings to help complete the big picture of broadband for New Mexico.	• Update the core, public-facing reference map. • Incorporate new data such as the FCC point locations and availability, Middle-Mile network spans, Statewide Education Network (SEN) nodes [aggregation centers], 5G coverage • Identify any opportunities to make previously protected data sources available publicly, such as provider data and speed test data, perhaps using data generalization methods. • Subdivide previously generalized map layers as needed to refine the state of broadband, such as refining service definitions to reflect availability but also subscriptions (as an indicator of adoption).
• Organize technical infrastructure to support evolving needs.	• Develop data, hosting environments, and publish map services that can be shared across applications. • Identify key data custodians and data connections such as map services and API's that streamline data updates and increase dependability and accountability.
Implementation	
KPIs	• Release a new version of the State map by June 30, 2023. • Relevant map layers contain explicit details on vintage and update cycles.
Critical Success Factors	• EDAC contract amendment is fully executed in January 2023.

9.2C	**Launch of Analytic and Decision Support Tools to Empower All Stakeholders**
Overview	
Description	• The value of broadband mapping data is a function of its awareness, understanding, and usage. Information management responsibilities go beyond providing public-facing informational maps. These responsibilities include ingesting and synthesizing data from many disciplines and organizational levels, with touchpoints spanning development of statewide networks to managing and tracking outreach to assessment of digital equity and strategic planning. • As the OBAE refines the definition of success for New Mexico, the information systems need to support data for new metrics, such as resiliency and security. Development of some strategic priorities such as PROP and Statewide Middle-Mile Networks will require

	data integrations and standards when interfacing with multiple providers such as state agencies, local governments, and private entities. Finally, accurate and timely information needs to be presented to decision-makers in a format that is readily accessible in analytic tools and dynamic dashboards. • Many local governments and representatives of New Mexico communities lack staffing or technological tools that can facilitate data development, improvement, and understanding in the context of broadband expansion.
Objectives	• Plan, develop, maintain, and support a robust decision support toolkit to help New Mexico stakeholders develop key insights and make critical decisions based on broadband availability. • Assemble the necessary data and technologies to accomplish OBAE's goals and strategic priorities.
2022 Recap	• Published results of Dona Ana Community Survey (field & web data collection application) in web map, dashboard, and map layers used in turn by Dona Ana County for grant applications. • Maintained speed test application that is added to promotional materials, and published incoming results to local communities for planning. • Licensed ArcGIS Community Hub Software as a Service, providing a core web mapping framework with publisher accounts for core stakeholders and collaborators • Kicked-off the Broadband Initiative on the Community Hub, enabling, for those without their own means, Tribal engagement in the FCC Challenge process. • Developed a location-enabled public survey about broadband availability at their address, which can in turn be used to challenge the FCC data. • Implemented a web-based map application for Connect NM grants review, enabling providers to challenge data as another way to avoid overbuilds. • Initiated contract with engineering firm RS21 to formalize the information systems plan.

2023 Action Plan

Key Strategies	Key Action Items
• Plan how information systems will support OBAE's responsibilities to the public and to its own initiatives and activities.	• Conduct Needs Assessment. • Document requirements and a proposed strategy, including an Implementation Roadmap and Ecosystem Diagram of stakeholders and systems.
• Develop foundational information technology architecture.	• Implement enterprise ArcGIS environment on DOIT's cloud infrastructure, including SQL geodatabase and Active Directory user authentication model. • Hire IT Lead, GIS Manager, and GIS Developer/Analyst
• Support existing OBAE initiatives.	• Support the grants review process by maintaining a provider mapping tool for data review and comment. • Map the locations and engagement level of key outreach activities. • Ad-hoc data analysis and tools to support activities like targeted mailers, technology transfer and public information sessions, and strategic planning and reporting.
• Maintain awareness and engagement in technical and tactical needs of broadband.	• Participate in and/or host meetings with key stakeholders as identified in the ecosystem diagram (such as the existing DOT Rights-of-Way and Fiber Infrastructure meeting, NM Geospatial

	Advisory Committee, and the Mapping Data and Evaluation Working Group of the Connect New Mexico Council). • Study best practices and evaluate the work of other state broadband mapping programs to assess suitability for NM.
Implementation	
KPIs	• 15 stakeholders have used or been directly engaged with the Broadband Community Hub. • Active participation in at least 70% of priority technical working groups/meetings. • Final Report of Data Requirements, Strategy, and Ecosystem Diagram. • SQL geodatabase is implemented and housing at least 2 fundamental datasets in a secure environment.
Critical Success Factors	• OBAE technical staff are funded and hired by the end of FY23. • Contract with RS21 achieves the objectives written in the approved statement of work.

9.3 Strategic Priorities: Removing Deployment Barriers Related to Permits, Rights of Way, and Pole Attachments (PROP)

Overview: The implementation of broadband networks requires significant planning and coordination to obtain approvals from government and private stakeholders before construction can begin. Prerequisites involve government permits (e.g., federal, state, Tribal, land grant), rights of way, and private easements.

To illustrate, federal and State authorities require an impact assessment to the environment and to cultural and historical assets and resources. Transportation authorities control the rights of way adjacent to major roadways, and have to grant access in exchange for fees. Pole owners require broadband providers to obtain authorization and incur expense for "Make Ready" – or preparing utility poles for safely receiving new broadband infrastructure attachments. Local authorities require zoning approvals for wireless tower deployment. The process is complex and requires a great deal of time and expense.

The initiatives below are intended to facilitate and expedite the complicated processes of securing the Permits, Rights of Way, and Pole Attachment agreements. They will help facilitate and expedite the deployment of broadband infrastructure to connect unserved and underserved residences and businesses, and connect Community Anchor Institutions (CAIs). Better PROP processes are also needed to meet the NTIA requirements for BEAD funding distribution.[34]

NTIA Mandate
Identify steps that the Eligible Entity will take to reduce costs and barriers to deployment, promote the use of existing infrastructure, promote and adopt dig-once policies, streamlined permitting processes and cost-effective access to poles, conduits, easements, and rights of way, including the imposition of reasonable access requirements. Consistent with the goal that Eligible Entities seek to minimize the BEAD funding outlay on a particular project, Eligible Entities and their political subdivisions are strongly encouraged to remove time and cost barriers associated with BEAD projects, including by expediting permitting timelines and waiving fees where applicable, where doing so does not undermine other critical policy goals.

[34] https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf

➢ **Connect New Mexico Council Working Group**

The Connect New Mexico Council (CNMC) established the Permits, Rights of Way, and Pole Attachments (PROP) working group to focus on essential processes that will make or break the effective deployment of broadband to all New Mexicans. The composition of the working group is diverse, including State and federal agencies, electric utilities that own poles, and Internet service providers. The working group's goal is to develop policy recommendations that will improve existing processes and collaboration, supporting the deployment process.

➢ **Sovereignty of Tribal Nations**

OBAE is committed to honoring the sovereignty of the 23 Tribal nations of the State. This commitment will be reflected through: a) fostering government-to-government relations; b) understanding their unique status and jurisdiction with regard to approving projects that traverse Tribal lands; c) continuous consultations.

➢ **Major PROP Initiatives**

Three major PROP initiatives include:

- Permits and Rights of Way Streamlining: This effort is intended to facilitate and expedite the complicated processes of securing the Permits, Rights of Way agreements necessary from the many entities (local, state, and federal) having jurisdiction. The initiative is intended to put in place policy recommendations and processes that will better coordinate efforts between State and federal agencies, Tribes and Pueblos, municipalities, and other stakeholders.
- Modernization of Pole Attachment Policies and Practices: This effort is intended to facilitate and expedite the complicated processes of securing Pole Attachment agreements for "Make Ready" – or preparing utility poles for safely receiving new broadband infrastructure attachments.
- NMDOT Rights of Way Fee Waiver Program for In-Kind Fiber and/or Conduit Contribution: Effort involves obtaining Rights of Way for a significantly reduced charge by offering DOT and public agencies access to capacity or ability to install conduit.

9.3A	**Permit and Rights of Way Streamlining**
Overview	
Description	This effort is intended to facilitate and expedite the complicated processes of securing the Permits, Rights of Way agreements necessary from the many entities (local, state and federal) having jurisdiction. PROP will ensure NM entities have access to fast, fair, transparent, and cost-effective processes that support the deployment of broadband infrastructure to connect 100% of NM residents and organizations who want access to scalable, reliable, affordable, and secure Internet. The initiative is intended to put in place policy recommendations and processes that will better coordinate efforts between state and federal agencies, Tribes and Pueblos, municipalities, and other stakeholders. • Working Group under the Connect NM Council. • OBAE becomes the central repository of permits and Rights Of Way (ROW) for broadband work.

Objectives	• Coordinate processes between state, federal and other authorities having jurisdictions (and utility pole owners), eliminating overlaps, ensuring transparency, and realizing time and cost-efficiencies whenever possible. • Measure and improve on number of steps and duration from permit request submission to start of deployment. • Support improvements in the quality of permit requests submitted by broadband providers and (third-party) consultants.
2022 Recap	• The Connect New Mexico Council initiated a "Permits, Rights of Way and Pole Attachments" working group to foster collaboration with key permitting authorities, share best practices and solutions, and work with relevant authorities to implement reforms. • Broad participation by local and state stakeholders, working to gather information and establish baselines for procedure currently in place. • DOT is reporting being ready to deploy the new ePermit system (that was in the works for some time). Timing is opportune for the improvements required by the broadband infrastructure work.
2023 Action Plan	
Key Strategies	Key Action Items
• Participate in working groups to study challenges and opportunities.	• Actively participate in the Connect NM Council working group that focuses solely on broadband Permits, Rights Of Way and Pole Attachments (PROP) issues. • Establish a close working relationship with the Permitting Council, a newly establish federal organization that coordinates the many federal agencies involved. • Strengthen the working relationship with Tribes and Pueblos. Develop collaborative approaches and shared resources to develop permits and ROW. • Coordinate with local stakeholders – counties, municipalities, individuals, etc.
• Develop and advocate for policies that drive meaningful reform.	• OBAE is recommending legislative changes that will expand the same benefits available to other essential services (telephone, water & sewer, electricity) to broadband infrastructure. • Establish "Dig Once" and conduit sharing policies. • The NM legislature should establish a group (task force or working group) with authority, expertise, and resources that will work with stakeholders and resolve disputes in a timely fashion
• Identify opportunities to leverage technology.	• Leverage technology such as the newly developed ePermit (DOTs electronic permitting system) to automate, implement efficiencies and add transparency to the complicated permitting and ROW process.
• Develop tools and materials to mobilize change.	• Develop a "PROP Manual" regularly updated and available on the OBAE website that will guide applicants through the processes & steps required. • Leverage the Permit21 and the Permit Council federal process that streamlines the federal agencies review, establishing a single Point of Contact and a timeline for all federal agencies involved in the permitting process. • Ensure adequate resources (permit specialists, contract firms, funding) are in place to support the large volume of work expected with the large amounts of private, local, state and federal funding investments in broadband infrastructure.
Implementation	

KPIs	• Formal written recommendations to OBAE and Connect New Mexico Council to streamline permits and rights of way processes within state agencies.
Critical Success Factors	• Passage by the legislature of recommended policy reforms.

9.3B	**Modernization of Pole Attachment Policies and Practices**
Overview	
Description	• This effort is intended to facilitate and expedite the complicated processes of securing the Permits, Rights of Way and the Pole Attachment agreements (for "Make Ready" – or preparing utility poles for safely receiving new broadband infrastructure attachments. • The initiative is intended to put in place policy recommendations and processes that will better coordinate efforts between vendors deploying broadband infrastructure and utilities and/or municipalities (utility pole owners) and other stakeholders. • PROP will ensure NM entities have access to fast, fair, transparent and cost-effective processes that support the deployment of broadband infrastructure to connect 100% of NM residents and organizations who want access to scalable, reliable, affordable and secure Internet.
Objectives	• Coordinate processes between vendors/contractors and utility pole owners, eliminating overlaps, ensuring transparency, and realizing time and cost-efficiencies whenever possible. • Ensure adequate resources are in place to eliminate or minimize delays. • Have clear expectations for all parties to adhere to. Continuously monitor progress and measure KPIs. • Resolve disputes in a timely manner to ensure momentum on deployment is maintained.
2022 Recap	• The Connect New Mexico Council initiated a "Permits, Rights of Way, and Pole Attachments" working group to foster collaboration with key permitting authorities, share best practices and solutions, and work with relevant authorities to implement reforms. • DOT reports that it is ready to deploy the new ePermit system (that was in the works for some time). Timing is opportune for the improvements required by the broadband infrastructure work.
2023 Action Plan	

Key Strategies	Key Action Items
• Participate in existing working groups and form new ones that bring more stakeholders together.	• The Connect NM Council established a working group focused solely on broadband permits, Rights of Way and Pole Attachments (PROP) issues. • The NM legislature should establish a group (task force or working group) with authority, expertise and resources that will work with stakeholders and resolve disputes in a timely fashion.

• Advocate for policies that drive meaningful reform.	• OBAE is recommending legislative changes that will expand the same benefits available to other essential services (telephone, water & sewer, electricity) to broadband infrastructure. Develop "One Touch Make Ready" policies.
• Develop programs and policies to make "Make Ready" costs more efficient and transparent.	• Find ways to develop engineering and "Make Ready" Cost estimates earlier to avoid cost and project budget overruns. • Establish a way to timely develop fair, predictable and transparent charges for "Make Ready". • Implement "One Touch Make Ready" policies that will reduce cost for all and benefit all parties. • Establish a "Pole Replacement" fund that will cover the costs associated with utility pole replacements in specific circumstances, in particular for projects in hard to reach areas. • Establish a fair, transparent and predictable cost-sharing methodology for pole replacements.
• Collaborate with pole owners to identify opportunities to streamline the application, approval, and execution process.	• Support improvements in the quality of permit and Make Ready requests submitted by broadband providers and (third-party) consultants. • Establish a process and a framework for expedited dispute resolution. • Work closely with utility pole owners in unserved areas, including municipalities and electric cooperatives, to identify quickest broadband deployment strategies. • Employ technology tools that allow better asset tracking (existing pole conditions and attachments), minimizing the need for physical inspections
• Develop tools and resources that foster education and address barriers.	• Develop a "PROP Manual" regularly updated and available on the OBAE website that will guide applicants through the processes, and steps required. • Ensure adequate resources (permit specialists, contract/engineering firms, funding) are in place to support the substantial volume of work expected with the large amounts of private, local, state and federal funding investments in broadband infrastructure.
Implementation	
KPIs	• Formal written recommendations to OBAE and Connect New Mexico Council to create one process to secure Pole Attachment agreements. • Written procedures to streamline current processes, steps, and fees • PROP Manual written, edited, and released.
Critical Success Factors	• Establishing baselines for procedures currently in place.

