NEW MEXICO ECONOMIC DEVELOPMENT DEPARTMENT

EMPOWER & COLLABORATE

New Mexico's Economic Path Forward

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Prepared by the Center for Innovation Strategy & Policy @ SRI International

SRI International®

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Executive Summary

Executive Summary

The Mission: Why This Strategy, and Why Now?

New Mexico enters a new decade on the precipice of transformation. In the past, limited economic diversification has provided inconsistent statewide growth and fewer economic opportunities for many New Mexicans. While regional competitors have actively pursued opportunities in new industries, leading to the creation of higher-skill, higher-wage jobs, New Mexico has struggled to capitalize upon its immense assets to accelerate long-term growth in a wider variety of industries. Though this challenge has existed for New Mexico for many years, the compounding effects of the state's delayed recovery from the Great Recession and the onset of the COVID-19 pandemic in 2020 have intensified the need for a long-term, coordinated, and comprehensive strategy for economic development and diversification.

In early 2021, in a markedly different approach from New Mexico's response to the Great Recession, the New Mexico Economic Development Department (EDD) determined the need for a guiding strategy that not only identified ways to jumpstart New Mexico's near-term recovery, but also the state's long-term transformation into a more diversified, resilient, and inclusive economy. To assist in crafting this strategy, EDD hired SRI International, which engaged with over 100 public, private, and non-profit organizations—and conducted extensive quantitative data analysis—to design an actionable, long-term economic development and diversification strategy.

Ultimately, the mission of this strategy is to reimagine New Mexico's approach to economic development, beginning with building the capabilities necessary to facilitate statewide collaboration on common goals, like economic growth, inclusion, and workforce readiness. The diversification agenda outlined in this document is rooted in the nine target industries identified by EDD, but the recommendations go beyond specific industry needs to address the broader challenges facing New Mexico, which are discussed in greater detail below. These recommendations are best viewed as a roadmap, one that enables New Mexico to build upon its current momentum to create a robust, diverse economy that provides greater opportunities for residents and businesses of New Mexico's urban, rural, and tribal communities. New Mexico's economic transformation cannot happen immediately, nor can it be achieved by one agency alone. With support from stakeholders throughout the state, though, actions can be taken to begin a new era in New Mexico.

The Findings: Trends in New Mexico's State & Regional Economies

SRI's analysis of New Mexico's communities and economy falls into four core exercises: (1) New Mexico's State & Regional Economies; (2) New Mexico's Target Industries; (3) New Mexico's Innovation Ecosystem; and (4) New Mexico's State & Regional Assets. SRI's analytical approach included quantitative data analysis from state, federal, and proprietary data sources, as well as qualitative data analysis through an extensive stakeholder interview and survey process.

Stakeholders in New Mexico are united in their excitement for the state's future. Opportunity abounds in New Mexico where many of the components for economic growth and prosperity remain present. Nevertheless, stakeholders identified several challenges that impede the state's ability to capitalize on these opportunities, and the quantitative data supports many of these observations. In general, obstacles for New Mexico's economic future fall into one of **six challenge areas**:

1. Lack of collaboration between economic development stakeholders
2. Difficulty attracting and retaining talent in urban, rural, and tribal communities
3. Misalignment between higher education and industry
4. Disengagement of socioeconomically disadvantaged communities in planning processes
5. Public-sector dominance in New Mexico's innovation ecosystem
6. Concentration of economy in a few key industries

Mitigating these challenges must be a priority for state, local, industry, and community stakeholders, and the activities of these stakeholders must be coordinated to best achieve a diversified and resilient economy. Greater discussion of these challenges is found below.

Challenge 1: Lack of collaboration between economic development stakeholders

As a state with a large geographic footprint but a comparatively smaller population, New Mexico has traditionally utilized a decentralized, ad hoc approach to economic development. Local and tribal governments have historically been encouraged to lead development within their jurisdictions while statewide organizations have played a minimized role. While this approach prioritizes the needs of local communities, it relies heavily upon local organizations' capacities to support economic development projects, leading to some regions of the state excelling in growing their economies while other regions have fallen behind.

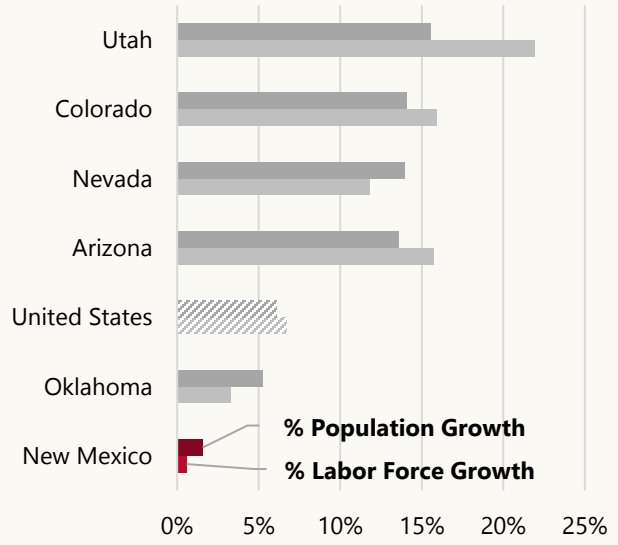
Over time, the differences in local and regional capabilities, in addition to the absence of a cohesive statewide strategy for economic development, has led to a patchwork of programs and initiatives designed to address different facets of community or economic development challenges in New Mexico's regions. While in some cases this approach enables local communities to address challenges with local priorities in mind, in other instances this approach can lead to a duplication of efforts and, at times, competing interests between different actors in New Mexico's economic development ecosystem. Ensuring that interests are aligned at the state, regional, local, and tribal levels will best provide New Mexico with a strong foundation upon which to launch strategic initiatives and leverage resources, such as those outlined in this plan.

Challenge 2: Difficulty attracting and retaining talent in urban, rural, and tribal communities

New Mexicans are well aware of the benefits of living in New Mexico, including the state's immense outdoor assets and relatively affordable cost of living. Nevertheless, data indicate that each of New Mexico's seven council of government regions has struggled to attract new residents, with each region relying heavily upon natural increase (i.e., new births) to grow their populations. Stakeholders had several theories to explain this struggle, including underperforming K-12 education systems, higher crime rates, and increasing housing costs in certain communities.

Despite being positioned in the center of one of the fastest growing regions of the United States, New Mexico has not benefited from the significant influx of young families and professionals seen in neighboring states like Utah and Colorado. For example, from 2010 to 2019 New Mexico's population and labor force grew by 2% and 0.6% respectively, while peer states like Utah (16% and 22%) and Colorado (14% and 16%) grew at far quicker rates (see *Demographics: New Mexico's Changing Communities* in the full report for a detailed discussion of demographic trends in New Mexico).

Figure ES-1: Population & Labor Force Growth, 2010–2019.

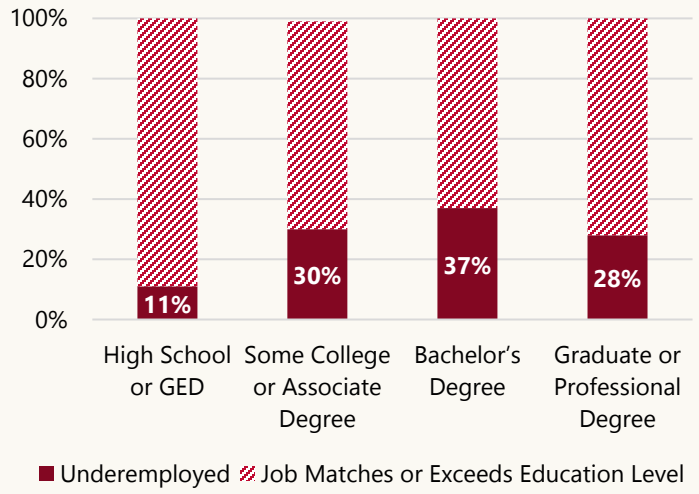


Stakeholders in New Mexico identified several trends influencing the slow population growth in New Mexico. While many of these challenges relate to economic opportunity for younger skilled professionals, others concern the appeal of New Mexico's urban and rural communities. While New Mexico is generally known for its comparative affordability, housing costs are an increasing concern for many residents of the state's urban core, where new housing developments have been slow to recover from the Great Recession, driving up the living costs in cities like Albuquerque and Santa Fe. However, New Mexico's rural and tribal communities, where a notable portion of the state's population resides, face additional challenges like integration into physical and digital infrastructures. Ensuring that New Mexico's existing toolkit of economic and community development programs meets the needs of urban, rural, and tribal communities will help to maximize the efficacy of the investments the state makes in these communities.

Challenge 3: Misalignment between higher education and industry

For a state with a smaller population, New Mexico maintains an extensive network of 2- and 4-year higher education institutions. Stakeholders noted that some of these institutions, such as Central New Mexico Community College, have been highly effective at engaging with industry and designing industry-relevant curricula. However, stakeholders also noted that many of New Mexico's higher education and training institutions are increasingly disconnected from the needs of industry, and the data support this assertion. Though New Mexico aims to grow industries requiring heavy science, technology, engineering, and mathematics (STEM) skills, New Mexico's higher education system is increasingly producing graduates in non-STEM fields.

Figure ES-2: Underemployment in New Mexico, 2015–2019.



The presence of a skilled workforce is critical to the development of a region's economy. While many skills are obtained through on-the-job experience, schools, colleges, and universities play a critical role connecting workers to industry. New Mexico has increased high school completion among the state's population from 82% in 2010 to 86% in 2020. This progress has led to increased rates of associate (9% of New Mexico's population in 2020), bachelor's (15%), and graduate (12%)

degree attainment in the state. However, data also indicate a mismatch in the skills of New Mexico's workers and the skills in demand by the state's employers (see *Labor Market & Workforce: Capabilities & Characteristics of New Mexico's Workers* and *New Mexico's State & Regional Assets* in the full report for a detailed discussion of educational attainment and alignment in New Mexico).

Interviews with industry leaders in New Mexico largely corroborate the quantitative data trends. Many stakeholders noted that over time, New Mexico's public education systems at the secondary and post-secondary levels have become misaligned to the needs of employers in the state. This misalignment is important to note given the skill intensity of New Mexico's target industries, which generally require advanced skill levels in STEM-related areas for employment. If education and training institutions in the state do not produce the qualifications necessary to meet industry's needs, New Mexico risks exporting young residents to states with better connected institutions and losing valuable employers to states that provide better trained workers.

Challenge 4: Disengagement of socioeconomically disadvantaged communities in planning processes

New Mexico is a minority majority state, which includes a significant Native American population. Traditional models of economic development in New Mexico have led to many of these communities being disengaged from the development planning process, institutionalizing inequities between communities and individuals with resources and those without. As a result, poor socioeconomic outcomes have become exacerbated in many of New Mexico's minority communities, requiring greater public resources to mitigate these outcomes.

Table ES-1: Socioeconomic Indicators of New Mexico's Underserved Populations, 2019.

	Unemployment Rate	*Poverty Rate*	*Population with an Associate Degree or Higher*	*Median Personal Income*
Native Americans	8.4%	30.0%	21.1%	$26,000
Immigrants	3.6%	26.1%	28.9%	$28,000
Rural New Mexicans	7.8%	26.1%	26.2%	$23,000
New Mexico Average	5.5%	26.1%	36.8%	$35,000

Diversity—educational, socioeconomic, ethnic, and geographic—greatly influences the dynamism of a region's economy. However, inequities based upon this diversity directly undermine the ability of a region to grow and prosper by disengaging different populations from the economy, hindering the economic wellbeing of historically disadvantaged communities. Such inequities have long been structural to economic systems in the United States, and New Mexico is no exception, but New Mexico faces unique challenges to equitable growth that many other states do not experience (see *Demographics: New Mexico's Changing Communities* and *New Mexico's State & Regional Assets* in the full report for a detailed discussion of equity challenges in New Mexico).

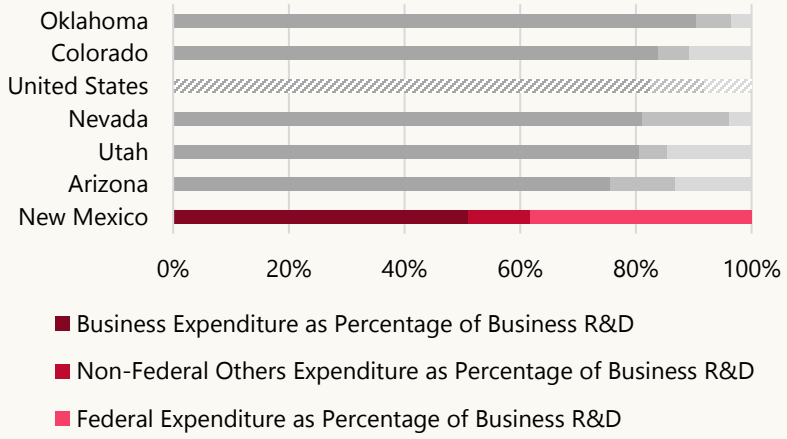
Poverty remains among the most formidable obstacles to equity in New Mexico, with poverty rates in the state increasing over the last decade despite declines in most peer states, including Arizona, Colorado, Oklahoma, and Utah. Additionally, poverty levels in New Mexico's communities remain elevated compared to levels in similar communities in other states. Despite these comparatively high poverty levels, tax filing data from the Internal Revenue Service indicate that income inequality has declined in New Mexico since 2010, though it remains elevated compared to the U.S. average. Identifying ways to better connect disadvantaged communities to resources and expand their role in the state's economy, whether through community-based education support or targeted investments in disadvantaged communities, is critical to build a more equitable economy in New Mexico.

Challenge 5: Public-sector dominance in New Mexico's innovation ecosystem

As the home of two national laboratories and a branch of the Air Force Research Laboratory, New Mexico has a proven history of innovation. Combined, these labs routinely bring significant federal resources to the state, helping to attract highly skilled workers in knowledge- and technology-intensive industries to New Mexico. This has also led to the emergence of a small but highly educated science and engineering (S&E) workforce in the state; New Mexico ranks 15th in the United States for the number of S&E master's and doctoral degrees conferred in the state.

Nevertheless, many stakeholders noted that, given the significant resources at the labs' disposal, New Mexico's private sector is in constant competition with the labs to attract and retain highly skilled talent. This challenge is further compounded by the small number of resources perceived by stakeholders—such as skilled workers and financing—that are available to entrepreneurs in New Mexico, especially those entrepreneurs looking to establish businesses in knowledge- and technology-intensive industries. Ultimately, this has led to the emergence of a New Mexican private sector that is closely intertwined with the federal lab system, rather than a private sector heavily rooted in the creation, production, and distribution of new products and services. For example, whereas most knowledge- and technology-intensive businesses in the United States invest in their own innovative activities—like research and development (R&D)—with smaller levels of support from the federal government, about 40% of business R&D spending in New Mexico is funded by the federal government (see *New Mexico's Innovation Ecosystem* in the full report for a detailed discussion of innovation and entrepreneurship in New Mexico).

Figure ES-3: Percent of Total Business R&D Spending, by Funding Source, 2010–2018.

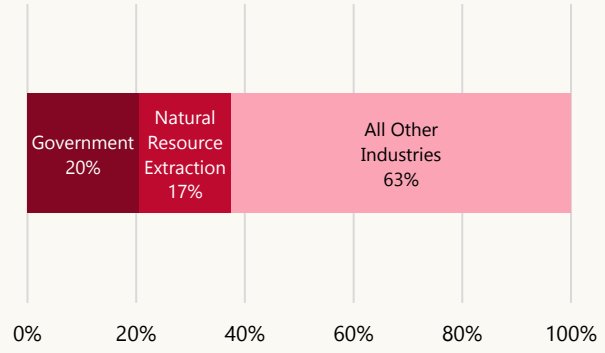


Separating New Mexico's private sector from the federal government is necessary to support the emergence of dynamic businesses in New Mexico. Stakeholders noted that increasing the successes of New Mexico-based businesses and startups is contingent upon increasing the market readiness of the state's entrepreneurs. Challenges range from increasing the business and financial literacy of small business owners to helping high-technology enterprises connect with industry leaders to catalyze future investments and growth. Supporting new programs focused on building technical capabilities and funding accessibility are critical to the future of a strong private sector in New Mexico.

Challenge 6: Concentration of economy in a few key industries

Historically, New Mexico's economy has been dependent upon a few key industries that have driven development in the state. These industries include government, retail, and oil and gas. These industries will continue to play an important role in the state's economy, especially as they provide well-paying jobs to many individuals throughout New Mexico's regional economies. However, New Mexico's lack of industrial diversification has resulted in volatile economic cycles in which employment and the state's ability to fund public services are highly dependent on oil and gas prices as well as federal policy decisions. The threat that this dependence poses to New Mexico's economy was illustrated by the COVID-19 pandemic, when falling oil prices created an outsized negative impact for New Mexico compared to other states. In the long run, as the world transitions from fossil fuel to renewable energy, the need for New Mexico to develop new drivers of economic growth will become ever more urgent.

Figure ES-4: Percent of New Mexico GDP, by Industry, 2019.



Central to New Mexico's economic growth over the next 20 years is the development of nine industries with strong growth potential and high private sector wages. These industries, which are discussed in detail below, will complement New Mexico's existing assets and form the basis through which the state will attract new business and workers, upskill its existing workforce, protect its natural assets, and ultimately improve the quality of life of all New Mexicans.

The Way Forward: New Mexico's Economic Path Forward

A strategy must have an identified goal that speaks to the unified vision of a region upon the completion of a strategy. The following vision was designed to reflect the goal of this strategy:

To build a diverse and robust economy that engages local talent, cultivates innovation, and delivers prosperity for all New Mexicans.

Stakeholders in New Mexico must take action to achieve this vision, which will require the collaboration of many stakeholders in New Mexico, including those in government, industry, academia, and non-profits. Addressing the six broad challenges identified in this report is beyond the scope of any one organization, and identifying successful solutions will require evidenced-based actions that are unique to New Mexico. The full report contains a series of specific actions to be taken by EDD and stakeholder organizations, but EDD must keep an open dialogue focused on identifying further actions to be carried out by EDD and the newly formed Sustainable Economy Task Force.

A roadmap was developed that focuses on six key strategies for economic development stakeholders in New Mexico. These strategies and their associated priority areas are identified below and are aligned with the six key challenges identified in the analysis. See the full report for a detailed discussion of these strategies and the specific actions recommended to those in New Mexico's economic development ecosystem.

Strategies & Priorities to Achieve the Vision

Collaborative New Mexico

Modernize New Mexico's Economic Development Ecosystem

Priority 1.1. Align the efforts of stakeholders in New Mexico's economic development ecosystem.

Priority 1.2. Streamline and simplify New Mexico's rules and regulations.

Priority 1.3. Strengthen New Mexico's business recruitment and retention efforts.

Dynamic New Mexico

Strengthen New Mexico's Communities

Priority 2.1. Increase community capacity for economic development projects and initiatives.

Priority 2.2. Redefine New Mexico's urban regions.

Priority 2.3. Commit to the economic sustainability of New Mexico's rural and tribal communities.

Skilled New Mexico

Reimagine Education & Training

Priority 3.1. Improve the quality of New Mexico's higher education and training programs through industry engagement and institutional reform.

Priority 3.2. Reform New Mexico's workforce development ecosystem to align with industry needs.

Priority 3.3. Prepare New Mexico's students for success.

Inclusive New Mexico

Promote Equity through Economic Justice

Priority 4.1. Encourage state, regional, and local organizations to increase collaborations with tribal communities.

Priority 4.2. Expand access to resources for entrepreneurs from disadvantaged backgrounds.

Priority 4.3. Improve education and workforce outcomes for underserved populations.

Innovative New Mexico

Enable High-Quality Home-Grown Innovation

Priority 5.1. Build capacity among New Mexico's entrepreneurs.

Priority 5.2. Remove barriers to financial resources for entrepreneurs.

Priority 5.3. Sustain an entrepreneur-friendly business environment.

Priority 5.4. Connect entrepreneurs and innovators to critical industry knowledge and resources.

Resilient New Mexico

Diversify New Mexico's Economy

Priority 6.1. Aerospace.

Priority 6.2. Biosciences.

Priority 6.3. Cybersecurity.

Priority 6.4. Film & Television.

Priority 6.5. Outdoor Recreation.

Priority 6.6. Sustainable & Value-Added Agriculture.

Priority 6.7. Intelligent Manufacturing.

Priority 6.8. Global Trade.

Priority 6.9. Sustainable & Green Energy.

Diversification: Defining New Mexico's Target Industries

New Mexico's economy has long been defined by a core set of industries: government, retail, agriculture, and oil and gas. New Mexico's history with these industries—as well as its many assets, including federal national laboratories and significant endowments of renewable and nonrenewable natural resources—indicates that these industries will continue to play a pivotal role in the state's economy. Nevertheless, as the state seeks to expand its economy in the future, stabilize long-term public revenues, and create greater opportunity for current and future residents, New Mexico will need to foster growth in a greater number of industries.

EDD and SRI employed a mix-methods approach to analyze the target industries identified by EDD as those that New Mexico should pursue to increase economic diversification. This approach is built upon a review of New Mexico's current assets—whether they be institutional, infrastructural, or otherwise—and existing studies conducted by regional and local stakeholders that identify promising industrial opportunities in their regions. Similarly, data from the U.S. Bureau of Labor Statistics (BLS) provide a quantitative justification for why certain industries are identified as opportunities for New Mexico. Industries are measured at several different levels of specificity, according to the North American Industry Classification System (NAICS). At the two-digit NAICS level, industries are assessed as the cumulation of their component three-, four-, five-, and six-digit NAICS industries, with industries at the six-digit level being the most specific.

There are nine target industries for the state to actively pursue, and additional reasoning is provided further below:

- Aerospace
- Biosciences
- Cybersecurity
- Film & Television
- Outdoor Recreation
- Sustainable & Value-Added Agriculture
- Intelligent Manufacturing
- Global Trade
- Sustainable & Green Energy

Identifying Industries to Accelerate Diversification

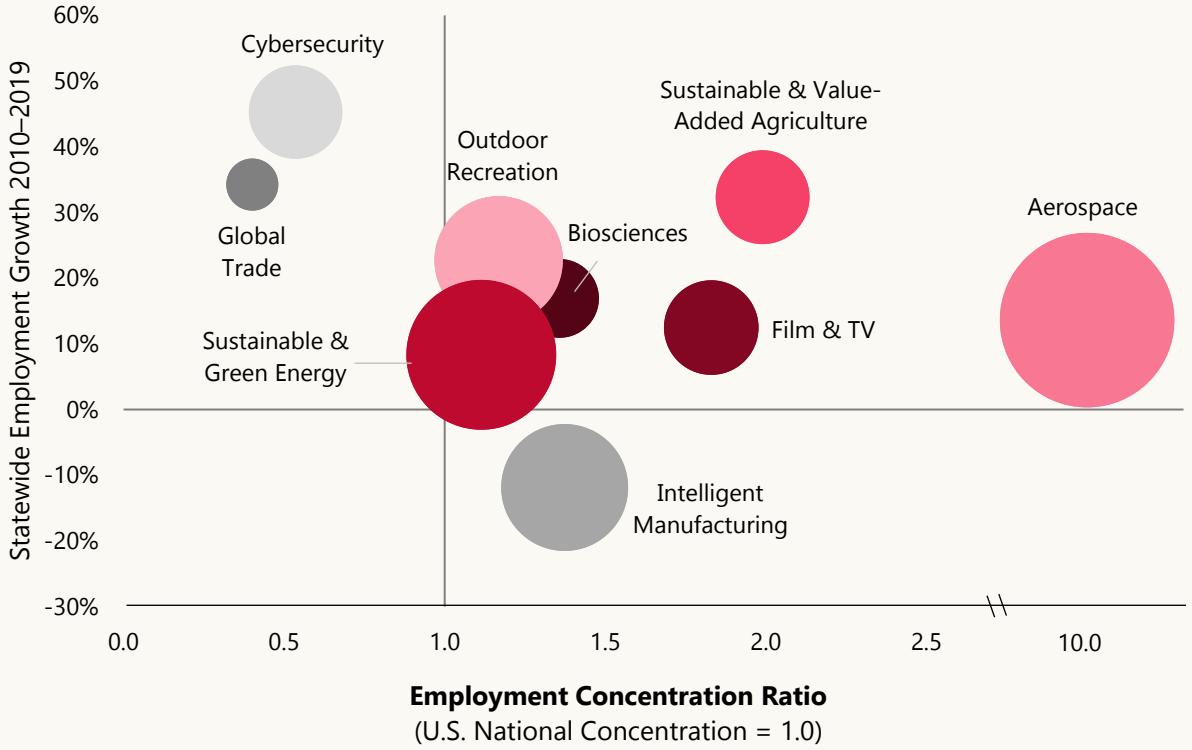
To identify emerging trends in New Mexico's target industries, EDD and SRI analyzed industrial change at the six-digit NAICS code level. This enabled EDD and SRI to capture change occurring at the hyper-specialized level and determine actions to be taken to support these industries according to changes occurring within related six-digit industries. Overall, four main qualities were assessed to identify opportunities within New Mexico's target industries:

- **Stability**. New Mexico's historical dependence upon government, retail, and oil and gas has heightened volatility within the state's economy, and any new target industry should work to minimize future economic volatility.
- **Earnings**. New Mexico should aspire to attract stable, well-paying industries that provide the state's residents with rewarding, productive, and meaningful work.
- **Job-Rich**. While New Mexico should seek to grow emerging and next-generation industries, there should also be a focus on industries with an established presence in the state and significant potential for job creation.
- **Concentration**. Any new target industries should demonstrate a comparatively high employment concentration compared to other regions of the United States, indicating a local competitive advantage that can translate to additional growth in jobs and businesses.

Using NAICS codes, it is possible to define these industries and measure their growth within a region over time. Many six-digit NAICS industries were identified that best align with New

Mexico's competitive assets, which are discussed in greater detail further below, and these six-digit NAICS industries were aggregated to the nine broader target industry clusters within which New Mexico has a competitive advantage. As the analysis in the full report shows, these industries have historically been a relatively small share of New Mexico's economy but represent significant opportunities for growth in various regions of the state. Additionally, all but two of these industries—cybersecurity and global trade—have greater employment concentration ratios than the U.S. average, indicating that New Mexico outperforms many other regions of the country in these industries.

Figure ES-5: Growth, Concentration, and Size of New Mexico Target Industries, 2019.



From 2010 to 2020, the share of New Mexico's total employment represented by these nine target industries has remained relatively steady, representing between 10% and 12% of total employment in New Mexico. However, even accounting for the pandemic, employment growth has been high in cybersecurity (50%), global trade (38%), and sustainable and value-added agriculture (27%). Other high-performing target industries during this time include biosciences

(20%) and aerospace (17%). While the remaining industries may not have been among the fastest growing, their pre-pandemic employment growth indicates that they remain competitive propositions for New Mexico. These trends show that these nine target industries represent areas of keen interest for New Mexico as it grows and diversifies its economy into the future.

Mapping New Mexico's Assets to Industries Capacity

New Mexico's historical economic strengths serve as a strong foundation upon which to build a more diverse economy that creates stable and sustainable growth. For example, the large role played by the government in New Mexico's economy—primarily through laboratories like Los Alamos National Lab (LANL), Sandia National Lab (SNL), and a division of the Air Force Research Lab (AFRL)—makes New Mexico an ideal location for industries that rely heavily on scientific research and technical knowledge. In particular, businesses related to **biosciences** and **cybersecurity**, both of which are core research areas at LANL and SNL, show particular promise in New Mexico. Additionally, the location of AFRL's Space Vehicles Directorate in New Mexico, coupled with the construction of Spaceport America, provides New Mexico an edge over other states seeking to capitalize on the rapidly growing **aerospace** industry.

Natural amenities and resources—including the vast and pristine landscapes found throughout much of New Mexico, as well as the state's endowments in renewable and nonrenewable resources alike—make New Mexico an obvious candidate for employers in industries like **sustainable and green energy** and **outdoor recreation**. In addition to supporting the outdoor recreation industry, the diversity of natural landscapes in New Mexico, coupled with the quality of the film production workforce, has led to a thriving **film and television** industry. The agricultural traditions of many Native American communities in New Mexico have led to the emergence of a powerful **sustainable and value-added agriculture** industry, an industry that provides significant opportunities to those living in rural and tribal communities. Infrastructural investments made in various regions of New Mexico—including significant investments in the Borderplex region along the state's southern border with Mexico—have made the state a competitive player in certain industries, such as **intelligent manufacturing**, and **global trade**.

A Call to Action: Ensuring Strategy Success

This strategy is not the final step to revitalize New Mexico's economic development and diversification agenda—rather, it represents the crucial first step. It recognizes the need for greater collaboration throughout New Mexico's economic development ecosystem and calls on

the stakeholders within this ecosystem to commit to a unified vision for New Mexico's future. Long-term growth is contingent upon routine collaborations between EDD and stakeholders that continuously scan the horizon for emerging opportunities and challenges and design approaches to strengthen and grow the state's economy.

This strategy is not intended to be so prescriptive that changes in state-level priorities render the plan irrelevant. Instead, it identifies many of the actions necessary for reinvigorating economic growth and diversification in New Mexico while recognizing the ongoing work done by regional, local, and tribal governments; economic development organizations; nonprofits; and many other stakeholders in New Mexico's economic development ecosystem.

Supporting this work and ensuring that it occurs through a collaborative and informed process is critical for New Mexico's economic future. Similarly, maintaining alignment between this strategy and future strategic planning efforts in New Mexico, such as those carried out by the Sustainable Economy Task Force, will help to ensure that the strategy remains relevant, is more precisely refined to target tribal and other historically disadvantaged communities and businesses, and is fully implemented over time.

Successful implementation of this strategy will require supportive actions from many stakeholders:

- **New Mexico's business community** needs to adapt to rapidly changing times and be prepared to pay higher wages, increase schedule flexibility, and provide greater options for working parents, caregivers, and adult learners to attract employees.
- **New Mexico's business community and economic development activists** need to join calls for increased EDD funding from the legislature and provide financial assistance to their local EDOs and COGs to put more boots on the ground, increase capacity to go after massive federal funding, and grow resources to support their local business communities.
- **EDD, HED, and the higher education system** need to collaborate to give incoming students the information necessary to choose careers in high-demand areas, and to tailor degree and certification programs to better reflect the needs of current and future industry in New Mexico—all to reduce the mismatch between employer-required skills and skills obtained at New Mexico's colleges and universities, giving students the best possible chance for high-paying careers in New Mexico.
- **Policymakers** need to recognize that major changes to the economy to lift wages, strengthen New Mexico's private sector, and diversify for a more resilient economic base will require significant funding for EDD and economic development programs. New

Mexico cannot continue on the path it has pursued in prior years—this plan provides a new path forward, and the state must now provide funding and take action.

Introduction

Introduction

The recommendations found in this strategy are derived from four core analytical exercises:

New Mexico's State & Regional Economies. In this section, trends are examined at the state and regional level to understand how New Mexico has changed since 2010. Change is determined according to five primary lenses: (1) Demographics; (2) Labor Market & Workforce; (3) Industry Development; (4) Entrepreneurship; and (5) Infrastructure & Environment. The analysis in this section is heavily rooted in quantitative data analysis, using data from state and federal government sources, as well as organizations like the Ewing Marion Kauffman Foundation.

New Mexico's Target Industries. The state of New Mexico has identified 9 industries that should be targeted for growth in the future: (1) Aerospace; (2) Biosciences; (3) Cybersecurity; (4) Film & Television; (5) Outdoor Recreation; (6) Sustainable & Value-Added Agriculture; (7) Intelligent Manufacturing; (8) Global Trade; and (9) Sustainable & Green Energy. This section seeks to better understand the landscape of these industries in New Mexico, assessing each industry's strengths, weaknesses, opportunities, and threats.

New Mexico's Innovation Ecosystem. With a long history of scientific and technological excellence, New Mexico remains well positioned to grow highly innovative industries. Understanding the innovation-related assets in New Mexico, however, is critical for supporting knowledge- and technology-intensive industries in the long term. This section examines New Mexico's innovation ecosystem through six lenses: (1) Talent; (2) Risk Capital; (3) Innovation Infrastructure; (4) Idea Generation; (5) Business Environment; and (6) Networks & Partnerships.

New Mexico's State & Regional Assets. As a geographically large state, assets and capabilities vary throughout New Mexico. This variation means some regions are better positioned to capitalize on certain industries than others. In this section, New Mexico and its regions are examined at several different levels: (1) New Mexico; (2) the Albuquerque-Santa Fe-Las Vegas Metro Region; (3) Las Cruces; (4) Farmington; and (5) Micropolitan & Rural New Mexico.

New Mexico's State & Regional Economies

New Mexico's State & Regional Economies

A critical first step in developing a long-term strategic plan is establishing a foundational understanding of a region's economy. This understanding is driven by assessments of state and local dynamics in five key areas:

The analysis in this section uses quantitative data related to the areas above. A wide variety of data was engaged for writing this assessment, including data from federal and state agencies, such as the National Center for Science and Engineering Statistics and the New Mexico Department of Workforce Solutions, as well as from private organizations like Emsi and the Ewing Marion Kauffman Foundation. Together, these data paint a picture of a New Mexico that is ripe with opportunity.

The discussion throughout this section of the report focuses on "diagnosing" New Mexico's economy at the state and, when appropriate, regional level. To determine New Mexico's regions, counties were divided according to their association with one of New Mexico's seven councils of governments (COGs). This diagnosis is the foundational framework for the recommendations made in the **Strategies for New Mexico's Economic Path Forward**.

This assessment identified several ongoing and emerging trends in New Mexico's state and regional economies. While many of these trends indicate significant areas of opportunity upon which the state can capitalize, others indicate areas for improvement that should be addressed in any statewide economic development strategy. Some of the trends identified include:

> **Demographics:** New Mexico's population growth has not kept pace with peer states in the southwestern United States or with the national average. This lower-than-normal

growth rate, particularly among young families and working professionals, hinders New Mexico's ability to supply industries with qualified workers.

Labor Market & Workforce: Though many workers in New Mexico are employed in lower-paying occupations, there has been a notable acceleration of employment in higher-skill, higher-wage jobs in many of New Mexico's target industries over the last decade.

Industry Development: The COVID-19 pandemic inflicted severe short-term pain on New Mexico's economy but has actually assisted the state in accelerating diversification away from government and oil and gas industries. New Mexico remains competitively positioned to significantly grow many of the state's current target industries, including Aerospace & Defense, Healthcare, Outdoor Recreation, Film & TV, and Sustainable & Value-Added Agriculture. Growth in other target industries, however, will require a greater degree of intentionality to see employment gains.

Entrepreneurship: New Mexico is a highly entrepreneurial state with an increasing share of individuals starting their own businesses due to perceived opportunity, rather than urgent necessity (e.g., income). However, demographic trends across the state are beginning to affect the state's entrepreneurs, with falling population growth threatening the dynamism of New Mexico's entrepreneurial ecosystem.

Infrastructure & Environment: Outdoor recreation continues to be a significant asset for New Mexico, with engagement with the state's natural areas growing over the last decade. As the state continues to increase its deployment of renewable energy, there is an opportunity to expand the alignment between the outdoor recreation economy and the renewable energy industry.

While New Mexico continues to capitalize on its strengths in energy production and resource extraction, it is also rapidly growing its high-technology industries, particularly in engineering and the biosciences, and remains well-positioned to be a key player in the national and global transition to renewable energy sources. This economic diversification, driven by the state's higher education institutions and national research facilities, is expected to yield substantial benefits in the future. However, the state's slow population growth and lower-than-average wages present challenges that will need to be addressed through a proactive economic development strategy. This requires a detailed assessment of the state's socioeconomic and industry trends to identify the right initiatives to foster broad, inclusive growth.