<table>
<tr><td>9.3C</td><td colspan="2">NMDOT Rights of Way Fee Waiver Program for In-Kind Fiber and/or Conduit Contribution</td></tr>
<tr><td colspan="3">Overview</td></tr>
<tr><td>Description</td><td colspan="2">• The NMDOT has been developing right-of-way management policies and rules to allow private broadband entities to be treated as utilities under 23 CFR Part 645, for several years, beginning with revising the Utility Accommodation Rule 17.4.2 NMAC to allow private businesses to have similar access to public rights-of-way that Public Regulation Commission (PRC) consumer rate regulated traditional utilities like water, electricity and gas have enjoyed.
• The New Mexico Department of Transportation (NMDOT) makes controlled public right-of-way available to private broadband entities for deployment of conduit and fiber and wireless towers or poles. NMDOT encourages Dig Once by either: 1) installing state owned conduit and fiber at the same time as the private facilities are deployed; 2) requesting a fair equitable reduction in billable broadband services provided to the State by the broadband entities or their partners. The State's exchange of access and use of the public right-of-way, for conduit and fiber or broadband service on a monthly or annual billable basis, complements the FCC's infrastructure sharing statute 47 USCS §224. FCC statute 47 USCS § 253 supports the authority of a State or local government to manage the public rights-of-way and to require fair and reasonable compensation from telecommunications providers, on a competitively neutral and nondiscriminatory basis, for use of public rights-of-way on a nondiscriminatory basis.</td></tr>
<tr><td>Objectives</td><td colspan="2">• Foster Dig Once and enhance project financial sustainability by significantly reducing or eliminating rights of way fees in exchange for providing NMDOT and other New Mexico government agencies a commensurate value of network capacity – such as dark fiber and fiber maintenance, or allowing NMDOT to install their own conduit and fiber.</td></tr>
<tr><td>2022 Recap</td><td colspan="2">• The NMDOT has also been developing an on-line web accessed right-of-way use permit system that will expedite the process, from use-permit application, to approval of shovel ready projects.
• NMDOT has been implementing a publicly available four-year future Statewide Transportation Improvement Program (STIP) access portal so that broadband companies can plan on future route deployments simultaneously with NMDOT highway improvement projects, complying with a dig-once policy of getting in, getting out, and staying out, to minimize deployment congestion and maximize public safety.</td></tr>
<tr><td colspan="3">2023 Action Plan</td></tr>
<tr><td colspan="2">Key Strategies</td><td>Key Action Items</td></tr>
<tr><td colspan="2">• Obtain legislative approval on in-kind policy.</td><td>• Host discussions with legislators on the value of this program.</td></tr>
<tr><td colspan="2">• NMDOT to publish the new program in 2023.</td><td>• Publish this program across all information channels managed by OBAE.</td></tr>
<tr><td colspan="2">• Encourage beneficiaries of Connect NM Pilot Program to participate in this program.</td><td>• Publish this policy in guidance.
• Make this part of the recurring checkpoint calls.</td></tr>
<tr><td colspan="3">Implementation</td></tr>
</table>

KPIs	• 75% of grantees (for broadband deployment projects) using NMDOT right of way participate in program to reduce operating expense for ROW in exchange for contributing fiber or conduit space for state agency usage.
Critical Success Factors	• For the 2023 legislative session, the NMDOT is proposing an amendment to clarify the prescriptive use and maintenance statute, NMSA 1978, Section 67-2-5, defining undocumented rights-of-way on rural routes along county and state roads, critical for deploying last-mile infrastructure. An important element of this right-of-way limit identification process will be for right-of-way use applicants to process large Lidar data files to determine where, within the public use and maintenance right-of-way, they may legally deploy broadband infrastructure. These Lidar evidence-based identification of undocumented right-of-way routes will allow rapid deployment of broadband infrastructure within public right-of-way upon concurrent certification of environmental, cultural, and historical clearances, as early as the summer of 2023. • Dependent on the enabling legislation resulting from amendment to the New Mexico Constitution, Article IX, Section 14 creating new section (H), the NMDOT may need additional broadband design review engineers, Geographical Information Service (GIS) experts, surveyors, data management experts, web portal and public facing web page design support, environmental, cultural, and historical preservation experts, field agent inspectors, right-of-way legal support and engineering support staff.

9.4 Strategic Priorities: Workforce Development

9.4A	**"All Hands on Deck": Statewide Broadband Workforce Development Strategy**
Overview	
Description	• A large, highly skilled workforce, across the State, constitutes a critical success factor to allow for the planning, design, deployment, testing, and operations of broadband networks funded by hundreds of millions of investment. • Several federal funding programs (e.g., NTIA BEAD, Middle-Mile, etc.) require the State to help create, maintain, and retain a highly skilled workforce in the State capable of deploying and operating the broadband networks across the State.
Objectives	• Cultivate a New Mexico-based workforce that can support the increased demand for professionals and skilled labor to support network infrastructure projects (fiber and wireless) that will could potentially involve billions of dollars over the next 10 years.
2022 Recap	• Started workforce development conversations with key stakeholders (e.g., community and Tribal colleges and universities, labor organizations and trade group associations, contractors, etc.)
2023 Action Plan	

Key Strategies	Key Action Items
• Develop an evidence-based needs and gaps analysis.	• Engage stakeholders to solicit feedback, resources, and tools from: - State government partner regarding existing programs and wrap-around services such as the Department of Workforce Solutions, Economic Development Department, Human Services Department, Early Childhood Education and Care Department, and the Public Education Department.

	- Industry associations such as wireless Industry Association and other telecom and ISP associations. - Tribes and Pueblos. - Rural New Mexico counties and municipalities.
• Secure necessary funding.	• Use federal funds provided for in BEAD, DE, and MM in scope of the integrated plan developed in phase one.
• Allocate planning dollars to workforce development.	• Economic Impact to determine what returns New Mexico receives by making investments in broadband workforce • Integrated Workforce Plan to include funding strategy including, existing funding, BEAD, DE, MM, additional state funds, private sector, public-private partnerships. The Integrated Workforce Plan will also include stakeholder programs and/or private sector partnerships, registered apprenticeships, and labor-management training programs to meet the requirements of BEAD, DE, and MM funding.
• Develop strategies to address the gaps.	• Pilot Programs to address gaps with proof of concept. Some strategies to consider are bootcamps in rural communities, Tribal areas, and Pueblos to address access and ability for rural and diverse communities to access workforce training and address rural ISP needs for a skilled workforce. Bootcamps will also need to consider wrap-around services such as childcare during training. • Potential strategies include: - work with trade schools, non-profits, to build and fund certificate programs to meet entry level to mid-career trade and skilled labor certifications. - Develop portable programs that can meet the workforce and the employers where they are. - work with community and Tribal colleges to build and fund entry level to mid-career certificate programs, associate level degree programs. - work with colleges and universities to build and fund bachelor level programs to meet needs of New Mexico employers for careers like network and systems engineers. - work with universities to build and fund masters level programs to meet the needs of New Mexico employers for careers that require advanced degrees. - work with ISPs and other employers to build apprenticeship programs to connect workers to careers. - work with labor organizations and trade unions to develop training programs for skilled labor.
• Develop a comprehensive financial analysis – including resources required, available funding, additional investment required, and return on investment.	• Evaluate funding opportunities to support workforce training programs, including Integrated Workforce Plan to including funding strategy including, existing funding, BEAD, DE, MM, additional state funds, private sector, public-private partnerships. The Integrated Workforce Plan will also include stakeholder programs and/or private sector partnerships, registered apprenticeships, and labor-management training programs to meet the requirements of BEAD, DE, and MM funding.

	• Assess the economic impact to determine what returns New Mexico receives by making investments in broadband workforce.
• Form strategic partnerships with state agencies and other labor-affiliated stakeholders.	• Partner with other state agencies to provide wrap-around services during broadband training programs. • Learn from and evolve pilot programs to grow the necessary workforce in NM. • Use metrics to measure the success of the integrated plan to see if plan goals are met. • If plan goals are not being met, adjust to support successful strategies, and end, adapt, or modify unsuccessful strategies.
Implementation	
KPIs	• Requested workforce in place for FY24 and FY25
Critical Success Factors	• OBAE has requested FY24 state funding to perform a needs assessment to survey both the workforce enablers (e.g., community and Tribal colleges, universities, technical schools) and demanders (e.g., Internet service providers (ISP), electric co-ops).

9.5 Strategic Priority: Technical Assistance Programs to Empower Local Communities

9.5A	**Technical Assistance Programs to Empower Local Communities**
Overview	
Description	• The Technical Assistance Program (TAP) has a two-part component focused on OBAE capability over time. OBAE has a statutory requirement to assist Tribes, counties, and other public sector entities in perpetuity with broadband projects. Currently OBAE has a TAP funded through a CARES Act program that will run through 2023. OBAE has developed a midrange plan to use some of the Capital Outlay Fund to provide programs to support broadband infrastructure builds in NM. Lastly, OBAE has requested recurring general funds to staff a TAP program in perpetuity.
Objectives	• Empower local communities to effectively participate in grant-funding programs.
2022 Recap	• Eleven counties and municipalities sought and received assistance from CARES Act EDA-TAP. Four projects are complete and seven are ongoing.
2023 Action Plan	
Key Strategies	Key Action Items
• Continue the existing EDA TAP.	• Economic Development Administration (EDA) TAP has a contract with Columbia Telecommunications Corporation (CTC) to perform projects for 11 applicants. Each project is a result of specific project assistance requested by the applicant. Four projects are complete, while seven remain outstanding. • OBAE and CTC are working on a contract amendment to extend the project to both offer more detailed assistance from current applicants and to offer new applicants assistance based on need through FY23.

• Launch several grant programs to provide technical assistance.	➢ **Technical Assistance Program** • The *Technical Assistance Program (TAP)* is designed to provide direct support for aspiring applicants for federal and state-funded grant programs. Participants will be selected on an equity basis, with direct consultative support and application preparation services available, tailored to participant needs. Structured engagement will engage qualified communities, Tribes, providers, and others poised to leverage public funding, leadership, or partnership to drive local broadband expansion – often through cross-sector collaboration. • Because OBAE is grantor, OBAE will build clear role-based duties and define access within the office to ensure no conflicts of interest exist between the assistance programs and grant programs. OBAE will separate the TAP division personnel, contractors, and programs from the grant division. ➢ **Accelerate New Mexico Planning Program** • The *Accelerate New Mexico Broadband Planning Program* is designed to support those local governments and Tribes focused on leveraging historic public broadband infrastructure funding for community-driven broadband expansion and cross-sector collaboration. This program offers local governments and Tribes an intensive 14-week community engagement, planning, and capacity building program with structured curriculum and expert consultation. The program will support local governments and Tribes that are interested in driving broadband deployment, likely through community-driven collaboration with one or more broadband service providers. ➢ **New Mexico Connected Community Grant Program** • The *New Mexico Connected Communities* program is designed to help drive community planning for broadband access, adoption, and use implementation. Multiple rounds of state grant funding, combined with expert consultative services and access to best-practice curricula, will be made available to assist local governments, Tribes, libraries, schools, and various community organizations with planning and progress around broadband access, adoption, and utilization -- a holistic approach to broadband deployment. The program will prepare local communities to participate, in time, in broadband deployment and digital equity programs. ➢ **Regional Engagement for Adoption and Digital Equity (READY)** • The *New Mexico Broadband READY Program* is designed to support qualified regional entities to engage in broadband deployment planning, engagement, and data collection. The program will leverage existing local initiatives, contribute to regional digital indicator dashboarding, and align local and regional broadband planning, engagement, and data collection with statewide efforts. Each regional entity will engage a representative cross-section of stakeholders to provide scalable solutions for expanded broadband access, adoption, and utilization across all economic development regions of the State. The program will prepare the State, through regional engagement, to incorporate local and regional perspectives and participation into broadband planning, investment, and deployment processes.

• Build a dedicated team to plan, design, implement and monitor these grant-funded TAP initiatives.	• The projects in the mid-range plan will require OBAE oversight. OBAE has requested the addition of three positions to oversee the TAP program. These employees will long the initiatives above and oversee contractor to launch and maintain the programs. • Beyond FY24, OBAE will need to be strategic about the projects that the TAP Department takes on and assists. On an as needed basis OBAE will contract with technical experts to ensure the assistance required can be delivered to the governmental agency seeking it.
Implementation	
KPIs	• Completion of the current 11 projects. • Creation of the mid-projects. • Hiring of the permanent employees to manage the programs and develop the future of the programs.
Critical Success Factors	• Staffing and ongoing funding.

10.0 Digital Equity

10.1 Strategic Priority: Achievement of 2023 programmatic requirements for the NTIA administered Digital Equity Program

➢ **Overview**

As directed by the IIJA, NTIA will distribute planning funds to states, territories, and Tribal groups to fund the creation of Digital Equity Plans. New Mexico received $740,534.91

The Digital Equity Plan that the State develops within one year of receiving its planning grant will be the key to receiving the State's portion of the $1.44 billion State Digital Equity Capacity Grant Program, which NTIA will also administer. Specifically, the implementation funding the State receives as a result of its Digital Equity Plan will fund a five-year grant program to be operated by the State that will enable the State to execute the programs identified in its Plan.

The Digital Equity Plan is expected to complement the State's application for Broadband, Equity, Access, and Deployment program grants to fund network deployments. Projects and priorities identified in the State's Digital Equity Plan will dovetail with BEAD planning.

This final plan is due within one year of the State's receipt of its planning funds. The Plan will be actively communicated to and shared with key stakeholders and the public. These efforts should include publishing the plan online, announcing the plan to the press, and engaging the public about the plan through social media.

10.1A	**Development of the Digital Equity Plan**
Overview	
Description	• To enable New Mexico to get maximum value from the federal funding opportunity, the State will take the following phased approach to developing the Digital Equity Plan, followed by extensive draft plan review (including a public comment period) and final submittal to NTIA: a. Foundational data collection and stakeholder engagement. b. Creation of measurable objectives and development of implementation activities. c. Drafting and organizational design. d. Following public comment and the last round of stakeholder socialization, the State will finalize and publish the Statewide Digital Equity Plan.
Objectives	• The State will seek to develop a Statewide Digital Equity Plan that will be optimized to meet the needs of residents throughout the State of New Mexico—and that will maximize the opportunities for eligible non-profits, community organizations, and government agencies to access federal funds and support digital equity initiatives.
2022 Recap	• The State has submitted its application to receive planning funds.
Action Plan	
Key Strategies	Key Action Items
• Collect a range of data sets and engage with stakeholders	• Build a digital equity stakeholder inventory by identifying and inventorying stakeholders as well creating a database of stakeholders that will be

(Foundational data collection and stakeholder engagement).	engaged throughout the planning efforts (e.g., state agency leaders, county and municipal organizations). • Develop a State Digital Equity Plan outreach strategy that focuses on engaging with state officials, anchor institutions, school system representatives, healthcare practitioners, and representatives from civic, businesses, and nonprofit organizations who have an awareness of and involvement in digital equity issues in different regions of the State. • Provide broadband and digital equity training that enables stakeholders to fully engage. • Design and field an asset inventory to inform a capacity assessment and gap analysis of current digital equity programs throughout the State. • Collect and analyze existing digital equity data that, to the greatest degree possible, identify broadband access gaps throughout the State. • Design and field a scientific survey of residential digital needs to develop data regarding barriers to meaningful use of broadband, particularly by low-income and rural households throughout New Mexico. • Design and field an analysis of barriers to covered populations' broadband adoption to provide insight to challenges and opportunities for residents who have historically been unserved or underserved. • Develop a digital equity dashboard, including an interactive data visualization map, allowing stakeholders to review datasets based on county and other geographic units. • Stakeholder engagement may include: Listening Sessions, Public Events and Meetings, Impact Area and Tribal Convenings and Workshops, Regional Meetings, Statewide Convening, Focus Groups, Interviews, Surveys, Asset Inventory.
• Create measurable objectives and develop comprehensive program plan all activities. (Creation of measurable objectives and development of implementation activities).	• Develop measurable objectives for digital equity to standardize measurable objectives for digital equity across the Covered Populations for the Statewide Digital Equity Plan. • Develop measurable objectives for the State's impact on Education, Workforce, Health, Social and Civic Service and Essential Services supported by the investments in digital equity. • Design an implementation strategy for the statewide Digital Equity Plan, identifying and prioritizing the type of projects or activities that will help the State move the needle on the measurable objectives through the implementation strategy.
• Draft the Digital Equity Plan and comprehensive operating model.	• Draft the Statewide Digital Equity Plan. • Develop a governance and operating model for Plan implementation. • Establish a program evaluation framework and sustainability indicators for digital equity. • Align the DEA and BEAD plans to establish a strong synergy and joint accountability between the BEAD plan and Digital Equity plan.
Implementation	
KPIs	• Completion of the Digital Equity Plan within one year of the receipt of funds. • Receipt of the State's portion (to be determined) of the $1.44 billion • State Digital Equity Capacity Grant Program

Critical Success Factors	• Active stakeholder participation

10.2 Strategic Priority: Fostering Digital Equity and Inclusion within Tribal Communities

10.2A	Fostering Digital Equity and Inclusion within Tribal Communities	
Overview		
Description	• OBAE aims to assist and support New Mexico Tribes in developing and deploying broadband infrastructure through Tribal consultation and engagement that leads to expanded access to health care, education and economic opportunity and includes strategies for access to funding, technical assistance, project management support, workforce development and sustainability in ways that protect Tribal sovereignty. • OBAE is committed to engaging New Mexico's 23 Tribes with respect and honesty honoring the rich history, culture, diversity and sovereignty of each Tribal nation in the State. • This initial approach to strategic planning is evolving and should include the input of the CNMC Tribal Workgroup and other constituents. • Ongoing collaboration with CNMC Tribal Workgroup. • Results to date have been documented in the stakeholder engagement. Extensive Tribal engagement has occurred via Tribal convenings, standing up the CNMC Tribal Workgroup and workshops that provided in-person technical assistance with the FCC data mapping challenge.	
Objectives	• Honor and respect Tribes and Tribal sovereignty in all aspects of NM broadband initiatives. • Strengthen New Mexico's relationship with Tribes. • Work together to improve health, education, and economic development outcomes for New Mexico Tribes.	
2022 Recap	• Supported nine engagements with 23 Tribes (or 100% of the Tribal nations in New Mexico) to foster digital equity and inclusion.	
2023 Action Plan		
Key Strategies		Key Action Items
• Ensure 100% of NM Tribes have participated in the FCC Data Mapping Challenge to ensure optimal positioning for funding by January 13, 2023.		• Communicate to all Tribes via electronic newsletter and other mechanisms. • Meet one-on-one with Tribes as requested. • Set up working sessions with the Pueblos. • Include NM Indian Affairs Department. • Follow up with Tribes by phone and email. • Look for opportunities to present at G2G Tribal meetings. • Ensure Tribes are included in the overall OBAE marketing for the mapping challenge. • Communicate technical assistance opportunities to Tribes. • Communicate funding and grant opportunities to Tribes.

• Expand quality broadband access to 100% of NM Tribes by January 2026 (Note: Martinez/Yazzie ruling to provide students with technology).	• Establish a Tribal department inside of OBAE that includes a 1) Project manager 2) Grants manager 3) Technical assistance expertise by June 2023. • Build philanthropic partnerships to ensure NM Tribes have options for matching grant requirements. • Develop NM legislative strategies to ensure Tribes are funded and resourced. • Ensure Tribes get fair compensation for right of aways that promote and stimulate economic development opportunities and overall sustainability. • Support Tribes when requested on supply chain issues for broadband build out. • Support Tribes in developing strategies to ensure their broadband initiatives are sustainable when federal and state funding is limited. • Support Tribes in developing workforce opportunities for their Tribal members and surrounding communities. • Set the stage and develop legislation for G2G between Tribes and OBAE (or ensure inclusion in Education G2G). • Develop NM specific Tribal broadband toolkit that includes an FAQ. • Communicate via electronic newsletter at least six times a calendar year about funding opportunities, technical assistance, tools, etc.
• Ensure NM Tribes have access to affordable, quality, high speed Internet, including access to modern devices by January 2026.	• Collaborate with Tribes to create workforce development training tailored for Tribal communities. • Support training among Tribal communities and members as it relates to maximizing broadband usage, including training on devices. • Support Tribes in developing affordability strategies for Tribal communities.
• Support NM Tribes in maximizing broadband uses to support cultural preservation, economic development, education and telehealth by January 2026.	• Engaging application • Economic Development • Telehealth • Education
Implementation	
KPIs	• Good awareness and strong participation by New Mexico Tribes in the FCC Data Mapping Challenge to ensure optimal positioning for funding by January 13, 2023.
Critical Success Factors	• Legislative authorized funding to establish a Tribal department inside of OBAE that includes: 1) Project manager 2) Grants manager 3) Technical assistance expertise by June 2023.

10.3 Strategic Priority: Maximize Participation in the FCC Affordable Connectivity Program

10.3A	Robust Participation in the FCC Affordable Connectivity Program	
Overview		
Description	• The Affordable Connectivity Program (ACP) is a federally funded monthly subsidy to help New Mexicans pay for Internet service. The reduced rate is $75 per household on sovereign nations and $30 per household in the rest of the State.	
Objectives	• Enroll all eligible households in New Mexico in the ACP.	
2022 Recap	• OBAE worked with ISPs to encourage supplier enrollment in the ACP and to encourage their customers to enroll. • Public Education Department had a Help Desk program that assisted residents with information to enroll in the ACP.	
2023 Action Plan		
Key Strategies		Key Action Items
• Launch series of community engagement programs to drive enrollment.		• Promote the National Affordability Connectivity Hotline. • As part of the Digital Equity Plan, include information about the ACP at every event. • Develop and leverage existing program materials that provide awareness, guidance, and retention on the ACP.
• Collaborate with ISPs to drive adoption.		• Work with ISPs at the individual company level to encourage participation. • Diligent monitoring of all grantees regarding their performance to promote and enroll eligible households.
Implementation		
KPIs	• New Mexico places among the top 10 states for enrollment percentage among eligible households. • Every Digital Equity public presentation to include information on ACP benefits and eligibility. • 100% compliance by NM grant awardees with regard to all ACP obligations.	
Critical Success Factors	• Hiring of OBAE Digital Equity Manager. • Genuine commitment by NM ISPs to promote and enroll eligible households.	

11.0 Next-Generation Statewide Networks

11.1 Statewide Education Network (SEN)

11.1A	Launch of Statewide Education Networks	
Overview		
Description	**Statewide Education Network (SEN)** • The Statewide Education Network will connect all interested public schools and public libraries together and to scalable, reliable, affordable, and secure Internet.	
Objectives	• Connect public schools and public libraries together and to secure Internet, while maximizing E-rate funding. • Allow schools to share instructional resources, increase opportunities for students and teachers • Leverage the school's buying power and access to predictable federal funding to establish the sustainable foundation for broadband growth for the entire State. • Create neutral aggregation points for Middle Mile and connections between networks. Nodes will serve as launching points for connectivity in the region.	
2022 Recap	• Agreements for Phase1 of the SEN are being negotiated for review/approval by the PSCOC in spring of 2023.	
2023 Action Plan		
Key Strategies		Key Action Items
• Complete procurement process.		• Completed a major procurement for Phase1 of the SEN that could connect at least 150,000 students and teachers.
• Upgrade nodes.		• UNM Gallup node upgrades are under way, with completion expected in late spring 2023. • OBAE secured funding for upgrades to additional nodes in 2023 that will serve Phase 1 participating schools and beyond.
• Form partnership between PSFA and OBAE		• Public School Capital Outlay Council (PSCOC) approved a Joint Powers Agreement between Public School Facilities Authority (PSFA) and the Office of Broadband Access and Expansion (OBAE) to streamline and expedite the SEN implementation.
• Foster outreach regarding program.		• Conducted webinars, presentations, and one-on-one meetings with schools and other stakeholders to build awareness regarding the benefits for participants, the implementation steps, and timeline.
Implementation		
KPIs	• Four nodes upgraded by December 31, 2023. • Four more nodes upgraded by December 31, 2024. • SEN backbone operational spring 2024. • Schools and libraries connected, in phases, beginning spring 2024.	
Critical Success Factors	• Contracts executed spring 2023 to upgrade nodes. • Contracts executed spring 2024 to upgrade nodes. • Contracts executed spring 2023 to connect backbone nodes and circuits.	

	• Contracts executed fall 2023 to connect schools and libraries

11.2 Statewide Middle-Mile Network

➢ **Overview**

Middle-mile infrastructure can be defined as the connection between a local network, also called a "last mile" connection, and the backbone Internet network. Middle-mile networks serve several roles:

- Catalyst for last-mile network deployment and upgrades involving fiber or next-generation fixed wireless;
- Catalyst for the coverage expansion for mobile and public safety networks (e.g., FirstNet) which require high-speed backhaul;
- High-capacity bandwidth solution for public institutions, including: State, Tribal and local government agencies; community institutions; research and education networks (e.g., higher-ed and K-12);
- Enabler for Intelligent Transport Systems when crossing major roadways;
- Requirement for hyperscale data centers requiring ultra-high-speed fiber backbone networks with redundant pathways; and
- Enabling redundancy and resiliency of critical network infrastructure.

➢ **Key Gaps**

OBAE recognizes that many unserved and underserved communities lack the availability of high-speed middle-mile networks. Due to this gap, last-mile service providers are unable to cost-efficiently upgrade or extend their last-mile networks, which must interconnect with the middle-mile networks to reach the Internet backbone. Moreover, several stakeholders depend upon dedicated high-speed backhaul, including mobile network operators (MNOs), data centers, research and education networks, public agencies, large enterprises, etc.

The significant challenges facing New Mexico include limitations of existing networks on major interstate corridors, an ever-evolving deployment with current and new entrants into the middle mile market, physical terrain, environmental reviews and permitting, and the constant pressures of workforce and supply chain demands. OBAE must work collaboratively with stakeholders and the private sector to aggressively pursue a strategy to maximize the funding opportunities on the near horizon. These challenges articulated above can be mitigated or improved through cohesive problem-solving and joint design advocacy to enhance the overall funding and construction environment

➢ **Importance of Tribal Areas**

Significant opportunities exist within Tribal nations; however if existing broadband providers do not report service in their areas, the data will not reflect their information. Given the high concentration of Tribal lands within the Northwest, North, and Central regions, it is vitally important that the deployment strategy considers the significant opportunities to build upon the recent PEN successes in funding awards. During the funding round for NTIA Middle Mile Expansion Program in exploring potential routes for current federal funding programs, leadership for the Tribal nations indicated a keen interest in leading deployment efforts to assist in closing the middle-mile gaps across their territories. Exhibit 2 in the Appendix represents the Tribal nations within the Northwest, North, Central, and Southeast Regions of New Mexico.

11.2A	Middle-Mile Expansion Strategy through Public-Private Collaboration
Overview	
Description	• The State's middle-mile strategy involves a three-phased approach: 1) all three interstate highway corridors (I-25, I-40, I-10) have open-access, dark fiber networks with frequent interconnection points; 2) form regional rings off those corridors and then laterals into communities with an open-point of interconnection to enable the deployment of advanced broadband networks and future upgrades; 3) make Albuquerque a major regional carrier hotel that lowers IP transit costs, keeps intrastate traffic local and improves network performance and resiliency for all New Mexico ISPs. • OBAE plays several vital roles in achieving this middle-mile strategy as a funder, convener, coordinator, and implementer. A high standard of fiber-based projects with high fiber conduits, multi-channel conduits, and the installation of frequent interconnection points for providers, communities, and institutions to easily connect to the network.
Objectives	• All New Mexico communities should benefit from close proximity to open-access middle-mile networks that offer reasonably priced, high-speed lit services and dark fiber to facilitate backhaul and support private links for government, large enterprises, data centers, educational institutions, and others requiring at least 1 Gbps connectivity. • This strategy requires a multifaceted response involving large-scale funding and active coordination of open-access middle-mile network deployment.
2022 Recap	➢ **NTIA Middle-Mile Application** • OBAE filed a middle-mile application, entitled "Southern New Mexico I-25 Fiber Initiative," to bridge the digital divide in southern New Mexico. This middle-mile network involves an open-access, dark fiber network that will cost-effectively catalyze last-mile deployment across unserved and underserved communities. • Project involves a 251-mile dark-fiber buried network that runs from Socorro, NM, to El Paso, TX, and directly spans Sierra, Socorro, and Doña Ana counties. About 20-25% of the 240,000 residents – representing about 100,000 households – are unserved or underserved (based on premises within 15 miles of the fiber deployment). This region represents over 4,100 businesses – many of which lack broadband offering 100/20 Mbps. • The main route spans 203 miles in length along New Mexico I-25 and I-10 and then Highway 20 (for a few miles) into the State of Texas. Frequent interconnection points are enabled by 347 handhole locations along with 87 planned splice points. The handhole locations are strategically designed to allow for more frequent access in town areas, near CAI locations, wireless tower locations, county, and state highway road crossings, and at NMDOT mile marker posts. The network involves an 8-path multi-duct conduit that will initially contain 288 fiber strands in one path – a truly future proof architecture reflecting the principles of Dig Once. • A second redundant route runs Las Cruces to Gadsden in Dona Ana County. It is 48 miles long and traverses over four State of New Mexico highways and one Texas highway. This route drops an interconnection points across several smaller towns (120 handholes and 21 planned splice points)- and spans across Highways 28, 182, and 273. The full network will be placed in New Mexico Department of Transportation ROW

	(NMDOT), county and local public rights of way, and some limited State of Texas Department of Transportation ROW. • This proposed project, if funded, will integrate with the middle-mile spans of two recently awarded NTIA projects from the Tribal Broadband Connectivity Program. The project establishes a meet-me point in Socorro with the Santa Fe Indian School, an NTIA awardee of $57.3 million that funds fiber from Albuquerque to Socorro. The result will involve an integrated fiber network from El Paso to Albuquerque. Next, the project establishes a meet-me point in El Paso, TX, with Mescalero Apache Telecom, an awardee of $43.9 million that funds fiber from the Mescalero Apache reservation to El Paso over Highway 54 in Otero County. These three projects will unleash local ISPs to develop cost-efficient, sustainable business plans for last-mile deployment to their communities. • OBAE also provided several letters of support to NTIA on behalf of other applications that were submitted. ➢ **Request for Information** • OBAE issued two rounds of a Request for Information (RFI) in May and August of 2022 to ascertain from the broadband community and other interested stakeholder's middle mile needs, areas of priority and whether new routes were being deployed. The first round received nineteen responses, including providers (16), government (1), and non-profits (2). The second round yielded twelve responses, including providers (6), government (2), higher education (1), and non-profits (2). • Overall themes from the outreach documented the desperation for middle-mile access, recommendations for future builds, frequent interconnection points, use of multi-duct conduit, and investing in infrastructure that is sustainable and can be expanded over time. Most respondents were willing to partner with the State on new infrastructure or provide targeted growth areas for their companies. • Respondents identified at least four Tribal nations and 19 communities in critical need of middle-mile access. They include: - Tribal: Acoma, Laguna, Navajo, and Zuni - Communities: Abiquiu, Alamo, Arrey, Bloomfield, Candy Kitchen, Chimayo, Cimarron, Crown Point, Cuba, Espanola, Fruitland, Kirtland, Los Alamos, Magdalena, Nenahnezad, Ojo Amarillo, Penasco, Pine Hill, Pojoaque, Ramah, San Truchas, Tierra Amarilla, Ysidro, Vanderwagen, Waterflow, White Rock, and Ya-Ta-Hey.