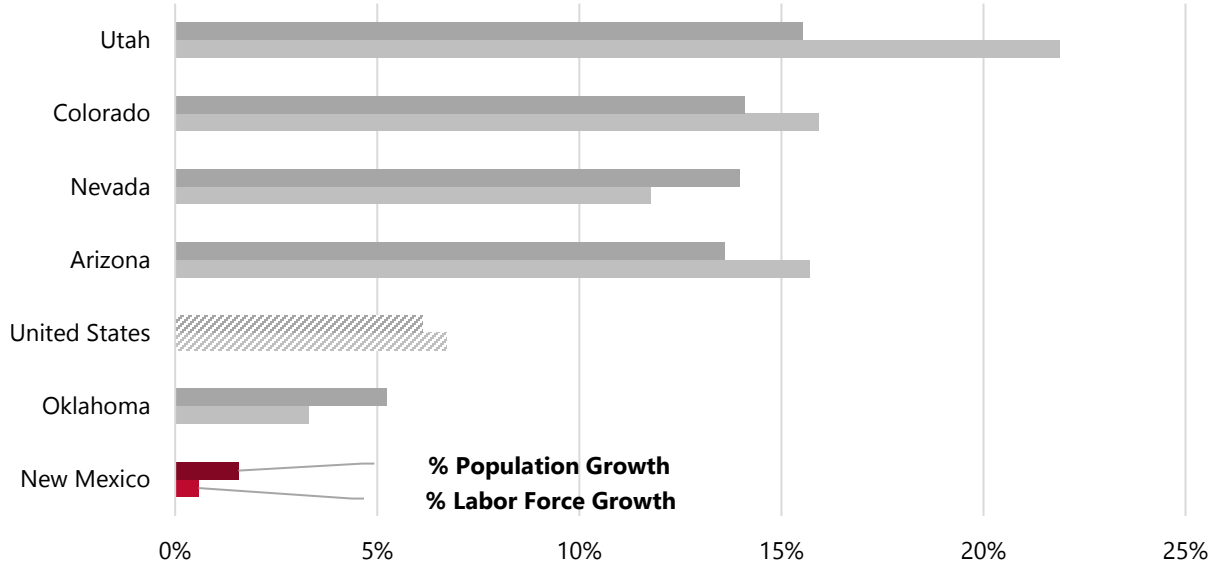
Demographics

New Mexico's Changing Communities

Economic growth and opportunity depend on a growing population and the participation of an area's residents in the labor force. Although New Mexico's population growth was among the fastest in the nation (13%) prior to the Great Recession, the years from 2010 to 2019 saw the state population grow by a modest 2% and its labor force by 1%. By comparison, other Sunbelt states, including Nevada and Arizona, experienced substantially higher growth in population and labor force (see Figure 1). The slow growth in New Mexico's labor force is a challenge that, if not overcome, will constrain the state's long-term economic development potential. Currently, New Mexico's population is growing at a faster rate than its workers, and the decreasing share of workers in the population may eventually result in a labor shortage if this trend is not reversed. States with faster-growing economies, by comparison, tend to experience labor force growth that outpaces their total population growth.

Population and Labor Force Growth Lags Peer States as Well as the Nation

Figure 1: Change in Population among New Mexico and Peer States, 2010–2019. Source: U.S. Census Bureau Population Estimates.



Demographic trends, especially the state's aging population, can explain much of the lackluster growth within New Mexico's labor force. From 2010 to 2019, the population aged 20 to 64, who are more likely to work, declined by 1.9%. In contrast, the state's over-65 population increased by 37.8%. Of particular concern is the loss of residents between the ages of 35 and 49, who typically earn higher wages, contribute more to the tax base, and spend more on the local

economy. As they leave the state, so do their children (see Figure 70 in Appendix B), and this out-migration, if not reversed, can deprive New Mexico not only of current workers but also potential future workers.

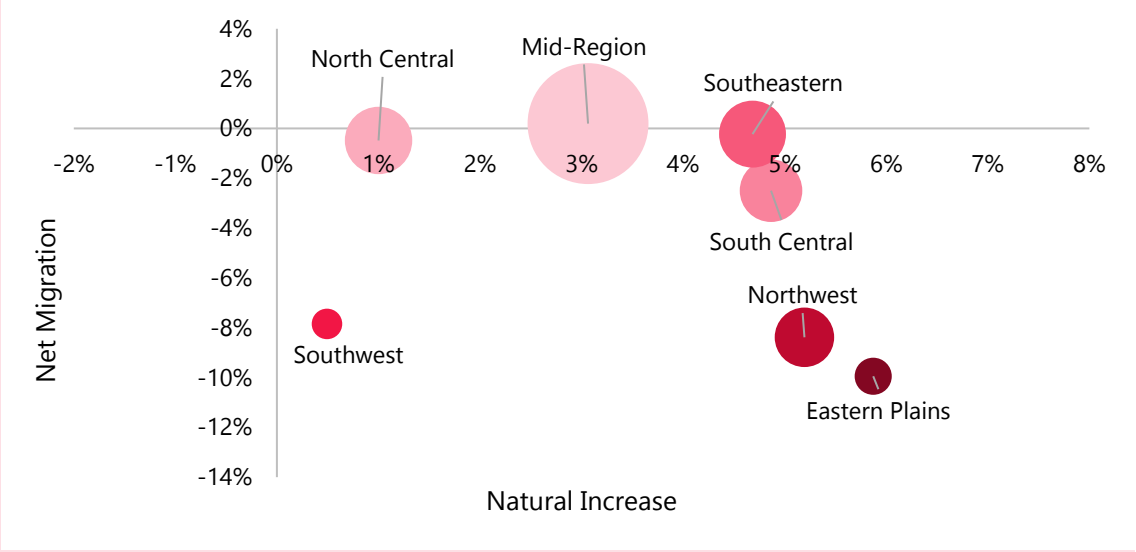
Thus, demographic trends in New Mexico—the rapid growth in the senior population and the loss of middle-aged residents and their families—present a challenge to the state's vision of a talented and dynamic workforce. In response, the state, local communities, and industry stakeholders must aggressively take steps to retain New Mexico's existing workforce and to attract new talent in the post-COVID-19 economy. New Mexico, for example, can capitalize on its growing young adult population to train a new generation of highly skilled workers, leveraging its extensive network of higher education institutions and workforce development programs in the process. The final section of this plan will discuss workforce development and retention strategies in detail.

At the COG level, population growth has generally followed national trends toward increasing urbanization and suburbanization, while growth in the state's rural regions has been limited. Though all regions have relied on a natural increase to sustain their populations, some rural regions have seen a significant share of their residents migrating elsewhere (see Figure 2). Residents who migrate out of New Mexico typically move to nearby states such as Texas, Arizona, Colorado, and Nevada, while at the domestic level, new residents migrating into New Mexico typically originate from Texas, California, Colorado, and Arizona (see Figure 72 in Appendix B). Texas is by far the largest overall source of new residents as well as the most common destination for residents leaving the state. The second largest source of new residents is international immigration, which added 11,000 new residents to New Mexico in 2019 alone.

It should also be noted that, while net migration in the rural Southeastern region is on par with the Mid-Region and the Albuquerque metropolitan area, much of its migration inflow is dependent on the oil industry. Because many new residents are temporary oil workers, demographic trends in southeast New Mexico tends to fluctuate with the cyclical nature of oil prices.

Population Growth in New Mexico Is Increasingly Centralized in the State's More Urban and Suburban Regions

Figure 2: Dynamics of Population Change at the COG Level, 2010–2019. Source: U.S. Census Bureau Population Estimates.



New Mexico's Underserved Populations

As a minority-majority state, New Mexico's racial and cultural diversity is one of its greatest assets. However, access to economic opportunities is still a challenge for certain underserved populations, as shown by socioeconomic disparities between these groups and the New Mexico population as a whole. Three underserved populations are of particular interest in New Mexico: Native Americans, immigrants, and rural residents.

Socioeconomic Health of Native Americans, Immigrants, and Rural Residents Is Lower than That of the Average New Mexican

Table 1: Socioeconomic Indicators of New Mexico's Underserved Populations, 2019. Source: American Community Survey 1-Year Estimates and 5-Year Estimates. Note: Percentage with an Associate Degree or Higher is based on the population aged 25 years or older.

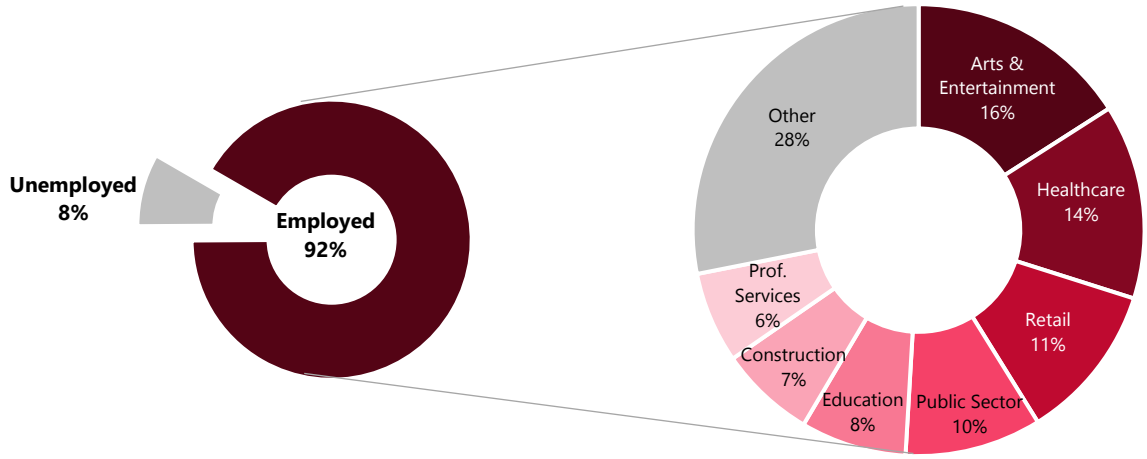
	Unemployment Rate	*Poverty Rate*	*Population with an Associate Degree or Higher*	*Median Personal Income*
Native Americans	8.4%	30.0%	21.1%	$26,000
Immigrants	3.6%	26.1%	28.9%	$28,000
Rural New Mexicans	7.8%	26.1%	26.2%	$23,000
New Mexico Average	5.5%	26.1%	36.8%	$35,000

New Mexico is home to a large and diverse Native American population, which comprises 10% of the state's residents, and the state's 23 Indian tribes—19 Pueblos, 3 Apache tribes, and the Navajo Nation—make invaluable contributions to the state's economy. Native American-owned businesses generate hundreds of millions of dollars in economic activity each year, while tribal governments bring to the state hundreds of millions more in federal funding to provide health, educational, public safety, and other services to their communities. In 2017, for example, the Pueblos alone brought $608 million dollars to the state, supported nearly 11,500 jobs, and stimulated $1 billion in sales.[1]

However, socioeconomic well-being among New Mexico's Native American population is the lowest among the three underserved groups. The unemployment rate among Native Americans is significantly higher than the state's; only 21% of the over-25 population has an education at or above the associate degree level, and almost one-third of Native Americans in the state live below the poverty line (see Table 1). Among employed Native Americans, more than half work in Arts & Entertainment, Healthcare, Retail, and the Public Sector, while one in five works in Education, Construction, and Professional Services (see Figure 3).

Most Employed Native Americans Work in Arts & Entertainment, Healthcare, Retail, the Public Sector, and Education

Figure 3: Share of New Mexico Native Americans in the Labor Force Who Are Employed and the Industries in Which They Work, 2019. Source: American Community Survey 1-Year Estimates.



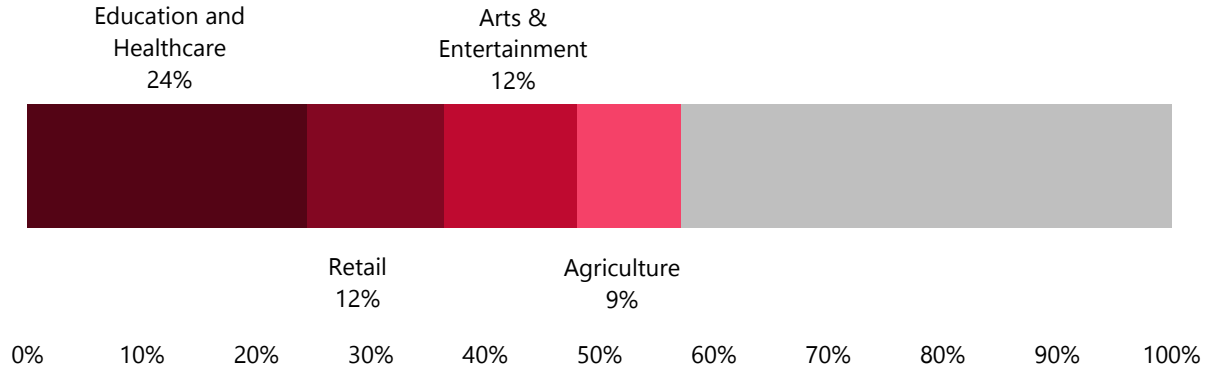
The second underserved group, immigrants, plays an essential role in New Mexico's communities and economy. Almost one in ten residents in New Mexico is born in another country, and one in nine residents is a native-born U.S. citizen with at least one immigrant parent. Within New Mexico's workforce, immigrants account for one-third of New Mexico's

construction and agricultural workers, a quarter of its transportation workers, and one-tenth of its manufacturing workforce (see Figure 71 in Appendix B). Many immigrants also work as essential healthcare workers and as educators in their communities. Despite having a lower unemployment rate than that of New Mexico as a whole, immigrants tend to hold lower-wage jobs and face barriers to economic advancement due to structural factors such as lower educational attainment and less access to quality housing, transportation, and public services. As a result, immigrants tend to have lower personal incomes and experience more poverty than the average New Mexican (see Table 1).

New Mexico's rural residents, defined as those living outside of the state's metropolitan areas, comprise the third underserved group. Rural communities have significantly less access to basic infrastructure, services, and opportunities, which limit their residents' social and economic mobility. Housing quality and affordability, coupled with broadband access, are especially serious challenges faced by rural communities. This is evidenced by the high prevalence of mobile homes, which comprise one-third of the housing stock in some counties, and by a notable lack of broadband infrastructure in rural New Mexico. As a result, poverty and unemployment rates are higher while educational attainment and incomes are lower among rural residents. Rural residents work in a variety of industries, with more than half of workers employed in education and healthcare, retail, arts & entertainment (including outdoor recreation), and agriculture (see Figure 4). Notable portions of the workforce are also employed in the public sector (8%), construction (7%), and professional services (6%).

New Mexico's Rural Residents Work in a Diverse Range of Industries

Figure 4: New Mexico's Rural Workers, by Industry, 2019. Source: American Community Survey 1-Year Estimates.



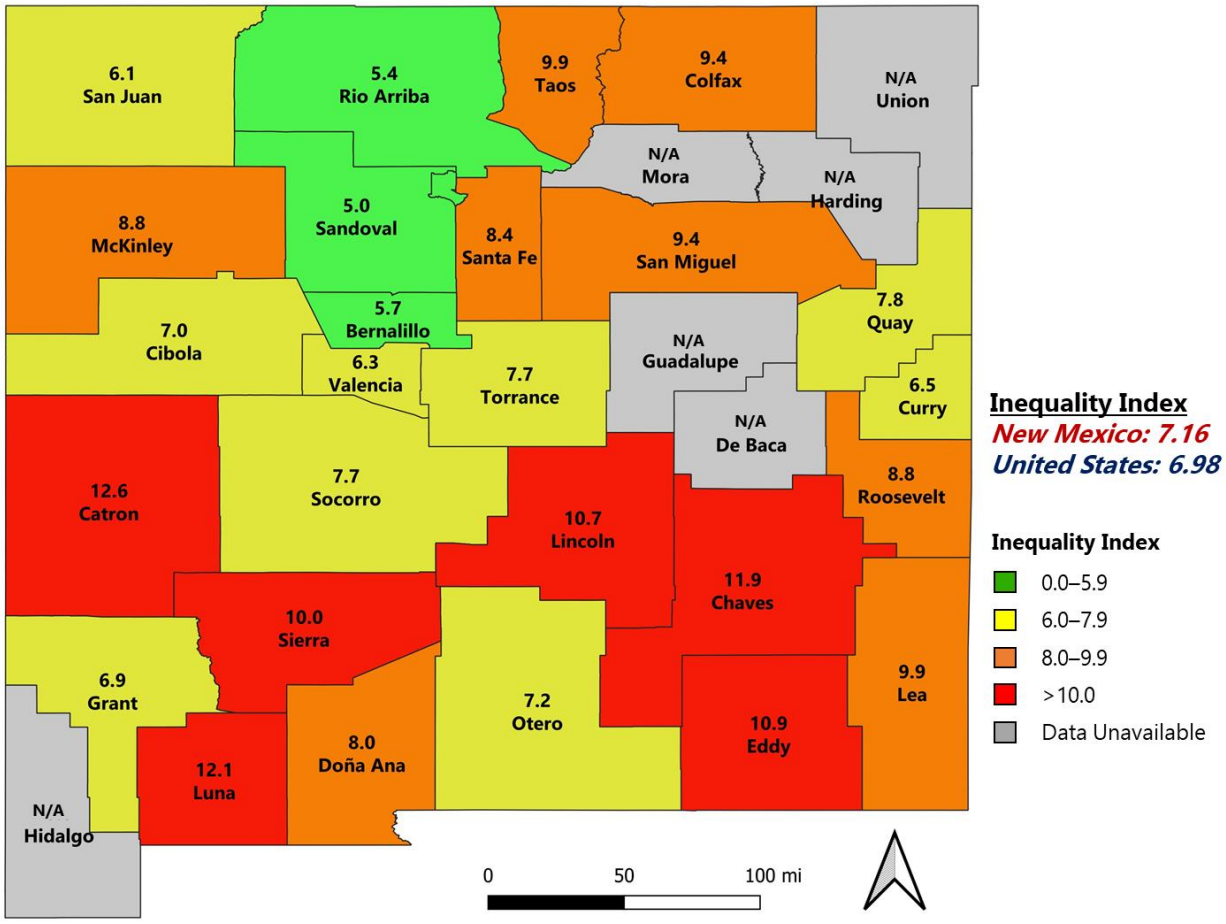
Income & Wealth Inequality

Economic inequality is a growing phenomenon in both New Mexico and the United States. The effects of a rising disparity in income or wealth between different groups can lead to higher

rates of health and social problems, increased burdens on public services, and stagnated economic development.[2] Though income inequality is difficult to measure, this plan uses tax filing data published by the Internal Revenue Service to construct a measure of income inequality. This measure is defined as the ratio of the per capita adjusted gross income (AGI) of tax-filing individuals making $200,000 or more in the past year to the per capita AGI of tax-filing individuals making under $200,000.

Income Inequality Varies Significantly within New Mexico but Is Generally Higher than the U.S. Average

Figure 5: Income Inequality Index by County, 2018. Source: IRS SOI Tax Statistics. Note: The Inequality Index is calculated as the per capita AGI of tax filers with AGI of $200,000 or more divided by the per capita AGI of tax filers with AGI below $200,000. For example, an AGI of 7.0 implies that tax filers with $200,000 or more in taxable income make, on average, seven times more than tax filers with taxable incomes of under $200,000.

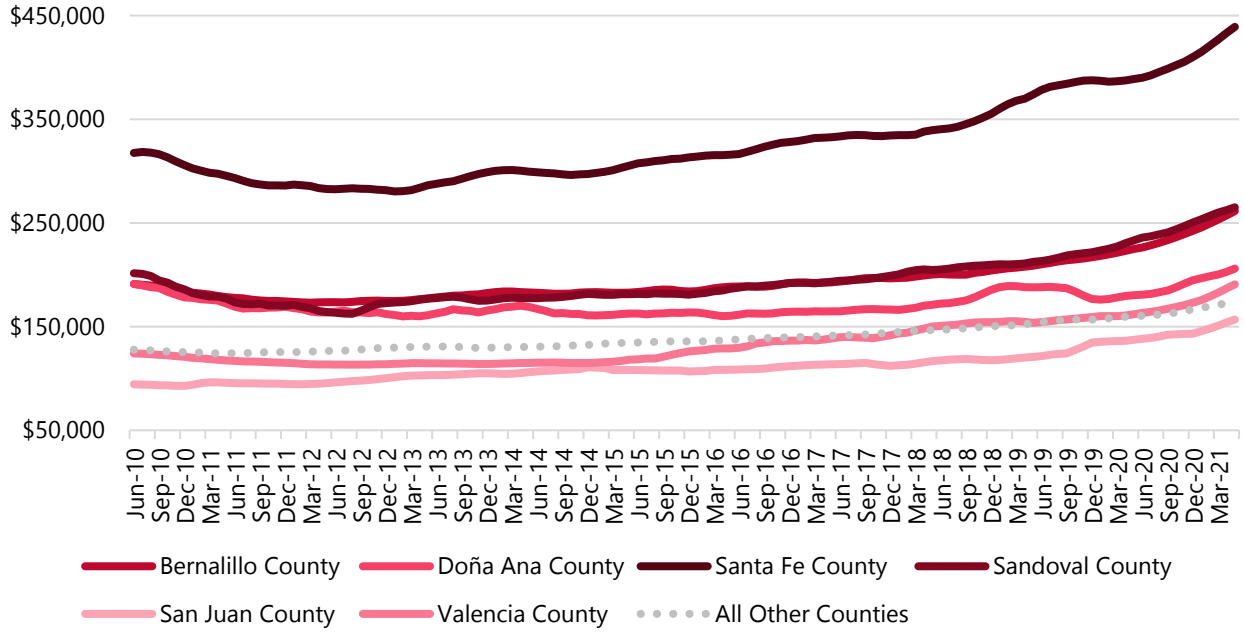


As Figure 5 illustrates, income inequality in New Mexico is generally higher than in the United States. Furthermore, inequality varies across the state, with Bernalillo County showing lower income inequality and Santa Fe, Doña Ana, and several rural counties in southern New Mexico trending toward higher inequality. From 2010 to 2018, income inequality has decreased both in New Mexico and in most of its counties. New Mexico's Inequality Index fell from 9.27 in 2010 to 7.16 in 2018. While national inequality fell from 8.40 to 6.98 during the same period. All but four of New Mexico's counties (Catron, Colfax, Luna, and Lea) saw income inequality trend downwards, which is consistent with national trends that reflect the recovering economy in the years following the Great Recession.

While data on income inequality is more readily available, data on wealth inequality—the total value of what an individual owns minus liabilities—is harder to obtain. However, wealth inequality is typically a more accurate measure of economic disparity in a region. Because, for most Americans, a large percentage of personal wealth is tied to housing, an analysis of home prices can shed light on the severity of wealth inequality between New Mexico's counties. Figure 6 illustrates home price trends for New Mexico's five most populated counties as well as for the rest of the state.

New Mexico's Wealthiest Counties Have Benefitted Most from Rising Home Values

Figure 6: Zillow Home Value Index, by New Mexico County, June 2010–May 2021. Source: Zillow Group. Note: Data are unavailable for Guadalupe, Otero, Curry, and Union counties.



Santa Fe's housing market, driven by a boom in second home and vacation home sales, saw prices increase by 38% since June 2010. Though less dramatic, home value increases in Bernalillo, Doña Ana, and Sandoval counties were also notable in the past decade. Additionally, homes in New Mexico's less populated counties, whose values increased by 37%, have also benefited from the economic recovery in the decade between the Great Recession and the COVID-19 pandemic.

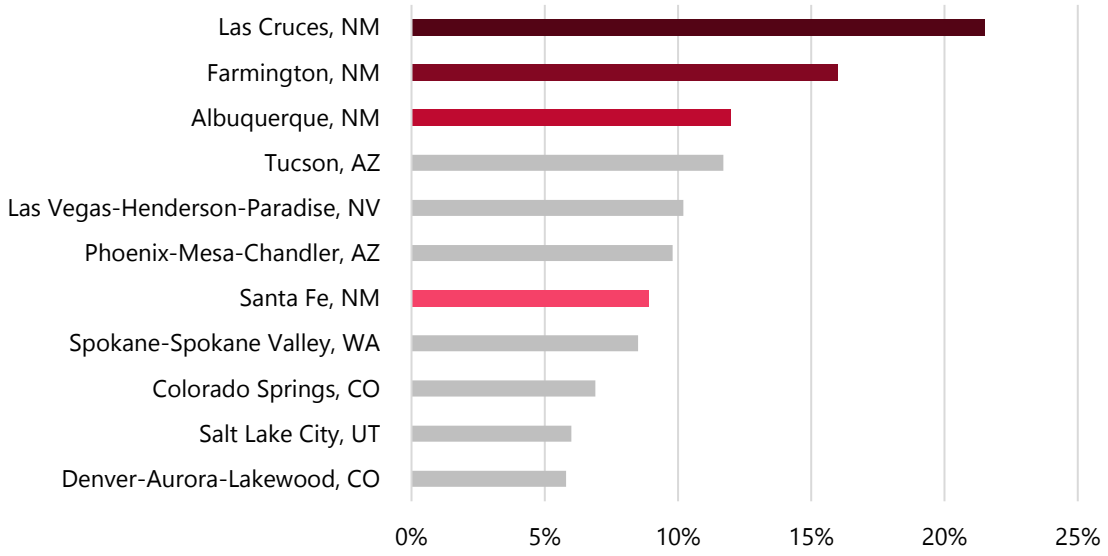
Growth in home values tend to exacerbate wealth inequality between homeowners and renters, because renters gain little from increasing home values. In fact, many renters are harmed by corresponding rent hikes as a result of rising home values. Because renters are disproportionately comprised of low-income, minority, and underserved populations, many already struggle with meeting their housing costs. As Figure 73 in Appendix B shows, 43% of New Mexico's renters spend at least 30% of their incomes on housing (compared to 21% of owners), and one in five renters spends at least half of their income on rent and other housing expenses. Thus, housing affordability is a significant contributor to both income and wealth inequality in New Mexico, and policies that make housing more affordable for renters will be an effective tool to combat economic inequality in combination with other programs.

Poverty in New Mexico's Communities

Uneven economic recovery, inequality, structural factors such as low educational attainment and population growth, and area-specific challenges have all contributed to poverty remaining a problem for both urban and rural regions in New Mexico. Among peer states, New Mexico and Nevada were the only states to experience an increase in the poverty rate from 2010 to 2019. Additionally, three of New Mexico's four metropolitan areas have poverty rates that exceed those of peer metropolitan areas (see Figure 7).

Poverty Rates in Three of New Mexico's Four Metropolitan Areas Exceed Those of Peer Metros

Figure 7: Percent of Households Living below Poverty Line, by Metropolitan Area, 2015–2019. Source: American Community Survey 5-Year Estimates.



In rural regions, a lack of broadband, infrastructure, and workforce services has limited economic opportunities and social mobility, thereby contributing to high levels of poverty. Because some rural regions are home to a significant proportion of the state's Native American residents, who as a group lag far behind the rest of the state on socioeconomic indicators, the need to combat rural poverty through economic development and improved access to infrastructure and services is all the more critical. Furthermore, because the nature of urban poverty is vastly different from rural poverty, economic development strategies aimed at poverty reduction should be tailored toward specific local conditions and involve close coordination between state and local stakeholders. As the state pursues its economic development strategy, this coordination with local stakeholders will play an indispensable role in both the success of the state's efforts and in ensuring that the benefits of economic development also spread to its underserved and underrepresented communities.

Labor Market & Workforce

Capabilities & Characteristics of New Mexico's Workers

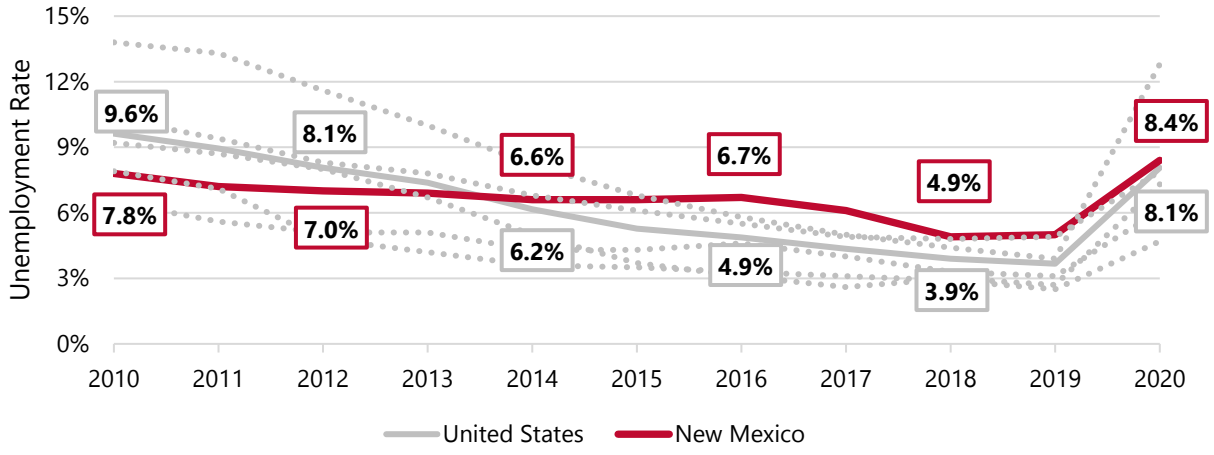
Labor Force & Employment

New Mexico's long-term economic development rests in large part on its workforce ecosystem. Developing a highly skilled and versatile workforce, and the conditions to sustain it, is critical to drawing industry and businesses to the state. Two widely used indicators for evaluating an area's workforce are labor force participation and unemployment. Typically, higher labor force participation rates and lower unemployment rates point toward a healthy labor market with abundant employment opportunities for residents.[3]

Historically, New Mexico's labor force participation rate—the percentage of the civilian noninstitutionalized population aged 16–64 who are working or looking for work—has been lower than that of peer states and the national average. Moreover, as Figure 74 in Appendix B shows, the labor force participation rate fell by 1.0 percentage point from 2010 to 2019. Due largely to the COVID-19 pandemic, labor force participation fell by another 1.5 percentage points in 2020. This decline implies that large numbers of working-age residents have exited the labor market altogether in 2020 (i.e., they have retired or stopped looking for employment), and the likelihood of these former workers becoming employed again is lower than those who are actively looking for work (i.e., unemployed workers).

Unemployment Has Fallen since the Great Recession but Is Still Higher than That of Most Peer States and the Nation

Figure 8: Unemployment Rate by State and the United States, 2010–2020. Peer states include Arizona, Oklahoma, Nevada, Colorado, and Utah. Source: Bureau of Labor Statistics.



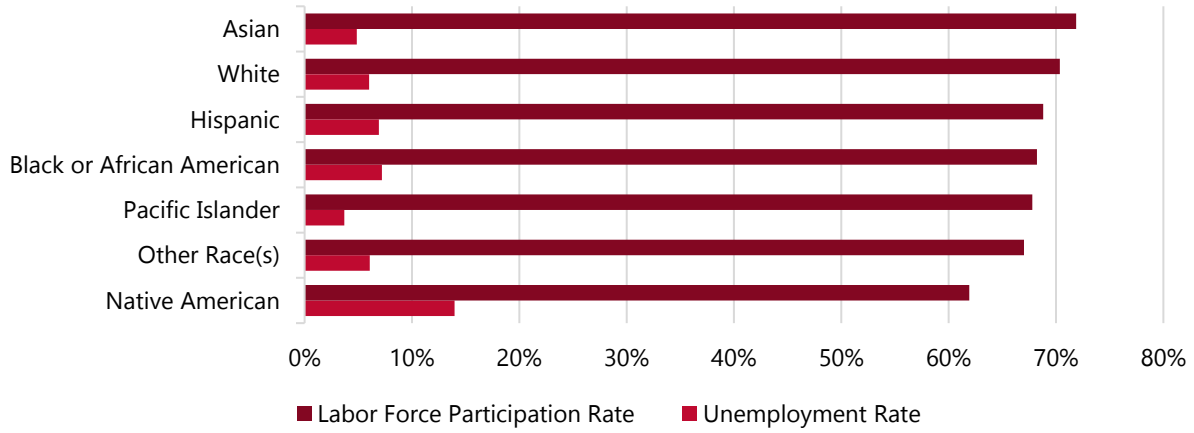
Despite the decline of labor force participation, New Mexico's unemployment rate fell from 7.8% in 2010 to 5.0% in 2019 (see Figure 8). Recovery of the state's labor market from the Great Recession has been slower than that of the United States, but the dramatic fall in unemployment from 2016 to 2019 shows that the recovery was picking up speed before being disrupted by the COVID-19 pandemic.

A closer examination of New Mexico's economy during COVID-19 shows that the pandemic's first months impacted New Mexico's labor market less than those of peer states and the United States (see Figure 75 in Appendix B). Nevertheless, summer 2020 saw the state's unemployment rate jump to 13.4% before recovering to 8.0% in spring 2021. The state's unemployment rate remains high compared to its peers, but unemployment is expected to fall as the post-pandemic economic recovery gains steam. With the negative impact of the pandemic on state and local economies easing, the expected ramp-up in nationwide hiring will be a boon for New Mexico's labor market, and local industry and workforce stakeholders will play a crucial role in helping the state take advantage of new opportunities in the post-pandemic era.

At a structural level, labor force outcomes in New Mexico vary significantly by race. Of the racial and ethnic minority groups, American Indians or Native Americans have by far the lowest labor force participation rate and the highest unemployment rate (see Figure 9).[4] Furthermore, Blacks or African Americans have had less success obtaining employment than Whites and Asians despite their high labor force participation. These disparities are likely linked to other socioeconomic factors, such as poverty and educational attainment, as well as differences between the state's economic development regions.

Employment & Labor Force Outcomes Vary by Race

Figure 9: Labor Force Participation Rate and Unemployment Rate in New Mexico, by Race, 2015–2019. Source: American Community Survey 5-Year Estimates.

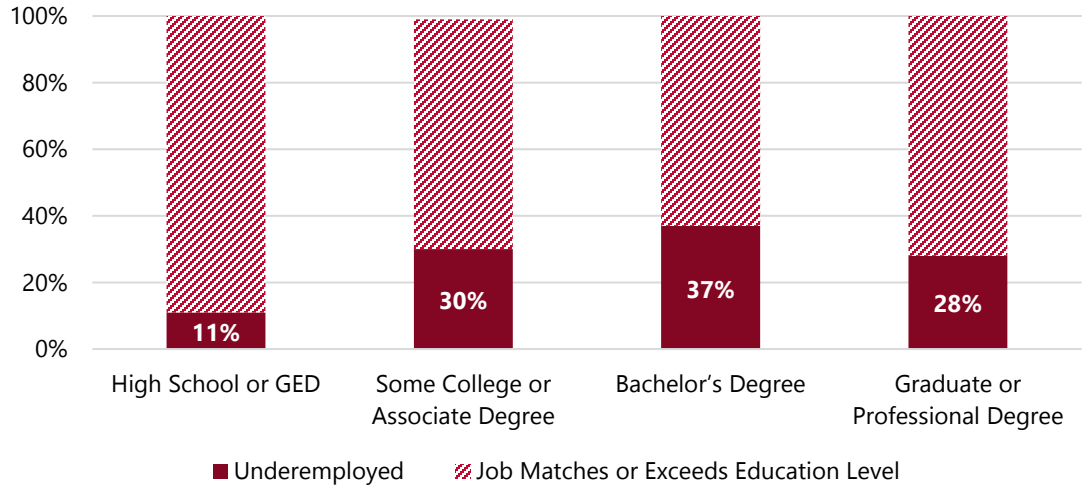


Additionally, unemployment among young adults is higher than the national average. The state's unemployment rate among 20- to 29-year-olds is 9.5% compared to about 8% nationally, implying that 1 in 10 young adults in New Mexico's labor force has difficulty finding employment. These young adults may lack the work experience, credentials, and job references that older workers have garnered, thus facing barriers to starting a career.[5] Chronically high unemployment among young adults, moreover, can create long-term problems, such as depressed earnings over a lifetime and increased inequality among the state's residents. As such, New Mexico's educational institutions, workforce developers, and employers play a critical role in both jumpstarting the careers of young adults and addressing disparities among subsets of the population.

A third workforce metric, in addition to labor force participation and unemployment, is *underemployment*. Workers are underemployed if their educational attainment is higher than the education level required by their job. Broadly speaking, an underemployed worker could be making better use of their education and can be considered overqualified for their job, as is the case if a college graduate works as a cashier as their primary occupation. Measuring underemployment in New Mexico is a first step in identifying how well workers' skills and qualifications match the labor needs of the state's employers. It also provides insights into the quality of jobs available to workers and identifies areas in which the state's education system can better fulfill the needs of employers and future workers.

A Significant Percentage of New Mexico Workers Are Underemployed

Figure 10: Percentage of New Mexico Workers Who Are Underemployed, by Educational Attainment. Workers are underemployed if their educational attainment is higher than the education level required by their job. Source: American Community Survey 5-Year Estimates, 2015–2019.



As Figure 10 shows, 37% of workers with bachelor's degrees work in occupations that do not require a bachelor's degree, and 30% of workers with associate degrees work in occupations that require a high school diploma or less. There are many causes for underemployment among New Mexico workers, but the high levels of underemployment among college degree holders suggest two related workforce development problems that the state needs to address. First, there are not enough jobs in the state that match the experience and skills that workers possess. Second, educational institutions are producing graduates with skills that do not align with employers' needs.

Data from the Job Openings and Labor Turnover Survey present strong evidence that New Mexico employers are struggling to find the right workers to fill open positions. These data are illustrated by Figure 11, which shows the job openings rate in New Mexico at the end of each month and the rate at which new workers were hired during that month. A labor market in which the rate of job openings consistently exceeds the rate of hiring indicates that employers are struggling to fill open positions, either because there are simply not enough workers to fill open positions, or more likely, that workers are available but do not have the skills and qualifications demanded by employers.

Failure of Hiring to Keep Up with the Number of Open Positions Indicates that Employers Are Struggling to Find the Right Workers

Figure 11: Job Openings Rate and Hires Rate in New Mexico, January 2010–March 2021. Source: Job Openings and Labor Turnover Survey, Bureau of Labor Statistics.