2023 Action Plan	
Key Strategies	**Key Action Items**
• Develop and publish the State's detailed middle-mile strategy that complements the 5-Year Action Plan for BEAD.	• Review and socialize recently produced priority routes within these four regions determined by Finley Engineering (consultancy). • Define the technical requirements for all the routes. • Identity various public-private partnership models. • Develop the program design. • Incorporate all findings to date: RFI input, NTIA Middle-Mile Application, federally-funded middle-mile awards, priority routes, and all technical and strategic analyses completed in 2022.

• Seeking funding from legislature.	• Make a formal presentation regarding the need for $300-500 million to fund a statewide middle-mile networks.
• Initiate a state-led middle-mile investment program.	• Establish a dedicated middle-mile investment program to foster middle-mile across all priority routes across the State and Tribal regions. • Strengthen the SEN, Higher Education facilities, DoIT, and DOT nodes with the following activities: upgrades to equipment, increase cybersecurity efforts, other necessary infrastructure improvements (e.g., cooling systems), and support redundancy and resiliency efforts to develop in a ring formation point-to-point 100G wave connections between SEN POP sites, denoted as Exhibit 4 in the Appendix. • Support the implementation of locations where last mile providers and other stakeholders can easily access the middle mile infrastructure, otherwise referred to as 'meet me' aggregation points. OBAE has identified at least twenty locations that can be utilized as aggregation points and enable more last-mile connectivity throughout the State. These opportunities can assist in lowering providers' cost of middle-mile connectivity by providing an open access point with minimal resources required. • Provide seed capital to research, develop the business model, and initiate shifting 505 Marquette in Albuquerque into a central carrier hotel. The evolution of 505 Marquette into a carrier hotel will lower IP transit costs, keeps intrastate traffic local, improves network performance, and achieves a more resilient statewide network.
Implementation	
KPIs	• Priority routes published and comments received. • NTIA grants awards to the State and other New Mexican applicants for the NTIA Middle-Mile Grant Program.
Critical Success Factors	• Legislature-approved Budget Authority: State requires $300-500 million to fund middle-mile networks. Final estimate being developed. The specific funding will be influenced by the: level of need indicated in the broadband mapping data; types of public-private partnerships that can be developed and the investment contributed by the private sector. • Coordination with SEN: OBAE will consider SEN and Higher Education assets that may benefit and receive additional support due to the new infrastructure. The network has 65 participating locations, nine of which serve as backbone nodes. Investments in middle-mile access have been shouldered primarily by local institutions, with State support being provided occasionally over the years. The resources needed to upgrade or enhance services typically far exceeds budget requests by schools, libraries, and higher education institutions. The forthcoming resources to invest and accelerate middle mile interconnectivity is another high priority for OBAE to advance redundancy and resiliency efforts.

	• Coordination with Recently Awarded Projects: NTIA awarded funding for several middle-mile projects. Any statewide strategy will carefully coordinated with consistent updates and dialogue amongst the principals from each entity denoted. The constant discussion, planning, and comparison of construction schedules may yield synergies in coordination activities, the anticipation of supply chain challenges, and the identification of other challenges that may arise and can be quickly addressed by the leadership. Another key benefit of regular and consistent communication is that it will lead to the development of prospective partnerships and collaborations for future endeavors.

11.3 Coverage Expansion of Mobile Broadband and Public Safety Networks

➢ **Overview**

Mobile networks operators (MNOs) provide vital voice and broadband connectivity to mobile users. Moreover, several regional and national MNOs increasingly offer fixed wireless by leveraging existing towers and base stations. One national carrier, T-Mobile, is largely focused on rural communities. [35] 5G networks cover over 315 million Americans (95% of population) and constitutes the fastest-growing segment of the home broadband market. [36]

Over the last twenty years, MNOs in New Mexico have invested billions to improve coverage and capacity. Nevertheless, signals remain weak or non-existent across many rural-based roads. Moreover, rural-based residents and businesses cannot turn to these networks for broadband data service, in contrast to those living in urban and suburban settings, who have broadband choice where a mobile hotspot can be an adequate substitute for fixed broadband service. Key limitations include lack of towers and high-speed backhaul. OBAE aims to engage in several collaborative initiatives to address these limitations.

11.3A	**Rural 5G Coverage Acceleration**
Overview	
Description	• Involves a comprehensive program to: a) identify coverage holes across rural communities and highly trafficked roadways; b) identify gaps in the public safety networks (e.g., FirstNet); c) understand the mobile network operators' specific plans to address these gaps; d) gain industry feedback on key barriers toward achieving quality coverage and capacity; e) determine approaches on how current and planned last-mile grant programs can be used to facilitate 5G coverage expansion (e.g., open-access requirement for backhaul networks; shared usage of towers for fixed and mobile broadband); f) design other programs to foster universal 5G coverage (e.g., investment, integration statewide middle-mile initiative, permit streamlining, etc.)
Objectives	• Improve the 5G signal strength (and future generations of mobile wireless technology) across all of rural New Mexico so that: 1) every rural community and highly-trafficked roadway includes reliable voice and data services; 2) first responders have strong signals

[35] The Office of -Mobile's fixed wireless sub base skews heavily rural – study. https://www.lightreading.com/5g/t-mobiles-fixed-wireless-sub-base-skews-heavily-rural---study/d/d-id/776745
[36] https://www.ctia.org/news/u-s-wireless-investment-hits-record-high

	from FirstNet and other public safety networks: 3) mobile broadband networks can offer access, choice, and resiliency to unserved and underserved residents and businesses.
2022 Recap	• The Connect New Mexico Pilot Program provides additional points for those applications that can serve the broader needs of the community, including fostering 5G cellular service (e.g., sharing towers, open-access backhaul, other collaboration with the 5G mobile network operators).
2023 Action Plan	
Key Strategies	Key Action Items
• Obtain industry and stakeholder input.	• Issue RFI to obtain input from MNOs and key stakeholders to develop a comprehensive record on investment plans, key barriers, and public-led solutions to over 5G coverage gaps. • Make 5G coverage gaps a key topic in local community and Tribal engagements. • Engage with satellite operators to understand how new generations of satellites can provide backhaul to base stations in highly remote areas.
• Conduct inventory of all major coverage mobile gaps.	• Work with EDAC to develop tools to comprehensively identify coverage gaps. • Collaborate with FCC to ensure its 5G data set (in the Digital Opportunity Data Collection) accurately reflects coverage gaps in New Mexico.
• Find synergies with other grant programs to facilitate rural 5G expansion.	• Ensure all fiber-based middle-mile spans and new towers funded by any federal and State offer open access and tower leases, respectively, at reasonable prices • Convene meetings between federal and State awardees and their potential to leverage existing assets. • Communicate all existing awards and asset footprints to the mobile sector.
Implementation	
KPIs	• High-quality, reliable 5G coverage across all rural communities and highly-trafficked roadways.
Critical Success Factors	• Accurate identification of all coverage and capacity gaps. • Hiring of OBAE staff member to own this initiative (50% time). • Legislative appropriation for: a) middle-mile funding which can address lack of backhaul which can stymie industry's efforts to improve rural 5G coverage; b) 5G funding to help subsidize network construction in high-cost areas.

11.4 Network Resiliency and Cybersecurity

➢ **Overview**

It's imperative that all network elements – last-mile, middle-mile, SEN, PEN, and mobile wireless networks – are always operational, reliable, and secure. Network downtimes and cyberattacks can impede the productivity and safety of residents, businesses, and institutions. For example, disruptions not only interfere with telework, remote learning, and telehealth – but life-impacting services such as 911.

A variety of external threats not only interfere with daily functions, but may lead to recent broadband adopters to stopping using and meaningfully engaging with online resources. These threats include environmental, human error, criminal, etc. Recent wildfires, and their potential frequency due to climate change, unfortunately, make network resiliency a critical priority. The network designs should reflect best practices around: a) redundancy through backup paths and systems that minimize downtime; b) defense against physical attacks (man-made or environmental); c) defense against cyberattacks; d) long-term sustainability.

Cybersecurity is a major risk to all New Mexico institutions including K-12 Schools, Higher Education, State, Municipal, and County governments. These same organizations must have resilient Internet and telephony services to secure the wellbeing and safety of all New Mexicans. OBAE has been developing a plan to ensure these institutions have the support of DoIT in resolving potential issues through multiple projects that provide distributed Cybersecurity resources via the Middle Mile Plan. OBAE is addressing New Mexicans' online security issues by incorporating security services like Distributed Denial of Service (DDOS), Intrusion Detection Services (IDS), and Intrusion Protection Service (IPS) across the State Education Network (SEN) and the Network Aggregation Points associated with the State's Middle Mile plan.

<table>
<tr><th>11.4A</th><th colspan="2">Statewide Network Resiliency and Security Program</th></tr>
<tr><td colspan="3">Overview</td></tr>
<tr><td>Description</td><td colspan="2">• Develop a comprehensive program that: a) identifies weak points for every network type across the State; b) understands industry's attempts to build highly resilient, secure networks; c) ensures network resiliency and security as part of every infrastructure funding program (e.g., program design, scoring, evaluation, and project implementation); d) identifies other opportunities for public-private collaboration.</td></tr>
<tr><td>Objectives</td><td colspan="2">• Eliminate any and all vulnerable and weak points across the myriad public and private networks so that the impact of network downtime and cyberattacks is inconsequential.</td></tr>
<tr><td>2022 Recap</td><td colspan="2">• OBAE has worked to ensure the SEN and Middle Mile Network has Cybersecurity and Network Resilience as a cornerstone to the Strategic Broadband Plan. The network will bring diversity to single thread communities.
• As the rollout begins OBAE has begun to map out a Cybersecurity path the includes DDOS, IPS, and IDS to ensure the broadband being delivered is safe.</td></tr>
<tr><td colspan="3">2023 Action Plan</td></tr>
<tr><td colspan="2">Key Strategies</td><td>Key Action Items</td></tr>
<tr><td colspan="2">• Develop a comprehensive fact-set on network resiliency and security.</td><td>• Issue a series of RFIs to understand key weaknesses and risks across public and private networks; activities to resolve these; key obstacles and barriers from achieving 100% resilience and security; set of strategies and initiatives that the State can lead in collaboration with industry.
• Review best practices and lessons from other states and their broadband offices.</td></tr>
</table>

	• Gather stakeholder input during all meetings for the development of the Five-Year Action Plan.
• Ensure all public networks owned and operated by the State (or planned) are fully resilient and secure.	• Ensure all network aggregation points for the SEN and PEN reflect the best-in-class designs and technologies to withstand network outages and cyberattacks. • Leverage network aggregation points to enable resiliency and security for commercial network providers, public safety, etc. • Select best-in-class vendors through an exhaustive. procurement process that not just protects state networks, but can by synergistic to all non-state networks.
• Ensure network resiliency and security are part of every infrastructure funding program	• Integrate network resiliency, redundancy and security objectives, best practices, strategies, and other current and planned programs in the BEAD Five-Year Action Plan. • Make review of network resiliency and security part of every site visit.
Implementation	
KPIs	• SEN and PEN adoption of network resiliency and security provisions in award agreements.
Critical Success Factors	• Secure funding for Middle Mile. • Secure funding for Cybersecurity assets.

12.0 Program Stewardship

An unprecedented amount of grant funding will be invested in New Mexico over the next five years for both broadband infrastructure development and digital equity and inclusion programs. These funds will require scrutiny to prevent waste, fraud. Moreover, given the high level of need relative to the potential funding amounts, the process must be based on the principles of transparency and accountability. This applies to both the government agencies issuing the funds and the awardees (grantees) receiving the funds. Thus, the three-year plan recognizes the immense value of program stewardship. OBAE leadership and staff are committed to the utmost transparency and accountability of its programs. Moreover, the awardees must be fully committed to meeting all programmatic and compliance requirements.

12.1 Strategic Priority: OBAE Transparency and Accountability

➢ **Overview**

The Governor's Office, along with the OBAE team, recognize the immense responsibility and trust placed by the public into these institutions to ensure that the grant funds are used most effectively and efficiently. OBAE is committed to transparency regarding programs, initiatives, and results.

Moreover, OBAE has been very transparent across the programs that defined its first full year, such as the Connect New Mexico Pilot Program. The program materials clearly defined the scope, purpose, process, and evaluation criteria. The public expects transparency as well as measurable results that yield universal broadband availability, adoption, meaningful usage, and a complementary set of statewide networks. It is these results which will help drive social and economic advancement for all New Mexicans. In all aspects, OBAE will be fully accountable for its decisions.

OBAE intends to launch three initiatives in the year 2023. They include: a) rulemaking initiative; b) an Annual Report updating progress associated with the initiatives in this Broadband Plan; c) partnership with the New Mexico academic community to engage in program evaluation and community impact.