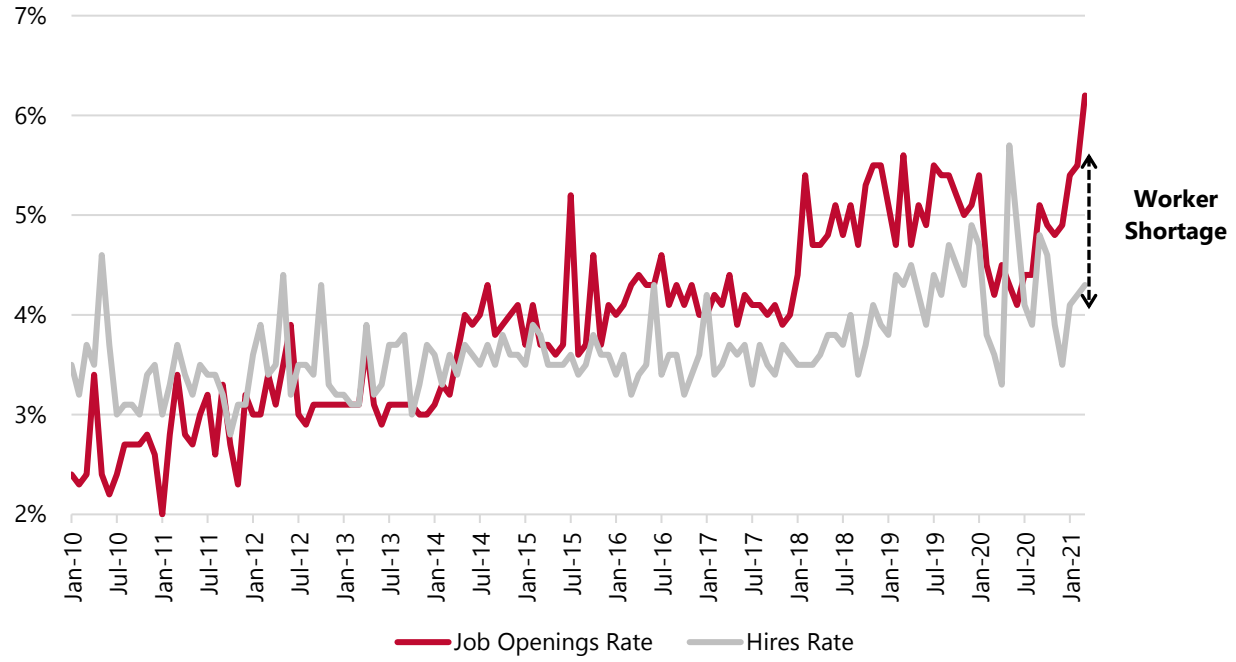


Figure 11 shows that, as New Mexico's economy began to improve after 2010, employers increasingly sought out workers by steadily posting more open jobs. These job openings were generally filled without difficulty by New Mexico's workforce until 2014. Beginning in 2014, however, job openings consistently exceeded the number of hires, and the gap between job openings and hires has since widened. Many open jobs, therefore, remained unfilled between 2014 and the 2020 COVID-19 lockdowns. More recently, job openings in New Mexico increased dramatically in response to the lifting of pandemic-related restrictions and the expectation of nationwide vaccination, but the failure of hirings to keep pace with job openings indicates that New Mexico's workforce is still struggling to meet the needs of employers as the pandemic draws to a close.

The following sections examine this workforce gap in detail, first by analyzing the occupations and skills of New Mexico's workers and then by investigating the role of state and local educational institutions in workforce development.

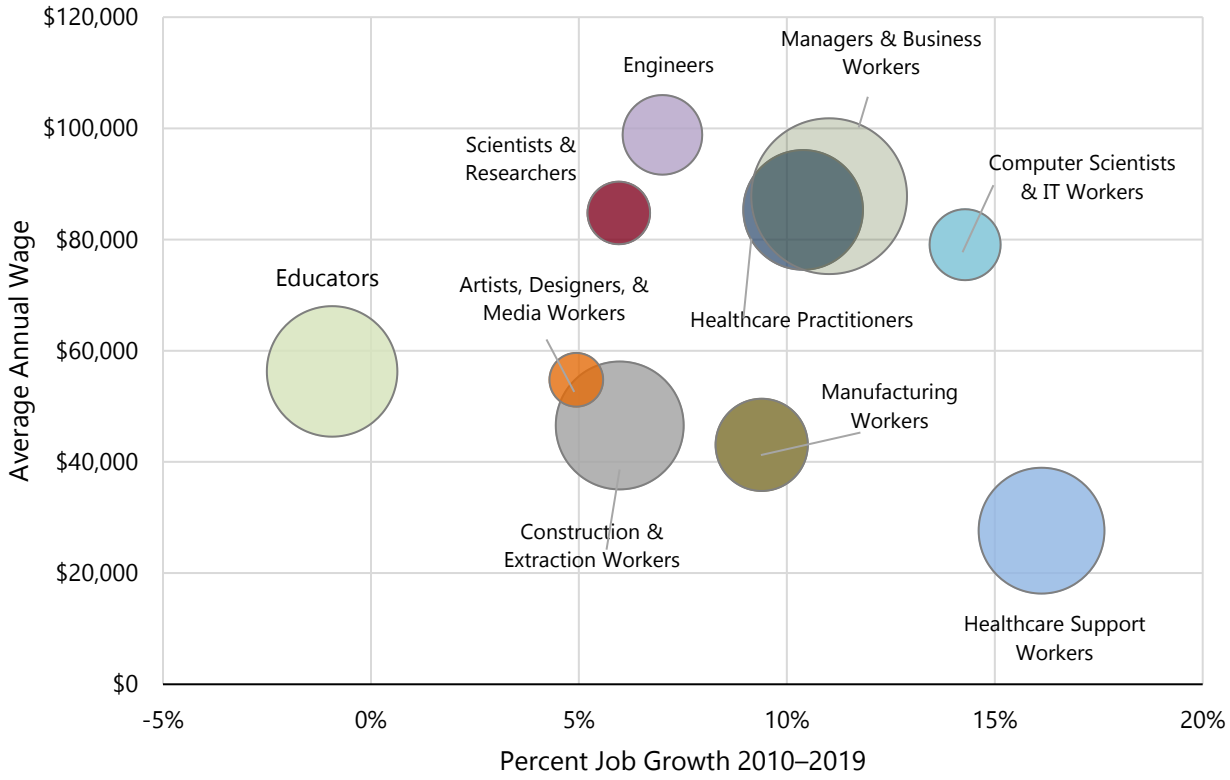
Occupations & Skills

In the past decade, New Mexico's workforce has experienced dramatic shifts in the response to the changing labor needs of its industries and economy. As fast-growing industries demand new types of workers, occupations such as healthcare professions have become especially popular. However, not all fast-growing occupations offer decent wages, and one in three workers in New Mexico continues to hold low-paying jobs in retail, food preparation, and office support. The negative growth of education-related jobs, consistent with the broader decline of the state's education sector, is an additional problem that poses serious challenges to New Mexico's workforce development goals.

Nevertheless, the rapid growth of computer scientists and IT workers, business professionals, and healthcare practitioners in the past decade indicates that high-wage and high-skill workers comprise a greater share of the workforce (see Figure 12). These professionals, in addition to the state's scientists, researchers, and engineers, form the core of highly talented workers that the state can leverage to attract employers and further develop its workforce.

New Mexico's Fastest Growing Occupations Also Pay Some of the Highest Wages

Figure 12: Growth, Median Annual Wages, and Size of New Mexico's Occupations. Occupation size is measured in 2019 employment. Source: Occupational Employment Statistics, Bureau of Employment Statistics.



Manufacturing and construction and extraction occupations, while not as well-paid as "white collar" professions, also play a critical role in New Mexico's workforce. These occupations form the backbone of the state's technical and vocational job base and provide opportunities for the state's low-wage workforce by bridging the gap between lower-wage jobs in the retail sector and higher-wage jobs in professional services and healthcare. Many workers in these vocational occupations—otherwise known as skilled technical workers—are highly skilled in science, technology, engineering, and mathematics (STEM) fields but do not possess a bachelor's degree. Furthermore, these workers often receive training at community colleges and through vocational programs rather than at 4-year universities.

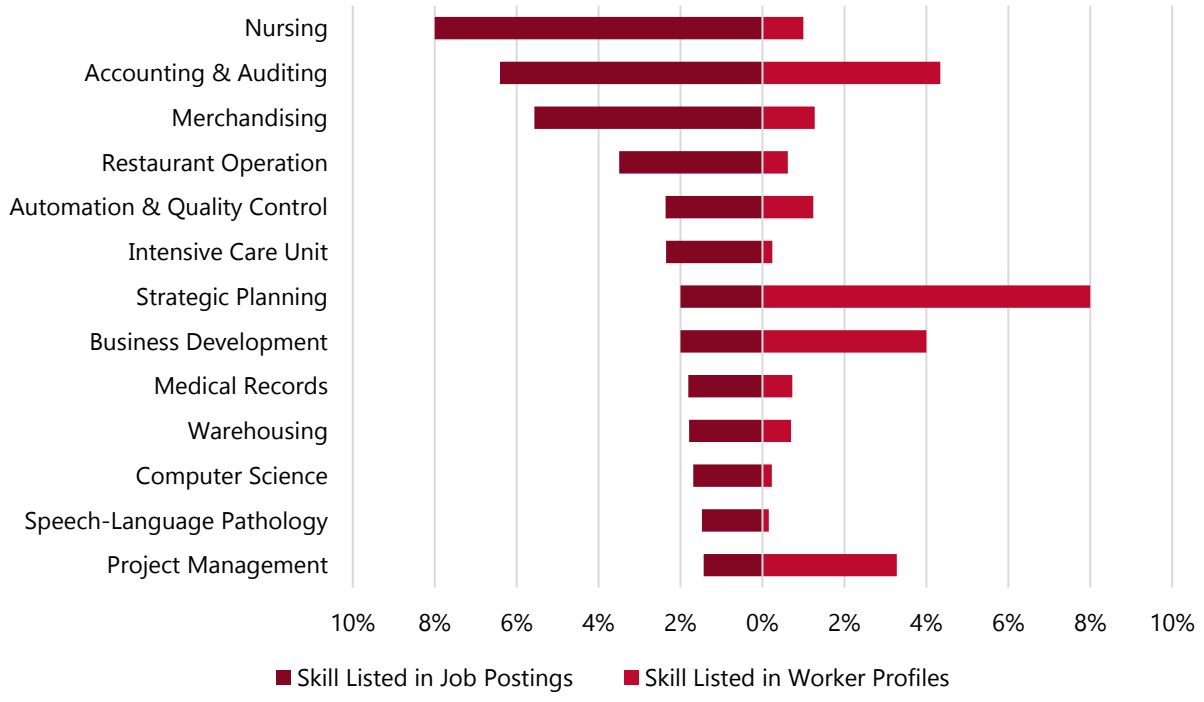
New Mexico has a large pool of skilled technical workers thanks to its oil and gas industry, its small-but-sizable manufacturing cluster, and community colleges that produce a strong pipeline of new workers. As the state seeks to diversify away from oil and gas, it must offer channels through which oil industry workers can transfer their skills to new industries, such as

manufacturing or renewable energy, while providing retraining and upskilling programs to help workers transition to the high-tech industries that the state seeks to develop.

Figure 13 offers a snapshot of the skills sought by New Mexico's employers and how often these skills appear in New Mexico workers' resumes. Most skills that appear in job postings are scarcely found in worker profiles, signaling that employers are struggling to find enough workers with these skills. Nursing and other medical skills are in especially high demand, but there seems to be a shortage in the supply of qualified workers in the state. Similarly, computer science, automation, and quality control expertise are popular skills among New Mexico's manufacturers and professional services firms, but only a small percentage of the workforce possesses these skills. On the other hand, many workers profess competency in strategic planning, business development, and project management, but these skills are not in high demand among employers. These findings suggest the existence of a *skills mismatch* in which New Mexico's employers seek workers with specialized skills, often in STEM-related fields, but many workers instead offer skills in nonspecialized and non-STEM areas. A skills mismatch between employers and workers, moreover, may explain the high rates of underemployment in New Mexico's workforce and the hiring difficulties faced by the state's employers.

Skills Employers Seek Do Not Match Skills Workers Offer

Figure 13: Percentage of Job Postings and Worker Profiles in Which Selected Skills Are Present, January 2020–March 2021. Source: Emsi.



As New Mexico continues to diversify its economy through the development of its nine target industries, it must ensure that its workforce has the right skills and attributes to meet the talent needs of these industries. To assess how well the state's existing workforce can meet the target industries' demand for specific types of workers, Table 26 in Appendix B shows the five largest occupations in each target industry in both New Mexico and the United States. Specifically, it compares each occupation's share of industry jobs in the state to that of the country, thus identifying whether the state has a staffing shortage or surplus in a specific industry relative to the United States. For example, medical scientists comprise 7% of workers in the national biosciences industry but only 2% of New Mexico's workers, implying that the state's biosciences industry has a staffing shortage in medical scientists. Though not a perfect measure of New Mexico's staffing strengths and weaknesses (i.e., structural differences between how an industry operates in New Mexico versus industry activities at the national level may explain why some occupations are more prevalent than others), this methodology provides a useful snapshot of the staffing capabilities of New Mexico's workforce relative to the U.S. workforce.

As Table 27 (see Appendix B) shows, New Mexico's existing workforce is well-suited to fill the occupational needs of Aerospace, Outdoor Recreation, and Sustainable & Value-Added Agriculture. However, it lacks the types of workers needed to meet the needs of Cybersecurity, Intelligent Manufacturing, and Sustainable & Green Energy. In other industries, the state has a surplus of workers in some occupations and a shortage in others. The healthcare sector, for example, has a large supply of low-wage healthcare support workers, such as home health aides and medical assistants, but is experiencing a shortage in registered nurses. Similarly, the education sector is well-staffed with K–12 teachers, but the state's share of higher education teachers is much lower than that of the United States. Therefore, reorienting the state's education ecosystem toward providing students the skills sought by employers is a crucial step to grow and diversify the state's economy.

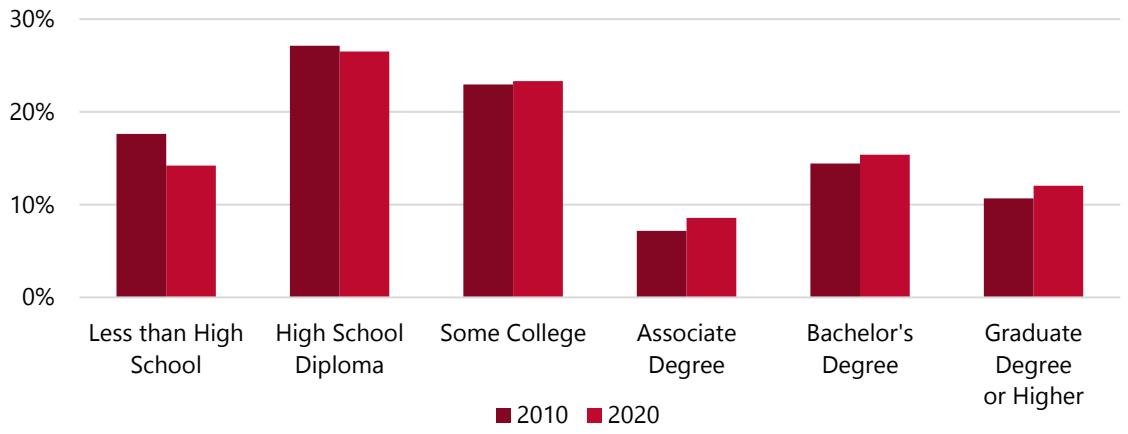
Education & Workforce Development

New Mexico's population has become more educated in the past decade. Residents with at least a bachelor's degree comprise 27% of the population in 2020 compared to 25% in 2010 (Figure 14). The share of associate degree holders also saw a notable increase from 7% in 2010 to 9% in 2020. These positive trends are largely due to improvements in the high school graduation rate across all subgroups of the population; 86% of New Mexico residents had a high school education in 2020 compared to 82% in 2010.

Although these gains are encouraging for New Mexico's economy, the state's educational attainment still lags behind that of the United States in several key areas; for example, 36% of New Mexico's population holds at least an associate degree, compared to 42% of the U.S. population.

New Mexico Residents Have Become More Educated

Figure 14: Percentage of New Mexico's Population by Educational Attainment, 2010 and 2020. Source: Emsi.



Although educational attainment has risen in New Mexico, a significant portion of degrees awarded in 2019 were associate degrees in liberal arts and humanities (see Figure 76 in Appendix B). At the bachelor's level, life sciences, business, social sciences, and liberal arts tend to be the most popular fields of study. While a large number of students graduates with science and engineering degrees, few students complete programs in computer science and math. New Mexico schools also produce a strong pipeline of educators, with many students obtaining master's degrees in education before entering the workforce as teachers and administrators.

New Mexico's economic growth and diversification require a workforce with advanced skills in STEM fields. In this context, New Mexico's education ecosystem—consisting of several large universities and a strong network of community colleges—is the foundation on which the state can develop this workforce. Furthermore, the relationship between universities and community colleges is critical to offering future workers a pipeline through which they can begin their education at a community college before transferring to a state university to finish their training.

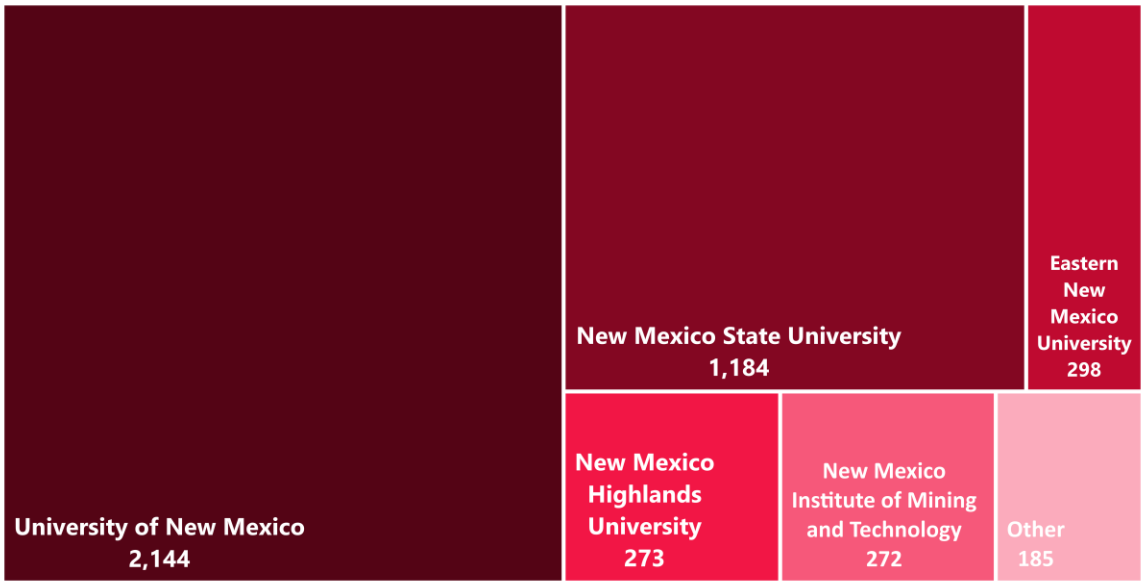
Figure 77 in Appendix B shows the number of pre-baccalaureate awards (including associate degrees) in STEM-related fields awarded by each educational institution. Half of all pre-baccalaureate STEM awards in 2019 were earned at either Central New Mexico Community College or San Juan College. The rest were awarded at Pima Medical Institute, smaller community colleges, or 4-year universities with pre-baccalaureate programs. Of the 8,287 pre-baccalaureate awards earned at these institutions, 3,329 (40%) were associate degrees while the rest were shorter-term programs that took less than two years to complete.

In 2019, 4,356 bachelor's degrees were awarded in STEM fields by New Mexico's universities. Three-quarters of these degrees were earned at the University of New Mexico and New Mexico State University, which together produce hundreds of nursing, biological science, and

engineering graduates each year (see Figure 15). Additionally, STEM-focused universities, such as the New Mexico Institute of Mining and Technology, offer specialized training in science, engineering, and technology-related fields.

University of New Mexico and New Mexico State University Produce the Majority of STEM-Related Bachelor's Degrees

Figure 15: Bachelor's Degrees in STEM-Related Fields Awarded in New Mexico, by Educational Institution, 2019. Source: Integrated Postsecondary Education Data System, National Center for Education Statistics.



New Mexico's educational institutions are one of its most important assets. Producing thousands of STEM graduates every year, these institutions form the foundation to build a highly skilled workforce that attracts industries and businesses to the state. However, evidence of underemployment among New Mexico workers and a skills mismatch between workers and employers suggest that more can be done to align education curricula with the needs of industry. Schools, for example, can invest more in their math and computer science programs while continuing to bolster the pipeline of graduates in the science, engineering, and health professions. A coordinated approach toward curriculum design between educational institutions, as opposed to a go-it-alone approach, will be critical to providing future workers the skills they need to compete in tomorrow's high-tech economy.

Racial & Gender Equity in STEM Education & Workforce Development

As New Mexico seeks to further develop its STEM workforce and enhance its STEM education programs, it is important to ensure that groups that have historically been underrepresented in the STEM fields have the same exposure to STEM in school as other groups. STEM careers typically offer workers more economic mobility and higher wages, which makes STEM education and workforce development an important tool for promoting long-term equity. Currently, however, women, Native Americans, and Blacks are notably underrepresented among students enrolled in STEM higher education programs as well as within the state's STEM workforce.

In 2019, more than 2,700 STEM degrees and certificates were awarded by New Mexico's higher education institutions, of which 56.5% were awarded to men and 43.5% were awarded to women. Whites accounted for almost three-quarters of the state's STEM graduates, while only one in nine STEM graduates are Native American or Black (see Table 2).

Women and Minorities Are Significantly Underrepresented among STEM Graduates

Table 2: STEM Graduates from New Mexico's Higher Education Institutions, by Race and Gender, 2019. Source: Integrated Postsecondary Education Data System.

Race	*Male*	*Female*	*Total*
White	41.3%	30.2%	71.4%
Asian	3.7%	2.6%	6.4%
Native American	3.4%	4.4%	7.8%
Black	2.5%	1.5%	4.0%
Other	5.6%	4.7%	10.4%
Total	**56.5%**	**43.5%**	**100%**

Within New Mexico's STEM workforce, women and minorities are even more underrepresented. White males comprise more than half of all workers in the STEM professions, and whites in general comprise almost four-fifths of all STEM workers. Women constitute only one-third of the STEM workforce, and just 1 in 12 STEM workers are Native American or Black (see Table 3). It is also worth noting that, despite more women enrolling in STEM education programs than men among Native Americans, Native American men significantly outnumber Native American women in New Mexico's STEM workforce.

New Mexico's STEM Workforce Is Similarly Lacking in Gender and Racial Equity

Table 3: New Mexico's STEM Workforce, by Race and Gender, 2019. Source: American Community Survey 1-Year Estimates.

Race	*Male*	*Female*	*Total*
White	51.8%	26.7%	78.5%
Asian	1.5%	2.2%	3.6%
Native American	4.5%	1.9%	6.3%
Black	0.8%	1.3%	2.1%
Other	7.3%	2.1%	9.4%
Total	**65.9%**	**34.1%**	**100%**

Given the current underrepresentation of women and minorities in STEM, New Mexico has a significant opportunity to promote STEM education and careers among underserved groups. The high demand for STEM workers among the state's employers and the economic opportunities made possible by a STEM career only underscore the importance of this strategy for equitable workforce development. Thus, not only can STEM-based education and workforce development better align New Mexico workers with employers, but it can also play a key role in addressing the state's economic and social inequality.

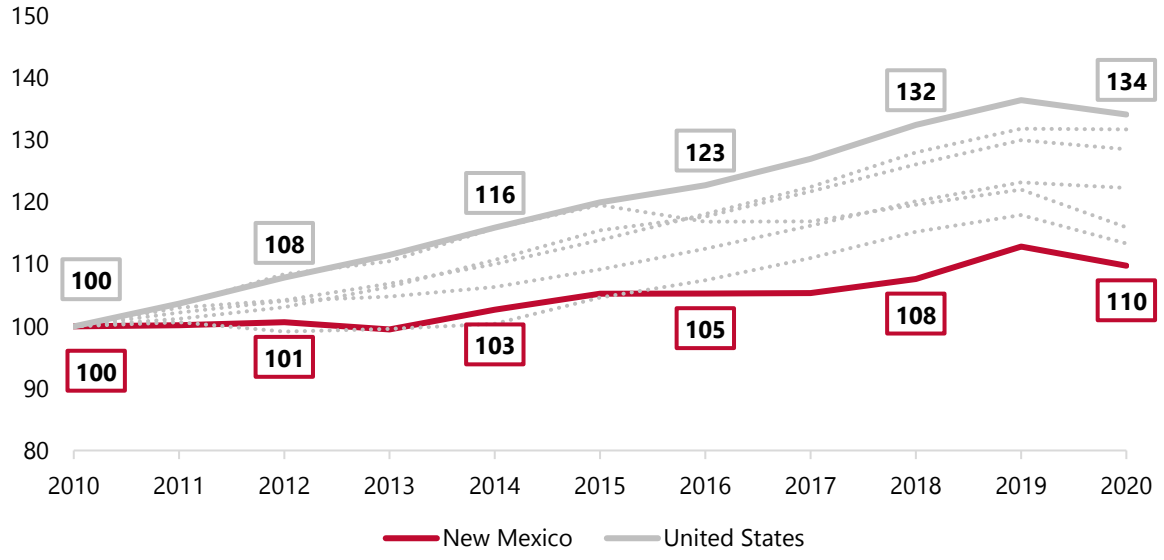
Industry Development

Performance & Composition of New Mexico's Industries

In the years between the Great Recession and the COVID-19 pandemic, New Mexico's economy grew by 13% and its labor market added 55,000 jobs. Although economic growth has been steady, it has not kept pace with growth in peer states and in the United States as a whole (see Figure 16). New Mexico's annual GDP growth was 1% between 2010 and 2019 (prior to the pandemic), while national annual GDP growth averaged 4%. All of New Mexico's peer states experienced faster annual growth, from Nevada (2%) to Utah (4%).

New Mexico's GDP Growth Has Lagged behind Its Peers

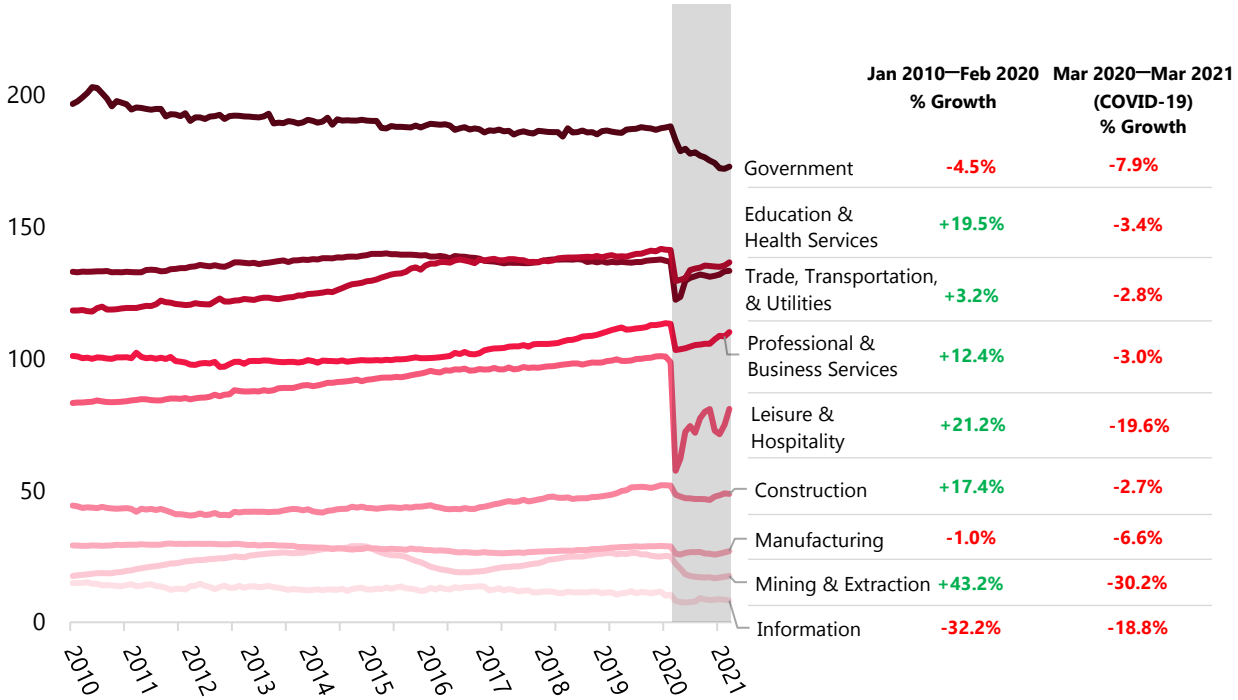
Figure 16: Index of GDP Growth, by State and the United States, 2010–2020. Peer states include Arizona, Oklahoma, Nevada, Colorado, and Utah. Source: Bureau of Economic Analysis.



Despite slow growth in the past decade, New Mexico's economy has begun to diversify away from its dependence on natural resource extraction and public sector employment toward health, education, and professional and business services. From 2010 to February 2020, just before the COVID-19 pandemic, the healthcare industry grew by 21%, education by 12%, and professional and business services by 12%. The leisure and hospitality sector, which includes tourism-related industries, grew by 21%, while the state saw a boom in construction activity. In contrast, federal government employment fell by 5% while resource extraction, based on oil and gas production, remains cyclical and volatile. These trends suggest that New Mexico's economy is already diversifying. However, the state's economic diversification is a long-term process that, despite the economic impact of COVID-19, will likely continue over the next two decades.

Economic Diversification Will Likely Continue despite COVID-19 Impact

Figure 17: New Mexico Employment (in Thousands), by Selected Industry Sector, January 2010 to March 2021. Shaded area marks the COVID-19 pandemic. Source: Current Employment Statistics, Bureau of Labor Statistics.



As Figure 17 shows, the COVID-19 pandemic has affected New Mexico's economy across all sectors. The impact on the leisure and hospitality, mining and extraction, and information sectors has been especially severe. Nevertheless, the pandemic's economic effects largely resonate in the short to medium term, and it is unlikely that the pandemic will stop or reverse the state's economic diversification over the long term. On the contrary, COVID-19 seems to have accelerated the long-term decline of the state's public sector job base while jobs in other sectors are on track to recover to pre-pandemic levels. Employment in the state's biggest sectors, with the exception of government, began to rebound shortly after the initial lockdown. This recovery continued into 2021 and was aided by federal stimulus packages, nationwide vaccination, and the expectation of restrictions lifting.

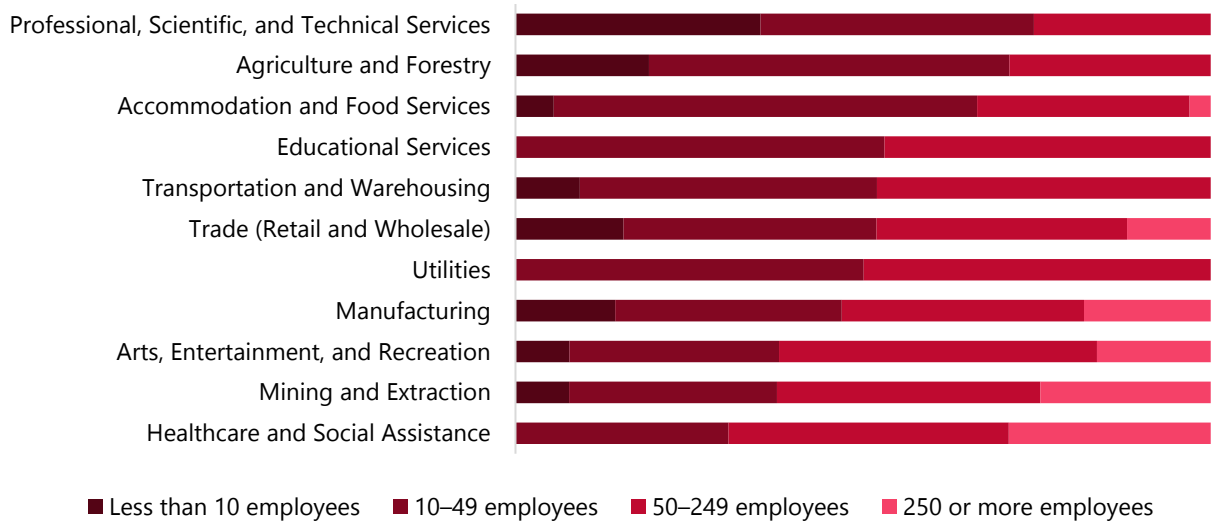
The previous decade saw rapid growth in some specific industries and significant declines in others (see Table 27 in Appendix B). Healthcare, retail, oil and gas, and transportation comprise most of the state's 15 fastest growing industries. Furthermore, impressive job growth in physical science research and development (R&D)—the third fastest growing industry, which added almost 5,000 jobs—presents promising opportunities for economic developers. Of the 15 industries that lost the most jobs, the decline in both pre-secondary and post-secondary

education is a major challenge to the state's workforce development goals. New Mexico also lost almost 1,300 jobs in semiconductor manufacturing, but Intel's $3.5 billion expansion of its Rio Rancho fabrication facility, announced in May 2021, is an opportunity to reverse this decline. (There may be additional such investments spurred by a dramatic increase of federal funding for microelectronics.)

As New Mexico continues its economic recovery and diversification, it is important to understand the size of businesses that operate in each economic sector so that the state can develop strategies aimed specifically at attracting and cultivating those businesses. Improving the small business landscape, for example, requires the state to employ different strategies than attracting large corporations. Figure 18 provides a breakdown of New Mexico's industry sectors by establishment size or the number of employees in an establishment. Although not a perfect measure of business size (a business can have multiple establishments), establishment size provides useful insights on the businesses in each sector and the type of sites and facilities these businesses require.

Small- and Medium-Sized Establishments Comprise a Significant Share of New Mexico's Economy

Figure 18: Select New Mexico Industries by Establishment Size, 2019. Source: Quarterly Census of Employment and Wages, Bureau of Labor Statistics.



In key sectors such as professional services, manufacturing, trade, and transportation, New Mexico's establishments tend to be smaller compared to the United States. Almost 35% of establishments in professional services, for example, have less than 10 employees compared to 10% in the United States. Likewise, 47% of manufacturing establishments and 52% of

transportation and warehouse establishments in New Mexico have less than 50 employees. These figures are, respectively, 22% and 28% for the United States as a whole. The number of smaller establishments in New Mexico suggests that small- and medium-sized businesses have a prominent role in the state's economy and that even larger firms tend to operate on a smaller scale when doing business locally.

Regional Industry Composition

New Mexico is divided into seven economic development regions, each with its own economy and industry clusters. Economic development efforts in each region are led by a Council of Governments (COG) comprised of the region's local governments. As Table 28 in Appendix B shows, growth has been uneven within the state, with bigger regions generally performing better than smaller ones.

Beyond economic size and the urban vs. rural factor, each region's key industries have contributed significantly to their economic performance. Federal and local governments play an outsized role in the jobs base of rural regions, which makes the decline of government jobs in the past decade all the more threatening to the economies of these regions. On the other hand, most regions have industries that their COGs can use as a foundation for economic diversification and growth. These include R&D (North Central and Mid-Region), mining (Southwest), tourism and accommodation (North Central, Southwest, Southeastern), and healthcare (all regions). Although the Southeastern region is heavily dependent on the oil and gas industry, which has experienced rapid growth and is largely responsible for the region's outsized contribution to the state's GDP, dependence on oil and gas is unlikely to bring long-term prosperity to the region. To diversify its economy, the region should explore using its oil and gas infrastructure for renewable energy development as well as capitalizing on its strengths in agriculture and tourism.

New Mexico's Target Industries

New Mexico's economic diversification effort focuses on the development of nine target industries. These industries are Aerospace, Biosciences, Cybersecurity, Film & Television, Outdoor Recreation, Sustainable & Value-Added Agriculture, Intelligent Manufacturing, Global Trade, and Sustainable & Green Energy, which together comprise roughly 11.3% of all jobs in New Mexico. To better understand their growth drivers, SRI analyzed each industry's:

- Employment concentration in New Mexico relative to the United States, which measures the degree to which New Mexico specializes in an industry;[1]
- Employment growth in New Mexico; and
- Current industry size in New Mexico as measured by the number of jobs.

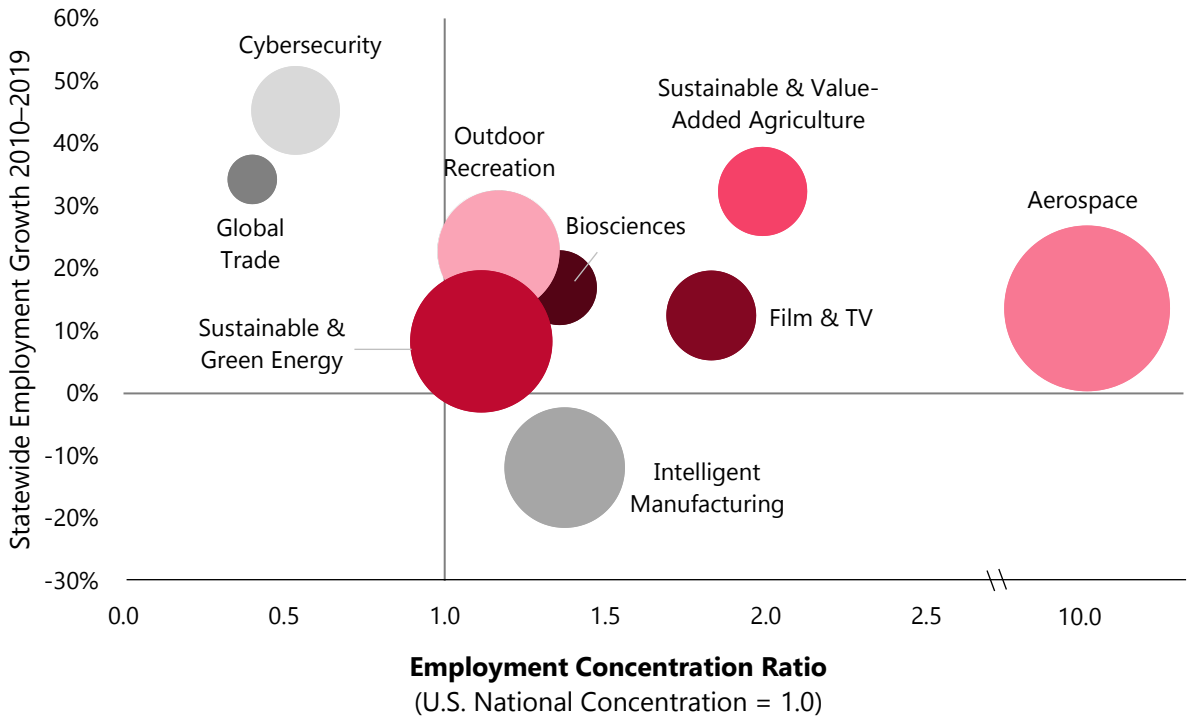
Figure 19 illustrates these three metrics for each of New Mexico's target industries. Industries in the upper right quadrant are those that both exhibit strong growth potential and encompass areas in which New Mexico is more specialized relative to the United States. Industries in this quadrant, therefore, signify areas in which New Mexico possesses a clear competitive advantage.

Six of New Mexico's nine target industries—Aerospace, Sustainable & Value-Added Agriculture, Film & Television, Biosciences, Outdoor Recreation, and Sustainable & Green Energy—fall in this category. The aerospace industry is 10 times more specialized in New Mexico than in the United States thanks to the state's national laboratories, test facilities, and military installations. New Mexico is also highly specialized in Film & Television and Sustainable & Value-Added Agriculture, which along with Aerospace, should be considered competitive strengths of the state economy. Furthermore, the fact that the Outdoor Recreation industry in New Mexico is only slightly more specialized than the national average, despite the abundance and variety of outdoor recreation opportunities in the state, suggests that the industry can likely support many more jobs and businesses than currently exist.

[1] An employment concentration ratio of 1.0 for a particular industry means that New Mexico and the United States are equally specialized.

New Mexico Is Highly Specialized in Most Target Industries

Figure 19: Growth, Concentration, and Size of New Mexico Target Industries. Industry size is measured in 2019 employment. Note: Because the Employee Concentration Ratio for Aerospace and Defense is much higher than other industries, a break is created on the horizontal axis between 2.5 and 10.0 to better visualize the range between all industries. Source: Quarter Census of Employment and Wages, Bureau of Labor Statistics.



Industries in the upper left quadrant—Cybersecurity and Global Trade—exhibit strong growth potential but are currently in a weaker competitive position. These industries have a smaller presence in New Mexico than in the rest of the nation, but they are rapidly growing. They should, therefore, be viewed as opportunities for the state to leverage their ongoing growth to cultivate competitive clusters.

Industries in the bottom left quadrant signify challenge areas for the state due to their negative growth and weak competitive position. Fortunately, no target industry falls in this category, which would signal that employment in a particular industry is declining and that its presence in New Mexico is smaller relative to its national footprint.

The bottom right quadrant, which encompasses Intelligent Manufacturing, represents areas in which New Mexico has a strong competitive position but faces growth challenges. Specifically, employment in Intelligent Manufacturing has declined slightly since 2010, but the state's recent successes in attracting manufacturing operations to New Mexico will likely bring back job growth in the manufacturing sector.

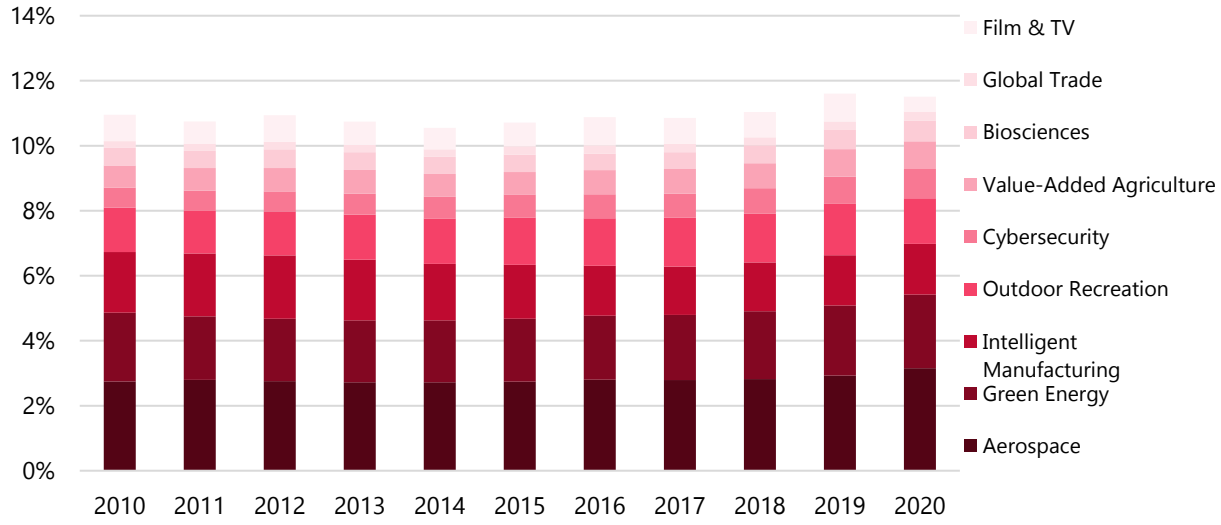
Because target industry development will take place at both the state and regional levels, it is important to consider the competitive position of each region and strategically pursue opportunities in areas in which a region is strong. Biosciences and Cybersecurity, for example, are well-suited to the education institutions and national laboratories in the Mid-Region COG and North Central EDD, outdoor recreation and sustainable agriculture are potential avenues to diversify the economies of more rural regions, and the plains of eastern New Mexico are ideal for wind energy development. Later sections of this plan will discuss how these target industries can be developed at both the state and regional levels in ways that complement the strengths of local communities.

Target Industry Performance

New Mexico's target industries have demonstrated promising growth since 2010 with increasing shares of total employment in New Mexico. Overall, the target industries added almost 9,000 jobs from 2010 to 2020, and their share of total employment increased from 10.5% to 11.3% during this period (see Figure 20). Almost half of the new jobs were added in the Aerospace industry (~4,000), followed by Cybersecurity (~2,500), Sustainable & Green Energy (~1,600), and Biosciences (~900). Additionally, the average annual wage for eight out of nine target industries exceeds the New Mexico state average ($49,650 as of May 2020), ranging from $38,000 per year to $124,000 per year.

New Mexico's Target Industries Comprise 11.3% of Total Statewide Employment

Figure 20: Employment in Target Industries as a Percentage of Total Employment in New Mexico, 2010–2020. Source: Emsi



Aerospace

As the home to several national entities that conduct research on aerospace technologies, including Sandia National Laboratory (SNL), Los Alamos National Laboratory (LANL), Air Force Research Laboratory (AFRL), White Sands Missile Range, and Spaceport America, New Mexico is uniquely positioned to develop and attract Aerospace companies and jobs. New Mexico's Aerospace industry employs approximately 27,000 workers and accounts for 3.2% of total state employment in 2020, up from 2.7% in 2010. The overwhelming majority of these jobs are related to Research and Development in the Physical, Engineering, and Life Sciences (NAICS 541715), which requires highly skilled workers with advanced degrees, and the average annual wage is approximately $124,000.

Biosciences

Biosciences is a nascent and growing industry that has strong potential to become a major high-technology cluster in New Mexico. The state's research universities and national labs train and employ a highly talented biosciences workforce, and both public and private institutions have supported the development of a growing number of biosciences startups. As a result, the industry added more than 900 jobs from 2010 to 2020. Potential synergies with other fields and industries in the state, such as artificial intelligence (AI)-focused biosciences research and biofuel development—which intersects with Sustainable & Green Energy and Sustainable & Valued-Added Agriculture—can accelerate development of the state's Biosciences industry. In New Mexico, the average annual wage in Biosciences is approximately $75,500.

Cybersecurity

Cybersecurity is New Mexico's fastest-growing target industry. From 2010 to 2020, industry employment increased by 50% with more than 2,500 new jobs. The majority of jobs in Cybersecurity are held in Computer Systems Design Services (NAICS 541512) and Custom Computer Programming Services (NAICS 541511), both of which pay a high average annual wage. Computer Facilities Management Services (NAICS 541513) and Data Processing, Hosting, and Related Services (NAICS 518210) are also major components of New Mexico's Cybersecurity industry. Despite its rapid growth, however, cybersecurity has a relatively small presence in New Mexico compared to the rest of the United States. Nevertheless, the industry is expected to continue to grow due to more frequent and sophisticated cyberattacks, the implementation of new cybersecurity standards by the federal government for its contractors, and the roll out of new cybersecurity education initiatives by state institutions. In New Mexico, the average annual wage in the Cybersecurity industry is approximately $97,000.

Film & Television

New Mexico is home to an established and competitive Film & Television industry that is supported by a well-trained film crew workforce, an abundance of natural and urban production locations, and generous financial incentives. However, because the pace of film production is not always consistent, employment in Film & Television has fluctuated between 5,500 and 8,000 jobs in the past decade. From 2010 to 2019, employment grew by 12.5%, but the industry was severely impacted by the COVID-19 Pandemic, losing more than 3,700 jobs as the pandemic disrupted production schedules. This employment loss is temporary, however, and the industry is expected to rebound and recover as filming resumes after the pandemic. Motion Picture and Video Production (NAICS 512110) is the primary component of the Film & Television industry, and the average annual wage in New Mexico is $62,400.[2]

Outdoor Recreation

From 2010 to 2019, employment in Outdoor Recreation added more than 2,600 jobs and grew by 22.7%. This growth was reversed in 2020 by the COVID-19 pandemic, which contributed to a loss of approximately 2,000 Outdoor Recreation jobs. Most of these job losses occurred in Fitness and Recreation Sports Centers (NAICS 713940), which is the largest component of the industry and accounted for approximately one-fifth of industry employment. As the pandemic recedes and consumers resume recreation and fitness activities, employment in the Outdoor Recreation industry is expected to rebound. Industry growth will also be boosted by ambitious projects being undertaken by both state and local governments to develop the outdoor recreation economy, which has become a key component of many communities' economic development and diversification strategies. In New Mexico, the average annual wage in Outdoor Recreation is $38,000.

Sustainable & Value-Added Agriculture

Agriculture is an essential component of New Mexico's economy, and pursuing more sustainable and value-added forms of agriculture is a vital pathway to economic development for many rural communities. New Mexico farmers lead the nation in the production of chiles and pecans, and the state's dairy industry ranks among the top ten for milk production and top five for cheese production. From 2010 to 2020, employment in Sustainable & Value-Added Agriculture grew by 27.4% and added approximately 1,600 jobs. Much of this growth took place in valued-added food processing, including Cheese Manufacturing (NAICS 311513), Fruit and Vegetable Canning (NAICS 311421), and Breakfast Cereal Manufacturing (NAICS 311230). In

[2] Based on data provided by the New Mexico Film Office.

New Mexico, the average annual wage in Sustainable & Value-Added Agriculture is approximately $51,500.

Intelligent Manufacturing

New Mexico has a diverse high-technology manufacturing industry that ranges from large semiconductor manufacturers to small, family-owned businesses. The state's manufacturers enjoy a high level of state and local support as well as access to a large base of high-technology institutions, including national labs and research universities. One in five jobs in the industry are in Semiconductor and Related Device Manufacturing (NAICS 334413). Other major industry components include Machine Shops (NAICS 332710), Other Electronic Component Manufacturing (NAICS 334419), and Oil and Gas Machinery and Equipment Manufacturing (NAICS 333132).

While industry employment fell by 14.9% from 2010 to 2020, recent wins, such as Intel's $3.5 billion investment in its Rio Rancho semiconductor manufacturing operations, ongoing industrial development in southern New Mexico, and recent investments by other domestic and international manufacturers are likely to bring job growth back to the industry. The annual average wage in New Mexico's Intelligent Manufacturing industry is approximately $81,500.

Global Trade

New Mexico's transportation infrastructure and logistics industry facilitates billions of dollars in cross-border trade each year, and it led the nation in export growth in 2019. Employment in the Global Trade industry grew by 38.2% from 2010 to 2020, with the majority of growth concentrated in General Warehousing and Storage (NAICS 493110). Warehousing and Storage, furthermore, comprises almost two-thirds of total employment in Global Trade. The industry is expected to experience additional growth as the Santa Teresa border region continues to develop, the state ramps up promotion of its Foreign Trade Zones, and domestic companies seek to reshore their supply chains back to the United States. The average annual wage in New Mexico's Global Trade industry is approximately $57,500.

Sustainable & Green Energy

New Mexico's sunny climate, windy conditions in its eastern regions, and ample supply of open, undeveloped land makes the state an ideal environment for renewable energy development. Aided by both state and community initiatives to develop a renewable energy workforce, industry employment grew by 9.1% from 2010 to 2020. The majority of employment in Sustainable & Green Energy are in downstream, supporting, and consumer-facing industries, such as Electrical Contractors and Other Wiring Installation Contractors (NAICS 238210) and

Plumbing, Heating, and Air-Conditioning Contractors (NAICS 238220). On the other hand, employment in upstream industries such as Wind Electric Power Generation (NAICS 221115) remains low. The average annual wage in the state's Sustainable & Green Energy industry is approximately $65,500.

Entrepreneurship

Generation of New Businesses in New Mexico

The dynamism of a state or regional economy is often influenced by the generation of new ideas and businesses. In this report, SRI focuses on two key components of new businesses and ideas: innovation and entrepreneurship. While these two themes are intimately interrelated, this section will focus primarily on trends in entrepreneurship throughout New Mexico and its regions. Another section of this report, entitled **New Mexico's Innovation Ecosystem**, explores New Mexico's capacity for innovation.

Entrepreneurship is a key indicator of a region's economic dynamism. Higher rates of entrepreneurship can be the result of several different factors. For example, high rates of entrepreneurship may indicate that a state or region has a particularly creative or innovative workforce that is constantly developing new technologies or processes and bringing them to market. A highly entrepreneurial workforce may also be indicative of a shortage of employment opportunities for qualified workers, leading to the creation of businesses that are used primarily as an income source for their owners. Other types of entrepreneurs may also include "lifestyle" entrepreneurs, or those who begin a business in the tourism or recreation sectors motivated not by need or a novel technology, but rather a clear market need for a specific good or service. Frequently, the root cause for starting a business lies somewhere in between.

While it is difficult to determine the precise cause of high levels of business formation in a state or region without directly asking entrepreneurs, several indicators have been developed to provide an estimate of the likely cause. A few of these indicators can be found in Table 4.

New Mexico's Population Remains Highly Entrepreneurial

Table 4: Key Entrepreneurship Indicators among Peer States, Averaged for 2010–2020. Source: Ewing Marion Kauffman Foundation. Note: For additional information on how the Kauffman Foundation calculates its indicators, see https://www.kauffman.org/wp-content/uploads/2020/06/Method_Paper_KESE_2020.pdf.

	Rate of New Entrepreneurs	*Opportunity Share of New Entrepreneurs*	*Startup Early Job Creation*	*Startup Early Survival Rate*
New Mexico	**0.4%**	**76.8%**	**4.2**	**77.4%**
Arizona	0.4%	80.6%	4.7	76.9%
Colorado	0.4%	80.3%	6.1	78.5%
Nevada	0.4%	79.8%	5.5	77.1%
Oklahoma	0.4%	82.9%	5.2	79.4%
Utah	0.3%	84.9%	5.3	77.6%

When examining rates of entrepreneurship in New Mexico and its peer states, it becomes clear that New Mexico's population is highly entrepreneurial compared to peers. From 2010 to 2020, New Mexico's average rate of entrepreneurship (0.4%)—that is, the percent of the state's non-business owning population that starts a new business within the last month—was among the highest among peers. Additionally, while most peer states experienced a decrease in the rate of entrepreneurship during this time, New Mexico (30%) and Oklahoma (25%) both experienced notable growth in entrepreneurship rates. Part of this increase is likely due to the COVID-19 pandemic, as high levels of unemployment encouraged many Americans to start their own businesses. However, pre-pandemic data indicate that New Mexico and Oklahoma were the only two states among those examined to experience a net increase in the rate of entrepreneurship prior to the pandemic as well (3% and 12%, respectively).[6]

While the data cannot definitively determine the root cause of New Mexico's high rates of entrepreneurship, the "opportunity share" of new entrepreneurs can provide a glimpse into the rationale for starting a new business. The opportunity share of new entrepreneurs tracks the percent of entrepreneurs who start their business by choice, rather than necessity. A lower opportunity share may indicate that entrepreneurs are starting new businesses to make ends meet or as a primary source of income. A higher opportunity share may indicate that entrepreneurs feel confident enough in a new product, process, or idea to start a business in lieu of pursuing traditional employment opportunities.

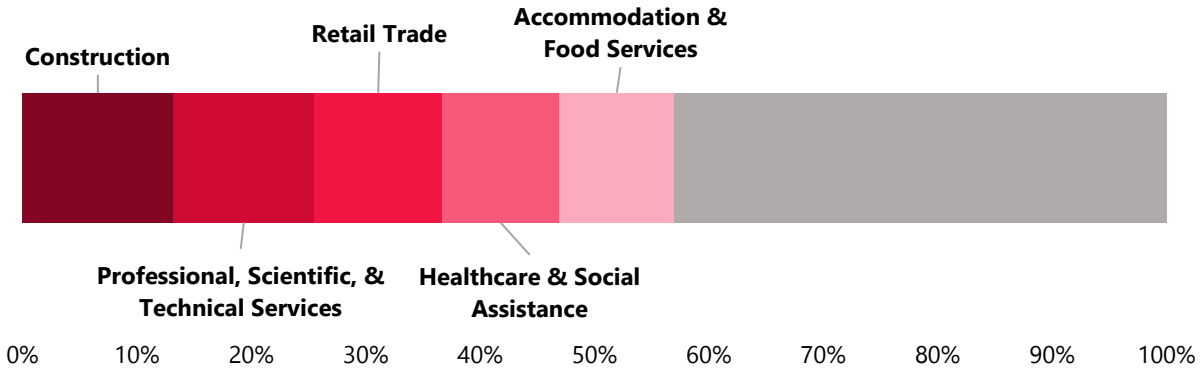
From 2010 to 2020, the opportunity share of new entrepreneurs in New Mexico averaged 77%, lower than its peers. However, while the opportunity share of new entrepreneurs declined in most peer states from 2019 to 2020, the percentage of New Mexican entrepreneurs starting a business by choice rather than necessity grew by 7%. The growth in opportunity share of new entrepreneurs in New Mexico also diverges significantly from data for the United States overall during the pandemic; nationwide, the opportunity share of new entrepreneurs in the United States fell from 87% in 2019 to 70% in 2020.[7]

While the Kauffman Foundation data indicate that New Mexico is generally a highly entrepreneurial state, it is also valuable to identify trends in entrepreneurship by industry and at the county level. Using data from the Annual Economic Survey (AES) collected by the U.S. Census Bureau, it is possible to determine the number of establishments[3] "born" within an industry during the last 12 months at the state and county level. These data help to discern private sector dynamism within a region and identify which industries experience higher rates of new establishments.

[3] Establishments are any business (e.g., a firm may have several storefronts, each one counting as an establishment). There are fewer data on firms and more on establishments.

The Majority of New Mexico's New Establishments Are Concentrated in Five Industries

Figure 21: Industry Composition of New Establishments in New Mexico, Averaged 2010–2018. Source: Annual Economic Survey, U.S. Census Bureau.



On average, from 2010 to 2018, construction (13%); professional, scientific, & technical services (12%); and retail trade (11%) accounted for a significant portion of new establishments in New Mexico, though healthcare & social assistance (10%) and accommodation & food services (10%) establishments also accounted for a sizable portion of new establishments in the state during this time. Together, these five industries account for nearly 60% of new businesses established in New Mexico (see Figure 21).

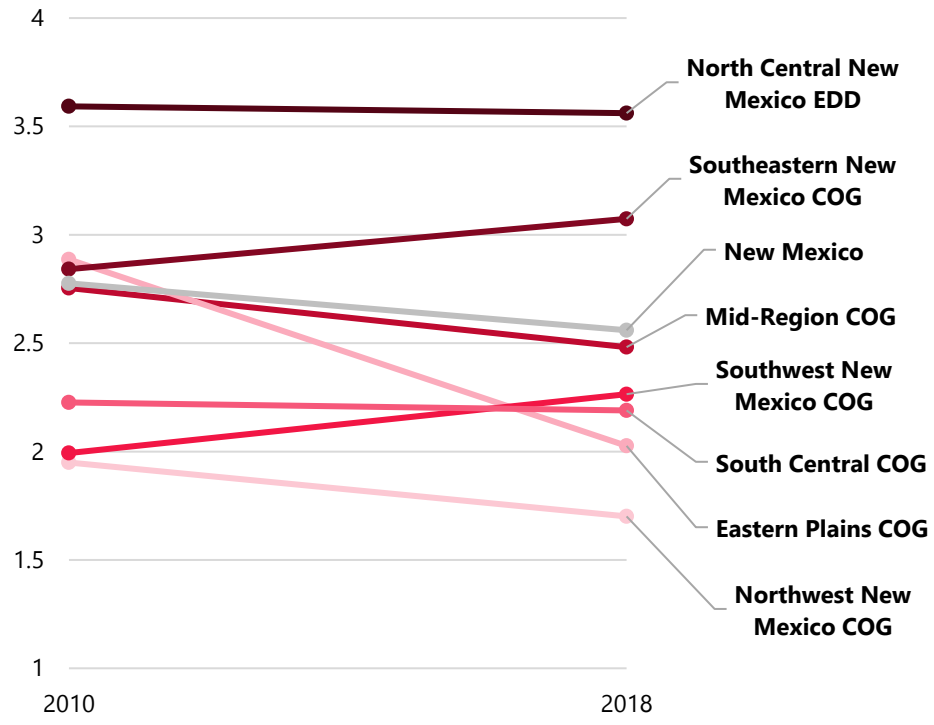
Table 29 in Appendix B provides industry establishment detail at the COG level. Four of New Mexico's COG regions experienced the greatest number of new establishments in construction, following trends at the state level in construction employment growth. When accounting for those industries that experienced the fastest rate of new establishment creation, however, most COGs experienced a rapid increase in the number of establishments in arts, entertainment, & recreation as well as real estate & rental & leasing.

In addition to identifying industries that see greater establishment creation in certain COG regions, it is also insightful to determine the number of new establishments created within a region relative to the region's population. Referred to as "new establishment density," this indicator can help to determine regions of New Mexico that are seeing higher rates of entrepreneurship, particularly as it relates to population growth or decline. While the AES provides data on the number of new establishments formed within a county, these data may mask causes of a fall in the number of new establishments. For example, if a county experiences population decline, it is likely it will also experience a decline in new establishments.

Using new business density to determine the creation of new establishments in New Mexico's COG regions, it becomes apparent that the majority of the state's regions have experienced a decline in the number of new establishments relative to each region's population (see Figure 22). Measuring the number of new establishments per 1,000 residents in 2010 and 2018, all COG regions experienced a decline in the number of new establishments except for two: Southwest New Mexico COG and Southeastern New Mexico Economic Development District (EDD).

The Creation of New Establishments in New Mexico Has Been Concentrated in Southeastern and Southwestern New Mexico

Figure 22: Change in Number of New Establishments per 1,000 Population, by COG Region, 2010 and 2018. Source: Annual Economic Survey, U.S. Census Bureau. Note: North Central New Mexico EDD refers to North Central New Mexico Economic Development District, which is the COG-based body for North Central New Mexico.



The state-level data for New Mexico indicate that the state is highly entrepreneurial, with a notable portion of the population having started a new business in the past month. Though the opportunity share of new entrepreneurs remains lower compared to peer states, trends indicate a greater portion of new entrepreneurs are starting their businesses due to a perceived opportunity for success, rather than a need for income.

However, deeper analysis of the data shows that this entrepreneurialism plays out differently in different regions of the state. While the data from the AES cannot be compared exactly with the data from the Kauffman Foundation due to differences in measurement, the AES data show that, when controlled for population size, most regions of the state are experiencing a decline in the level of new establishments per 1,000 population. This decline in new establishments generally reflects population dynamics in each COG region: all COG regions experienced a net decrease in population from 2010 to 2018, except for Southeastern New Mexico EDD, and all COG regions experienced a net decrease in new establishment formations, except for Southeastern New Mexico EDD and Southwest New Mexico COG.

Infrastructure & Environment

A Sustainably Connected State

Recreation

As the fifth largest state in the nation, New Mexico has benefitted from an incredibly diverse environment, with deserts, mountain ranges, hot springs, and caverns. About one-third of the state's land is owned by the federal government, potentially opening millions of acres to the public.[8] There are 15 national parks and monuments, 35 state parks, and 5 national forests. These spaces provide residents and out-of-state visitors alike with a wide range of recreational activities, including hiking, biking, kayaking, rafting, and skiing. Additionally, as of 2017, over 70% of out-of-state visitors to New Mexico engaged in cultural activities, such as visiting one of New Mexico's three UNESCO World Heritage sites or attending the Albuquerque International Balloon Festival.[9]

In 2019, New Mexico's national parks collectively had 2.1 million visitors, a 42% increase since 2014, and its state parks saw 4.5 million visitors in the same period. Overall, New Mexico's parks are a huge asset to its economy; in 2019, its state parks generated $4.9 million in revenue,[10] while its national parks generated a total of $155 million in economic benefit when the indirect and secondary effects of the parks' visitors are included.[11] In total, the outdoor recreation economy accounted for 2.2% of New Mexico's GDP in 2019 (see Table 5).[12]

There Remains Significant Opportunity for New Mexico to Grow Its Outdoor Recreation Economy

Table 5: Value Added to State Economy from Outdoor Recreation, 2019. Source: U.S. Bureau of Economic Analysis.

	Value Added from Outdoor Recreation (in billions)	*Value Added from Outdoor Recreation as share of state GDP*
Utah	$6.4	3.3%
Colorado	$12.2	3.1%
Nevada	$5.5	3.1%
Arizona	$9.6	2.6%
New Mexico	**$2.4**	**2.2%**

While there are only preliminary data so far, it is likely that the COVID-19 pandemic will have increased park visitation in the state even further. A national survey conducted for the Outdoor Industry Foundation in December 2020 found that many adult Americans began walking, biking, fishing, and participating in other outdoor activities more since the pandemic began. Most chose activities they could participate in close to home, and more than 60% of those who picked

up these activities during the pandemic intend to continue afterwards.[13] Every county in the state has an above average natural amenities score from the Economic Research Service at the U.S. Department of Agriculture,[14] and a higher percentage of adults and adolescents in New Mexico report meeting physical activity recommendations compared with those in the United States as a whole.[15] These data suggest that New Mexico has great opportunities for outdoor recreational activities and many residents regularly take advantage of them.

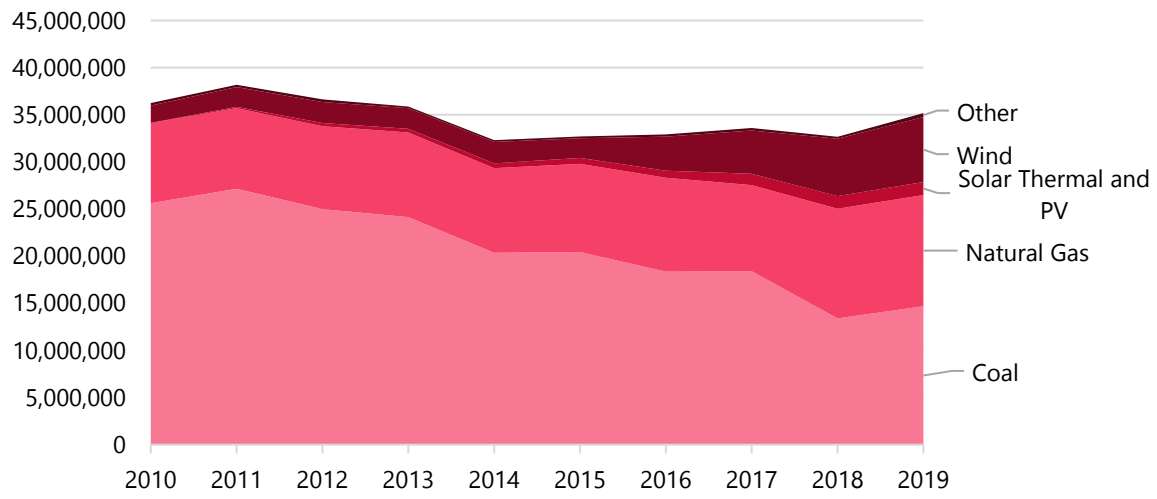
Energy & Minerals

New Mexico has a rich variety of natural resources and minerals, earning it a rank as the ninth largest energy-producing state. It has 5% of the nation's proven natural gas reserves, primarily located in the Permian Basin in the southeast corner of the state, and there are several natural gas pipelines across the state. It also has substantial coal reserves, but production has dropped over the past two decades following national trends. Still, New Mexico does export some coal mined to Arizona for electricity generation.[16]

In terms of electricity generation, coal is still the largest energy source (42%), but natural gas has steadily increased its share of the makeup over the past decade to 34% in 2019. As coal plants are retired, New Mexico has relied more heavily on renewable energies, especially wind power. The amount of electricity generated from wind in the state nearly tripled from 2010 to 2019, when it supplied nearly 20% of New Mexico's electricity generation (see Figure 23). That number continues to rise, too; the state's largest wind farm to date just came online in December 2020. Still, there is enormous capacity for expanding renewable energy generation in the state. New Mexico is ranked eleventh in wind potential, sixth in geothermal potential, and third in solar energy potential nationwide.[17]

New Mexico's Energy Production Is Gradually Shifting from Coal to Natural Gas and Renewables

Figure 23: Net Annual Energy Generation (in Megawatt Hours), 2010–2019. Source: U.S. Energy Information Administration.



In addition to its fossil fuel wealth, New Mexico also has the second largest amount of known uranium reserves in the nation, though it has no nuclear power plants and has mined little to no uranium since 1990 as interest has waned. It still has significant copper mining operations, though, producing 180 thousand metric tons of copper in 2019, making New Mexico the third largest producer of copper in the country.[18]

Transportation

New Mexico has four primary commercial airports, with the largest being Albuquerque International Sunport. The Sunport is located in and operated by the City of Albuquerque, and it sees roughly 5.5 million passengers annually. Other primary commercial airports in the state include Lea County Regional Airport, Santa Fe Regional Airport, and Roswell International Air Center. The latter serves as a boneyard storing retired planes for several major airlines and has been used as a testing site by Boeing. Additionally, Arizona-based aircraft maintenance company Ascent Aviation Services entered an agreement in 2020 with state and local officials to expand its operations to Roswell Air Center. This planned development is expected to create 360 jobs within five years and bring $545 million in economic impact within the first 10 years.[19]

As a mostly rural, geographically large state, New Mexico has limited options for statewide public transportation. Still, the New Mexico Department of Transportation (NMDOT) oversees a range of transit methods. This includes a commuter train, the Rail Runner, that operates

between Santa Fe and Belen, with stops in Albuquerque and Bernalillo along the way; the Rail Runner had a ridership of over 700,000 in 2019. For smaller urban areas, vanpools were introduced in 2019 to connect commuters who live and work near each other to share a van. Additionally, NMDOT manages an intercity bus service that operates lines in and around Santa Fe, Albuquerque, and Las Cruces; the entire Park and Ride intercity bus system had a ridership of over 200,000 in 2019. Some rural areas are serviced by fixed-route public transit, but most have demand-response transit options, if any.[20]

Despite the public transportation options that many New Mexicans have for getting to work, most still commute alone via personal car. The average commute time across all methods is estimated to be just over 22 minutes. This is more than three minutes faster than the commute times for neighboring Arizona and Colorado.

Broadband

The COVID-19 pandemic has revealed inequities in broadband access across the state. For example, a 2020 study of students' internet connectivity found that more than 20% of public school students did not have access to internet services at home.[21] This is particularly true for New Mexico's rural communities. While most of the state's urban counties have high rates of broadband coverage, rural parts of New Mexico do not have access to basic internet speeds. Only 85% of New Mexico has wired broadband coverage, compared to 93% coverage nationwide. Furthermore, the independent research group BroadbandNow has found that only 13% of New Mexicans have access to what is considered an affordable internet plan of $60 a month or less.[22]

Affordable broadband access is a critical economic driver, especially in low-income areas. Fortunately, New Mexico has made it a priority in recent years to address the disparity in access to high-speed internet, designating funds and drafting strategic plans for increased internet accessibility. Additionally, the state is a beneficiary of several federal projects aimed at extending broadband coverage, particularly in rural areas and on tribal land. In October 2020, the New Mexico Department of Information Technology was awarded $1.5 million in CARES Act funding[23] and two months later the state was approved for $165 million in grants from the Federal Communications Commission.[24] Both awards will go toward improving broadband access across the state.

Water

As a mostly desert state prone to droughts, New Mexico depends heavily on responsible water management and conservation. In New Mexico, water serves many purposes: it supplies drinking water, contributes to New Mexico's recreation economy, supports crops and livestock, assists in

the drilling of natural gas, and more. The state relies on a mix of surface water, primarily from major rivers, and groundwater, primarily from aquifers. Both sources have challenges; surface water levels fluctuate greatly depending on precipitation, while aquifer levels have been diminishing over previous decades.[25] New Mexico's Office of the State Engineer, together with 16 water planning regions, regularly monitor water levels across the state to ensure appropriate conservation measures are taken so that New Mexico can sustain a robust water source for generations to come.

Since 2011, New Mexico has experienced several large-scale and long-lasting severe droughts, with more than a third of the last 10 years spent in emergency and exceptional drought conditions.[26] New Mexico is not alone though, as the western half of the United States has been gripped by a "megadrought" that has lasted since 2000.[27] Megadroughts last decades to centuries, drawing on a combination of high temperatures and low precipitation in the form of reduced rain and snowfall. Increasing average temperatures due to global climate change have resulted in stronger than expected drought conditions throughout the western states, especially in Arizona, California, and Colorado. Water management and conservation in New Mexico are critical regional challenges as they require the cooperation of many different stakeholders both public and private and are governed by a series of laws and compacts sometimes over a hundred years old.

New Mexico's Target Industries

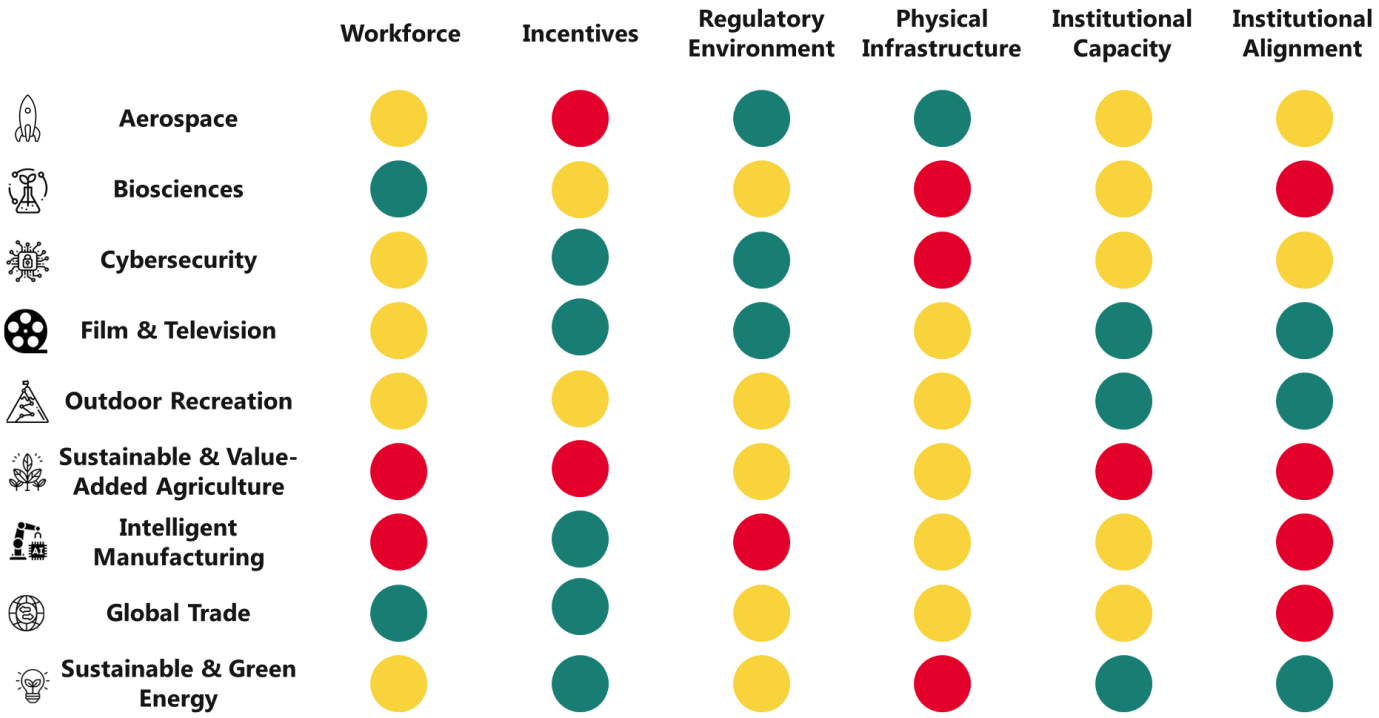
New Mexico's Target Industries

New Mexico has identified nine target industries that the state wishes to grow into the future. These target industries build on inherent strengths in New Mexico's economy to diversify the state away from historically dominant, and often economically volatile, industries. Growing the employment share of these industries in New Mexico will provide greater opportunities for workers throughout the state's diverse regions, while also increasing the resiliency and dynamism of New Mexico's economy. These target industries are:

To conduct this assessment, SRI engaged with dozens of stakeholders from industry, government, academia, and non-profit organizations to understand New Mexico's current capabilities related to these industries and the emerging trends that will shape these industries into the future. SRI also examined existing studies and reports produced by stakeholders in New Mexico, including the Councils of Governments (COGs), state agencies, and industry-affiliated organizations, among others. Overall, SRI finds that New Mexico has significant potential to be a leader or key player in each of these industries, but this industrial prominence will require renewed commitment from state and local governments in New Mexico, as well as the many stakeholders that constitute the state's economic development ecosystem.