12.1A	**Rulemaking for Broadband Grant Programs**
Overview	
Description	• The rulemaking initiative involves the establishment of rules that apply to the development, award and administration of grant programs within the jurisdiction of DoIT, the Office of Broadband Access and Expansion ("OBAE"), the Connect New Mexico Council ("Council"), or to any public body administratively attached to DoIT, directly or indirectly. These rules also apply to a subject grant program, as applicable, and to any person who applies, or intends to apply, for a grant under a program that is subject to these rules. These rules do not apply to contracting. • These rules are required pursuant to Paragraphs A and B of Section 9-27-6 NMSA 1978; Paragraph C of Section 63-9K-4 NMSA 1978.
Objectives	• Develop rules that establish standards and practices that foster grant applicant participation, program transparency, consistent standards of evaluation. • Rules should be clear, adaptable, reasonable and still allow for program flexibility.

2022 Recap	• A working group – comprised of Council members and staff from DoIT and OBAE – spent several months to develop the rules based on research (e.g., best practices), strategizing, and extensive discussions. • Presented the rules to two Special Connect NM Council meetings (November and December). • The Notice of Proposed Rulemaking (NOPR) was published in the New Mexico Register on December 27, 2022, establishing a public comment period through the date of the public rule hearing on January 30, 2023. There will be a response comment period with a deadline February 9, 2023. The intent is to have these rules adopted with an effective date of April 1, 2023. Note: Website :https://www.doit.nm.gov/rulemaking/

2023 Action Plan	
Key Strategies	**Key Action Items**
• Obtain public feedback on the draft rules.	• Review written comments and proposals received from the Notice of Proposed Rulemaking and responses received thereafter. • Summarize comments and share with working group members.
• Incorporate changes into the draft rules.	• Apply comments, proposals, and other suggestions that establish standards and practices that meet the rulemaking objectives.
• Publish the revised rulemaking.	• Incorporate valuable public feedback into the final draft.
• Obtain Council approval and publish final rules.	• Present the rules to the Council for consideration. • Incorporate any other relevant feedback. • Publish the rules.

Implementation	
KPIs	• Final rules published by June 30, 2023
Critical Success Factors	• A large, cross-section of New Mexico service providers and other stakeholders file comments in the NOPR process. • Connect New Mexico Council approves program strategy, design, and materials.

12.1B	**OBAE: Year End Annual Progress Report**
Overview	
Description	• OBAE will produce an annual report, at the end of each calendar year, that provides a progress update on the identified strategic priorities and initiatives listed in each Three Year Broadband Plan. The assessment includes the progress made by OBAE, and stakeholders involved with the initiatives (e.g., awardees' progress with grant-funded projects). • The first Annual Report will be published on or before January 1, 2024 and same date each year thereafter– in parallel with the Broadband Plan update also due on the 1st of January.
Objectives	• Transparent reporting of the progress achieved across the myriad initiatives under OBAE's purview.
2022 Recap	• The Annual Report for 2023 will be the first report. OBAE has produced other progress reports such as the October 2022 report from the Connect New Mexico Council.

Action Plan	
Key Strategies	**Key Action Items**
• Develop a detailed project plan for each initiative.	• Define owners, targeted milestones and dates, and key dependencies for each initiative listed in this Three-Year Plan.
• Track results.	• Develop a reporting system to monitor, track and report results. • Develop a quarterly status report (for internal review).
• Publish the annual report.	• Publish the report in December 2023 and each December thereafter. Post the report on the OBAE website.
• Implementation	
KPIs	• Detailed project plan is set-up for each initiative by February 28th, 2023. • Annual report published on or before January 1, 2024
Critical Success Factors	• Staff requirements must be addressed to enable the execution of the initiative, which will impact the progress in the Annual Report.

12.1C	**Program Evaluation and Socioeconomic Impact Assessment**
Overview	
Description	• OBAE aims to develop a partnership with researchers from the New Mexico's higher education community. The scope involves three aspects to measure: a) effectiveness of program design and implementation; b) grantee results; c) community impacts and outcomes. These can be done through case studies, for example. • Project research can be led by professors in collaboration with graduate and undergraduate students.
Objectives	• Provide the public transparency regarding the performance of OBAE's programs and awardees results, and well as community impact and outcomes.
2022 Recap	• N/A (new program)
Action Plan	
Key Strategies	**Key Action Items**
• Develop detailed design of this program.	• Review similar program evaluation initiatives that federal and state governments have implemented (e.g., NTIA BTOP collaboration with ASR Analytics). • Develop separate designs for broadband infrastructure, digital equity, technical assistance.
• Obtain feedback from stakeholder community.	• Socialize program with university partners to obtain their feedback, insights, and level of interest. • Issue a RFI to obtain feedback from the broader stakeholder community.
• Leverage stakeholder input and analysis from the Five-Year Plan and Digital Equity Plan to develop research framework.	• Develop questions and topics to cover during stakeholder engagement. • Identify existing or prior research programs and identify key strengths and shortcomings.
• Finalize a partnership with higher education institutions.	• Develop a detailed budget. • Develop an MOU.

	• Use the Connect New Mexico Pilot Program as the first initiative to lead with the Pilot Program.
Implementation	
KPIs	• MOU with at least one New Mexican institute of higher education by June 2023
Critical Success Factors	• Obtain funding support from the legislature • Interest and participation by academic community • Staffing resource to manage the program

12.2 Strategic Priority: Grantee Accountability for Programmatic and Compliance Requirements

The unprecedented level of federal and state grant funding for both infrastructure expansion and digital inclusion constitutes a generational investment. The grantees, or awardees, will engage in the "heavy lifting" to plan, deliver, and sustain the projects – most of which are complex, lengthy, and involve several dependencies. Nevertheless, the grantee is making a commitment to fulfill all programmatic obligations and compliance requirements. While OBAE will strongly consider an applicant's ability to execute across all facets of the grant award, the ultimate responsibility rests with the grantee for: project execution; compliance with state and federal laws and rules; preventing waste, fraud, or abuse with regard to expenditures; and tracking and maintaining records for all reporting requirements. OBAE is developing an elaborate system to foster accountability throughout the life of the grant-funded project.

12.2A	**Comprehensive System to Foster Grantee Accountability**
Overview	
Description	Involves a comprehensive system to foster accountability by award recipients, but also to provide assistance and support to position awardees for success. Key elements include the following: - Award Agreements: Clearly defined agreements that list all program and compliance requirements. - Reporting: Quarterly and annual reporting on funds expended, key performance indicators (e.g., miles deployed, training classes held, etc.), project outcomes, key risks and mitigation approaches, etc. - Communication: Frequent communication by OBAE staff with grantees to gauge project performance, assess compliance, and understand key challenges and risks (and help grantee navigate them). - Program Resources: Develop tools to enable grantees to position awardees for success in meeting programmatic and compliance requirements (e.g., guidelines, FAQs, best practice summaries, webinars, technical assistance, etc.) - Site Visits: Periodic visits to the offices and field to directly witness and evaluate grantee performance and compliance.
Objectives	• This system aims to: 1) ensure awardees fully understand their programmatic and compliance obligations; 2) hold awardees accountable for fulfilling their obligations; 3) provide tools and resources to position the awardees for success; 4) proactively manage challenges and risks to minimize any negative impact; 5) leverage the experience and

	knowledge of the New Mexico and national grantee community to share best practices, risk mitigation strategies, etc.
2022 Recap	• Hired a software firm to develop and maintain grants management system (GMS). • Developed drafts of the Award Agreement for the Connect New Mexico Pilot Program.
Action Plan	
Key Strategies	**Key Action Items**
• Develop award agreements that lists all program and compliance requirements.	• Develop robust contracts to ensure grant recipients have a clear understanding of all programmatic and compliance obligations. • Develop a payment release mechanism that ties payments to programmatic execution. • Determine policy on imposing binding penalties for grantee for non-compliance or non-performance.
• Develop and enforce reporting requirements.	• Publish reporting requirements and guidance that considers all federal and state mandates specific to grant program. • Design internal procedures and methods to collect, track, and report on data collected. • Develop reporting template based on reporting requirements. • Make funds receipt contingent upon fulfilling reporting requirements. • Build reporting requirements into Grants Management System. • Enforce FCC policy Broadband Consumer Labels for all New Mexican grant awardees
• Actively communicate with awardees.	• Host frequent checkpoints (bi-weekly or monthly) by the grants program officer. • Create a forum by which all grantees meet once a year to discuss progress. • Highlight performance and best practices in OBAE newsletter.
• Develop comprehensive set of tools to support grantee performance.	• Develop the following tools: guidelines, FAQs, best practice summaries, webinars, technical assistance sessions, office hours, etc. • Evaluate and apply best practices from federal and state broadband programs for TA support on adherence to programmatic and compliance requirements.
• Perform site visits to directly witness and evaluate grantee performance and compliance.	• Develop policy framework on scope and timing of site visits. • Develop site visit checklist.
Implementation	
KPIs	• 100% conformance with programmatic and compliance requirements by awardees. • 100% quarterly and annual reports submitted on-time by awardees (and State for federal projects).
Critical Success Factors	• Awardee participation. • Legislative appropriation to fund staffing requirements to enable monitoring, enforcement and support.

13.0 Critical Success Factors

Several critical success factors (CSFs) significantly influence the planning and execution of the initiatives, and ultimately, the achievement of the four strategic goals. These include: a) fulfilling all OBAE staffing requirements; b) obtaining required federal and state funding, especially for network infrastructure grant programs; c) other legislative actions defined below.

13.1 OBAE Staffing Requirements

The statutory requirements for OBAE requires sufficient staffing. In FY22, OBAE operated with a small team and remained small into FY23 with 6.5 full time employees.

Through the executive budget, OBAE requested to grow to 21 general fund positions: 14.5 new positions and 6.5 existing positions. In addition, OBAE will create five federally funded positions. This will increase the total staff count to 26. Failure to grow rapidly will impede OBAE's ability to meet its mission and obligations – e.g., pursue funding opportunities, administer grant programs, develop technical assistance programs, develop rights of way repositories, or map resources.

Built into the ask is $1.7 million in additional funding over FY23. The ask incorporates desired classifications, salaries at midpoint, benefits and additional costs for computers and office subscriptions. Also built into the cost is a request to fund salaries at 15% above midpoint. While this is outside the normal budgeting for State government, the ask is important because OBAE is using generic classifications that do not consider the specialized nature of the work of the project managers and broadband specific positions. OBAE is competing for a limited number of highly skilled workers with knowledge of broadband, telecom, and electrical industries. Please see Appendix (15-4) for the proposed budget for additional staffing.

In the long term, OBAE anticipates the need to grow to 50 FTE in succeeding years to build programs over time to meet goals and statutory obligations.

13.2 Grants for Network Infrastructure and Other Funding Matters

Preliminary estimates indicate that the State requires up to $5.5 billion for broadband infrastructure – depending upon assumptions regarding technology, ability to leverage existing assets and accuracy of broadband mapping data.

The State has approximately $193 million authorized for the Connect New Mexico Pilot Program ($123 million) and Connect New Mexico Fund ($70 million).

It is unknown how much NTIA will award the State through the BEAD initiative. For example, for discussion purposes only, a $300 million BEAD allocation would mean a total of approximately $500 million in grant funds, representing ONLY about 10% of the $5.5 billion total required amount. While the applicants will be asked to contribute at least 25% through matching funds, assuming all providers invest the minimum 25%, the State would then need at least $3.6 billion in grant funding.

- **Legislative Request(s)**

For the 2023 legislative session, OBAE is seeking:

- Appropriation of $500 million to Connect New Mexico Fund for both last and middle-mile expansion during the regular session of the 56th legislature.
- Replenish the Connect New Mexico Fund (in FY 2025) based on a refined analysis on the capital requirements that will be part of the Five-Year Action Plan due to NTIA in August 2023. This amount may be up to $3.6 billion. The exact amount will be influenced by various factors, including:
    - Amount NTIA grants via the BEAD
    - Assumptions regarding the mixture of fiber vs. fixed wireless
    - Ability to leverage existing assets
    - Broadband mapping data
    - Middle-mile priority routes

In addition, OBAE requests the following points for consideration by the legislature:

- Adequately fund OBAE. The budget would be supplied through the recurring funding at 5% of funding/value of projects for which OBAE has anticipated oversight, including the Connect NM fund, federal grants, New Mexico Rural Universal Service Fund (NMSRUSF), etc.
- Clarify all New Mexico broadband funding will be administered by OBAE.
- Include oversight of NMSRUSF-funded projects in the duties/responsibilities of OBAE.
- Establish a robust state funding structure to provide technical and financial assistance for Pueblos, Tribes, and local governments to setup their preferred method to provide Internet services to their members (e.g., P3, Tribal/municipal, ISP etc.).

13.3 Other Legislative Requirements

OBAE has additional priorities for the first session of the 56th legislature. These are critical toward achieving this Plan's strategic goals, priorities, and initiatives.

A) Governance of State-Owned Broadband Assets and Commercial Agreements

- **Context**

Several states have created a public entity to manage their statewide broadband networks. New Mexico should consider these successful states' models as it relates to the establishment of a public corporation (non-profit) to be responsible for those assets as well as managing interaction/contracting with Tribal governments and private entities (IRUs, fiber swaps, peering agreements, etc.). Without this structure, OBAE will need to own, monitor, and maintain the infrastructure assets, whereas a public corporation would be able to lease fiber and other assets to help maintain the infrastructure, while partnering with and accounting for both public and private sector needs.

- **Legislative Request(s)**

✓ Enact legislation that allows the creation of a Public Benefit Corporation-- to serve public, Tribal and private sector needs. The public corporation would have a board with representatives from all three sectors to facilitate the brokering of these needs.

✓ Allow OBAE, or a public corporation, to enter into agreements with Tribes, neighboring states' broadband network managers, and Research and Education (R&E) networks to collaborate on the NM SEN and bring high-speed Internet access to rural communities close to the borders of New Mexico.

B) Cybersecurity

- **Context**

Every cyber attack, constitutes a major risk to all New Mexico institutions including K-12 schools, higher education, State, Municipal, and County governments. OBAE is working on a plan to ensure these institutions have the support of DoIT in addressing potential threats through multiple projects that provide distributed Cybersecurity resources via the Middle Mile Plan.

In the infrastructure areas OBAE is responsible for building, such as network aggregation points for Middle Mile projects (nodes) and SEN, OBAE plans to incorporate the following security services: Distributed Denial of Service (DDOS), Intrusion Detection Services (IDS), and Intrusion Protection Service (IPS).

- **Legislative Request(s)**

✓ Enact legislation that empowers DoIT/OBAE/Public Corporation to implement broadband-related security directives in the state cybersecurity plan.