Summary: Alignment Between New Mexico's Aspirations & Capabilities

SRI's analysis found that while the state has made strides over the last decade to attract businesses in new industries and support locally grown businesses in traditional industries, New Mexico's approach to economic development remains disjointed. Stakeholders noted that, since the Great Recession, New Mexico has implemented some important programs to support new industries, like the Job Training Incentive Program (JTIP), the Local Economic Development Act (LEDA), and the various industry-specific incentives offered by the state. Industry stakeholders, particularly smaller businesses that relocated to or expanded operations in New Mexico, noted that these programs enabled them to invest in other important areas, such as higher wages, better benefits, or capital expenditures.



Nevertheless, New Mexico's economic growth over the last decade has been characterized as inconsistent and susceptible to misalignment. The graphic above provides an overview of progress made in certain domains for each of New Mexico's target industries, informed by stakeholders and existing reports and studies in the state. These domains include workforce, incentives, regulatory environment, physical infrastructure, institutional capacity, and institutional alignment. These six domains help to identify areas in need of attention from state and local leaders. Green indicates a category that New Mexico performs well in for each target industry. Yellow is indicative of an observed weakness or challenge for an industry that requires

additional attention from New Mexico policymakers, whereas red indicates a significant hurdle that undermines the strength of a target industry.

What is clear from the graphic is that some industries—such as film and television, outdoor recreation, and sustainable and green energy—remain better positioned for growth in the near term than others. Likewise, the graphic shows that certain features of New Mexico's economic development policy toolkit, like the state's incentives and institutional capacity, are generally well-positioned for the state's target industries, while other characteristics, like workforce and institutional alignment, need attention.

In SRI's interviews with stakeholders, the following four themes emerged that present both challenges to and opportunities for New Mexico's future economic competitiveness:

Workforce Compatibility. Stakeholders routinely cited New Mexico's workforce as a deterrent for businesses moving to or expanding within New Mexico. Common issues with the state's workforce include the lack of necessary skillsets to support businesses in a variety of industries. These skillsets include soft "people" skills, industry-relevant technical knowledge, and general workplace skills. Additionally, the exodus of younger talent from the state combined with the influx of retirees further limits the availability of skilled workers for New Mexico's employers.

Institutional Misalignment. Many stakeholders noted the close-knit community feel that is present throughout New Mexico and the importance of interpersonal relationships for getting the job done. An unintended consequence of this approach has been the creation of many different institutions, both public and private, with overlapping mandates and similar activities. This often results in confusion, especially among industry stakeholders, in understanding who to approach when they have questions or need assistance from government agencies.

Financial Competitiveness. Several financial incentives are offered by New Mexico to businesses looking to relocate to or expand within the state. While these incentives help to make the state more competitive, the complicated tax regime, the most notorious of which is the Gross Receipts Tax, is a disincentive for many businesses, especially compared to the competitive tax structures of neighboring states. Additionally, many stakeholders noted the difficulty they experience trying to qualify for these incentives, as well as the unclear guidelines required by them.

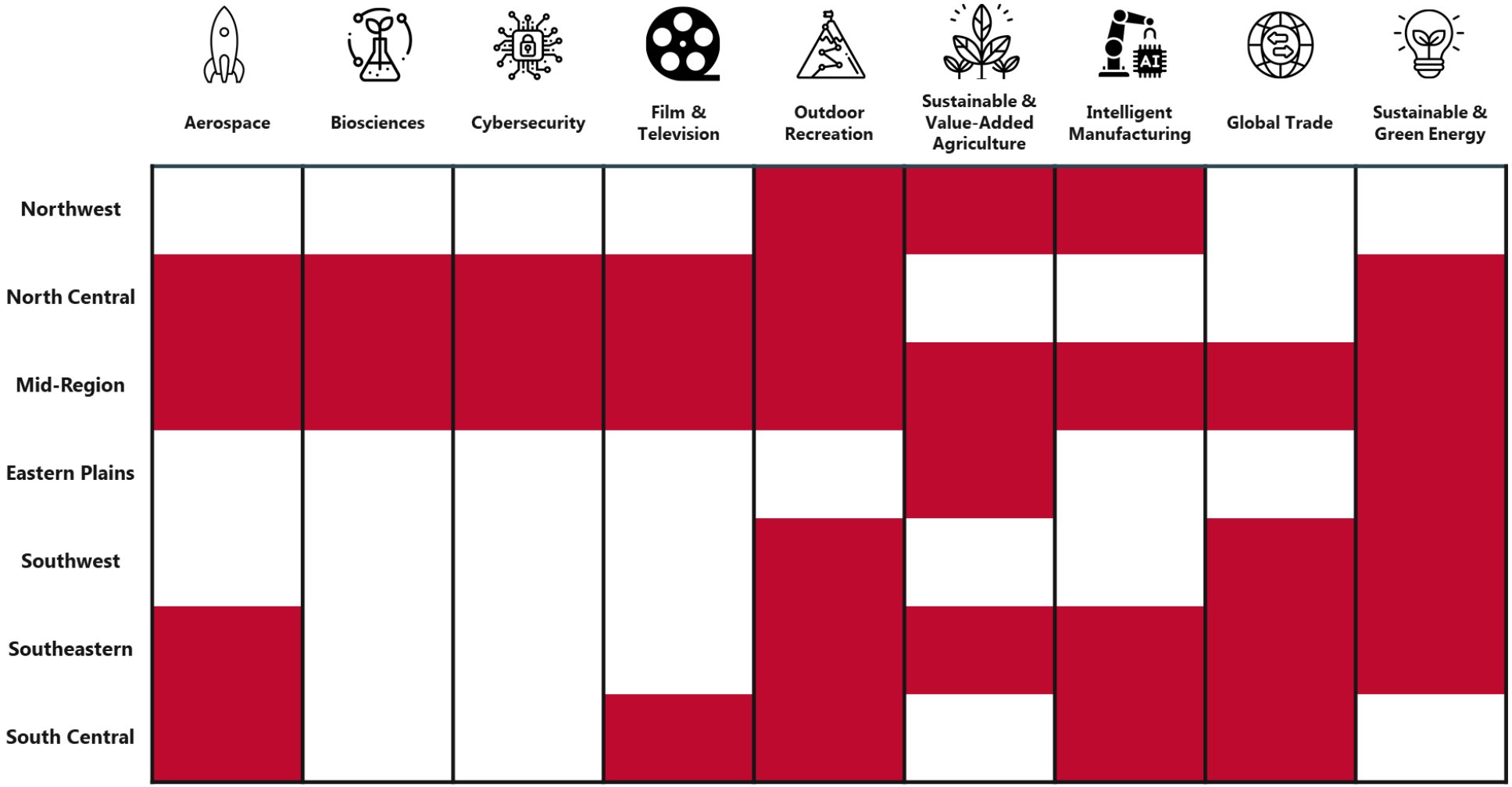
State Perceptions. One of the most commonly-cited obstacles from stakeholders is the negative perception of New Mexico's communities. At times, these negative perceptions have made it difficult to recruit businesses and talent to the state. A spotty public K–12 education system, a lack of understanding of New Mexico's vibrant urban areas, and a feeling of remoteness were all cited as challenges when attracting people to the state.

Conversely, after people come to New Mexico once, they often find themselves coming back again later in life.

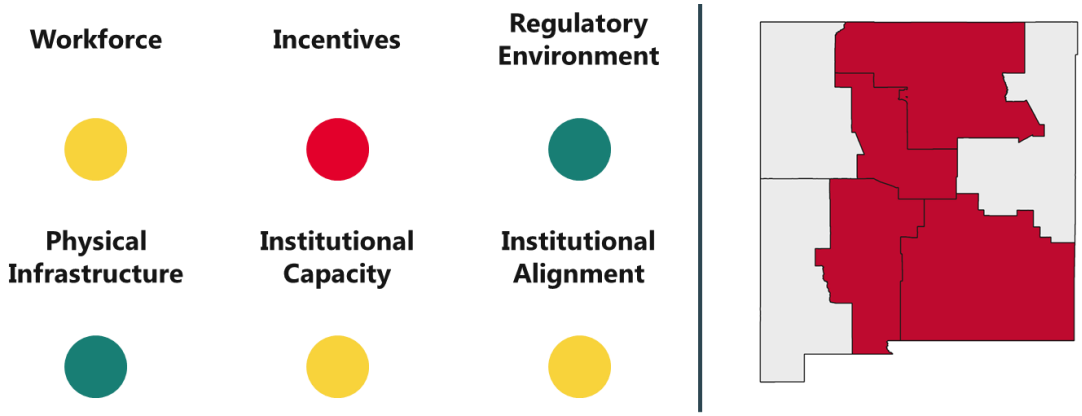
Despite the challenges for New Mexico's target industries, stakeholders widely agreed that the state has immense potential to be a key player in many of these industries. For example, the Biden administration's increased focus on competitiveness in science, technology, and innovation will likely see an increase in federal research and development funding provided to SNL, LANL, and AFRL. This increase in funding is a significant opportunity for New Mexico, allowing the state to capture knowledge spillovers from the national labs and use this knowledge for private sector development in key industries. Additionally, the COVID-19 pandemic has demonstrated that many workers can effectively do their jobs remotely, making New Mexico a more attractive place to relocate for remote workers. This is particularly true for those living on the U.S. West Coast, where skyrocketing costs and congestion are driving workers and businesses to other states. Some regions of New Mexico are better poised to capitalize upon growth in certain industries. Figure 24 below provides an overview of the general alignment of New Mexico's regions to the state's target industries. More conversation of this alignment can be found in this section as well as in Appendix D.

The following sections discuss the strengths, weaknesses, opportunities, and threats faced by each of New Mexico's target industries. In addition to the across-the-board opportunities and challenges discussed above, each target industry is faced with unique factors that require additional consideration.

Figure 24: Alignment between New Mexico's Target Industries and COG Regions.



Aerospace



Strengths

There are several institutional assets in New Mexico that make the state a competitive location for the aerospace industry. Perhaps most notably, the state is home to several national government entities that conduct groundbreaking research, development, and testing of space-related technologies, including SNL, LANL, and AFRL. Within AFRL's New Mexico branch, two divisions are worth noting as particularly valuable to the state's aerospace industry: The Space Rapid Capabilities Office (Space RCO) and a branch of the Los Angeles-based Space and Missile Systems Center. AFRL also maintains two technology centers in New Mexico related to the aerospace industry: Directed Energy Directorate and Space Vehicles Directorate. These organizations serve as vital attractors of space-related knowledge and capabilities to New Mexico and help to centralize a significant level of industry-specific technical knowledge within the state.

Outside of the labs and lab-related organizations, New Mexico is also home to the world's first commercial spaceport, Spaceport America. The relative remoteness of the spaceport is in many ways an asset as it reduces the need to cooperate with other agencies and landowners to conduct launches and related activities. While other spaceports, such as the Mojave Spaceport, are similarly remote, the limitations on the height of their airspace require collaborations with federal organizations to ensure launches can proceed. Spaceport America, however, has unlimited restricted airspace, significantly reducing the need for federal collaboration. Aside from the spaceport, Albuquerque has recently become home to Q Station, a space- and directed energy-focused coworking space that enables aerospace companies to work alongside other firms, colleges and universities, and government agencies to develop next-generation aerospace technology.

To encourage growth in aerospace and build upon the existing institutional assets, New Mexico provides incentives, such as the Military Acquisition Program Tax Deduction, the Spaceport-Related Activities Gross Receipts Tax Deduction, and the Directed Energy and Satellites Gross Receipts Tax Deduction. These programs, among others like JTIP and LEDA, help to make New Mexico a more cost-competitive state for aerospace companies to do business.

Weaknesses

Despite the presence of strong institutional assets in New Mexico, the state has yet to see exponential growth in the aerospace industry. Several stakeholders noted that while Spaceport America had once been a unique asset that made New Mexico a competitive location for the commercial space industry, other states have since developed spaceports that may have a competitive edge over Spaceport America. While in some ways the spaceport's lack of over-water launch capabilities is an asset from a national security standpoint, stakeholders noted the preference of many aerospace companies for spaceports with water access because it enables more frequent launches without concern for disturbing those living in the immediate vicinity. Additionally, the remote nature of Spaceport America makes the site less competitive for aerospace manufacturing firms that must instead manufacture in other regions, such as Los Angeles, and bring their technology to the spaceport. Aside from manufacturing operations, the remoteness of the spaceport makes it more difficult to get to, and fewer amenities in the region make it a less competitive destination than spaceports in places like Cape Canaveral. The cessation of commercial flights into Las Cruces International Airport has increased the perceived remoteness of the spaceport.

Aerospace manufacturing in New Mexico is primarily hindered by the Gross Receipts Tax (GRT) system, and further compounded by a confusing incentive regime and the perceived lack of financial capital in the state. As many firms in other industries in New Mexico stated, the GRT adds additional costs to manufacturers while limiting their ability to pass these costs on to customers. While the state provides incentives that abate or reimburse the cost of the GRT for aerospace firms, several stakeholders noted the inability to qualify or access these incentives as a reason for not relocating to New Mexico or expanding their existing in-state operations. Other stakeholders reiterated the perceived scarcity of venture capital and other financing mechanisms in New Mexico as a hindrance for the New Mexico aerospace industry. This "scarcity mentality" has been identified in several other industries as well and hints at two broader weaknesses in New Mexico: entrepreneurs' lack of knowledge of existing financing mechanisms and a lack of organic, home-grown investor networks. Subsequently, many in the industry do not find New Mexico to be a cost-competitive state.

A final weakness in New Mexico's aerospace industry is the underdeveloped industry-relevant workforce necessary to support the industry. Stakeholders noted the general lack of attention given to the aerospace industry by the state's 2- and 4-year education and training institutions

as a challenge for the industry, while acknowledging the efforts of some, such as CNM and NMSU, to develop workforce pipelines for the industry. Further compounding the challenge, however, is the underperformance of New Mexico's public K–12 education system in developing high-quality science, technology, engineering, and mathematics (STEM) talent that research universities in the state can recruit for aerospace programs.

Opportunities

New Mexico sits squarely within the "Space Triangle" of the western United States, which refers to the three main western cities that lead the development of the United States' space industry: Albuquerque, NM; Colorado Springs, CO; and Los Angeles, CA. This means the state is well-positioned to capitalize on opportunities in the aerospace industry through targeted efforts, intra-industry specialization, and enhanced connections between industry actors.

Aerospace is a large industry that encompasses many different components, such as those focused on manufacturing, operations, and research and development (R&D), among others. Attempting to specialize in each of these areas will result in an underdeveloped ecosystem that is not competitive enough in any one realm to drive industrial expansion. Stakeholders identified several areas, though, in which New Mexico has an early advantage for specialization, including microelectronics, optics, directed energy, computer software, satellite manufacturers and operators, and data analytics. These sub-industries of aerospace already exist to varying degrees of maturity in New Mexico and many of New Mexico's colleges and universities have begun developing programs for these industries, such as UNM's COSMIAC program, which focuses on topics like laser communications and directed energy.[28]

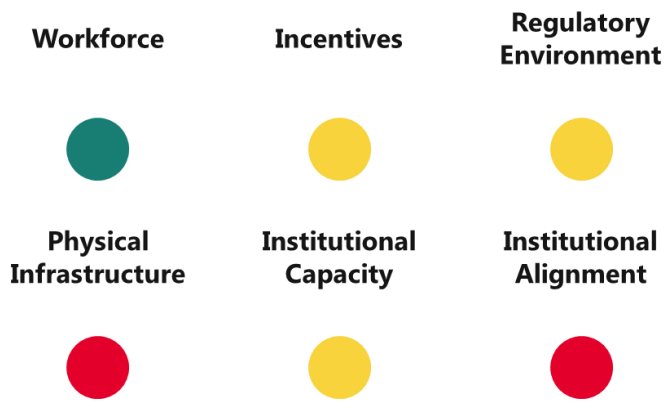
Growing these sub-industries will require a renewed approach to the aerospace industry in New Mexico. New Mexico's aerospace industry remains dominated by small R&D-focused startups that are looking for opportunities to commercialize their research. Programs run by the AFRL's New Mexico branch have helped to bring additional aerospace startups to New Mexico, but the state needs to develop new incentive regimes and funding programs that attract more mature aerospace firms while enabling startups to test and refine their technologies. This is particularly important for startups and mature firms that are developing technologies for the commercial sector. Currently, New Mexico's aerospace industry remains focused on the federal government as a client, which is hindering the spill-over of new space technologies into the private sector. Once these spillovers begin, there is greater potential for other aerospace-related industries to emerge in the state. Organizations like NewSpace New Mexico are critical for enabling these spillovers and increasing the commercial space opportunities in New Mexico, and opportunities to increase NewSpace New Mexico's reach and impact in the state should be explored.

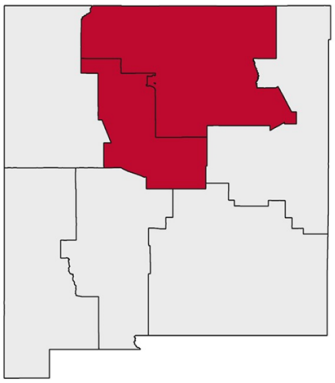
Threats

While New Mexico was among the first to develop a fully operational spaceport, over the last decade several other states have begun to capitalize on the space economy. In total, eight U.S. states now operate at least one spaceport, including Alaska, California, Colorado, Florida, New Mexico, Oklahoma, Texas, and Virginia.[29] Three of these states—Colorado, Oklahoma, and Texas—are immediate neighbors to New Mexico. Of these three, Texas remains a significant competitor and threat to the development of New Mexico's aerospace industry. Texas maintains a similar climate to New Mexico, with a high number of sunny days and low susceptibility to natural disasters, though Texas is increasingly affected by hurricanes on its Gulf Coast. Texas also maintains a highly competitive business environment and a robust higher education system that develops much needed science and engineering talent for the space industry. As a result, New Mexico will be in increasing competition with Texas as a location for the space industry.

More generally, stakeholders noted the risk of New Mexico missing the opportunity to be a leader in the space industry. The state's current incentive regime is overly focused on aerospace as it relates to federal programs, higher education has not developed a cohesive approach for developing the necessary workforce in large numbers to support an expanding industry, and the state government has not adequately established New Mexico as a hub for the space industry. Though growing in-state aerospace manufacturing capabilities would make New Mexico more competitive in the industry, the aerospace industry has grown to represent more than the traditional airplane manufacturing for which it was once known. Failing to capitalize on this expansion and market New Mexico's strength as a center for space industry knowledge and capabilities threatens to cede leadership in this industry to states with more aggressive development, attraction, and retention strategies.

Biosciences





Strengths

The strong biosciences focus of New Mexico's national labs and its research universities present a ripe environment for the biosciences industry. Both SNL and LANL operate bioscience research divisions that work on a range of subfields, from infectious disease research to the development of biofuels. This research environment is bolstered by the University of New Mexico, New Mexico State, and New Mexico Tech, which together spend more than $6 billion on R&D while training a large pool of highly competitive STEM graduates.

The state's strengths in scientific research, technology, and talent development have contributed to the formation of a cluster of biosciences startups. Many of these startups, furthermore, found a home in the Biosciences Center, an Albuquerque-based business incubator that provides 10 wet laboratories, offices, information technology (IT) infrastructure, and conference space for biosciences entrepreneurs. These entrepreneurs also benefit from the Boomerang New Mexico program, which connects STEM professionals with employers looking for the right talent. Lastly, NMBio, New Mexico's trade association for biosciences and biotechnology, functions as a coordinator of stakeholder activities, provides a forum for collaboration and strategic planning, and serves as a unified voice for the industry. These institutional assets therefore make a solid foundation upon which the state can build to grow its nascent biosciences cluster.

A biosciences asset that is often overlooked in New Mexico is the strong presence of healthcare-focused software companies, especially those that utilize artificial intelligence (AI) and advanced computational methods to create breakthroughs in biotechnology. These firms often complement and accelerate the pace of innovation at traditional lab-based companies, and interdisciplinary collaboration between computer scientists and biosciences researchers is becoming mainstream. Because both traditional biosciences firms and software companies frequently utilize the JTIP and LEDA incentive programs, EDD can take a central role in bringing together firms across disciplines to enhance collaboration and innovation in the biosciences.

Weaknesses

A lack of investment in biosciences businesses is the greatest barrier to growth in the industry. Biosciences research and manufacturing is an extremely capital-intensive industry that requires a significant amount of custom-built laboratory space and state-of-the-art equipment. However, the current supply of capital and space dedicated to the biosciences limits how much and how fast the industry can grow. For example, New Mexico investors tend to be smaller and are typically willing to provide seed stage capital up to $1 million. Startups requiring larger investments usually seek financing from out-of-state investors, which is difficult because New Mexico is not well-known among the United States' bigger venture capital funds.

Additionally, biosciences firms in New Mexico have difficulty finding the lab space that is well-suited to their operations. Startups expanding out of incubators, such as the Biosciences Center, have been known to convert warehouse space into laboratories. Despite real estate developers expressing interest in building customized lab space for biosciences firms, construction projects were deemed infeasible without incentives from the state.

Opportunities

Interdisciplinary collaboration between traditional biosciences firms and other industries, notably software engineering and sustainable energy, is a significant opportunity on which the state is well-positioned to capitalize. Both software engineering and sustainable energy have a strong presence in New Mexico, and increased collaboration between these industries and bioscience firms can spur innovation and drive growth across multiple industries. One example is biofuel, which stands at the intersection of biosciences research, sustainable energy, and value-added agriculture. While New Mexico's national labs and universities are conducting advanced research on harnessing bioenergy, industry leaders in sustainable energy and agriculture can prepare the groundwork for a biofuel supply chain, from the production of energy crops and their conversion into biofuel to the distribution network that supplies biofuel to customers.

Recruiting a large and established biosciences firm to New Mexico is another opportunity that can accelerate growth in the industry. A large firm that complements the focus areas of the existing biosciences cluster can provide the critical mass that breaks down barriers to investment and increases the pace of innovation and job creation while putting New Mexico on the map as a competitive state for biosciences.

Lastly, given the disruptions in global supply chains during the COVID-19 pandemic, many companies have sought to make their supply chains more resilient through reshoring (i.e., bringing manufacturing and part or all of the supply chain back to the United States). Critical supply chains, such as those for healthcare products and personal protective equipment, will likely experience substantial reshoring, benefitting the regions to which supplies chains are

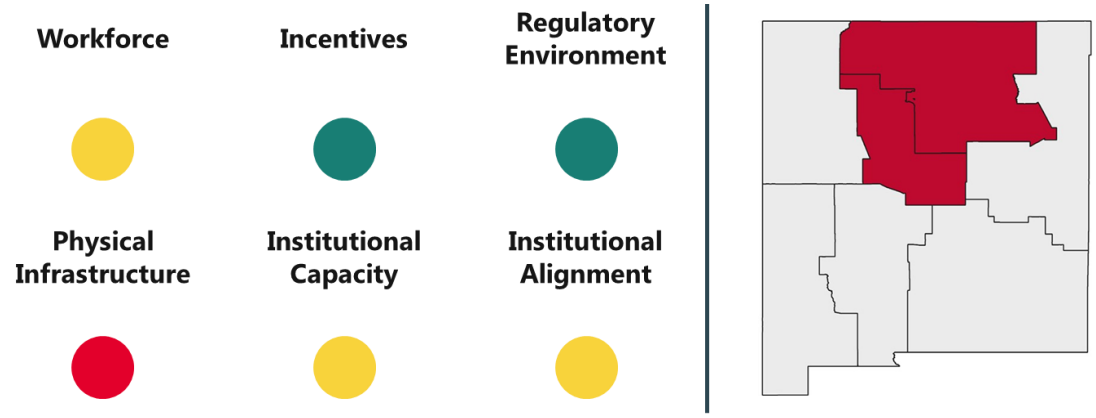
moving. Southern New Mexico is particularly well-positioned to host supply chain elements that have historically been based in Mexico and other countries. For New Mexico to realize the benefits of reshoring supply chains, however, the state must make a concerted effort with industry leaders to cultivate the domestic suppliers and manufacturers that reshoring companies seek. To this end, EDD's access to and relationships with a wide range of suppliers and customers will be a critical tool in showing reshoring companies that New Mexico is the ideal location in which to base their supply chain operations.

Threats

Development of New Mexico's biosciences industry is powered by the actions of industry champions, collaboration between businesses, universities, and the national labs, and the availability of a talented STEM workforce. Setbacks in either of these areas can threaten to hamper industry development. Because the biosciences industry in New Mexico is in its formative stages, proactive leadership and stakeholder buy-in is especially important if the industry is to overcome its growth barriers, such as a lack of investment, and realize its full potential.

Another threat is the possibility of biosciences startups going out of business or moving out of New Mexico. The state should therefore sustain a dialogue with promising biosciences startups on how it can support their business needs and how New Mexico can become part of their growth strategy. In addition to helping them succeed, regular dialogue with these startups and with their industry partners—the Biosciences Center and NM Bio—will also help the state anticipate and respond to potential threats to industry development.

Cybersecurity



Strengths

The cybersecurity industry in New Mexico is supported by a strong network of cyber-focused programs at the national labs and higher education institutions. These programs play a key role in the formation of cybersecurity businesses by providing the infrastructure for cybersecurity innovation and workforce development. SNL's Cybersecurity Engineering Research Institute and LANL's cybersecurity division perform exploratory research in cybersecurity and facilitates partnerships with academia and industry. Additionally, both labs provide state-of-the-art facilities and computing infrastructure that enable researchers to develop and test new cybersecurity technologies, which can potentially be commercialized by New Mexico businesses. In academia, New Mexico Tech operates two closely related cybersecurity centers: the Cybersecurity Education Center, which trains undergraduate and graduate students in the skills needed to work as cybersecurity professionals, and the Cybersecurity Center of Excellence (CCE), which is a statewide economic development center focused on strengthening New Mexico's cybersecurity industry. Lastly, computer science programs at the major state universities provide cybersecurity businesses with workers who possess a strong foundational competency in cybersecurity. These workers, once hired, often receive further specialized training from their employers through the state's JTIP program.

This ecosystem of institutional assets has successfully supported the development of New Mexico's cybersecurity industry, which grew by 50% in the past decade and accounted for approximately 8,000 jobs in 2020. The success of cybersecurity businesses, such as RiskSense and Descartes Labs, can be directly attributed to the physical infrastructure, human capital, and economic support provided by the national labs, universities, and state agencies. Going forward, ensuring that these organizations continue to coordinate their development efforts in this industry is critical to building a strong cybersecurity cluster in New Mexico.

Weaknesses

Because business formation in New Mexico's cybersecurity industry depends heavily on the research performed at the national labs and universities, rules and regulations governing technology transfer can hinder the industry's development. The transfer of cybersecurity technology from national labs to the private sector has been infrequent, as much of the technology developed is classified or has national security implications. Furthermore, because cybersecurity innovation often involves collaboration between industry, academia, and the national labs, intellectual property considerations can prevent a new technology from being commercialized. Many researchers and scientists want to commercialize their technologies by creating a cybersecurity startup but lack the legal and business knowledge to deal with intellectual property issues. New Mexico's cybersecurity organizations, such as the Cybersecurity Center for Excellence, can therefore help aspiring entrepreneurs commercialize new technologies by supplying the legal and business knowledge needed to successfully operate a company.

A second weakness in New Mexico's cybersecurity industry is the lack of sufficient risk capital to finance new technology ventures. While investment funds for startups exist, the banking environment is not equipped to handle the amount of risk involved in lending to technology startups. New Mexico banks, for example, often require personal collateral from small business owners while banks in Silicon Valley do not. Additionally, because a sizable percentage of investors reside out-of-state, it can be difficult for New Mexico entrepreneurs to create and sustain the investor relationships needed to finance a startup.

Opportunities

Nationwide, there is a shortage in cybersecurity professionals and businesses. At the same time, federal guidelines on cybersecurity standards have become increasingly stringent and demanding, which in turn calls for cybersecurity firms to employ ever more sophisticated cybersecurity methods. Consequently, many cybersecurity firms across the country are undertrained, while most companies have yet to adopt a corporate culture that takes cybersecurity seriously. New Mexico is well-positioned to take advantage of this gap in demand and supply by pivoting its educational institutions and innovation ecosystem toward the cybersecurity industry. This process has already begun, as evidenced by New Mexico Tech's recent launch of a Master of Science in Transdisciplinary Cybersecurity degree as well as the development of the CyberReady workshop. CyberReady helps businesses working with the federal government obtain Cybersecurity Maturity Model Certification, which is required for some Department of Defense projects, and provides participant businesses with up to $10,000 in assistance to develop cybersecurity capabilities. With financial support from the federal government, this form of assistance can be expanded into programs that incentivize firms to hire cybersecurity professionals and to contract with New Mexico's cybersecurity businesses.

Meanwhile, the state should continue to support universities' cybersecurity programs to ensure that its cybersecurity talent pool remains strong.

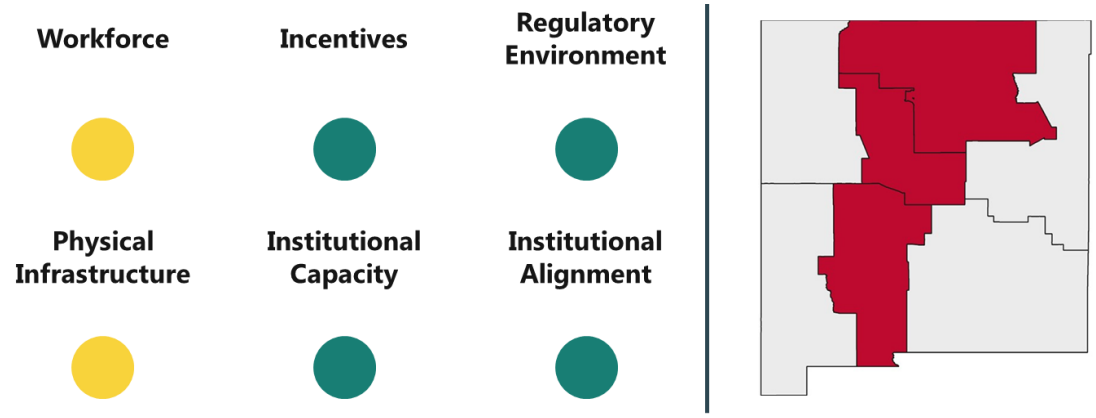
Cybersecurity education and awareness is another opportunity that can indirectly spur economic development. A central goal of the CCE is to raise awareness about cyber-related threats and to educate New Mexico residents and businesses on basic cybersecurity practices. While this campaign will not directly lead to job creation in the industry, fostering a mentality among New Mexicans to take cybersecurity seriously will yield substantial economic and social benefits over the long term. In recent years, cyberattacks on New Mexico businesses and residents have been increasing in frequency, severity, and sophistication as the state's large presence in defense and R&D makes it a prime target to cybercriminals. Educating consumers and businesses on cybersecurity practices would thus decrease the likelihood of business disruption and, from an economic development perspective, increase demand for cybersecurity services and professionals. Rolling out CCE's public education efforts across the state can therefore create demand for the cybersecurity industry and ultimately catalyze job creation and business formation.

Threats

Maintaining the cybersecurity institutions that drive the growth of New Mexico's cybersecurity industry requires steady financial support from the state and buy-in from legislators, businesses, and communities. Because these institutions need to maintain and expand their programs, funding cuts can hinder industry development efforts over the short and medium term. It is therefore critical for the CCE and its partners to educate legislators as well as the general public on the importance of the cybersecurity industry in protecting the state's businesses, residents, and infrastructure.

A second threat is potential competition between the national labs and the private sector for talent. If the relationship between the labs and businesses becomes one based on competition rather than cooperation, New Mexico's cybersecurity industry may face difficulties in recruiting workers even though its educational institutions are producing qualified graduates. The state should therefore assist the labs and businesses in coordinating their talent acquisition efforts through innovative methods such as talent sharing. This is especially important because the national labs have historically recruited a significant share of the state's cybersecurity talent, and helping these labs develop a mutually beneficial relationship with businesses can accelerate the development of the state's cybersecurity industry.

Film & Television



Strengths

Over the last two decades, New Mexico has become home to a fast-growing film and television industry. New Mexico's location in the western United States makes it a competitive location for the film and television industry. Beautiful vistas and unique urban and rural regions provide New Mexico with inherent qualities that make the state an attractive location for a diverse array of productions. The proximity to the Los Angeles film industry means that talent can be brought to New Mexico for a comparatively low cost. New Mexico's consistent climate also makes it easier to schedule productions, with fewer down-days due to rain and inclement weather. Several smaller budget projects that do not require union representation means New Mexico's film industry provides many opportunities for entry workers to gain experience in the industry before moving to larger productions.

The state's film incentives make the state a financially competitive location to produce media by lowering the cost of doing business in New Mexico. Stakeholders in the state's film industry noted that without the film incentives, New Mexico would not have a film industry; furthermore, if the incentives were reduced or canceled, a significant component of the state's film industry would relocate operations to a more competitive state, like Georgia. Stakeholders noted the misinformed perspective on film industry incentives, with many of those who are against the incentives claiming these incentives go to highly paid directors, producers, and actors and actresses. However, these incentives have desirable down-stream effects in New Mexico and provide large levels of funding to local businesses in the state.

Outside of the state's natural amenities and financial incentives for the film industry, New Mexico's sizable "below-the-line" crew workforce is an attractive feature for many film and television studios.[4] Industry stakeholders noted that a large, diverse below-the-line workforce

[4] Below-the-line occupations include those who are responsible for the day-to-day operations of a film or television production, including pre- and post-production activities, such as line producers, production designers and coordinators, camera and lighting crew members, and others.

makes a state more cost competitive by reducing the need to import crew from other regions of the United States. Even with incentives, if a state were to lack a qualified below-the-line workforce, it is unlikely that the state would be competitive with others for feature films and television series. Existing workforce development programs, such as the Film Crew Advancement Program (FCAP), are critical for ensuring that New Mexico maintains a pipeline of qualified crew workers for the state's film and television industry. With an average wage of $62,400 in New Mexico, film and television occupations are a valuable opportunity for workers, especially those without a 2- or 4-year degree, to make a decent living with opportunities for rapid career advancement.

Weaknesses

Despite stakeholders' acknowledgment of a strong below-the-line crew workforce base in New Mexico, many noted the need for a larger below- and above-the-line workforce if New Mexico is to grow its film and television industry. State-sponsored programs like FCAP are helpful but alone are not enough to supply industry with the workforce necessary for projected future productions. Growth in these two workforces requires different approaches as well as coordination among the different stakeholders in government, academia, and industry.

Many of New Mexico's 2- and 4-year institutions have established "film schools" or "film programs" that seek to develop the state's below- and above-the-line workforces. However, stakeholders noted that for many below-the-line occupations, a degreed education is often not necessary. Rather, there is an intense need for workers with technical knowledge of how things work in the industry, as well as workers with the soft skills (e.g., timeliness, communication) necessary to succeed in a fast-paced and demanding industry. The most effective way of building a workforce with these skills is by offering weeks-long intensive training courses centered on a specific aspect of the film industry. Designing a streamlined, cohesive training program in collaboration with studios currently in the state would provide a scalable solution to below-the-line staff shortages during times of high studio demand.

Industry stakeholders mentioned a lack of above-the-line professionals in New Mexico that are critical for the execution of a production. However, not all above-the-line workers must be located in the state—creative talent, such as actors and actresses, frequently reside outside of the state and temporarily relocate to a location while their production is filmed. While other above-the-line talent, such as directors and executive producers, can be brought in from other locales, the ability to locally source these workers makes a state more cost-competitive. Though a studio would not typically move production to a different state due to the lack of above-the-line talent, the cost of importing this talent is a consideration, and mitigating this cost for studios would bolster the competitiveness of New Mexico's film industry.

Opportunities

There are many different opportunities for growing New Mexico's film and television industry, and they can be broadly categorized within three buckets: incentives, workforce development, and growing film-adjacent industries. As discussed above, New Mexico maintains a competitive incentive structure for the film and television industry, making the state more cost-competitive with other film-intensive states. However, the state can be made more competitive by raising or removing the cap currently on the existing incentives, similar to Georgia, to attract new industry partners to New Mexico. A higher or removed incentive cap would enable New Mexico to attract higher-dollar productions by bridging the gap some studios may face with other expenses, such as importing above-the-line crew from California or New York. Additionally, expanding the incentive offering for above-the-line crew would increase New Mexico's competitiveness with other states. Some stakeholders in the industry noted that New Mexico's existing cap on above-the-line crew incentives reduces the state's cost-competitiveness with other states, notably those along the east coast, like North Carolina or Georgia.

Aside from providing incentives to import above-the-line crew, there is significant opportunity for New Mexico to develop homegrown below- and above-the-line crew through the state's extensive 2- and 4-year higher education system. As mentioned above, many of New Mexico's higher education institutions already provide programs for the film industry, mostly focused at the 2- and 4-year degree level. However, particularly for below-the-line crew, streamlining and expanding short-term experience-focused programs would be one of the most effective ways to scale up this workforce for the anticipated increase in production in the state. Industry stakeholders consistently identified state and local government agencies as the primary drivers of these programs, indicating a lead role for these agencies in opening a dialogue between education institutions and industry. To make these programs more competitive with similar film workforce programs elsewhere, stakeholders noted the need for integrating leading-edge industry technologies, such as those related to digital content creation, into the programs.

Lastly, stakeholders indicated the opportunity for New Mexico to expand support for industries that are adjacent to but interrelated with film and television, like finance, marketing, and tourism. Other potential film-related industries for expansion in New Mexico include post-production, animation, video game design and production, and visual effects. Many of these industries, in particular post-production, are very high paying and are long-term employment, rather than production-based employment. As a result, these jobs provide excellent benefits while deepening the roots of the industry in New Mexico.

New Mexico's current film and television industry is heavily focused on the production phase and the state has built a strong ecosystem for this stage of development, notably through the large below-the-line workforce. However, the film industry also requires support from other industries that do not currently have a strong presence in New Mexico, such as those listed above. Supporting the growth of businesses in these industries will have several effects in New

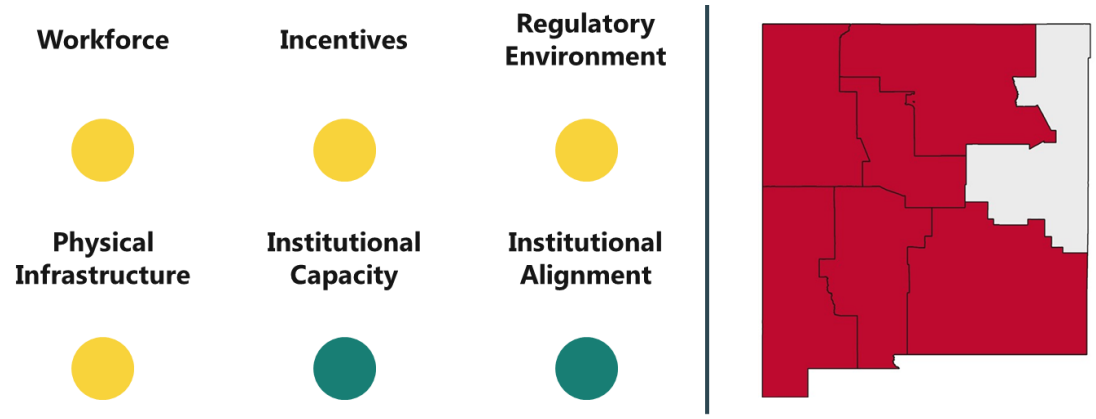
Mexico. For the film industry, these industries can help to grow in-state above-the-line workers, like accountants, that reduce the film industry's reliance on outside expertise. Growing adjacent industries will also help to diversify the state's economy by bringing new employers that can support businesses in other industries aside from film and television. Ultimately, the growth of these adjacent industries will strengthen New Mexico's economy and build a more sustainable ecosystem for the state's film and television industry.

Threats

Over the last decade, the film industry has gone through a phase of decentralization that has seen a greater number of U.S. states, as well as foreign locations, vying for growth in their respective film industries. According to Entertainment Partners, a firm specializing in production finance and management, 32 U.S. states offer some form of film and television incentive program.[30] Most incentive programs in other states take the form of a rebate or grant, though several use a transferable tax credit or refundable tax credit, like New Mexico. The growing popularity of these programs indicates the competitive threat New Mexico faces moving into the future, particularly as neighboring states with geographies similar to New Mexico like Texas, Oklahoma, Colorado, and Utah are strengthening their incentives for the film industry.

The film and television industry is uniquely sensitive to incentive availability and stability, and most stakeholders noted that the removal or reduction of New Mexico's current incentives will have an immediate and adverse impact on the state's film industry. As a result, a misunderstanding by decisionmakers of the film industry incentives in New Mexico and the benefits they unlock for the state's communities and businesses is a continuing threat to the stability of these incentives. Ensuring a coalition of support around these incentives and looking for ways to ensure the requirements of the incentives are met by recipients can help to strengthen the programs and demonstrate their stability to potential industry partners.

Outdoor Recreation



Strengths

New Mexico is endowed with significant natural assets that provide a range of economic, environmental, and social benefits for New Mexicans. Proximity to nature and access to outdoor recreation opportunities is often a major consideration for residents and businesses looking to locate in the state.[31] Over the past decade, New Mexico has taken major steps to capitalize on its strength in outdoor recreation for economic and community development. The creation of the Outdoor Recreation Division (ORD), for example, has jumpstarted numerous investments in outdoor recreation businesses and infrastructure, accelerated conservation efforts, and placed a renewed focus on equitable access to the outdoors. Its Outdoor Recreation Trails+ program seeks to improve outdoor recreation access through infrastructure development and community outreach, while its Business Accelerator Grant program supports local accelerators' initiatives in growing the outdoor recreation economy. The division has served as a "one-stop-shop" for stakeholders to access resources, share information, and coordinate development efforts.

Scope and Depth of ORD Programs have the Potential to Catalyze Growth of the Outdoor Recreation Economy

Table 6: Outdoor Recreation Division Programs and Initiatives. Source: New Mexico Economic Development Department.

ORD Program / Initiative	*Description*
Outdoor Recreation Incubator and Accelerator	Awards grants to incubators that assist in early-stage outdoor businesses
Outdoor Recreation Trails+	Awards grants to support projects, typically related to physical infrastructure, that enhance communities' outdoor recreation opportunities

Outdoor Equity Fund	Awards grants to projects that increase equitable access to the outdoors among New Mexico youths
Outdoor Recreation Asset Atlas	A study seeking to identify outdoor recreation opportunities that connect communities' downtowns with their natural resources
New Mexico Outdoor Economics Conference	Event which brings together industry leaders in developing opportunities to grow the outdoor recreation economy
New Mexico Outdoor Education and Industry Strategy	Plan which identifies education-to-career pathways for future outdoor recreation workers and entrepreneurs.

New Mexico's private sector is central to creating and sustaining the state's outdoor recreation economy. Whereas other states rely on permanent public funds to support conservation and recreation initiatives, New Mexico's agencies work closely with accelerators and incubators to assist businesses and communities toward realizing their own outdoor recreation and conservation goals. Grants from ORD to these accelerators and incubators fund programs which, for example, train outdoor recreation entrepreneurs in business development and online marketing skills. Additionally, ORD provides technical assistance and one-on-one consultations with outdoor recreation business owners and community leaders throughout the state. As such, New Mexico's approach to outdoor recreation is more comprehensive than most other states. Public health, conservation, equity, and community well-being feature prominently in the state's efforts to develop the outdoor recreation economy, and leaders fully recognize the synergistic value in integrating sustainability, health, and economic growth.

Weaknesses

Unlike many western states, New Mexico lacks dedicated funding for statewide conservation and restoration programs, which hampers the state's ability to leverage federal funding.[32] States such as Colorado operate permanent pools of outdoor recreation funding that is sustained by lottery proceeds and federal conservation funds. The infrastructure projects enabled by this funding, such as new trail systems, have not only spurred economic development but have also improved public health and transportation access among residents. Without a permanent funding source for recreation and conservation, New Mexico is limited in its ability to finance large-scale outdoor infrastructure projects.

Additionally, one of New Mexico's primary weaknesses in outdoor recreation is the difficulty of its small businesses to access capital. Whereas larger companies in urban areas are significantly more likely to receive venture capital and angel investor financing, many outdoor-oriented

businesses are smaller and located in more rural areas. Expansion opportunities for many small businesses are further limited because many business owners go into business for personal income rather than as an investment. As a result, small outdoor recreation businesses struggle to obtain loans and other forms financing necessary to expand.

ORD currently lacks the resources to support outdoor recreation businesses through financial incentives, as its grant and funding programs are designed for local governments and non-profits. Likewise, few local governments in the state have the capacity or the capital to financially incentivize the private sector to invest in the industry. Developing an innovative mechanism in which the state can financially support business development in outdoor recreation, just as it did for the manufacturing and film industries, is one strategy through which the state can accelerate private sector investment. It should be noted, however, that the use of financial incentives to spur business development needs to be combined with close collaboration between the ORD, business owners, and local communities to ensure that business and job creation is viable in the long run.

Opportunities

During the COVID-19 pandemic, residents and visitors alike have turned to the outdoors as restrictions and social distancing limited indoor gatherings. This newfound appreciation for outdoor recreation and the corresponding increase in demand for outdoor amenities will likely remain after the pandemic. The state can capitalize on these trends by investing in its outdoor facilities and infrastructure so that outdoor assets provide a welcoming experience for residents and visitors alike. This desire for infrastructure improvement is echoed by the majority of New Mexicans who, according to the 2015 Statewide Plan for Outdoor Adventure, prefer that funds be used to build new outdoor facilities and to improve existing ones. Thus, as demand for the outdoors increases, improving outdoor recreation infrastructure not only creates a virtuous cycle that draws even more visitors but, if done equitably, also fulfills the need expressed by New Mexico residents for better facilities. To realize this vision, however, legislators will need to appropriate more funding for outdoor recreation so that the state can be eligible for matching federal funds. The passage of the Great American Outdoors Act in 2020 has made available substantial federal funding over the next five years, and having access to this funding will enable New Mexico to transform its outdoor recreation industry into a key economic driver.

Improving the marketing, branding, and storytelling of New Mexico's outdoor recreation assets is another opportunity that has historically been underutilized. This has contributed to a relative lack of national awareness about New Mexico's outdoor recreation assets, an awareness that has significant potential to attract businesses and workers to the state. The establishment of the ORD under the leadership of Axie Navas, who has a decade of professional storytelling experience in the outdoor industry, is a critical step toward building a well-articulated brand that draws workers, businesses, and tourists to the state while sustaining the local character and

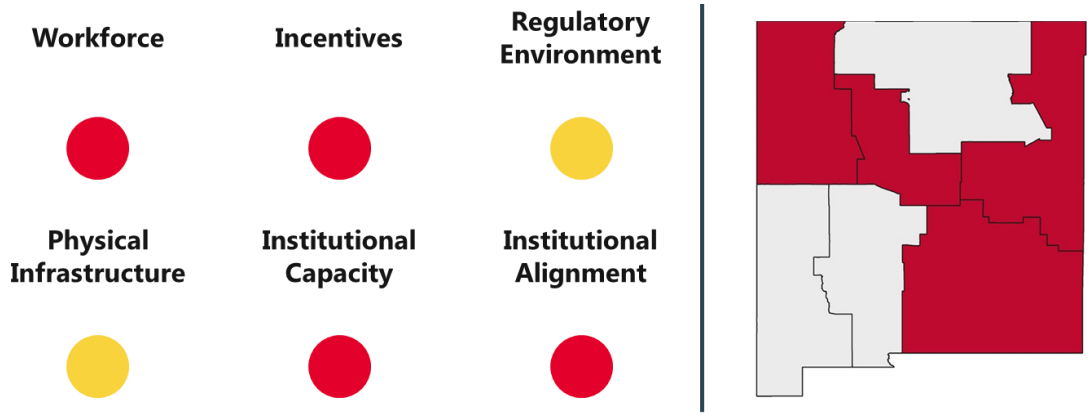
values of New Mexico communities.[33] Going forward, ORD should work with the New Mexico Tourism Department in coordinating its outdoor marketing and branding efforts, thereby making New Mexico's outdoor assets more widely known and appreciated outside of the state.

Lastly, New Mexico's outdoor recreation potential presents opportunities that extend well beyond tourism. Alongside the monetary benefits of the outdoor recreation economy are significant public health, social, and environmental benefits that can be harnessed in tandem with economic development. For example, the economic benefits of outdoor recreation could enable rural communities to fund critical infrastructure, improve their workforce capabilities, and educate students about conservation. They can also be a means to bridge the equity gap, as many underprivileged children do not have as many opportunities to experience the outdoors. As such, it is important for the state to support the ORD's efforts in integrating the development of the outdoor recreation economy into broader community development efforts.

Threats

Climate change is a growing threat that is already impacting New Mexico's outdoor recreation economy. The increasing risk of wildfires, due in part to more frequent droughts throughout the American West, has forced the closure of forests during the summer tourist season. Severe and dangerous heat waves will directly affect when and how people engage in recreational activities, limiting options or making it unhealthful to be outdoors.[34] This is especially true for New Mexicans, whose most preferred activities include hiking, running, biking, and wildlife viewing. For businesses and entrepreneurs, climate change will impact the viability of starting or expanding a business and influence what products and services to offer. For the state, changing recreation habits in response to climate change will determine what types of outdoor infrastructure and programs to provide for communities. A greater emphasis on conservation and effective environmental management can mitigate some of the impact of climate change, such as the risk of wildfire. This requires environmental management practices to be exercised by all parties, especially the users of outdoor amenities. Educating New Mexicans on responsible environmental management while spending time outdoors can thus be a long-term strategy to protect New Mexico's natural assets against the effects of climate change.

Sustainable & Value-Added Agriculture



Strengths

New Mexico is home to a thriving agriculture industry that serves multiple purposes. On a larger scale, New Mexico's agricultural producers lead the United States in the production of chiles and pecans, alongside the state's strong dairy industry. On a more local scale, the value-added agriculture industry serves as a vital source of income and employment for many located in New Mexico's rural communities, including the state's large Native American population. Subsequently, supporting employees and employers in New Mexico's value-added agriculture will also strengthen New Mexico's rural communities.

State and local governments in New Mexico have been at work supporting the state's agriculture industry over the last several years. At the state level, the New Mexico Public Education Department (NMPED) has provided grants to most of the state's school districts to connect them with New Mexico farmers. Farm-to-school programs like these have dual purposes: They provide steady income to local farmers while also encouraging healthier eating habits among school-aged children. The New Mexico Department of Agriculture (NMDA) maintains its own grants program focused on increasing the sustainability and resiliency of New Mexico's agriculture industry, notably through the Healthy Soil Program.[35] Programs focused on sustainability ensure that the state is able to expand its agricultural production while reducing the risk this production poses to the natural environment. Incentives offered by New Mexico's Economic Development Department (NMEDD) and Taxation and Revenue Department (NMTRD), such as the Beer & Wine Producers' Preferential Tax Rate, help to make agribusiness a more financially competitive industry in New Mexico.

Several of the state's COGs have also identified the agriculture industry as a key player in their regional economies. For many communities in Eastern Plains COG, agriculture is a foundational industry that provides employment to a significant component of the region's workforce. In some towns, such as Portales, agriculture and value-added food production represents about 20% of regional employment.[36] Agriculture is similarly important to residents of Southeastern

New Mexico EDD, Northwestern New Mexico EDD, and Mid-Region COG. Each of these regional governing bodies has identified agriculture, agribusinesses, and food processing as a key component to their region's economic success.

The growing popularity of agriculture in New Mexico's rural and urban areas hints at the state's diversity of agricultural opportunity. Similarly, the increased usage of leading-edge conservation technologies and methods, such as those related to water use and soil health, has enabled the state to sustain a dynamic agriculture industry while exploring new opportunities for New Mexican producers. A report by New Mexico First and New Mexico State University Cooperative Extension Service found that from 2007 to 2016, commercial fertilizer and conditioner use fell by 30% in New Mexico and chemical insect and crop disease control fell by 37% and 21%, respectively.[37] Programs and incentives aimed at supporting a healthy agriculture ecosystem will remain necessary to sustain the industry in New Mexico.

Weaknesses

Shortcomings in New Mexico's current approach to the agriculture industry fall into two broad buckets: natural resource management and the economics of agriculture in New Mexico. In the 2016 report produced by New Mexico First and NMSU, land ownership and water planning were two of the most frequently cited challenges facing New Mexico's farmers and ranchers. Similar to many states in the western United States, much of New Mexico's land is managed by the federal government as either public land or restricted use land, such as areas reserved for the military. This complex government ownership structure can hinder the ability of agriculturalists to access the land and resources necessary to sustain and grow operations.

Additionally, the western United States has been in a perpetual drought for much of the 21st century, which increases the importance of water access for the agriculture industry. While the Office of the State Engineer for New Mexico (OSE) maintains a recurring series of drought management plans, New Mexico remains highly vulnerable to drought conditions, and those industries reliant upon rainfall and soil moisture, such as farming and ranching, are among the most at-risk from drought.[38] In 2016, agriculture industry stakeholders identified the lack of a comprehensive and coordinated drought management strategy that goes beyond the state's current drought planning as an obstacle for New Mexico's agriculture industry. Likewise, New Mexico's complicated water access regulatory framework, which rewards those with earlier claims to water resources rather than those who can most efficiently and effectively use the resource, inflates the scarcity of water resources in the state. This framework also makes it difficult for agricultural producers to make long-term investments in infrastructure for the agriculture industry as the producers are unsure if their access to water will be continued.[39]

Aside from natural resources, profitability and access to capital remain a formidable challenge for many in New Mexico's agriculture industry, particularly smaller operations. According to the

New Mexico Healthy Soil Working Group, about 70% of New Mexican farmers do not make a profit. Some stakeholders noted the underdeveloped business acumen of those who have been in the state's agriculture industry for a long time as a hinderance. For those who are entering New Mexico's agriculture industry within the last several years, understanding farm loans, grants, and repayment programs has also been a challenge. Agriculture, particularly of the sustainable variety, is a capital-intensive industry with significant up-front costs associated with investments in land and industrial infrastructure, such as heavy machinery. The ability for agricultural firms to easily access capital is a necessity for the establishment of a technology-enabled and sustainable agriculture industry. This is particularly true for smaller agricultural operations looking to operate in New Mexico—if agriculturalists are unable to access the required funding to make New Mexico operations a reality, they will often look to establish operations elsewhere.

Opportunities

Many of the requisite components of a sustainable and high-value-add agriculture industry are present in New Mexico. The state has carved out a strong niche in chile and pecan production and is similarly competitive in dairy and cattle-related industries. A strong culture of agriculturalism and environmental care persists in many of New Mexico's communities, providing the industry with a dedicated workforce that will continue the state's tradition of agricultural resilience. Stakeholders have indicated that New Mexico's agriculture industry remains well-positioned to expand into the future. However, this expansion will require the state and stakeholders to capitalize on a number of opportunities arising in the near- and mid-term; many of these opportunities will require investments in financing mechanisms, education and training programs, and industry-relevant infrastructure development.

Several stakeholders and studies conducted by other organizations in New Mexico have identified an opportunity to expand the agriculture industry into the food processing sector. New Mexico's current agriculture industry is mainly focused on production of raw agricultural goods, such as cash crops and livestock, that are often shipped to other states for further processing and refinement. As a result, New Mexico misses out on the value-added component of the agriculture industry in which raw agricultural products can be used to develop higher-value products. In the report *Opportunities, Challenges, and Realities for New Mexico's Farming and Ranching Future*, researchers found that New Mexico underperforms compared to the United States as a whole in the number of food processing businesses operating within the state, and this trend is worsening over time. The study found that renewed investments in food processing could increase value-added production in New Mexico while creating more jobs and revenue for agriculturalists in the state, particularly its rural regions.[40]

Increasing food processing capacity in New Mexico will require additional and more stable funding mechanisms for producers in the state. A 2019 study by the City of Albuquerque and Bernalillo County regarding that region's International District's Urban Agriculture Plan found that one of the most significant obstacles for urban agriculturalists is access to consistent, long-term funding mechanisms.[41] The credit accessibility challenge is not limited to New Mexico's urban farmers, though, with farmers in the state's rural regions facing strict lending guidelines that hinder access to capital. As a result, the establishment of a revolving loan fund or non-traditional lending program for New Mexico's agriculture industry could help the state expand food processing operations in rural and urban regions of the state. Such a program would also support the expansion of agricultural production and distribution in the northwestern region of the state and help to increase accessibility to healthy foods for the region's communities.

At the state level, there is also an opportunity to increase the in-state consumption of New Mexico-grown agricultural products. Studies from the last few years indicate that New Mexico exports the vast majority (about 97%) of the food grown in the state and imports almost all (about 95%) of the food consumed in the state. Local stakeholders in the state's urban areas have advocated for increasing local procurement requirements for agricultural products, but thus far the state-level response has been limited.[42] Increasing in-state consumption of locally-grown produce has the benefit of providing producers with a dedicated revenue stream, such as through the expansion of farm-to-school programs, while simultaneously reducing the state's dependence on imports from other states to support local consumption.[43] Expanding these programs to include other buyers aside from schools, such as eldercare and childcare facilities, may help to expand in-state markets for New Mexico's producers.

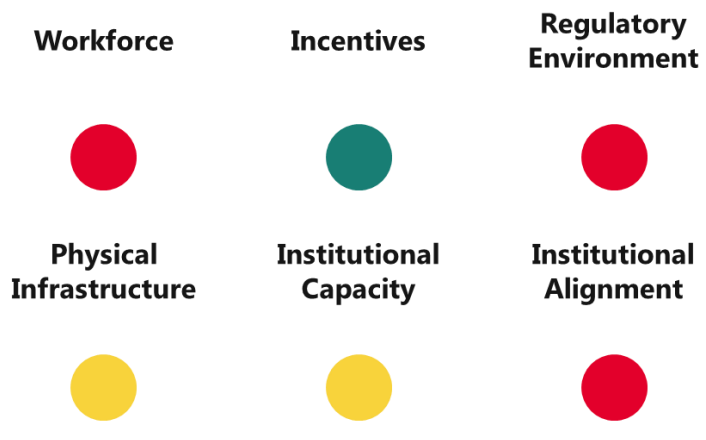
Threats

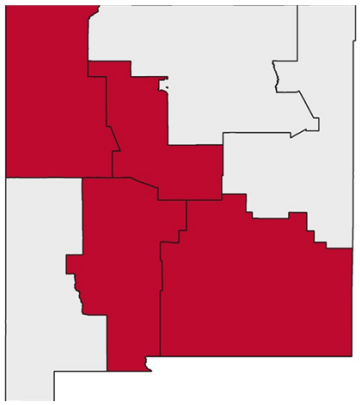
As in many states with large agriculture industries, climate change remains a significant threat to the sustainable growth of agricultural activity. This is particularly true for the western United States, where population growth, reduced rainfall, and higher temperatures have placed greater strain on the region's natural resources. New Mexico is no exception—reduced water levels at the majority of the state's reserves have forced farmers and ranchers in the state to maintain operations with fewer resources. While this places strain on all varieties of farmers and ranchers, those growing the state's specialization of pecans are at an increased risk due to the water intensity of tree nuts during the growing season. New conservation technologies, such as those related to optimized water use, must be deployed at greater rates and utilized across the state to ensure New Mexico remains competitive in its current strengths while providing resources for new growers and ranchers.[44]

Aside from climate change, the rapidly aging workforce of New Mexico's agriculture industry undermines the industry's ability to sustainably expand in the future. According to the U.S.

Department of Agriculture's 2017 Census of Agriculture, the average age of a farmer in New Mexico is about 59.5 years, above the U.S. average of 57.7 and above the average of all peer states except for Arizona, with which it is tied.[45] The higher average age of farmers in New Mexico is indicative of two important trends. First, the industry is struggling to attract younger individuals who can manage the state's small- and mid-sized agriculture operations. This means that, as older farmers retire, it is likely that more of New Mexico's agricultural lands will be in use by a small number of large-scale producers. This concentration of productive lands will limit a career pathway that is vital for many in New Mexico's rural communities, particularly in the eastern and northwestern regions of the state. Second, the lack of new talent entering New Mexico's agriculture industry may hinder the adoption of new, leading-edge conservation technologies that make the industry more sustainable and competitive in the long term.

Intelligent Manufacturing





Strengths

New Mexico has a strong and versatile manufacturing ecosystem that is comprised of a diverse range of firms, from large corporations such as Intel to small, family-owned businesses. The state's predictable and stable climate is ideal for siting a manufacturing facility, as operations are less likely to face disruption from natural disasters as other regions. Furthermore, the low cost of labor and the ability to cheaply set up infrastructure makes New Mexico an attractive state for manufacturers. Once in business, manufacturers have access to a large base of high-technology institutions, such as the national labs, which are often customers and partners to these manufacturers.

One of New Mexico's greatest strengths in manufacturing is the level of support that the state provides to its manufacturing businesses. As was expressed in numerous interviews, manufacturers have easy access to state officials, and agencies across the state are willing to engage, negotiate, and assist on a range of business issues. Many manufacturers have developed long-standing relationships with staff at agencies such as the EDD. One organization that has made a particularly meaningful impact on the manufacturing industry is the state's Manufacturing Extension Partnership (MEP). Under the leadership of its executive officer, Jennifer Sinsabaugh, the MEP has delivered significant assistance to small- and medium-sized manufacturers through its training programs on business and operational best practices and by providing customized consulting to individual manufacturers. One of the MEP's goals is to reduce barriers to growth for manufacturers, and it has historically functioned as a "one-stop-shop" for manufacturing businesses seeking resources or assistance.

In addition to organizational support, New Mexico's financial incentive programs for manufacturers are among the most generous in the United States. These incentives include JTIP, which has been instrumental in enabling manufacturers to train workers at low cost, and LEDA, which has helped manufacturers finance equipment purchases and facility expansions. The state also offers a Gross Receipts Tax deduction and an investment tax credit for manufacturers, while

some municipal governments offer industrial revenue bonds to further incentivize firms to locate in their communities.

Weaknesses

New Mexico manufacturers overwhelmingly cited the hiring and retention of skilled workers as the industry's greatest challenge. Many businesses have faced difficulties in finding properly trained workers, especially during the COVID-19 pandemic and the subsequent economic recovery. Additionally, some workers that manufacturers hire lack the training and soft skills required for manufacturing operations, while other workers leave after a few weeks or months on the job. During interviews, manufacturing stakeholders stressed the importance for workers to have basic problem solving and math skills, an innovative mindset, and a willingness to learn. Finding workers with these qualities has been difficult for manufacturers. While the MEP has been working with businesses to better train workers, this skills gap is typically created in high school.

A second challenge for New Mexico's manufacturers is the lack of alignment between New Mexico's regulations and permitting processes and the realities faced by manufacturers. While business owners value timeliness and predictability so that they can make decisions based on clear expectations, navigating state regulations has frequently been time-consuming and unpredictable. For example, the requirement of some programs for business owners to travel to Santa Fe is a large time commitment that is especially costly for small manufacturers. Streamlining regulatory and administrative processes, by making them both virtually accessible and more standardized, will make it less costly for in-state manufacturers to navigate the regulatory environment and increase the attractiveness of doing business in New Mexico for those out-of-state.

The lack of shovel-ready sites is a third weakness that discourages some manufacturers from relocating to New Mexico. Despite abundant land in the state, site selectors have had difficulty in finding land that is suitable for light manufacturing and industrial activity. Specifically, the lack of facilities, infrastructure, and building specifications desired by manufacturers have led some out-of-state manufacturers from deciding against locating in New Mexico. Despite the work of New Mexico Partnership in helping communities submit competitive proposals, the lack of infrastructure has been a major barrier to the state's manufacturing recruitment efforts. The passage of President Biden's American Jobs Plan, however, will give these efforts a much-needed boost in the form of substantial infrastructure funding. If New Mexico can use this funding to build the facilities and infrastructure that manufacturers seek, it will become much more competitive in its manufacturing recruitment efforts.

Lastly, manufacturing stakeholders mentioned that New Mexico's Gross Receipts Tax (GRT) has a discouraging effect on out-of-state manufacturers considering a move to the state. From a

business perspective, the main implication of the GRT is that manufacturers cannot pass the tax on to customers, even those who are less price-sensitive, such as the federal government. Rather, because the GRT is a tax on revenue, the manufacturer bears the full tax burden. Despite the GRT deduction offered to manufacturers, some have cited the "consumables" requirement of the deduction as limiting its impact and have advocated for the application of the deduction to capital expenditures, such as equipment purchases and facility expansions. A common dilemma faced by manufacturers is to choose between New Mexico's GRT and Texas's property taxes. While stakeholders noted that, in some situations, the GRT has advantages over property taxes, they also noted that were Texas to offer property tax deductions, many manufacturers would be incentivized to choose Texas over New Mexico.

Opportunities

Given the billions of dollars in infrastructure funding expected from the federal government, New Mexico will need to develop a strategy to leverage this funding to assist its intelligent manufacturing industry. One opportunity is to expand the scope of infrastructure investments and incentives to equipment purchases. Doing so will enable manufacturers to invest in automation and new technologies as well as to make their systems cybersecure. This upgrading will also create ripple effects on workforce development as the skills to operate these new technologies become increasingly more important. New Mexico can look to other states in designing its equipment incentives. Texas, for example, applies a sales and use tax exemption to manufacturing machinery and equipment, while South Carolina offers a one-time corporate income tax credit on the cost of new equipment for its manufacturers.

Another focus area of the American Jobs Plan is the development of a skilled manufacturing workforce. As more workforce development funding becomes available from the federal government, the state should reevaluate and potentially overhaul its approach to training manufacturing workers. For example, it can explore how educational institutions can become more responsive and agile to manufacturers' needs. Central New Mexico Community College (CNM) has been a pioneer in this area. It takes a proactive and collaborative approach to employer engagement, develops training programs for the skills employers seek at speed and often with little cost, and constantly seeks to plan ahead for the skills that industries of the future will require. The CNM model has been an underutilized asset that deserves further scrutiny by the state, with a view on how other institutions can adopt aspects of the model to better meet manufacturers' workforce needs. In short, the state should use the expected increase in workforce funding as an opportunity to redesign and improve its approach to workforce development.

Strategic alignment of resources and programs for manufacturers is another opportunity that can greatly benefit the industry. Specifically, the creation of a centralized portal through which state, regional, and local resources and programs are easily accessible and all relevant

information is readily available would save manufacturers valuable time and money. This portal, moreover, would effectively advertise New Mexico's generous programs to out-of-state manufacturers. According to stakeholders, the ideal process is one in which all applications are standardized and simplified, and manufacturers have one point-of-contact for all jurisdictions and agencies.

In terms of land and sites for manufacturers, the state has a significant opportunity to leverage the rapid growth and strategic location of the Borderplex region to strengthen its manufacturing presence in southern New Mexico. The region is already experiencing rapid development thanks to manufacturers and logistics firms moving to the area. Going forward, the state can work with The Borderplex Alliance and local stakeholders to develop a strategy to channel this growth into a high-tech manufacturing cluster that provides equitable benefits to local workers and to determine how the cluster can be integrated into the broader New Mexico economy.

Lastly, stakeholders mentioned that New Mexico has yet to take full advantage of its strengths in aerospace, photonics, and bioscience research to develop a related manufacturing base. Specifically, there is an opportunity for the state to leverage its R&D strengths to craft targeted business propositions for specific segments of the manufacturing industry. For example, by building a narrative of how the state's strength in photonics and sensor development translates to a competitive advantage for autonomous vehicle manufacturers, the state can make a convincing case in negotiations that, when coupled with incentives, would make New Mexico extremely compelling for certain companies. A similar case can be made for attracting pharmaceutical manufacturers based on the bioscience research conducted at the national labs, universities, and the Bioscience Center. Communicating the value of these strengths to manufacturers, however, requires a deep technical understanding of their supply chains and business models. Agencies such as the EDD will thus benefit from industry champions and subject matter experts who can assist in crafting and pitching these business propositions.

Threats

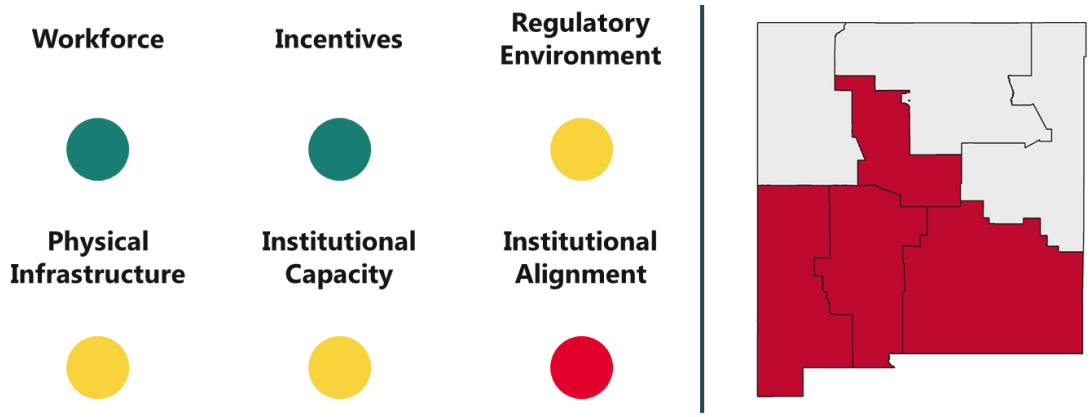
When manufacturers consider locating in New Mexico, many also consider its neighboring states in the Southwest as well as other business-friendly states, such as Alabama and Georgia. Like New Mexico, these states offer manufacturers competitive incentives and potential sites in a bid to recruit these businesses. Interstate competition for manufacturers and workers, therefore, can threaten New Mexico's own manufacturing recruitment efforts. One way to mitigate this threat is to simply make New Mexico more competitive in terms of its business environment. The state's manufacturer incentives are already some of the most competitive in the nation, but its regulatory processes and its workforce development ecosystem should be updated to align with the needs of today's manufacturers. A second mitigation measure is to coordinate with neighboring states in joint economic development. This is especially important in southern New Mexico, where the Santa Teresa area is closely integrated with El Paso. Rather than explicitly

competing for businesses and workers with Texas, New Mexico can work with interstate agencies, such as The Borderplex Alliance, to ensure that development on both sides of the New Mexico-Texas border complements each other's economies. As an example, many Santa Teresa businesses depend on El Paso's large population to support their workforce needs. On the other hand, El Paso has benefited from decreased cross-border congestion due to continued infrastructure development in Santa Teresa. Similar synergies can be realized in other border areas if governments and communities across states can coordinate their economic development strategies.

Recent innovations in manufacturing technology and processes have a strong potential to disrupt the business models of traditional manufacturers. Advances in automation, AI, and additive manufacturing have already changed the manufacturing process in factories across the world, and it is imperative that New Mexico manufacturers adapt to these changes in order to remain competitive. Likewise, the state's educational institutions must update their curriculums in the trade, vocational, and technical fields so that future workers have the skills to use these new technologies. These objectives require significant investment in equipment and training, which is difficult for small- and medium-sized manufacturers to make. However, the expected increase in federal funding from the American Jobs Act, coupled with state programs, will likely assist manufacturers in making the investments they need but cannot afford.

Lastly, the dual threat of cyberattack and supply chain disruption cannot be overlooked. In a 2016 survey, 31% of manufacturer respondents in the United States admitted that they had never performed a cyber risk assessment.[46] Given the increasing frequency and sophistication of cyberattacks, the risk of production stoppage and data theft is too great for New Mexico manufacturers to ignore. Manufacturers should therefore take advantage of services offered by the state's cybersecurity institutions, such as the Cybersecurity Center of Excellence, to adopt and implement cybersecurity best practices. Supply chain disruption is another risk that can impose significant costs to manufacturers, as demonstrated by the COVID-19 pandemic and the global semiconductor shortage. In response, some firms have sought opportunities to relocate their supply chains closer to their plants while others have diversified their supplier and customer networks. As such, the state's manufacturers should, with expert assistance from the MEP, make proactive efforts to increase the resiliency of their supply chains.