C) Permits, Rights of Way and Pole Attachments (PROP)

- **Context**

Right of way is a complex problem that will need legislative support to untangle. Some of problems include varied jurisdictional authorities (local, Tribal, State, federal, private), lack of sufficient and/or qualified resources and personnel, incomplete or inaccurate records and tracking tools, lack of transparency, and conflicting priorities. While not all of the above problems are within the legislature's constitutional authority, OBAE has identified ways the legislature can help expedite deployment of new broadband infrastructure and upgrades of existing broadband.

While the role of OBAE is to reduce costs and facilitate infrastructure deployment timelines, some local, Tribal, State, or federal organizations are mandated to monetize public assets (land) and minimize disruptions to artifacts and sites with cultural significance, threatened flora and fauna etc.

Examples

- According to the National Environmental Policy Act (NEPA), pre-requisites to a permits and ROW submission include archeological studies, new land surveys, paleontological studies, and environmental studies,. These requirements can cost $14,000 or more per occurrence. Utility poles are often too short, too far apart, or too degraded for new broadband infrastructure attachments, sometimes leading to disputes about who is responsible for the cost and for replacement. These obstacles can significantly drive up the cost and elongate schedules.
- It has been cited that the process for acquiring Federal Bureau of Land Management (BLM) and National Forest permits can take one to two years and sometimes longer, while State Land Office permits can take up to 70 days when the permit application is complete. All the delays and process duplications could significantly affect the mandated broadband build-out timeline required by the grant programs.

Recent Positive Activities from DOT

The New Mexico Department of Transportation (NMDOT) has developed a streamlined process and dashboard to provide a user-friendly means for requesting a DOT ROW and to track its approval process. At any time a user can log-in and see where the ROW request is in the queue and what approval steps have been completed. It is recommended the other permit/license holders do something similar.

- **Legislative Request(s)**
  - ✓ Authorize funding to establish a subsidy program that provides resources required to expedite the process (fund engineers, permit specialists etc.) and help with the utility poles replacement.
  - ✓ Develop legally compliant process to expand existing electrical and telephone ROW to broadband.
  - ✓ Direct NMDOT to use public land value as matching funds for federal grants and reduce or eliminate fees for hard-to-reach areas of the State.
  - ✓ Expand existing electrical (power)/telephone easements and ROW to broadband, while ensuring a fair, yet expedited, process for the landowners.
  - ✓ Empower OBAE to facilitate/expedite dispute resolution regarding permits, ROW, and pole attachments.
  - ✓ Establish a fund to allow resourcing of permits, ROW (including Tribal), pole replacement, etc. to facilitate/expedite deployment.
  - ✓ Follow the historic policy of the past to expand access to electrical power (electrifying rural America) by legislating no costs associated with installing broadband circuits (fiber optic cables) in the ground or overhead, and all associated equipment and structures.

- ✓ Include solutions and resources to expedite permits, and to speed up and introduce predictability and cost-effectiveness to "Make Ready" of utility poles (prepare utility poles to attach wired broadband infrastructure or add/replace poles where necessary).

D) Supply Chain Management

➢ **Context**

As has been reflected in news stories, in 2021 and 2022, entire cities were closed due to COVID in China and other manufacturing cities, causing significant supply chain disruptions. International turmoil caused energy uncertainty relating to production and transportation. News reports in the US contributed to the uncertainty with stories of worker strikes, port closures, inspection and unloading delays, shipping delays from lack of transportation and a workforce shortage including delivery workers. All these factors have led to 12 months plus delays in critical supplies for capital projects in broadband. This uncertainty makes it difficult to complete projects on time and more importantly, under or at cost. Inflationary pressures continue to affect fiber and other electronic components needed for broadband projects.

OBAE seeks to reduce risk by pre-purchasing materials in bulk for approved projects and projects that are grant funded. By statute, OBAE is required to reduce risk. In order to do so, OBAE will need to overcome several challenges, and will require funding and authorization to be able to purchase in bulk. This will additionally require access to warehouse storage in a logistically central place such as Albuquerque, along major interstate and rail connections. There will be the related need for additional staff for management of inventory and shipments and oversight of purchases and payments associated with acquisition of materials. Obtaining the funding, whares, and staff is fundamental to accomplishing strategic goals and mitigating uncertainties associated with the supply chain.

The mandate to buy American parts presents a conundrum because some broadband parts have been historically manufactured in foreign countries. The search for suitable and high-quality replacements and alternative manufacturers can be time consuming and at times futile. As NTIA spells out in its notices of funding opportunity for the $42.45 billion BEAD program and other broadband grants subsidized through the Biden administration's $2 trillion infrastructure law, the 'Build America, Buy America Act' requires that all the iron, steel, manufactured products (including but not limited to fiber-optic communications facilities), and construction materials used in the project or other eligible activities are produced in the United States unless a waiver is granted. Trade groups representing Internet Service Providers (ISPs) have been pushing back on the "Buy America" mandate for months, amid pandemic-era supply chain constraints. Several industry groups have urged the NTIA to issue a waiver on "Buy America" for information and communication technology (ICT)." [37]

➢ **Legislative Request(s)**

- Allow OBAE to use state-authorized grant funds to engage in a competitive procurement and use the collective purchasing power of the State to purchase fiber at a discount.

E) Amendments to Current Laws

[37] Nicole Ferraro, "'Buy America' rules have broadband industry on edge", www.lightreading .com, Light Reading, August 8, 2022

➢ **Context**

Amendments to current laws are recommended to clarify the Connect New Mexico Council membership, and to delineate OBAE's authority and responsibility. Recommendations that may be considered include, but are not limited to, the following.

➢ **Legislative Request(s)**

- Amend SECTION 63-9K NMSA 1978 to include the following:
- Create one seat on the Council for each of the following agencies that participate in developing policy and deploying broadband:
    - Public Education Department
    - Department of Health/Human Services Department (one seat)
    - Department of Public Safety
    - One seat to represent all New Mexico counties
- Subject to general laws, such as the State Tribal Collaboration Act, authorize use of current and future broadband access and expansion appropriations for private sector projects that align with objectives of the State broadband plan.
- Shift the Council seat currently designated for PSFA to OBAE or designate PSFA's seat as a broadband subject matter expert (SME) appointed by the Director of OBAE (with the caveat that the appointment would be for an employee other than the Director).
- OBAE also recommends legislation to amend several statutes to bring the Statewide Education Network together with the statewide broadband network:
    - Public School Capital Outlay Act, Chapter 22, Article 24 – amend to move $10M for broadband for schools (only) to OBAE;
    - SECTION 63-9K NMSA 1978 and/or SECTION 63-9J;
    - SECTION 22-24 – Amend to move education technology infrastructure language to SECTION 63-9J NMSA 1978 and/or SECTION 63-9K NMSA 1978;
    - SECTION 63-9J 63-9K NMSA 1978 – Amend to move PSFA/BDCP (Broadband Deployment & Connectivity Program) work, staff, and funding to OBAE.
- Authorize OBAE to direct Internet Service Providers (ISPs) to report non-redundant network configuration data as necessary to identify all broadband infrastructure and service locations within New Mexico for purposes of mapping and planning.
- OBAE requests authorization to deem data confidential under specific circumstances involving trade secrets to ensure a competitive broadband market.

13.4 Other Critical Success Factors

Much of the future success of OBAE depends on multiple stakeholders collaborating in unprecedented ways to meet the strategic goals of OBAE. Other issues that will determine the success of capital projects across the State will be impacted by how well OBAE can mitigate the instability and uncertainty of the supply chain for critical components such as fiber, generators, and other critical components needed by ISPs to build broadband networks. Lastly, the state of the skilled workforce in New Mexico as it relates to broadband is unknown. Determining the workforce landscape and how to build and enhance it will be critical.

- **Multi-Stakeholder Collaboration**

To successfully create, build, and maintain broadband networks across the State, OBAE will need to have strong relationships with counties, municipalities, Tribes, Pueblos, non-profits, colleges, universities, technical schools, labor-management organizations, ISPs, and other providers. Each of these entities touches the communities that are underserved and unserved already. Many provide services to these communities, or will be partners in the communities that need service or additional services. Without participation, collaboration and cooperation, OBAE will not be as successful in its mission. For instance, counties and municipalities are instrumental to the process of establishing accurate data, helping update maps, and connecting OBAE to community leaders. Tribes and Pueblos are sovereign nations that can help connect additional communities to the larger State broadband plan, and help build redundancies in the network. ISPs, non-profits, colleges, universities, technical schools, and labor-management organizations will be critical partners in developing the workforce that New Mexico needs to build and maintain broadband networks over the next 20 years. The ISPs and other providers will be critical partners for building networks in unserved and underserved communities and maintaining access into the future. OBAE, while fulfilling an important role, primarily facilitates coordination among various stakeholders with a piece of the pie.

- **Workforce**

OBAE has identified the broadband workforce as a CSF. Obtaining funding to do a workforce needs assessment across ISPs, telecom, and construction industries is a critical hurdle to developing a strategic workforce development plan. Involving additional stakeholders such as community colleges, Tribal colleges, universities, technical schools, Tribes, Pueblos, non-profits, and labor-management organizations is fundamental to successfully building a skilled workforce capable of both building the networks and developing a career trajectory for workers who will be needed to maintain the networks for the next thirty years (See 6.4A). OBAE's request for funding is important to accomplish the lofty goals of workforce development, with the understanding that it will be necessary to manage the stakeholder relationships to ensure a cohesive and integrated strategy of training workers across the State. This includes programs in rural communities where ISPs and electric co-ops will need to recruit skilled labor to perform network installations, construction, and maintenance.

14.0 Recap of Key Priorities, Initiatives and Strategies

The following table summarizes the key strategic priorities, initiatives, and strategies/actions for year 2023. A detailed program plan will be developed by February – which will list task owners, target dates, dependencies, and other key risks. This program plan will serve as an activity roadmap for OBAE.

14.1 Goal: Broadband Availability

Goal: Universal Broadband Availability		
Strategic Priorities	Major Initiatives	Key Strategies (2023)
Grant Funding to Enable Broadband Deployment	Connect New Mexico Pilot Program: Finalization of Awards and Launch Post-Award Monitoring	• Complete all application reviews and finalize awards. • Develop an internal system to support funds disbursement, monitoring, reporting, and communication. • Closely monitor awardee performance in meeting programmatic and compliance requirements. • Develop and apply lessons learned to future programs.
	Connect New Mexico Fund (Launch/Completion)	• Promulgate and publish final rules. • Develop program design. • Apply lessons learned and best practices from Pilot Program. • Develop program materials. • Ensure robust pool of applications. • Evaluate projects through merit review process.
	Development of the Five-Year Action Plan for NTIA BEAD Program	• Engage in a detailed situational assessment (Strategy and Planning Phase). • Collect data and engage in a variety of analyses to evaluate different scenarios to achieve universal access. (Data Collection and Analysis). • Design the BEAD funding program and implementation approach (Design and Deployment).
Current and Accurate Broadband Maps	Challenge of FCC Broadband Serviceable Location Fabric and Broadband Availability Data	• Use and improve local data sources that are most useful for understanding missing or inaccurate information. • Engage with New Mexico's service providers to ensure data timeliness and accuracy. • Engage local and regional representatives as FCC data challenge advocates. • Engage the public, individuals, and businesses, to perform their own data challenges. • Continue to engage FCC and other federal entities on New Mexico's needs.

	Evolution of the State Broadband Map	• Encourage more end-user awareness, engagement, and understanding. • Enhance user adoption and participation by improving data quality and dependability. • Continuously improve data offerings to help complete the big picture of broadband for New Mexico. • Organize technical infrastructure to support evolving needs.
	Launch of Analytic and Decision Support Tools to Empower All Stakeholders	• Plan how information systems will support OBAE's responsibilities to the public and to its own initiatives and activities. • Develop foundational information technology architecture. • Support existing OBAE initiatives. • Maintain awareness and engagement in technical and tactical needs of broadband.
Removing Deployment Barriers Related to Permits, Rights Of Way and Pole Attachments (PROP)	Permits and Rights of Way Streamlining	• Participate in working groups to study challenges and opportunities. • Develop and advocate for policies that drive meaningful reforms. • Identify opportunities to leverage technology. • Develop tools and materials to mobilize change.
	Modernization of Pole Attachment Policies and Practices	• Participate in existing working groups and form new ones that bring more stakeholders together. • Advocate for policies that drive meaningful reform. • Develop programs and policies to make "Make Ready" costs more efficient and transparent. • Collaborate with pole owners to identify opportunities to streamline the application, approval, and execution process. • Develop tools and resources that foster education and address barriers.
	NMDOT Rights of Way Fee Waiver Program for In-Kind Fiber and/or Conduit Contribution	• Obtain legislative approval for "in-kind policy." • NMDOT to publish new program in 2023. • Encourage beneficiaries of Connect NM Pilot Program to participate in this program.
Workforce Development	"All Hands on Deck": Statewide Broadband Workforce Development Strategy	• Develop an evidence-based needs and gaps analysis. • Secure necessary funding. • Allocate planning dollars to workforce development. • Develop strategies to address the gaps. • Develop a comprehensive financial analysis – including resources required, available funding, additional investment required, and return on investment.

		• Form strategic partnerships with state agencies and other labor-affiliated stakeholders.
Technical Assistance Programs	Technical Assistance Programs to Empower Local Communities	• Continue the existing EDA TAP program. • Launch several grant programs to provide technical assistance. • Build a dedicated team to plan, design, implement and monitor these grant-funded TAP initiatives.

14.2 Broadband Adoption and Meaningful Usage

Goal: Broadband Adoption and Meaningful Usage		
Strategic Priorities	Major Initiatives	Key Strategies (2023)
2023 programmatic requirements for the NTIA administered Digital Equity Program	Development of the Digital Equity Plan	• Collect a range of data sets and engage with stakeholders (Foundational data collection and stakeholder engagement). • Create measurable objectives and develop comprehensive program plan activities. (Creation of measurable objectives and development of implementation activities). • Draft the Digital Equity Plan and comprehensive operating model.
Fostering Digital Equity and Inclusion within Tribal Communities	Fostering Digital Equity and Inclusion within Tribal Communities	• Ensure 100% of NM Tribes have participated in the FCC Data Mapping Challenge to ensure optimal positioning for funding by January 13, 2023. • Expand quality broadband access to 100% of NM Tribes by January 2026. (Note: Martinez/Yazzie ruling to provide students with technology) Ensure NM Tribes have access to affordable, quality, high speed Internet, including access to modern devices by January 2026 • Ensure NM Tribes have access to affordable, quality, high speed Internet, including access to modern devices by January 2026. • Support NM Tribes in maximizing broadband uses to support cultural preservation, economic development, education and telehealth by January 2026.
Maximize Participation in the FCC Affordable Connectivity Program	Robust Participation in the FCC Affordable Connectivity Program	• Launch series of community engagement programs to drive enrollment. • Collaborate with ISPs to drive adoption.

14.3 Next Generation Networks

Goal: Next Generation Networks		
Strategic Priorities	Major Initiatives	Key Strategies (2023)
Statewide Education Network (SEN)	Launch of Statewide Education Networks	• Complete procurement process. • Upgrade nodes. • Form partnership between PSFA and OBAE. • Foster outreach regarding program.
Statewide Middle-Mile Network	Middle-Mile Expansion Strategy through Public-Private Collaboration	• Develop and publish the State's detailed middle-mile strategy that complements the 5-Year Action Plan for BEAD. • Seek funding from legislature. • Initiate a state-led middle-mile deployment program.
Coverage Expansion of Mobile Broadband and Public Safety Networks	Rural 5G Coverage Acceleration	• Obtain industry and stakeholder input. • Conduct inventory of all major coverage mobile gaps. • Find synergies with other grant programs to facilitate rural 5G expansion.
Network Resiliency and Cybersecurity	Statewide Network Resiliency and Security Program	• Develop a comprehensive fact-set on network resiliency and security. • Ensure all public networks owned and operated by the State (or planned) are fully resilient and secure. • Ensure network resiliency and security are part of every infrastructure funding program.

14.4 Program Stewardship

Goal: Program Stewardship		
Strategic Priorities	Major Initiatives	Key Strategies (2023)
OBAE Transparency and Accountability	Rulemaking for Broadband Grant Programs	• Obtain public feedback on the draft rules. • Incorporate changes into the draft rules. • Publish the revised rulemaking. • Obtain Council approval and publish final rules.
	Year End Annual Progress Report	• Develop a detailed project plan for each initiative. • Track results. • Publish the annual report.

	Program Evaluation and Socioeconomic Impact Assessment	• Develop detailed design of this program. • • Obtain feedback from stakeholder community. • Leverage stakeholder input and analysis from the Five-Year Plan and Digital Equity Plan to develop research framework • Finalize a partnership with higher education institutions.
Awardee Conformance with Programmatic and Compliance Requirements	Comprehensive System to Foster Grantee Accountability	• Develop award agreements that lists all program and compliance requirements. • Develop and enforce reporting requirements. • Actively communicate with awardees. • Develop comprehensive set of tools to support grantee performance. • Perform site visits to directly witness and evaluate grantee performance and compliance.

15.0 Appendix

15.1 Community and Stakeholder Engagement

The table below lists engagements that occurred during year 2022. These include working group meetings, community listening sessions, workshops, forums, and local and Tribal stakeholder sessions which took place to build awareness, inspire action, and mobilize local, regional, and statewide support for broadband improvement and BEAD and Digital Equity planning.

Event Date/ Time Period	Program Name	Engagement Description	Local and Tribal Governments Involved
1/5/2022	Broadband Collective Legislators Broadband Meeting	NM Broadband Collective	Statewide
1/12/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
1/14/2022	Connect New Mexico Council	CNMC	Statewide
1/26/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
1/27/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
2/4/2022	Broadband Spotlight: Lessons Learned in Chattanooga	Statewide	Statewide
2/9/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
2/18/2022	Connect New Mexico Council	CNMC	Statewide
2/23/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
2/24/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
3/16/2022	Connect New Mexico Council	CNMC	Statewide
3/23/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
3/24/2022	NM Meeting with FCC Commissioner Carr hosted by Ben Ray Lujan's Office	Statewide	Statewide
3/30/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
3/31/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
4/6/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
4/12/2022	Broadband Listening Session Reserve/Catron County	Local	Local Agencies, Associations, Organizations
4/13/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
4/20/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
4/20/2022	Connect New Mexico Council	CNMC	Statewide

4/27/2022	Listening Session with Hatch School Board	Local	Regional Agencies, Associations, Organizations
4/27/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
4/28/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
5/4/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
5/11/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
5/12/2022	Listening Session in Albuquerque	Local	Regional Agencies, Associations, Organizations
5/17/2022	Deming Town Hall	Local	Regional Agencies, Associations, Organizations
5/18/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
5/18/2022	Connect New Mexico Council	CNMC	Statewide
5/20/2022	NM Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
5/24/2022	County Listening Session for Luna County and Columbus	Local	Regional Agencies, Associations, Organizations
5/25/2022	Listening Session in Village of Cuba	Local	Regional Agencies, Associations, Organizations
5/25/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
5/25/2022	Listening Session in Deming	Local	Regional Agencies, Associations, Organizations
5/26/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
5/26/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
5/31/2022	NM Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
6/1/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
6/2/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
6/3/2022	NM Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
6/7/2022	County Listening Session in Lordsburg	Local	Regional Agencies, Associations, Organizations
6/8/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide

6/8/2022	NM Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
6/9/2022	County Listening Session in Silver City	Local	Regional Agencies, Associations, Organizations
6/9/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
6/14/2022	NM. Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
6/15/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
6/15/2022	Connect New Mexico Council	CNMC	Statewide
6/16/2022	Annual Conference for Association of Counties	Statewide	Regional Agencies, Associations, Organizations
6/22/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
6/22/2022	City Managers Meeting in Ruidoso	Statewide	Regional Agencies, Associations, Organizations
6/23/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
6/28/2022	Southwest Region Broadband Support Session	Regional	Regional Agencies, Associations, Organizations
6/29/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
6/30/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
7/6/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
7/7/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
7/20/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
7/20/2022	Connect New Mexico Council	CNMC	Statewide
7/21/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
7/21/2022	Tribal Government to Government Meeting	Statewide	Tribes
7/27/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
7/27/2022	North Central NM Economic Development Broadband Meeting in Santa Fe	Regional	Regional Agencies, Associations, Organizations
7/28/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
7/29/2022	Dona Ana Broadband Reconnect Meeting in Las Cruces	Local	Regional Agencies, Associations, Organizations

8/3/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
8/4/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
8/8/2022	Statewide Science and Technology Subcommittee Meeting in Socorro		Statewide
8/10/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
8/11/2022	NTIA Tribal Broadband Connectivity Award Announcement at Isleta Casino	Statewide	Regional Agencies, Associations, Organizations
8/17/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
8/17/2022	NM Pilot Grant Webinar: Notice of Funding Opportunity (NOFO) Overview	Statewide	Regional Agencies, Associations, Organizations
8/17/2022	Connect New Mexico Council	CNMC	Statewide
8/18/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
8/19/2022	NM Pilot Grant Webinar: Application Overview	Statewide	Regional Agencies, Associations, Organizations
8/22/2022	NM Pilot Grant Webinar: Scoring Guide Overview	Statewide	Regional Agencies, Associations, Organizations
8/23/2022	NM Pilot Grant Webinar: Interactive Broadband Map Overview	Statewide	Regional Agencies, Associations, Organizations
8/23/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
8/24/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
8/25/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
8/31/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
9/1/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
9/6/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
9/7/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
9/12/2022	NM Tribal Broadband Convening	Statewide	Tribes, FCC, NTIA, DOT
9/13/2022	National Tribal Broadband Summit - virtual	National	Tribes
9/13/2022	Listening Session in Hobbs	Regional	Regional Agencies, Associations, Organizations
9/14/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide

9/15/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
9/15/2022	Application Intake Portal Overview	Statewide	Statewide
9/19/2022	Regional Broadband Meeting for Southern NM	Regional	Regional Agencies, Associations, Organizations
9/20/2022	National Tribal Broadband Summit Part 2	National	Tribes
9/20/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
9/21/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
9/21/2022	Connect New Mexico Council	CNMC	Statewide
9/21/2022	Experience IT Conference - "Internet for All" Session	Statewide	Statewide
9/23/2022	New Mexico Data Mapping Meeting	Statewide	Statewide
9/26/2022	NM Governor's Statewide Conference on Economic Development in Albuquerque	Statewide	Statewide
9/27/2022	National Tribal Broadband Summit	National	Tribes
9/28/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
9/28/2022	State CIO Forum	Statewide	Statewide
9/29/2022	Exploring Partnerships	Local	Statewide
9/29/2022	Mamacitas Cyberneticas Planning Meeting	Regional	Regional Agencies, Associations, Organizations
9/29/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
9/29/2022	NM Broadband Collective Steering Committee	NM Broadband Collective	Statewide
9/30/2022	New Mexico Broadband Summit	NM Broadband Collective	Statewide
9/30/2022	Summit Watch Party (Broadband Collective Event)	Local	Regional Agencies, Associations, Organizations
9/30/2022	Summit Watch Party (Broadband Collective Event)	Local	Regional Agencies, Associations, Organizations
10/3/2022	Planning free fixed wireless deployment	Local	Regional Agencies, Associations, Organizations
10/4/2022	Small group from Grant, Luna, Dona Ana	Regional	Regional Agencies, Associations, Organizations
10/4/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
10/5/2022	5th Meeting of the Indian Affairs Committee	Statewide	Tribes

10/5/2022	NM. Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
10/6/2022	Broadband Expansion Plans for Luna County	County	Regional Agencies, Associations, Organizations
10/7/2022	Project Thor - How a Region Built a System	Regional	Regional Agencies, Associations, Organizations
10/8/2022	Digital Inclusion Week Internet Resource Fair at International District Library in Albuquerque	Local	Regional Agencies, Associations, Organizations
10/11/2022	Intelligent Transportation Conference (ITS) in Albuquerque	Statewide	Statewide
10/12/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
10/13/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
10/18/2022	Town Hall on Broadband in Anthony	Regional	Regional Agencies, Associations, Organizations
10/18/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
10/19/2022	Community Broadband Forum in Los Alamos	Local	Regional Agencies, Associations, Organizations
10/19/2022	Connect New Mexico Council	CNMC	Statewide
10/19/2022	Tribal Education Committee Meeting	Tribal	Tribes
10/20/2022	County Farm Bureau Annual Meeting	Local	Regional Agencies, Associations, Organizations
10/20/2022	UNM Gallup Community Workshops - GEER II and HED	Local	Regional Agencies, Associations, Organizations
10/21/2022	CNMC: Tribal Broadband Convening 2: Digital Equity & Inclusion	Statewide	Tribes, NTIA
10/26/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
10/27/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
11/1/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
11/2/2022	SWNM DOH meeting	Regional	DOH county reps Dona Ana and Luna
11/7/2022	NM Broadband Collective Regional Projects Working Group Meeting	NM Broadband Collective	Statewide
11/9/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
11/10/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
11/10/2022	Zuni - Red Bolt Broadband Event	Tribal	Tribes

11/11/2022	CNMC Tribal Working Group Meeting	CNMC Working Group	Tribes
11/15/2022	NM Tribal Workgroup: Data and Map Challenge Meeting	Statewide	Tribes
11/15/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
11/16/2022	Connect New Mexico Council	CNMC	Statewide
11/18/2022	Southern Broadband Action Team (BAT) monthly meeting	Regional	Regional Agencies, Associations, Organizations
11/24/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
11/28/2022	NM Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
11/29/2022	CNMC Mapping, Data & Evaluation	CNMC Working Group	Statewide
11/29/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
12/1/2022	NM Broadband Collective Grant Review meetings for Equity Fund and TA fund	NM Broadband Collective	Statewide
12/1/2022	Library Meeting with FCC Commissioner Rosenthal	Statewide	Libraries
12/1/2022	Fed reserve/Regional ACP meeting	Regional	Borderplex/Luna/Don a Ana/Hidalgo
12/1/2022	CNMC: NM Tribal Workgroup #2: Data and Map Challenge Meeting	Statewide and National	Tribes
12/3/2022	Eastern Navajo Agency Council	Regional	Eastern Navajo Chapters
12/7/2022	"Broadband for New Mexico" Series with.Senator Lujan	Statewide	Statewide
12/7/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
12/7/2022	Next Century Cities “Build Broadband Together”	Regional	Statewide, City of ABQ, Next Century Cities
12/8/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
12/8/2022	Regional Community Collaboration of nonprofit service agencies	Regional	30 Public Service Agencies
12/8/2022	Regional ACP funding and outreach meeting	Regional	Dona Ana, Borderplex, Hidalgo & Luna Counties
12/13/2022	CNMC Mapping, Data & Evaluation	CNMC Working Group	Statewide
12/13/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
12/16/2022	Southern Broadband Action Team (BAT) monthly meeting	Regional	Regional Agencies, Associations, Organizations
12/20/2022	Pueblo Map Challenge Working Meeting	Tribal	Pueblos

12/21/2022	CNMC Regional Projects & Engagement Working Group	CNMC Working Group	Statewide
12/22/2022	CNMC Digital Equity Working Group	CNMC Working Group	Statewide
10/12-14/2022	SHLB AnchorNETS Conference in Crystal. City, Virginia	National	CNMC
10/24-28/2022	Indigenous Connectivity Summit 2022 (ICS 2022)	National	Tribes
10/26-28/2022	NMLA Library Strong Conference in Albuquerque	Statewide	Libraries
11/30 to 12/1	NDIA and Federal Reserve Bank - Training in Denver	National	OBAE. and CTC, NDIA,Federal Reserve Bank
Every other Thursday	CNMC Digital Equity & Inclusion	CNMC Working Group	Statewide
Every other Tuesday effective 11/29/2022	CNMC Mapping, Data & Evaluation	CNMC Working Group	Statewide
Every other Tuesday effective 8/23/2022 until 12/31/2022	CNMC PROP Working Group (Poles, Right of Way, Permits)	CNMC Working Group	Statewide
Every other Wednesdays effective 3/30/2022 until 12/28/2022	CNMC Regional Planning & Community Engagement	CNMC Working Group	Statewide
Mondays 4pm	CNMC Grants Management & Rulemaking Working Group	CNMC Working Group	Statewide

15.2 Key data from 2020 Broadband Strategic Plan

The research, analysis, and engineering conducted in preparation of the 2020 broadband strategic plan suggested the following about broadband[38] in New Mexico at that time:

- **Between 13 and 20 percent of New Mexico locations did not have broadband available in 2020**

A conservative analysis of State, ISP, and federal data identified an estimated **196,000 locations in New Mexico that were unserved by broadband, or 20 percent** of the State's approximately 940,000 homes and businesses (referred to herein as Unserved Model 1).[39] This model does not count within the definition of broadband fixed wireless and copper phone line DSL technologies because of their inherent technical limitations.[40]