Global Trade



Strengths

In 2019, New Mexico led the nation in export growth, with a 31% increase in volume, and exports to Mexico grew by 68% as a direct result of the expansion of industrial operations in Santa Teresa.[47] Global trade, therefore, has a major impact on the state's economy, as manufacturing exports alone support 15,000 jobs in New Mexico.[48] The vast majority of exporting companies are small- and medium-sized businesses, and high-tech products such as industrial machinery, electrical machinery, and precision instruments comprise the largest categories of traded goods in both exports and imports.

One of New Mexico's greatest assets is its road and rail infrastructure, which is the foundation that enables the state to export to and import from other countries. This is especially the case in trade with Mexico, which is by far the state's largest export partner and its second largest import partner (behind China). New Mexico's three main highways provide goods shipped from Mexico easy access to the rest of the United States, and its rail network connects the Santa Teresa and El Paso ports of entry to both West Coast and Midwestern markets. Near the Santa Teresa port, two Union Pacific rail lines converge at a state-of-the-art, $470 million intermodal terminal, which has become a catalyst for additional economic development, including warehouses, trucking, and logistical distribution centers.[49] Combined with Union Pacific's $224 million investment in New Mexico's rail infrastructure from 2016 to 2020, Union Pacific's intermodal facility and the additional industrial development it has stimulated provides New Mexico with a significant competitive advantage in rail logistics.

Global trade in New Mexico is supported by two notable trade-focused institutions. The New Mexico Trade Alliance provides export assistance to New Mexico businesses and works to draw foreign direct investment to the state. It is a valuable and free resource for firms looking to develop their businesses internationally and organizes two international trade missions every year to promote New Mexican industries abroad. The Office of International Trade at the EDD

administers the State Trade Expansion Program (STEP), which financially supports New Mexico businesses in accessing international markets.

Weaknesses

Historically, New Mexico has not been proactive in promoting its businesses and industry to international markets. While trade with Mexico has been heavy and constant due to its close geographic proximity, the state has lacked the sufficient contacts and relationships in other high-value markets. Recently, however, New Mexico officials and Santa Teresa stakeholders have moved aggressively to attract investment from Taiwan. Their efforts, which included trade missions to Taiwan and the opening of a liaison office in its capital of Taipei, have led to three Taiwanese companies announcing plans to open industrial facilities in southern New Mexico, which is expected to create 400 jobs.[50] Going forward, the state should continue to work with local stakeholders to craft and pitch compelling business propositions to specific countries for which New Mexico would be an attractive place to do business.

Opportunities

The ongoing industrial development in the Santa Teresa area presents a major opportunity to enhance New Mexico's position as a hub for cross-border trade. In 2019 alone, public sector investment in the Santa Teresa's industrial base amounted to $66 million, while the private sector invested more than $180 million.[51] Nearly all of New Mexico's export growth can be attributed to growth in this region. Given the importance of trade with Mexico to the state economy, Santa Teresa's rapid development into a hub of cross-border trade, transportation, and logistical activity will bring substantial economic benefits not only to Dona Ana County but also to other areas of the state. Albuquerque, in particular, operates a prosperous free trade zone and possesses abundant logistics infrastructure and industrial capacity that can be better connected to trading activity in Santa Teresa. For example, there is an opportunity for Albuquerque companies to perform value-added processing or handling of goods as they are shipped from Santa Teresa Port of Entry to other regions of the United States. Going forward, the state should determine how to better leverage Santa Teresa's position in cross-border trade to benefit other areas of New Mexico.

There is also an opportunity to enhance New Mexico's agricultural exports by upgrading its rural infrastructure. Because the vast majority of New Mexico's agricultural products are exported to both domestic and international markets, ensuring that farmers have the adequate infrastructure to access these markets is critical to the success of both farmers and the logistics businesses that ship these commodities to countries such as Mexico. This infrastructure includes not only roads and railways but also broadband, as farmers and distributors increasingly rely on digital networks to coordinate with each other and to maximize the speed and efficiency at which

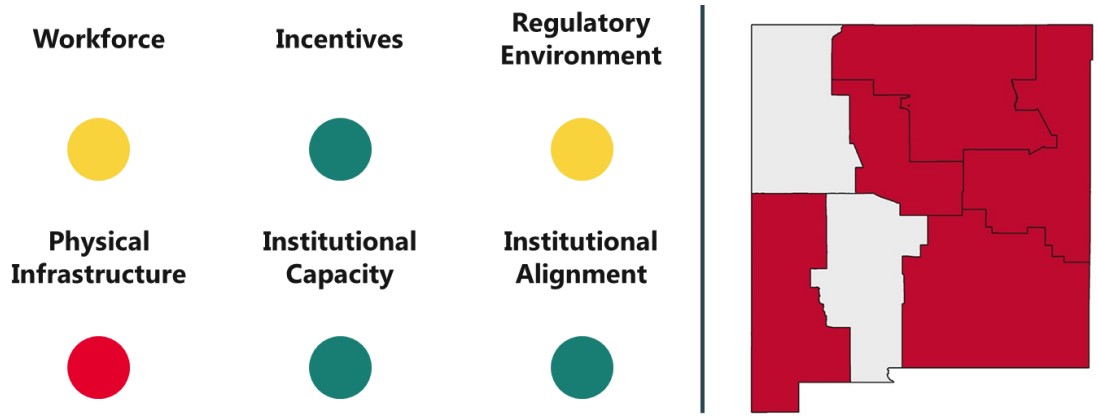
agricultural goods reach the end consumer. New Mexico's broadband initiatives and new federal infrastructure funding will thus provide the state with an opportunity to enhance its agricultural export capabilities.

New Mexico's success in attracting Taiwanese companies has shown that, in some respects, recruiting international companies is less difficult than recruiting domestic ones, where competition between states on incentives, workforce, and other factors poses a major challenge. Foreign companies looking to enter the U.S. market, on the other hand, typically place less emphasis on which state to locate their facilities, and interstate competition is less intense when recruiting international businesses. International trade promotion is therefore an underutilized tool that the state can pursue. Building on its success in Taiwan, New Mexico should strategically plan trade missions to other high-value markets, gather information about international companies' plans for entering the U.S. market, and aggressively pitch the state to foreign businesses seeking to open facilities in the United States. Furthermore, the state would be well-served by better utilizing resources at the federal level, such as its U.S. Senators and the Office of the United States Trade Representative, to promote itself abroad.

Threats

The possibility of an adversarial trade policy environment between the United States and other countries is a significant threat to the future of New Mexico's development in global trade. In 2019, planned tariffs on imports from Mexico and uncertainty over the North American Free Trade Agreement sparked concerns about potential disruptions to traffic at the Santa Teresa Port of Entry. While international trade relations have since improved, the future of the international trade policy environment is uncertain because it is heavily influenced by geopolitics. This uncertainty is compounded by the concentration of the state's imports in just two countries: Mexico and China. As of 2019, Mexico and China account for 69% of the state's exports and 64% of its imports. Trade disruption between the United States and either of these countries would therefore severely impact the New Mexico businesses that depend on this trade. To build resilience in its global trade relations, New Mexico exporters should, with assistance from state and federal resources, diversify its trading partners so that they can be protected from potential trade disruptions with Mexico or China.

Sustainable & Green Energy



Strengths

New Mexico's geographic location and amenable climate make the state a natural home to renewable energy production. A sunny climate with very few natural disasters increases the state's potential for sustainable and green energy development and deployment. According to the New Mexico Renewable Energy Transmission Authority (RETA), New Mexico experiences, on average, 278 days of sunshine per year, with some regions of the state experiencing sunny days far exceeding this number. Similarly, many parts of the state, especially in the eastern regions, can regularly experience wind speeds up to 50 miles per hour, making the state a competitive location for wind energy projects.[52] The ample supply of open, undeveloped land presents New Mexico with opportunities to develop large-scale renewable energy projects for in-state consumption and out-of-state exporting.

At the policy and incentive levels, New Mexico has created an environment that is receptive to sustainable energy. Incentives like the Advanced Energy Deduction & Advanced Energy Tax Credit, the Alternative Energy Product Manufacturer's Tax Credit, and the Renewable Energy Production Tax Credit, among others, make the state a financially competitive location for companies in the sustainable energy industry. Stakeholders in the industry noted that the sustainable and green energy industry is dependent upon incentives to increase deployment, particularly within the solar energy sector. The ability for state incentives to be combined with federal incentives, such as with the Solar Market Development Tax Credit, make renewables a cost-competitive alternative to fossil fuels in New Mexico. These incentives help to make New Mexico among the lowest-cost energy markets in the western United States.

In addition to incentives, New Mexico maintains a strong policy portfolio for the sustainable energy industry. Policies like the 2019 Energy Transition Act, which requires the state to be completely carbon free by 2045 and derive 80% of its energy from renewables by 2040, have placed renewables at the center of New Mexico's energy sector and further incentivize the development and deployment of sustainable energy technologies in the state. The creation of

the New Mexico RETA in 2007 placed New Mexico in a small group of states that have developed a state-level transmission authority to enable greater integration of renewables within the state's energy infrastructure.[53]

Stakeholders also mentioned that New Mexico has been adept at developing the workforce necessary to support continued expansion of the sustainable and green energy industry, particularly for the wind sector. The passage of the Energy Transition Act required the Department of Workforce Solutions to design a displaced worker development plan focused on assisting workers in energy industries impacted by the transition to renewables. These apprenticeship programs help to incentivize collaboration between renewable energy firms and the state's training and education institutions in the development of industry-relevant training programs. An example of successful workforce development programs in the sustainable energy industry can be found at Mesalands Community College, which has developed a strong and well-regarded wind technician training program that is aligned to wind producers' needs, though stakeholders noted a continued undersupply of graduates to meet current and forecasted wind capacity in the state.

Weaknesses

The most significant challenge facing New Mexico's sustainable and green energy industry is the lack of adequate transmission infrastructure throughout the state. Stakeholders noted that transmission infrastructure is the "gatekeeper" for the renewable industry, and the state does not currently have enough transmission lines to support significant expansion of the industry. Enabling further growth of this industry in New Mexico will require further investments in transmission infrastructure; according to a study by RETA, investments ranging from $9.3 billion to $11.2 billion through 2032 will be necessary to sufficiently grow the industry to meet New Mexico's 2045 carbon-neutral target and to make the state a net-exporter of clean energy.[54]

Aside from the financial commitment, there are other obstacles for the expansion of infrastructure to support the renewables industry. One challenge is land availability; while New Mexico has ample undeveloped lands, siting large projects can be difficult due to federal ownership of lands. This is a problem common in some western states with large parcels of federally owned lands. In New Mexico, the problem is exacerbated by the preservation of many of these lands for national defense-related activities. This adds an additional layer of complexity to collaboration with the federal government and limits the ability for transmission infrastructure to be built in the state.

Workforce development for the renewables industry remains another weakness in New Mexico. Stakeholders identified the wind technician program at Mesalands Community College as an asset for the state's growing wind sector, but more of these programs for the wind sector and similar programs for the solar sector are necessary to enable further deployment of these

technologies in the state. Members of the solar sector noted that they must often import trained electricians and laborers for solar installations or devote time and money training unskilled workers in the basics of the industry. Employer-designed training programs are an effective tool for developing an industry-ready workforce, but the lack of institutionalized solar education and training programs at New Mexico's 2- and 4-year education institutions make it difficult for solar producers to do work in the state. Stakeholders noted that while Santa Fe Community College (SFCC) used to run one of the state's primary solar energy technician programs, recent budget cuts at SFCC have left New Mexico with limited solar-related education and training programs, particularly at the associate degree and below level.

Opportunities

The rising demand for renewables and the increased prevalence of state-imposed renewable energy standards, especially in western states, provide an opportunity for New Mexico to export locally generated sustainable and green energy. This expansion is contingent upon the significant growth of transmission infrastructure in New Mexico that better enables in-state renewables producers to export their energy to other markets. Recommendations to invest up to $11 billion in transmission infrastructure has the potential to increase New Mexico's gross state product by more than $21 billion by 2050 and increase the state's renewables capacity from 2,500 megawatts (MW) to 11,500 MW.[55] Not only would this allow the state to meet its carbon neutrality goals, but it would also enable the state to become a large net-exporter of renewable energy.

The expansion of renewables in New Mexico also presents employment opportunities for the residents of many of New Mexico's rural counties. A report produced for RETA found that the counties of Guadalupe, Torrance, Lincoln, and Roosevelt had strong potential for wind production, while counties in southwestern New Mexico maintained the highest potential for solar development.[56] As many of these counties have predominantly rural populations, expansion of the renewables industry in New Mexico would likely provide higher-skill, higher-wage employment opportunities for many located in these counties. As a result, investments in sustainable and green energies have several benefits, such as helping the state meet its renewable energy commitments, providing a sustainable revenue source to the state through the exportation of these energies, and enabling wealth creation in rural regions of the state through new employment opportunities for residents. To catalyze industry-relevant workforce development in these counties, New Mexico should look for specialization opportunities among regional universities and colleges to provide these training and education programs.

As part of the U.S. Department of Energy's national lab network, SNL and LANL are both home to cutting-edge research in clean energy technologies. While these labs produce ground-breaking research and technologies, such as in the realm of photovoltaics, more should be done to capitalize on these technologies and integrate them into New Mexico's energy sector.

Expanding opportunities for collaborations with the labs to pilot the deployment of new clean energy technologies would better position New Mexico to be at the forefront of renewable energy research, development, and deployment. Recent programs announced by the Energy Department, such as the commitment of $65 million in public and private funding to commercialize promising energy technologies at the department's national labs through the Technology Commercialization Fund, are an opportunity for New Mexico to provide matching funds for renewable technologies developed in-state. Through the U.S. Department of Energy's investment, LANL is expected to receive more than $4.7 million while SNL is to receive nearly $2.1 million.[57]

Aside from the traditional renewables sectors of wind and solar, New Mexico is also well-positioned to capture on growing interest in the hydrogen economy. Hydrogen is widely regarded as critical for the transition away from carbon-intensive energies to those based on renewables as it is one of the few energy sources that can be used for power generation, transportation, and industries processes.[58] There are currently two main forms of hydrogen production, blue and green hydrogen, that require different inputs and infrastructures. New Mexico's current strengths in natural gas make the state a competitive location for the near-term build out of blue hydrogen production, which requires natural gas. Coupled with carbon-capture technology, however, the use of natural gas results in very limited carbon emissions, and the small amounts of carbon produced can be stored in wells certified by the Environmental Protection Agency (EPA) for 99 years.

Aside from the comparative advantage New Mexico has based upon its natural gas infrastructure and reserves, New Mexico also possesses existing knowledge capital in hydrogen power through research conducted at LANL, which has sought to make fuel cells more cost-competitive and efficient.[59] Some companies have become more aware of New Mexico's advantage as a hydrogen producer, such as through the recent announcement of the upcycling of a retired coal power plant in northwestern New Mexico into a hydrogen plant.[60] The existing natural gas infrastructure present in northwestern New Mexico makes the region a competitive location for the hydrogen industry, which is notable given the region's long-term decline as New Mexico and the United States transition away from carbon-intensive energy production. As a result, the hydrogen economy represents a significant opportunity for economic revitalization in northwestern New Mexico. However, despite the presence of much of the necessary infrastructure, New Mexico will need to build out critical infrastructure for the hydrogen economy, particularly in the northwestern portions of the state, that enable the state to meet federal requirements for the storage of the residual carbon created during the blue hydrogen production process. In order to grow the blue hydrogen economy in New Mexico, the state will need Class VI certification for carbon storage from the Environmental Protection Agency (EPA), which it has yet to receive.[61]

Growing New Mexico's renewable capacity—whether it be from wind, solar, or hydrogen—makes the state a more attractive location for businesses in these sectors, while also increasing the state's attractiveness to companies and organizations that have set internal carbon reduction or neutrality goals. Given New Mexico's current high capacity for renewables, and the expected growth of renewables' contribution to the state's generation capacity, firms relocating to the state can more quickly reach their carbon reduction or neutrality goals. An example of this is the recent opening of a Facebook office in New Mexico, which was done in part to assist the company in reaching its internal carbon reduction goals.

Threats

As incentives are critical for the growth of the renewables industry, the risk of sunsetting incentives at the state and federal levels are a threat to the development of New Mexico's sustainable and green energy industry. While New Mexico recently passed the Residential Solar Incentive, the temporary suspension of the incentive for about two years stunted the deployment of solar energy in the state. Additionally, solar has been made more competitive in New Mexico as the state incentives could be combined with federal incentives; however, the federal incentives are due to expire in 2024, potentially increasing the cost burden for consumers to install solar energy systems.[62]

The lack of suitable transmission infrastructure remains a threat to the state's renewable industry, despite the recent advancements made by RETA. If the state continues to face limited transmission capabilities, there is increased likelihood New Mexico will lose the current advantages it has, notably in the wind sector, as neighboring states like Texas and Oklahoma significantly increase the use of these technologies.

New Mexico's Innovation Ecosystem

New Mexico's Innovation Ecosystem

New Mexico has a storied history with innovation. Some of the earliest federally supported research and development efforts in the United States took place in New Mexico, propelling New Mexico into the national and international spotlight for innovation. Additionally, as home to three national laboratories—Sandia National Laboratory (SNL), Los Alamos National Laboratory (LANL), and a branch of the Air Force Research Laboratory (AFRL)—New Mexico has a significant advantage over other states in attracting innovators and developing new technologies. These institutions help to attract valuable science and engineering talent to the state to develop the technologies of the future.

This section aims to take account of the features of New Mexico's innovation ecosystem as they relate to six broad categories:

The insights in this section are derived from a combination of quantitative and qualitative data. Data from organizations like the National Center for Science and Engineering Statistics, the Association of University Technology Managers, the United States Patent and Trademark Office, and others help to quantify the opportunities and challenges facing innovators and entrepreneurs in New Mexico. In addition to these data, SRI engaged with dozens of stakeholders in New Mexico to better understand the ground-level realities faced by those working within the state's innovation ecosystem on a daily basis.

SRI's analysis of the state's innovation ecosystem identified many trends that should be of interest to state policymakers, but four trends in particular represent a challenge for the state's innovation ecosystem.

> **Startup Maturity.** Stakeholders generally noted the raw potential of New Mexico's entrepreneurs to start new businesses, but a lack of business acumen and startup

maturity hinders the development of New Mexico's growth-oriented startups. The lack of an understanding of basic business and financial principles makes businesses riskier propositions for investors or established business managers who may be interested in supporting or mentoring the startup.

Scarcity Mentality. Many stakeholders noted a lack of risk capital in New Mexico, forcing the state's entrepreneurs to look outside the state for financing. Several other stakeholders, however, noted that there were plenty of investors and financing instruments in New Mexico, but the state's entrepreneurs were not aware of them. SRI's analysis finds both of these to be true. Risk capital appears heavily concentrated in Albuquerque and Santa Fe, and state programs designed to increase accessibility for different business types and owners were considered too rigid, too obscure, or too difficult to access.

Missed Federal Funding Opportunities. New Mexico captures large levels of federal funding for in-state research but does not currently capture federal funding in many areas aligned with the state's target industries. Opportunities in the research-intensive bioscience and aerospace industries are particularly promising in New Mexico, but the state captures low levels of funding from federal agencies related to these industries, notably the Department for Health and Human Services and the National Aeronautics and Space Administration (NASA), compared to peer states and national spending trends.

Continued Reliance on Federal Government for Innovation Capacity. High levels of federal funding often mean the needs of researchers and innovators are met by consistent federal funding opportunities not available in many other states. However, stakeholders noted a downside of this federal funding availability is an institutionalized preference for federal partnerships and funding over other forms of collaboration, such as with industry. As a result, rather than a network of researchers, entrepreneurs, and innovators emerging from New Mexico's public, private, and academic sectors, several two-way relationships between the federal government and *either* industry *or* academia have emerged.

Lack of Critical Mass in Innovative Industries. An innovation ecosystem depends on many different actors, but businesses are among the most critical. New Mexico has identified several target industries to drive the state's economic diversification, and many of these are knowledge- and technology-intensive industries. However, New Mexico has yet to develop significant critical mass in these industries that helps to attract high levels of talent and capital to the state's private sector. While progress has been made in recent years, jumpstarting the creation of critical mass in a few key industries will help to grow these industries in the long run.

Talent

An innovation system's talent refers to the mix of business and technical skills, experience, and attitudes toward entrepreneurship found among a region's workforce and students. It represents the pool of potential entrepreneurs, managers, and skilled workers upon which a region's businesses and research institutions draw to meet their workforce needs. In New Mexico, the national labs have attracted a strong cadre of highly educated STEM workers to the state. Additionally, New Mexico outperforms the United States on average when it comes to graduate degrees conferred in science and engineering fields. However, the data indicate that the share of STEM talent in New Mexico's labor force has been declining in recent years, and educational attainment at the bachelor's degree level remains a challenge for the state.

Business & Managerial Talent

Key to a successful innovation ecosystem is the presence of business and managerial talent that understands market dynamics and the "ins and outs" of the private sector. Managerial talent helps researchers identify a market need and usher ideas through the commercialization phase. A healthy supply of business and managerial talent in a state helps to ensure startups and entrepreneurs are able to bring their technologies to market, increasing the dynamism of local economies and creating higher-skill, higher-wage jobs in the process.

A lack of this talent, however, creates challenges for a regional innovation ecosystem. If entrepreneurs are frequently having to look outside of a state or region to identify business mentors who can help them navigate the marketplace, there is a risk that these entrepreneurs will eventually leave the region to better situate themselves among those who can provide the necessary insights. Stakeholders identified some challenges for New Mexico's business and managerial talent, as well as a few opportunities for improvement.

Stakeholders noted that, generally, startups and entrepreneurs in the state have to look outside of New Mexico for business-savvy managers that understand the marketplace. However, some stakeholders noted that while this is the case, this is not due to a lack of in-state managerial talent. On the contrary, New Mexico has a healthy number of retired managers and business leaders with industry-relevant experience. The greater challenge relates to the maturity of New Mexico's startups and their readiness for marketplace competition. As a result, the small pool of high-level managers and business leaders located in New Mexico are faced with an even smaller pool of startups mature enough to enter the marketplace.

This issue speaks to a broader challenge echoed by stakeholders in New Mexico regarding the maturity of the state's startup ecosystem. This broader challenge is discussed at greater length in upcoming sections but is worth noting here due to its connectedness to business and managerial talent in the state. This kind of talent is necessary to increase the market readiness of

the state's startups, and greater efforts are necessary to connect the state's managerial talent to entrepreneurs in the state, such as through the creation of a mentorship network comprised of retirees. Examples of these programs exist in New Mexico, such as the New Mexico Start-Up Factory (NMSUF), which provides coaching for tech-intensive startups and makes funding available for those who successfully complete the program.[63] Finding opportunities to scale such programs and make greater use of the state's existing business and managerial talent can strengthen New Mexico's innovation ecosystem.

Science & Engineering Education & Employment

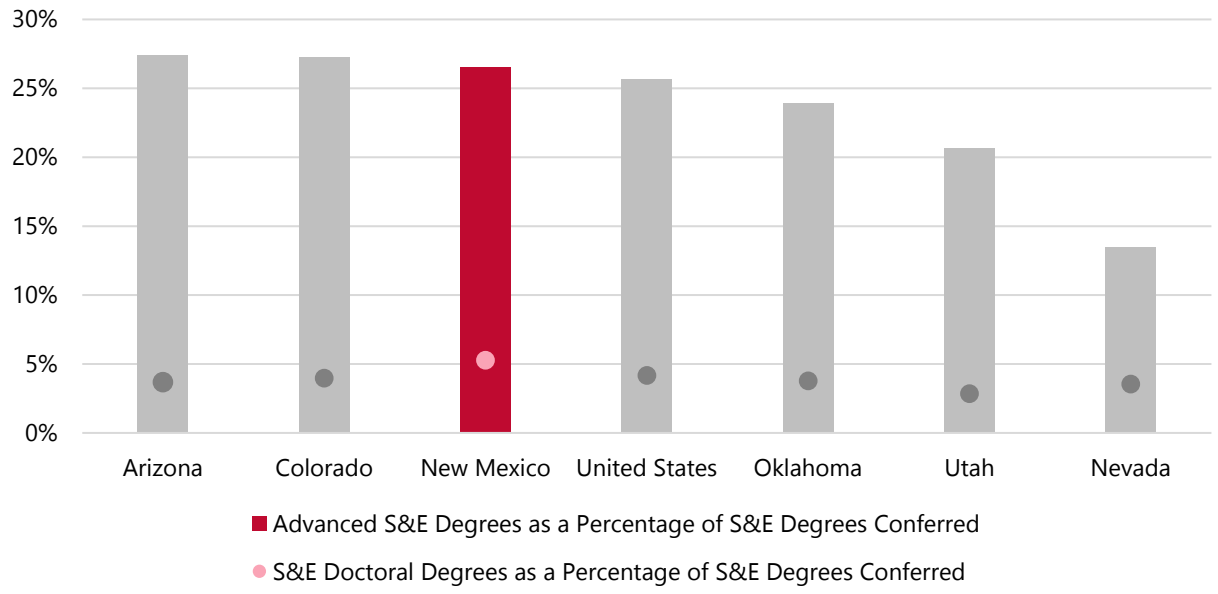
The prevalence of a highly educated workforce within a state may be an indicator of several trends. For example, a high number of individuals with a bachelor's degree may indicate the attractiveness of a state to educated workers relative to others. It may also indicate the need for highly educated workers for the state's employers or the effectiveness of a state's colleges and universities in developing highly educated individuals. On the other hand, a lower number of individuals with a bachelor's degree may be indicative of the out-migration of highly educated individuals to other states in search of job opportunities, among other reasons.

Trends in educational attainment within New Mexico's labor force and prime working-age population (i.e., those aged 25–44) indicate room for improvement in New Mexico. As Table 30 in Appendix B shows, New Mexico ranked below most states in educational attainment in 2019; 28% of the state's labor force possessed a bachelor's degree, and only 26% of those aged 25–44 did. This trend holds true for many of the Sunbelt states, with New Mexico, Arizona, Nevada, and Oklahoma all scoring within the bottom half of all U.S. states. New Mexico is steadily increasing the percentage of individuals with a bachelor's degree among the state's labor force and those aged 25–44, though at lower rates than the United States and peer states.

While New Mexico's overall educational attainment remains on the path to improvement, the state performs better when examining degrees conferred in science and engineering (S&E) fields, particularly at the graduate level. Though New Mexico confers only about 15 bachelor's degrees in S&E fields for every 1,000 individuals aged 18–24—well below the U.S. average of 24, and 49th out of 50 states and Washington, D.C.—New Mexico ranks 15th when it comes to the number of master's and doctoral S&E degrees as a percentage of all S&E degrees conferred in the state. This places New Mexico above all peer states—except for Arizona and Colorado—and the U.S. average (see Figure 25).

New Mexico Is Competitive When It Comes to the Production of S&E Talent

Figure 25: Graduate S&E Degrees Conferred, 2019. Source: National Center for Science and Engineering Statistics.

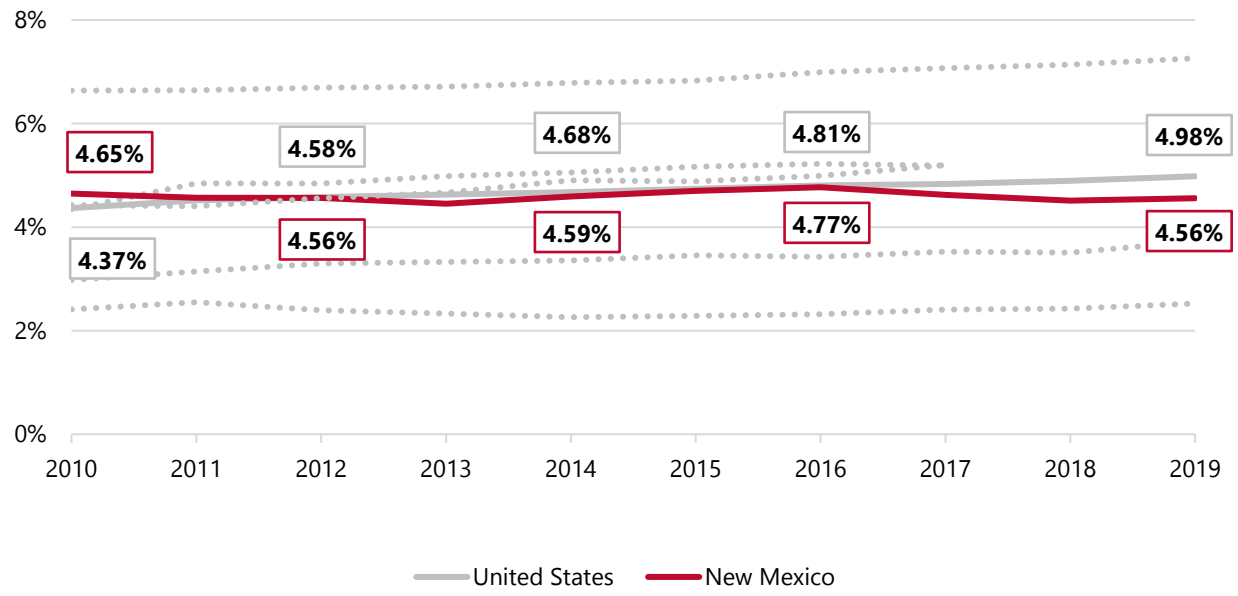


Examining degrees conferred in S&E fields helps to determine the efficacy of a state's higher education system in meeting the demands of science-and-technology-intensive industries. However, the portion of a state's workforce that is employed in S&E occupations helps to explain if those with S&E degrees are finding employment in New Mexico. For example, if a state has a high level of degrees conferred in S&E fields but a comparatively small portion of its workforce is employed in S&E occupations, this may indicate a lack of opportunities for S&E degree holders in the state economy, making the state an exporter of S&E talent.

As Figure 26 demonstrates, New Mexico has closely followed the U.S. average for the percentage of S&E occupations in the workforce. Undoubtedly driven by the presence of three large federal government laboratories in the state, New Mexico's S&E workforce has remained relatively steady over the last decade, though it has declined slightly in recent years. From 2010 to 2019, New Mexico's S&E workforce decreased by about 2%.

Though New Mexico Produces S&E Talent, This Does Not Appear to Translate into S&E Occupations

Figure 26: S&E Occupations as a Percentage of All Occupations, 2010 to 2019. Source: National Center for Science and Engineering Statistics.



While the decline in New Mexico's S&E workforce is not large, within the context of its peer states and the nation, the trend is worth noting. In the United States, the S&E workforce has consistently increased from 2010 to 2019, growing by 14% during this time. A similar trend can be observed in peer states, where growth rates of the S&E workforce range from 5% (Nevada) to 27% (Utah). Additionally, while the United States and all peer states, except for Colorado, began the decade with a smaller S&E workforce than New Mexico (in percentage terms), by the end of the decade, the United States, Arizona, and Utah had surpassed New Mexico.[64]

Entrepreneurial Skills & Culture

As discussed in the **Economic Assessment**, the quantitative data indicate that New Mexico remains a highly entrepreneurial state with a dynamic entrepreneurship ecosystem. Stakeholders largely support this assertion, noting New Mexicans' "can-do" spirit and initiative. Additionally, though New Mexico may be geographically large, the state benefits from a "small state" mindset that leaves policymakers accessible to many in the business community and provides easy networking opportunities for New Mexico's entrepreneurs.

Nevertheless, quantitative and qualitative data indicate that entrepreneurship in New Mexico is pursued primarily as a source of income rather than an opportunity to grow a technology or

idea to scale. This "sustenance-oriented" form of entrepreneurship is important for many entrepreneurs in New Mexico as these businesses provide a source of income and financial stability. Sustenance-oriented businesses serve a critical role in a region's community and economy as they provide necessary income for the business owner while also increasing the quality of life for community residents. This is particularly true for the state's Native American community, which is heavily reliant upon the informal economy as a means of generating personal income. Such businesses, however, have lower growth opportunities than businesses launched around an innovative technology, product, or idea (known as opportunity-based entrepreneurship).

Fostering an entrepreneurship ecosystem driven by opportunity requires significant support mechanisms. An important factor of this kind of ecosystem is the maturity of growth-oriented startups founded in a region. While all entrepreneurs, opportunity-based or not, require general business and financial literacy, those entrepreneurs focused on commercializing an idea or a technology require a greater degree of financial knowledge and business acumen. This knowledge can be gleaned from business and managerial mentors (as previously discussed), academic courses, startup support organizations (discussed in greater detail later), or others.

A few different organizations are working to increase the market readiness of New Mexico's entrepreneurs. For example, WESST provides training opportunities in basic business literacy for entrepreneurs in New Mexico, and the American Indian Chamber of Commerce of New Mexico provides similar training opportunities for the state's Native American entrepreneurs, which are tied more directly to the core themes of Native American entrepreneurship. Expanding the availability and capacity of these programs remains a critical necessity for entrepreneurs in New Mexico, both those located in the state's larger urban areas as well as those located in rural regions of the state.

Risk Capital

Key to an innovation ecosystem is the availability of equity capital to support the research, development, commercialization, and scaling of new technologies and ideas. Equity capital can take many forms, including venture capital, private equity investors, angel investors, and investments from accelerator or incubator programs. While venture capital tends to be the most well-known, such investments represent only a portion of all investments in a state's innovation ecosystem. Tracking these investments provides valuable insights into popular funding mechanisms in a region, as well as the sectors that receive the most funding.

Stakeholders noted a "scarcity mentality" within New Mexico's innovation ecosystem regarding funding availability. On the one hand, many stakeholders identified several different investors in the state, such as the state's Catalyst Fund or funds managed by entrepreneurship support organizations. On the other hand, most stakeholders noted that while these funds may exist, there is a severe lack of awareness of them in New Mexico that contributes to the scarcity perception. Data from the National Center for Science and Engineering Statistics generally reflect this sentiment. In 2019, about 1.5 venture capital deals were made for every 100,000 of the population in New Mexico, ranking the state 35th in the United States and 5th among peer states.[65]

Venture capital is not the only source of risk capital. While it represented 43% of all deals made in New Mexico from 2010 to May 2021, other funding sources provide critical financing opportunities for New Mexico's entrepreneurs. After venture capital financing, angel investors provide notable additional funding (32%), followed by accelerators/incubators (17%) and private equity investors (8%). Though private equity represents a small percentage of all investments in New Mexico, the dollar values of such investments are, on average, much higher (see Table 7). Despite accounting for only about 8% of all financing deals in New Mexico, the total dollar amount of private equity investments represents 42% of all financing raised in New Mexico from 2010 to May 2021.

Most Entrepreneurs Receive Funding through Venture Capital and Angel Investors, though Private Equity Investors Provide Significant Levels of Funding

Table 7: Startup Funding Sources in New Mexico, 2010 to May 2021. Source: Pitchbook.

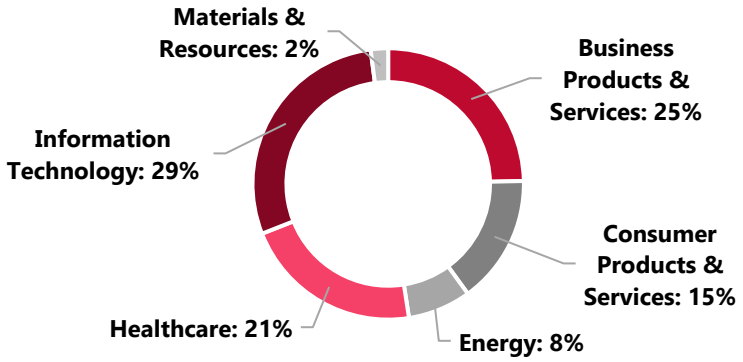
	Total Deals	*Percent of Total Deals*	*Total Dollar Amount (in millions)*	*Percent of Total Dollar Amount*	*Average Raised (in millions)*
Accelerator/Incubator-Backed	22	16.9%	$9.2	0.8%	$0.5
Angel-Backed	42	32.3%	$54.8	4.6%	$1.6
Private Equity-Backed	10	7.7%	$499.7	41.9%	$55.5

	Total Deals	*Percent of Total Deals*	*Total Dollar Amount (in millions)*	*Percent of Total Dollar Amount*	*Average Raised (in millions)*
Venture Capital-Backed	56	43.1%	$629.2	52.7%	$11.9
Total	130	100.0%	$1,192.9	100.0%	—

Pitchbook tracks the sectors within a state to which these dollars flow (see Figure 27). In New Mexico, three-quarters of the nearly $1.2B in financing in the state flowed to startups in three sectors: information technology (29%), business products & services (25%), and healthcare (21%). A more granular analysis indicates that funding within these larger sectors is often concentrated in a handful of subsectors.[5] Analyzing trends in these subsectors provides a more detailed understanding of critical mass in New Mexico's innovation ecosystem by identifying subsectors that attract a disproportionate amount of funding in the state.

Risk Capital in New Mexico Is Heavily Concentrated in a Core Set of Economic Sectors

Figure 27: Startup Financing in New Mexico, by Sector, 2010 to 2021. Source: Pitchbook.