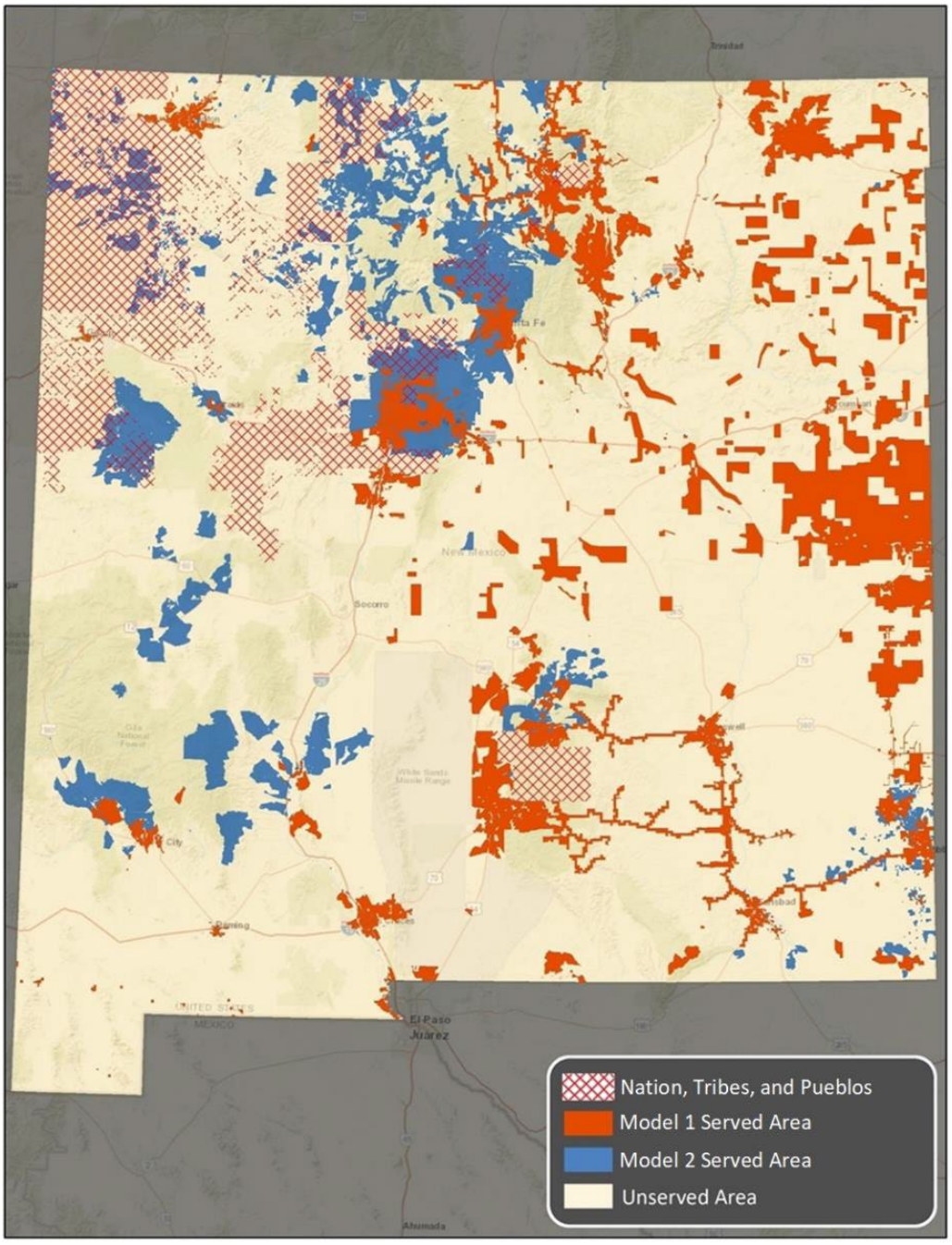
An analysis that uses broader, best-case assumptions about which locations are served includes fixed wireless and DSL despite their technical challenges (this model is referred to herein as Unserved Model 2). This best-case model suggests a lower number of unserved locations: **126,000 unserved locations, or 13 percent** of the State's approximately 940,000 homes and businesses.

[38] For purposes of this project, DoIT adopted the following definitions of these key terms:
Served: An area or address is **served** by broadband if it can receive fixed, terrestrial Internet access with transmission speeds that, at a minimum, provide twenty-five megabits per second (25 Mbps) download and three megabits per second (3 Mbps) upload. Neither satellite nor mobile service can be considered broadband for purposes of this definition. This definition generally aligns with federal rules. *See* "2018 Broadband Deployment Report," Federal Communications Commission, Feb. 2, 2018, https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2018-broadband-deployment-report (accessed September 17, 2019).
Unserved: An area or address is **unserved** by broadband if it cannot receive fixed, terrestrial Internet access with transmission speeds that, at a minimum, provide twenty-five megabits per second (25 Mbps) download and three megabits per second (3 Mbps) upload. Neither satellite nor mobile service can be considered broadband for purposes of this definition. This definition generally aligns with federal rules. *Ibid*. The sources consulted in developing these definitions are described and quoted in Appendix C.

[39] To identify the relative magnitude of an initiative in which broadband service would be made available to every home and business in the State, this Plan estimates the total number of unserved premises—then uses those numbers to develop cost estimates for deploying fiber optics, fixed wireless, or a hybrid of the two technologies to deliver broadband. Because there are no perfect maps or datasets of addresses that are served and unserved by broadband, these estimates required analysis of a variety of data sources.

[40] Based on our experience, wireless and DSL networks frequently do not serve all premises in a claimed area and, even if designed to provide 25 Mbps download and 3 Mbps upload service, do not always do so consistently for all customers.

Figure 18: Served and unserved areas of New Mexico (2020)



Permanently filling rural broadband gaps with fiber optics would have cost between $2 billion and $5 billion in 2020, while a mixed approach of both fiber and wireless would have cost less than $1 billion

An engineering model that builds on the analysis of how many premises are served results in a conclusion that bringing future-proof, fiber-based broadband to all of rural New Mexico will cost between $2 billion (under best-case assumptions) and $5 billion (under less optimistic assumptions), as illustrated in Table 9. The best-case cost assumptions assume a buildout led by incumbent providers using existing space on utility poles and other cable pathways and resources in place. The less optimistic cost assumptions are based on providers who are not already located in the area that would construct new infrastructure.
Of the State's unserved premises, approximately half are relatively closely clustered. These can be connected over state-of-the-art fiber optics at a cost between $300 million (using best-case assumptions) and $800 million, or an average of $3,800 to $9,300 per location.

Serving the full unserved population will require serving not only those clustered premises but also other locations that are widely spread-out. For the most widely spread-out homes and businesses in New Mexico (i.e., in areas where there are no existing towers for mounting fixed wireless antennas), density is often so low that a fixed tower might only serve one or a few premises with broadband speeds—meaning that the cost of fixed wireless would then approach the usually higher cost of fiber.

The cost of extending fiber optics or fixed wireless technology (where the latter is appropriate from an engineering standpoint) to the widely spread-out areas is between $1.6 billion (best-case assumptions) and $4.3 billion, or between $15,000 and $40,000 on average per location.

- **Cost estimates for low-density unserved areas reflect the higher average construction cost per mile for serving those addresses**

For the homes and businesses in the State that are not in clusters, density creates a challenge from a cost perspective to construct FTTP to every home. We created a high-level cost estimate to construct to these homes and businesses. We determined that the cost to construct to every home is the equivalent of constructing fiber down every street in the areas and adding a connection as homes and businesses are passed; we applied the average construction costs per mile developed earlier, which were $100,000 per mile for the high-cost estimate and $40,000 per mile for the low-cost estimate.

In Unserved Model 1, there are 107,000 unserved homes and businesses outside the clusters. The cost range to construct FTTP to these low-density areas is $1.7 billion to $4.3 billion, or $15,500 to $39,300 per passing. The Unserved Model 2 cost range with 74,000 unserved homes and businesses outside the clusters is $1.5 billion to $3.7 billion, or $19,800 to $48,800 per passing.

Table 7: Estimated costs to deploy broadband to unserved locations (2020)

Unserved Model	Density of Locations	Number of Locations	Total Cost by Density	Total Cost
Model 1 (196,000 unserved)	Fiber to clustered premises	87,000	$332 million – $806 million	$1.9 billion – $5.1 billion
	Fiber to widely spread-out premises	109,000	$1.6 billion – $4.3 billion	
Model 2 (126,000 unserved)	Fiber to clustered premises	50,000	$236 million – $576 million	$1.7 billion – $4.3 billion
	Fiber to widely spread-out premises	76,000	$1.5 billion – $3.7 billion	

Fixed wireless technology is an option for delivery of services and may be well-suited to less dense areas. Fixed wireless, however, comes with substantial limitations in performance and also has higher operational and equipment replacement costs than do fiber networks. A shorter-term interim solution that is focused on fixed wireless service and that uses existing wireless towers could cover approximately two-thirds of the unserved locations for an initial expenditure of approximately $500 million; however, this option would require replacement of most of the equipment every five to seven years, increasing the total cost considerably over time.

In a hybrid approach, there would be (1) fiber to the premises in the relatively closely clustered areas, (2) fixed wireless outside those clusters on existing towers, and (3) the most widely spread-out areas connected in a future stage, potentially using satellite or other emerging methods of broadband delivery. This latter category's cost currently is so high ($15,000 to $40,000 per location on average), whether with fixed wireless or fiber infrastructure, that to be viable those locations will require enormous federal funding or the emergence of a new technology innovation.

This hybrid approach will cost between $3,200 and $8,200 per premises on average for the served addresses and will serve approximately 50,000 to 87,000 premises with fiber and 67,000 to 85,000 premises with fixed wireless (Table 10). It will reach approximately 61 percent to 68 percent of the unserved premises in New Mexico. Following implementation of the hybrid approach, all but 31,000 to 42,000 premises (i.e., all but 3 percent to 4.5 percent of New Mexico premises) would have access to 25/3 Mbps service.

Table 8: Estimated costs for hybrid approach to deploy broadband to unserved locations (2020)

Unserved Model	Technology Approach	Number of Locations	Total Cost by Technology	Total Cost
Model 1 (196,000 unserved)	Fiber to clustered premises	87,000	$330 million – $800 million	$490 million – $1 billion
	Fixed wireless to areas outside clusters with towers	67,000	$155 million – $185 million	
	Future technology	42,000	TBD	
Model 2 (126,000 unserved)	Fiber to clustered premises	50,000	$240 million – $580 million	$400 million – $780 million
	Fixed wireless to areas outside clusters with towers	45,000	$165 million – $200 million	
	Future technology	31,000	TBD	

15.3 Table 9: Internet Service Providers Having Added Service Since 2020

Internet service provider	Addresses Added
Fiber	
Baca Valley Telephone	1
CBTS Technology Solutions LLC	6
CenturyLink	1,797
Coba Internet	11
Comcast	30
Conterra	1,168
Crown Castle Fiber	99
Dell Telephone Coop	6
ENMR/Plateau Telecommunications	9,404
FastTrack Communications, Inc	127
Higher-Speed Internet	233
Kit Carson Internet	80
La Jicarita Rural Telephone Cooperative	279
Leaco Rural Telephone	139
Lumen	220
Mescalero Apache Telecom, Inc.	1,258
Panhandle Telephone Cooperative	3
Penasco Valley Telephone/PVT Networks	79
Red Bolt Broadband	398
Resound Networks LLC	29
Sacred Wind Communications, Inc.	339
TBTC	424
TDS	288
Ting Fiber	3
UPN	336
Valley Telecom Group	253
Valor Telecommunications of Texas LP	475
Yucca Telecom	866
FIBER TOTAL	***18,351***
Cable	
Cable ONE	190
Charter Communications Inc	272
Comcast	3,812
Penasco Valley Telephone/PVT Networks	114
Spectrotel	1
Suddenlink Communications	125

Internet service provider	Addresses Added
TDS	5,523
Valor Telecommunications of Texas LP	5
CABLE TOTAL	***10,042***
DSL	
Baca Valley Telephone	916
Dell Telephone Coop	6
ENMR	2,672
Fusion Cloud Services, Inc.	73
La Jicarita Rural Telephone Cooperative	68
Leaco Rural Telephone	653
Lumen	31,841
Mescalero Apache Telecom, Inc.	619
Navajo Communication Arizona	3
Navajo Communication New Mexico	411
Penasco Valley Telephone/PVT Networks	683
Sacred Wind Communications, Inc.	3,419
SWC Custom Plan	232
TBTC	23
Valley Telecom Group	1,201
Valor Telecommunications of Texas LP	2,649
WNMCLEC	6,089
Yucca Telecom	22
DSL TOTAL	***51,580***
Fixed Wireless	
Choice Splash	9,301
Cibola LLC dba Cibola Wireless	9,550
Citynet LLC	1
Cyber Mesa Telecom	1
Dell Telephone Coop	6
DesertGate Internet	3,093
Higher-Speed Internet	875
JackRabbit Wireless	309
La Canada Wireless Association	801
Leaco Rural Telephone	517
Lobo Internet Services Ltd	3,447
Lokket Inc	3
Navajo Communication Arizona	131
Navajo Communication New Mexico	95
NMSurf Inc.	87
Pinon Mesa Networks	45

Internet service provider	Addresses Added
Plateau	2,400
Verizon Wireless	2,156
FIXED WIRELESS TOTAL	***32,818***

15.4 OBAE Position Requests

OBAE Position Requests								
Classification	**Working Title**	**PB**	**Midpoint**	**Appropriate Placement +15%**	**Benefits**	**Total 200**	**400 Cost**	**Total**
IT Project Manager III	GIS Mapping Project Manager	IG	$100,892	$15,134	$44,090	$160,116	6,000	166,116
Financial Coordinator - A	Contracts	75	$73,264	$10,990	$32,016	$116,270	6,000	122,270
Executive Assitant (GOV X)	Executive Assistant	24	$60,320	$9,048	$26,360	$95,728	6,000	101,728
Business Operations Specialist - A	Aministrative Services	60	$49,078	$7,362	$21,447	$77,887	6,000	83,887
A/O II	Technical Assistance Program (TAP) Manager	85	$89,388	$13,408	$39,063	$141,859	6,000	147,859
Engineer Tech V	TAP Engineer	EE	$65,728	$9,859	$28,723	$104,310	6,000	110,310
IT Tech Manager I	CIO (Rights of Way Repository Architect)	IG	$100,892	$15,134	$44,090	$160,116	6,000	166,116
Urban and Regional Planner	TAP Planner	65	$57,140	$8,571	$24,970	$90,681	6,000	96,681
GIS Specialist I	GIS Specialist (support)	ID	$68,102	$10,215	$29,761	$108,078	6,000	114,078
HR Training Labor - A	OBAE HR Program Support	65	$57,140	$8,571	$24,970	$90,681	6,000	96,681
Program Coordinator II	DE Manager	75	$73,264	$10,990	$32,016	$116,270	6,000	122,270
General Counsel (GOV X)	General Counsel	34	$91,395	$13,709	$39,940	$145,044	6,000	151,044
Program Coordinator II	Tribal Liaison	75	$73,264	$10,990	$32,016	$116,270	6,000	122,270
Business Operations Specialist - A	Grants Specialists	60	$49,078	$7,362	$21,447	$77,887	6,000	83,887
Business Operations Specialist - A	Rights of Way Specialist	60	$49,078	$7,362	$21,447	$77,887	6,000	83,887
Total:			**$1,058,023**	**$158,703**	**$462,356**	**$1,679,083**	**$90,000**	**$1,769,083**

Extra Page