Information technology was the largest recipient of financing in New Mexico from 2010 to May 2021, which was concentrated among startups in semiconductors and software subsectors, including application-specific semiconductors and business/productivity software. Given the presence of Intel, one of the world's leading producers of semiconductors, in New Mexico, it is expected that a comparatively strong ecosystem of semiconductor-focused startups exists in the state. This is similarly the case for financing within the business products & services sector, in

[5] Pitchbook provides data at the Industry Sector, Industry Group, and Industry Code levels. Industry Sector data indicate financing trends at the highest level, whereas Industry Code data indicate financing trends at a much more granular level.

which funding is concentrated in machinery and aerospace and defense startups. Because New Mexico is home to a handful of large national laboratories focused on national defense technologies, among other research areas, it is expected that the state would also be home to startups related to these subsectors.

Concentrations of financing in the remaining four sectors referenced in Figure 27 include:

- Within **healthcare**, financing has been concentrated among startups in healthcare devices and supplies and pharmaceuticals and biotechnology. This includes startups focused on diagnostic equipment, clinics/outpatient services, and monitoring equipment, among others.
- Within **consumer products & services**, media has been the dominant recipient of financing, which has been overwhelmingly concentrated in startups working within the movies, music, and entertainment subsector.
- Within **energy**, most financing has flowed to utilities, particularly water utilities, though startups focused on energy production technologies have received notable levels of financing as well. This is likely due to New Mexico's competitive advantage in many renewable fields, including solar and wind.
- Within **materials & resources**, small amounts have flowed to startups in agriculture, such as cultivation, as well as industrial chemicals.

Concentration in risk capital extends beyond sectors. In New Mexico, well over half of the risk capital raised in the state from 2010 to 2021 went to startups in Albuquerque (67%), with another quarter received by entrepreneurs in Santa Fe (25%). Of the remaining 8%, 4% went to those in Las Cruces, 2% to those in Los Alamos, and 2% spread between entrepreneurs in Alamogordo, Corrales, El Prado, Hobbs, Las Vegas, Questa, Rio Rancho, Silver City, and Taos.

Given the concentration of about half of New Mexico's population in the Albuquerque-Santa Fe-Las Vegas, NM combined statistical area, it is not necessarily surprising that risk capital is similarly concentrated in this region. However, it is important for entrepreneurs in New Mexico's non-urban regions to access financing to develop and commercialize their ideas. As the opportunities and challenges faced by New Mexico's rural regions differ from those in urban areas, entrepreneurs in rural areas likely focus their activities on economic sectors critical to their local economies. The data largely corroborate this trend:

- As larger metropolitan areas, **Albuquerque** and **Santa Fe** each received higher levels of risk capital investments between 2010 and 2021 in a wide variety of sectors and subsectors. During this time, Albuquerque saw a higher number of investments in aerospace and defense, drug discovery, and general business and consumer products and services. Meanwhile, Santa Fe has seen greater investments in service-oriented startups, though there is also a focus on resource-oriented startups.

- Though considerably smaller, **Las Cruces** also received a fair amount of risk capital investment in a mostly diverse set of subsectors, though there is a clear concentration in more technology-intensive subsectors like biotechnology, business/productivity software, and energy production, among others.
- In New Mexico's **smaller and more rural communities**, greater focus trends toward resource-oriented startups, such as those focused on food products, environmental services, alternative energy equipment, and wood/hard products.

Innovation Infrastructure

Before a technology can be brought to market, it first must go through various stages of research, development, and real-world testing and demonstration. Each of these stages requires access to different types of research infrastructure, but two remain of critical importance in New Mexico: broadband internet and laboratory space. Many stakeholders identified challenges relating to these two physical infrastructure components for the state's innovation ecosystem.

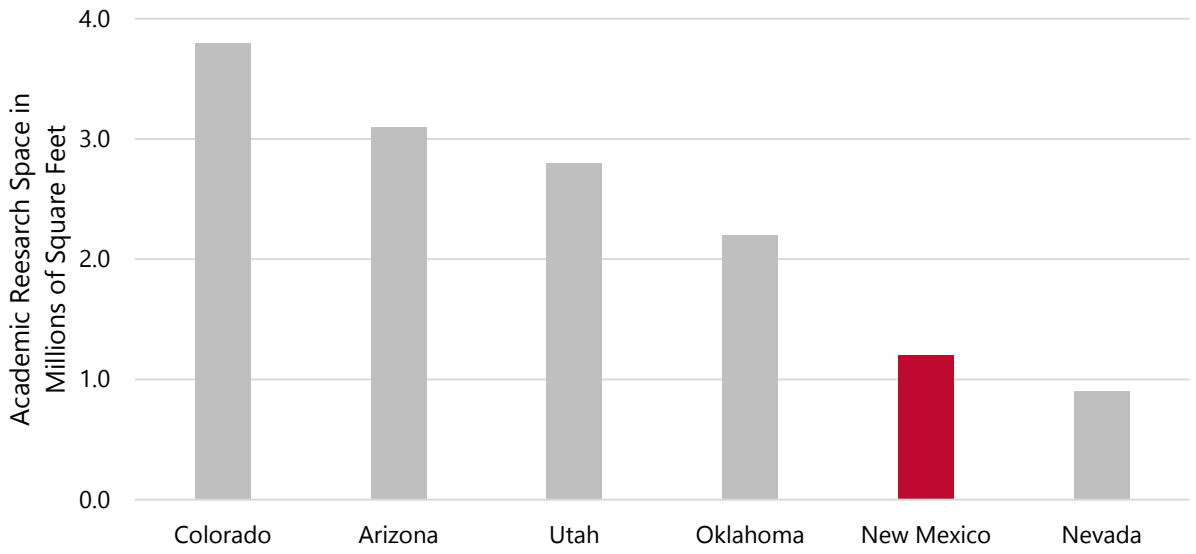
Broadband and internet connectivity is discussed at greater length in other areas of this report (see the section entitled **New Mexico's State & Regional Assets**). However, as digital infrastructure is important for innovation-related activities, it requires some discussion in this section of the report. A study by the Broadband Commission for Sustainable Development at the United Nation's International Telecommunication Union (ITU) finds that broadband and related "e-infrastructure" is critical in the world of modern scientific research. As scientific systems have become decentralized from a few key players to include researchers in urban and rural regions alike, the ability to digitally collaborate and access resources has become increasingly important.[66]

As a result, the inability of different groups to access stable, fast internet services hinders the participation of different regions and populations in New Mexico in innovation-related activities. As discussed later in this report (see "New Mexico" in the **New Mexico's State & Regional Assets** section), this "digital divide" means higher earners in more urbanized areas of the state are better able to access consistent internet services. The lack of suitable internet access in less wealthy and more rural regions of New Mexico concentrates the state's innovation-related activities in a few core areas and restricts the ability of non-urbanites to participate in the state's innovation economy. Expanding broadband access for the state's less urban communities will better enable individuals throughout New Mexico to support the state's innovation ecosystem. Some measures are already being taken, such as through the recent signing of Senate Bill 93 to create an Office of Broadband Access and Expansion, and House Bill 10, which established the Connect New Mexico Fund to support the expansion of broadband throughout the state.[67]

In addition to digital connectivity, innovators require access to state-of-the-art research facilities that enable them to develop, test, and refine their technologies to meet a marketplace need. Stakeholders noted that researchers in technology-intensive industries, like biosciences, have often faced a shortage of critical lab space in New Mexico. In some instances, these researchers have had to rent warehouse space and retrofit it for lab material. While this may be an effective temporary solution, a consistent lack of appropriate research space will ultimately hinder the ability for researchers to develop and commercialize technologies in New Mexico.

New Mexico Has Far Less Academic Research Space Available to Researchers Than Peer States

Figure 28: Academic Research Space in New Mexico and Peer States, in Millions of Square Feet, 2018. Source: National Center for Science and Engineering Statistics.



The data generally support the views of stakeholders in New Mexico's innovation ecosystem. As seen in Figure 28, New Mexico has some of the lowest amounts of academic research space among peer states, with slightly more than 1.1 million square feet of this space available to researchers. Most other peer states have over 2.0 million square feet available to researchers, while Colorado and Arizona both provide more than 3.0 million square feet of academic research space.

The demand for lab space has increased in recent years, and the COVID-19 pandemic has exacerbated this demand, particularly for labs purpose-built for the life sciences industry. While a similar study has not been conducted in New Mexico, studies from the Chicago and Philadelphia metro areas indicate that there is a shortage of lab space nationwide, and state and local governments are best positioned to increase the availability of this space. A study in Philadelphia found that lab space needs vary by the growth stage of life sciences researchers. At the startup stage, researchers may need as little as 2,000 square feet of lab space, a requirement that can usually be met by lab-equipped incubators. However, as life sciences companies grow and begin to test and commercialize their technologies, the demand for lab space can increase anywhere from 20,000 to over 500,000 square feet.[68] To create more lab spaces, Illinois created a $9 million grant program to support the development of multi-tenant lab spaces, requiring partnerships between universities, medical centers, and incubators, as well as plans to recruit from underserved areas of the state.[69]

Idea Generation

Idea generation refers to the volume, quality, and focus of business-relevant ideas generated within a region. These ideas are then turned into new products and services and often form the basis for new companies. Ideas could come from many sources, including academia, research institutions, and the private sector. Idea generation is typically captured by a few key metrics:

- Performance of innovation activities, such as research and development (R&D)
- Funding received for innovation-related activities
- Patents, licenses, and options granted as a result of innovation-related activities
- Startups initiated as a result of innovation-related activities

Funding & Performance of Innovation Activities

R&D is the primary mechanism through which new products and services are discovered, tested, and brought to market. R&D can be conducted by many different organizations, including businesses, universities, and government laboratories. Generally, different types of organizations focus on different types of funding. Universities and government-affiliated research organizations typically focus on early-stage research that is foundational to the discovery of new products or processes. Industry usually commits more resources to the application of these new products or processes and how they meet a market need. Subsequently, a healthy innovation ecosystem relies on a mix of organizations conducting lab-based research and others who take the results of this research and commercialize it.[70]

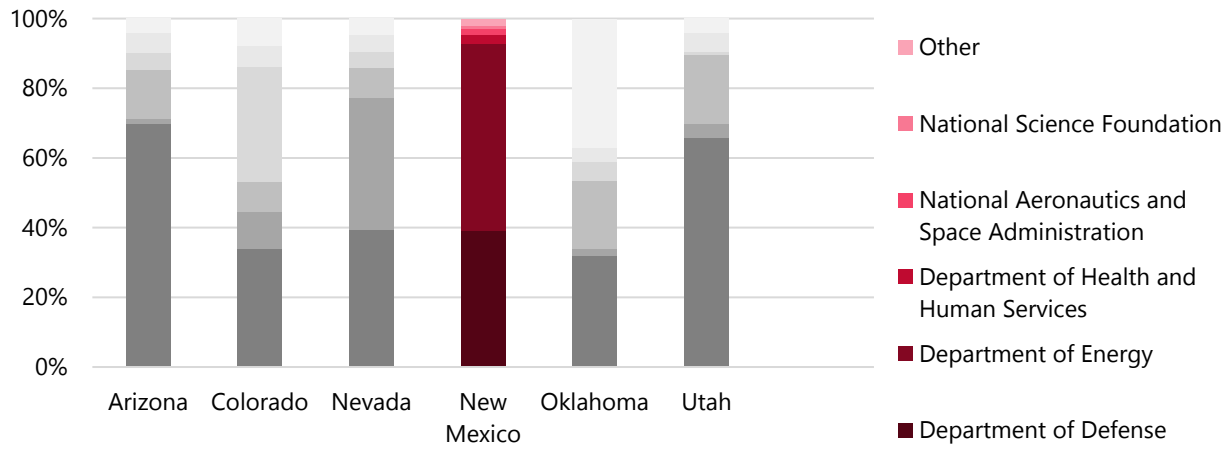
The federal government is a major funder of R&D in the United States, alongside private industry, and this federal funding is traceable by agency (see Figure 29). In New Mexico, the presence of SNL, LANL, and AFRL serves as attractors of federal R&D funding beyond what is seen in most other states. In many states, the Department of Defense is consistently one of the largest funders of R&D performance, if not the largest. Research by the Congressional Budget Office (CBO) finds that Department of Defense-sponsored research is less likely to provide "civilian benefits" and other spillovers to the private sector, whereas federally supported non-defense R&D spending yields about 75% of the output effect that primary investment yields.[71] Subsequently, having higher levels of non-defense federal R&D spending coupled with higher rates of industry R&D spending is an ideal combination for a state's innovation ecosystem.

In New Mexico, a majority of federal funding for R&D is provided by the Department of Energy, though the Department of Defense also provides high levels of funding (Figure 29). These high levels of Department of Energy funding are driven by SNL and LANL, both of which capture high levels of federal funding for R&D. Compared to peer states, New Mexico's innovation ecosystem sees more federal spending on energy- and homeland security-related projects, but lower levels of funding in most other areas. For example, while federal funding from the Department of

Health and Human Services accounted for at least 8% of total federal R&D spending in New Mexico's peer states, it accounted for less than 3% in New Mexico. Similarly, federal spending by NASA in New Mexico in 2018 was less than 2% of all federal R&D spending in the state while it exceeded 4% in all peer states, except for Utah, and exceeded 30% in Colorado. These lower levels of funding by other federal agencies are a challenge for New Mexico, especially for target industries that are dependent upon new technologies and processes in these fields (e.g., biosciences and aerospace).

New Mexico Is Less Dependent upon Defense Spending for In-State Research, But In-State Spending Is Overly Concentrated in Two Sectors

Figure 29: Federal R&D Spending in New Mexico and Peer States, by Federal Agency, 2018. Source: National Center for Science and Engineering Statistics.



Funding & Performance Trends in New Mexico's Private Sector

Business R&D is particularly interesting as these activities are likely to result in a consumable product for the marketplace. By creating more products for consumers, businesses can expand their operations, hire more employees, and invest additional funding in innovation-related activities. Funding for these innovation-related activities does not have to come from businesses, however. In the United States, businesses receive funding from federal and non-federal sources, in addition to their own investments.

New Mexico's Businesses Are Disproportionately Dependent upon the Federal Government for R&D Funding

Figure 30: Percent of Total Business R&D Spending Derived from Businesses, Non-Federal Organizations, and the Federal Government, 2010–2018. Source: National Center for Science and Engineering Statistics. Note: Data for Utah are from 2011 to 2018 due to limited data availability in 2010.

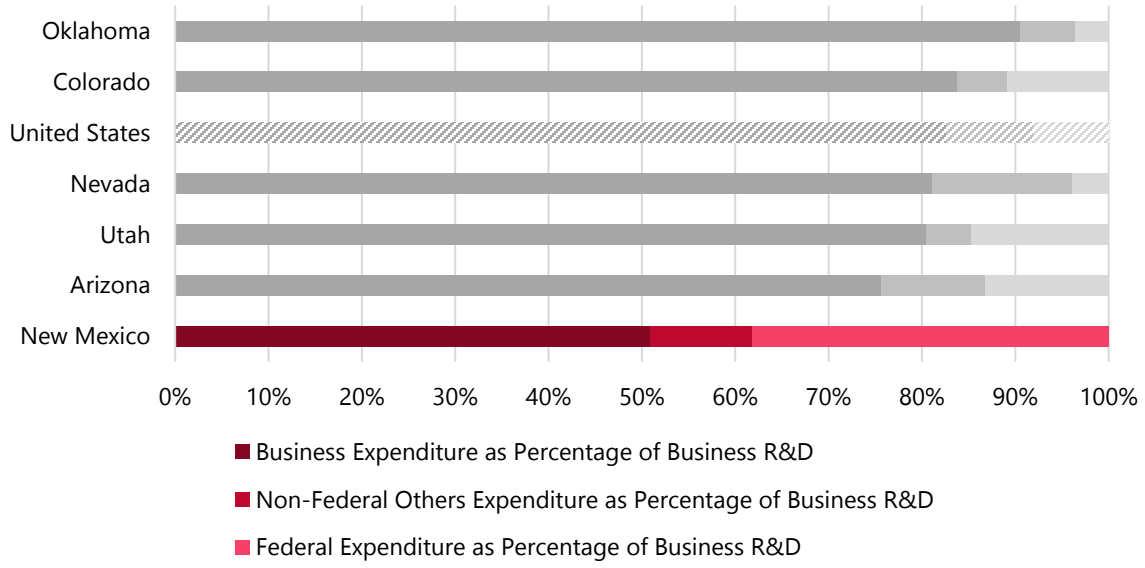
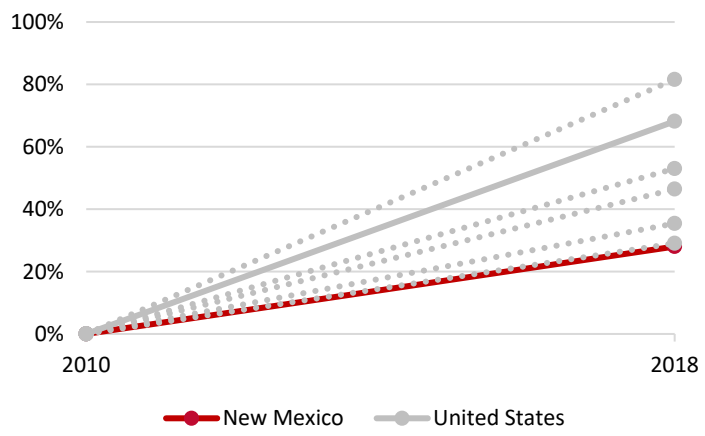


Figure 30 provides an overview of sources of business R&D funding for the total amount of business R&D expended from 2010 to 2018. As can be seen, businesses in most of New Mexico's peer states pay for about 80% of their own R&D funding, in line with the national average. However, businesses based in New Mexico are disproportionately dependent upon the federal government for R&D funding, with nearly 40% of all business R&D spending from 2010 to 2018 coming from federal sources, and about 51% coming from businesses themselves. This hints at the dependency New Mexico's innovation ecosystem has upon the federal government for support, and highlights the susceptibility of this ecosystem to changes in federal spending priorities. Stakeholder feedback further reiterates this point, with many stakeholders noting the importance of federal research funding to the private sector in the state.[72]

Business R&D Performance in New Mexico Has Increased at Slower Rates than Peers and the National Average

Figure 31: Percent Change in Business R&D Performance, 2010–2018. Source: National Center for Science & Engineering Statistics.



Despite the comparatively lower share of business spending as a percentage of total business R&D performance in New Mexico, total spending on business R&D in the state is increasing over time, albeit at a slower rate than peer states and the national average (see Figure 31). Two programs run by the federal government support the growth of business R&D performance: The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. These programs are critical for bringing entrepreneurs into the innovation ecosystem and supporting growth of economically competitive small businesses.

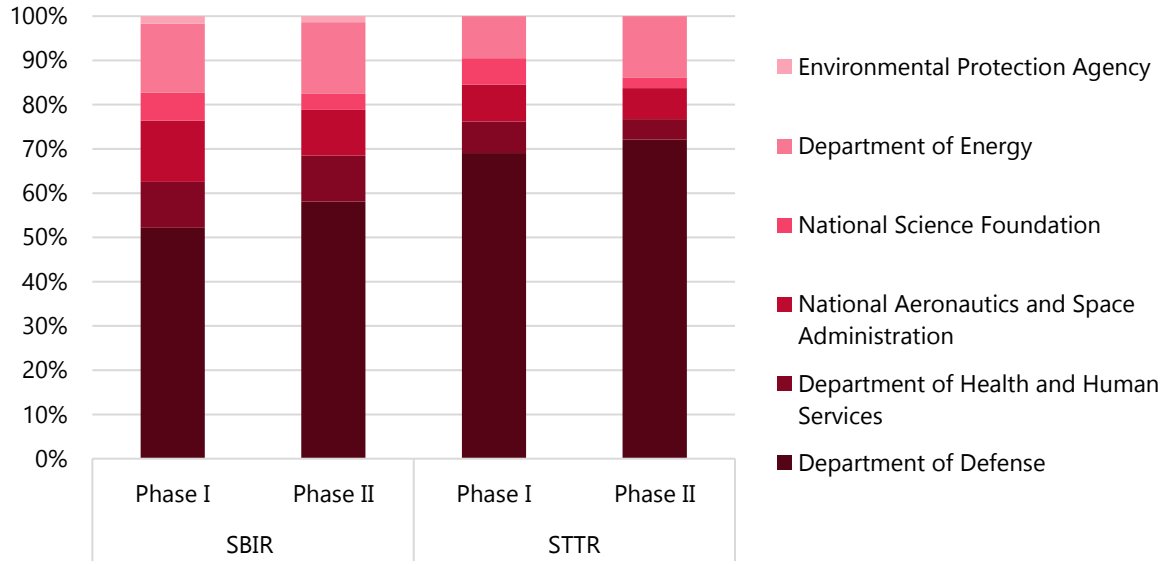
Data from the National Center for Science and Engineering Statistics indicate that small businesses in New Mexico have been highly effective at capturing SBIR and STTR funding. From 2010 to 2018, SBIR and STTR funding awarded to New Mexico's small businesses increased 34%, from $30 million to nearly $40 million. Among peer states, though Utah's funding has grown quicker (136% increase since 2010), New Mexico's small businesses are by far the most well-funded through these two programs. As a result, New Mexican small businesses capture the most SBIR/STTR funding per $1 million in state GDP in the United States, far above peer states and above the U.S. average (see Figure 87 in Appendix B).

Of the SBIR and STTR funding dispersed to New Mexico's small businesses, the vast majority originates from the Department of Defense, likely due to the presence of SNL, LANL, and AFRL in the state. From 2010 to 2020, the Defense Department accounted for 53% and 59% of projects in SBIR Phases I and II, respectively, and 69% and 72% of projects in STTR Phases I and II (see Figure 32). The Department of Energy accounted for the next largest share of SBIR Phase I and Phase II and STTR Phase I and Phase II projects in New Mexico during this time (16%, 16%,

10%, and 14%, respectively), with fewer projects funded by the Department of Health and Human Services, NASA, the National Science Foundation, and the Environmental Protection Agency.[73]

New Mexico's Innovative Small Businesses Are Highly Dependent upon Funding from the Department of Defense

Figure 32: Percent of All SBIR and STTR Projects Awarded to New Mexico's Small Businesses, by Federal Agency, 2010–2020.



As previously discussed, a higher dependence on defense-related R&D is likely to result in fewer marketplace outputs due to the national security focus of this research. While New Mexico's overall business R&D federal spending is less concentrated on defense-related research than peer states and the nation (see Figure 29), the over-concentration on defense-related SBIR and STTR projects likely hinders marketplace commercialization of technology developed within these programs.

The STTR program differs from SBIR in that it requires small businesses to have an institutional partner, usually a research university, that conducts at least 30% but less than 60% of a project's R&D. Because STTR requires an institutional partner, program data provide insights on the level of partnership between New Mexico's small businesses and its higher education institutions and national labs. From 2010 to 2020, 127 STTR awards were given to New Mexico small businesses. Of these, 48 (38%) involved a partnership with an in-state institution, whether it be one of New Mexico's research universities or one of the state's national labs. Among those businesses

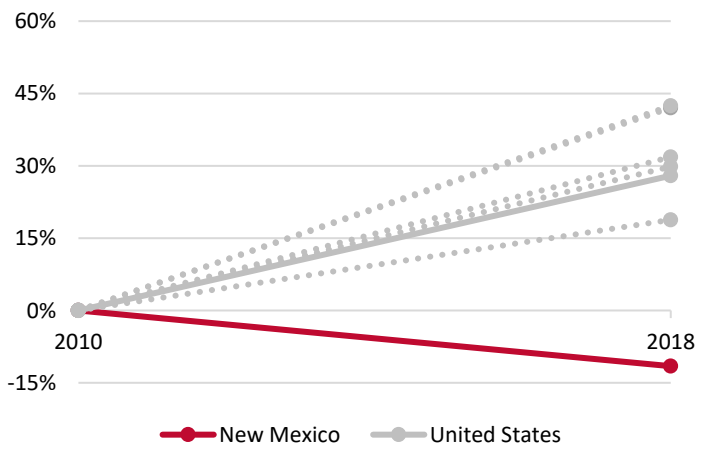
partnering with an in-state institution, more partnered with the state's higher education institutions (79%) than with the labs (21%). Thus, the data indicate that for STTR awards, New Mexico's small businesses are more likely to partner with an institution outside of the state.

Funding & Performance Trends Among New Mexico's Higher Education Institutions

R&D spending and performance at higher education institutions is important as well. Research shows academic R&D expenditures have a long-term positive effect on a region's high-tech employment, in addition to other university-based innovation-supporting activities (e.g., technology transfer offices, career development centers, etc.).[74] When partnered with industry, academic R&D also helps translate discoveries in basic scientific principles into market-ready technologies. Subsequently, high levels of academic R&D are integral to a region's innovation ecosystem. Figure 33 provides an overview of academic R&D performance in New Mexico, peer states, and the United States. From 2010 to 2018, academic R&D performance increased by about 28% in the United States. Among New Mexico's peer states, this increase ranged from 19% (Oklahoma) to 42% (Arizona). However, in New Mexico, academic R&D performance decreased during this period by about 12%–13%.

At a Time When Academic R&D Performance Is Gradually Increasing Nationally, It Is Falling in New Mexico

Figure 33: Percent Change in Academic R&D Performance, 2010–2018. Source: National Center for Science and Engineering Statistics.



This decrease in academic R&D spending is likely due to the compounding effects of falling academic R&D expenditure in New Mexico by all sectors, including higher education, business,

federal government, and other government sources. Figure 88 in Appendix B provides an overview of funding sources for academic R&D spending in New Mexico and peer states. The federal government is the largest spender on academic R&D in all peer states, as well as nationally. The outsized role of the federal government in academic R&D spending means changes to federal R&D spending will have a disproportionate impact on higher education institutions.

Regardless of the source of academic R&D spending, however, New Mexico's two primary research institutions have smaller research expenditures than most institutions in peer states (see Figure 34). While the University of New Mexico (UNM) outperforms a few institutions in other states, it captures significantly less funding than the public universities in Colorado, Arizona, and Utah; and New Mexico State University (NMSU) underperforms all institutions in peer states examined in this report. Lower levels of funding may limit the innovative outputs of New Mexico's higher education system, which is discussed in the upcoming section "Output of Innovation Activities."

UNM and NMSU Capture Notably Smaller Shares of Research Funding than Universities in Peer States

Figure 34: Total Federal and Total Research Expenditure in Billions of U.S. Dollars, 2010–2018. Source: Association of University Technology Managers (AUTM).

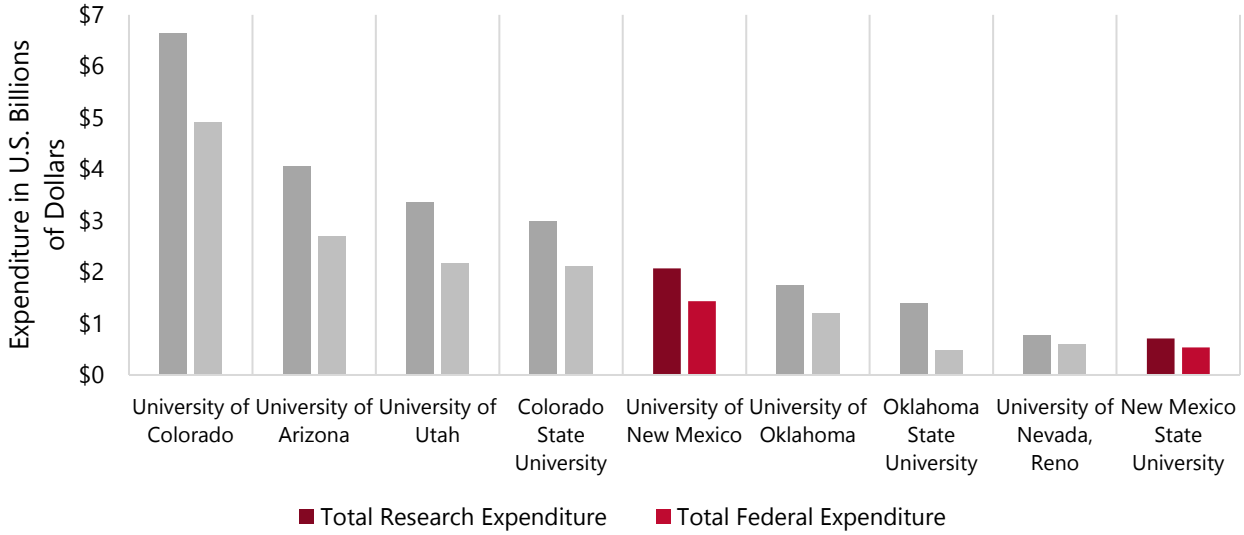


Figure 34 provides an overview of total research expenditure and federal research expenditure captured by UNM, NMSU, and major public institutions in peer states. The data indicate that both New Mexican universities capture less total and federal research funding than selected

institutions in peer states. These data are corroborated by data from the National Center for Science and Engineering Statistics, which finds that New Mexico's higher education system is less dependent upon the federal government for research funding than most peer states (see Figure 88 in Appendix B). While lower levels of federally sponsored research mean UNM and NMSU are less susceptible to changes in federal research spending and priorities, the comparatively lower levels of total research funding ultimately hinder the ability for these institutions to produce high-value research that attracts partners from other sectors, like private industry.

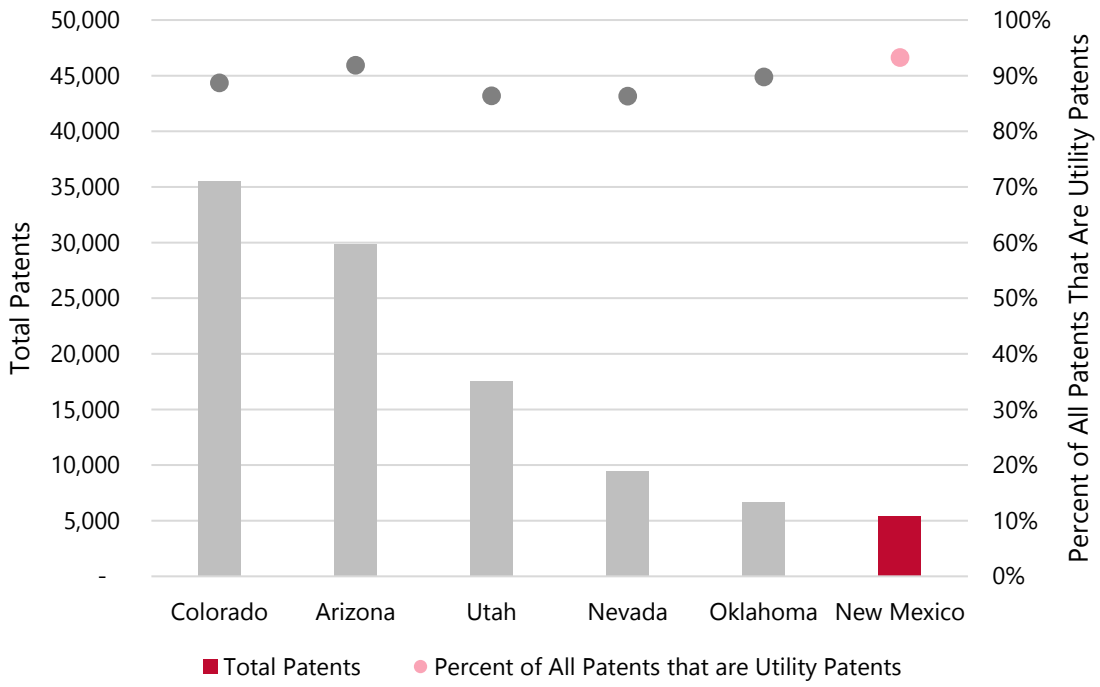
Output of Innovation Activities

The performance of R&D and other innovation activities can result in several outputs, including patents, licenses, and startups. These outputs help to measure the effectiveness of innovation activities within a state or region. Measuring innovation outputs can be difficult, especially when those outputs are derived from private industry or federal labs. One output that is easily measurable, however, is patent activity. The U.S. Patent and Trademark Office (USPTO) collects data on patents issued in each state according to one of four types of patents: design, plant, reissue, and utility. Most patent analysis is centered on utility patents, which refer to a patent on an invention or discovery that is considered to be new, useful, and non-obvious. A utility patent may refer to a machine, manufacture (i.e., manufactured goods), composition of matter (i.e., chemical compounds), or process.

Data from the USPTO indicate that, among peer states, New Mexico had the lowest number of patents issued in-state from 2010 to 2020 (see Table 31 in Appendix B). This translated into a lower average annual growth rate in the number of patents issued in New Mexico (1%) while most peer states saw annual growth above 4%. New Mexico remains a large producer of utility patents, however, with more than 93% of all patents issued in the state from 2010 to 2020 being a utility patent. Aside from Arizona (92%), less than 90% of peer states' patents were utility patents during this time (see Figure 35).

While Fewer Patents Are Issued to New Mexican Inventors, a Larger Percentage of Them Are Utility Patents

Figure 35: Total Patents Issued to In-State Entities and Percent of These Patents That Are Utility Patents in New Mexico and Peer States, 2010–2020. Source: United States Patent and Trademark Office.



Utility patents protect how an invention functions, whereas other patents, such as design patents, usually only protect how an invention looks. As a result, utility patents offer more protection but are also cost more and take longer to obtain. On average, a design patent will likely cost less than $1,000 to obtain and can be granted in about one and a half years with little probability of rejection. Utility patents, however, can cost more than $7,000 to file, can take almost three years to obtain, and still face a high likelihood of being rejected by the USPTO.[75] As a result, innovators, especially those not associated with a large corporation, can benefit from programs targeted at lowering the financial burden of filing and enforcing a utility patent.

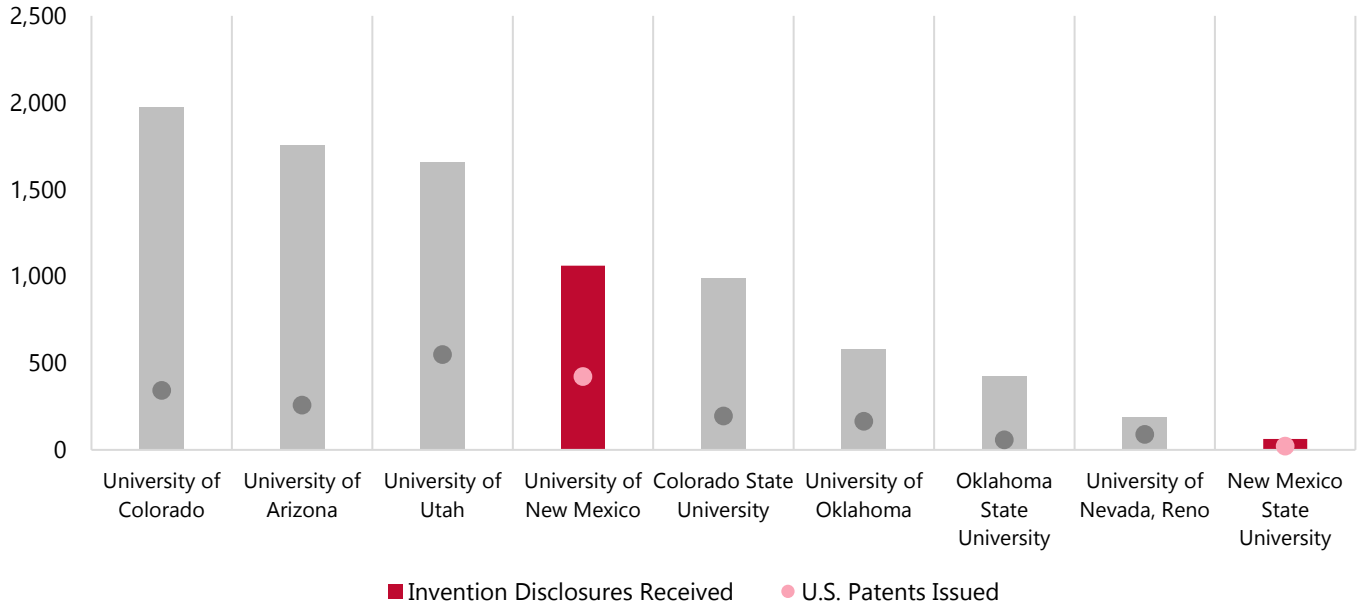
Aside from corporations, higher education institutions often provide this level of assistance to innovators who are associated with university-led research. Data from the Association of University Technology Managers show that the USPTO issues UNM a high number of patents (utility or otherwise), though these patents are only a fraction of the invention disclosure forms (IDFs)[6] received by the university. Figure 36 shows the total number of IDFs filed by UNM,

[6] An invention disclosure form (IDF) is often considered the first step in patent filing. Researchers file an IDF when they believe a new invention has been created and could potentially be commercialized by a university. However, not all IDFs that are filed with a university will be pursued for patent protection.

NMSU, and peer institutions, as well as the total number of U.S. patents issued to these institutions by the USPTO. While a few peer institutions see a high number of IDFs, UNM outperforms most peer institutions. Additionally, despite having a smaller number of IDFs compared to high-performers, UNM had the second-highest number of patents issued to it among peer institutions from 2010 to 2018. NMSU, however, sees significantly fewer IDFs filed, and thus sees far fewer patents issued.

UNM Performs Better than Most When Producing Patentable Inventions, but NMSU Significantly Underperforms Other Institutions

Figure 36: Invention Disclosures Received by and U.S. Patents Issued to UNM, NMSU, and Peer Institutions, 2010–2018. Source: Association of University Technology Managers.

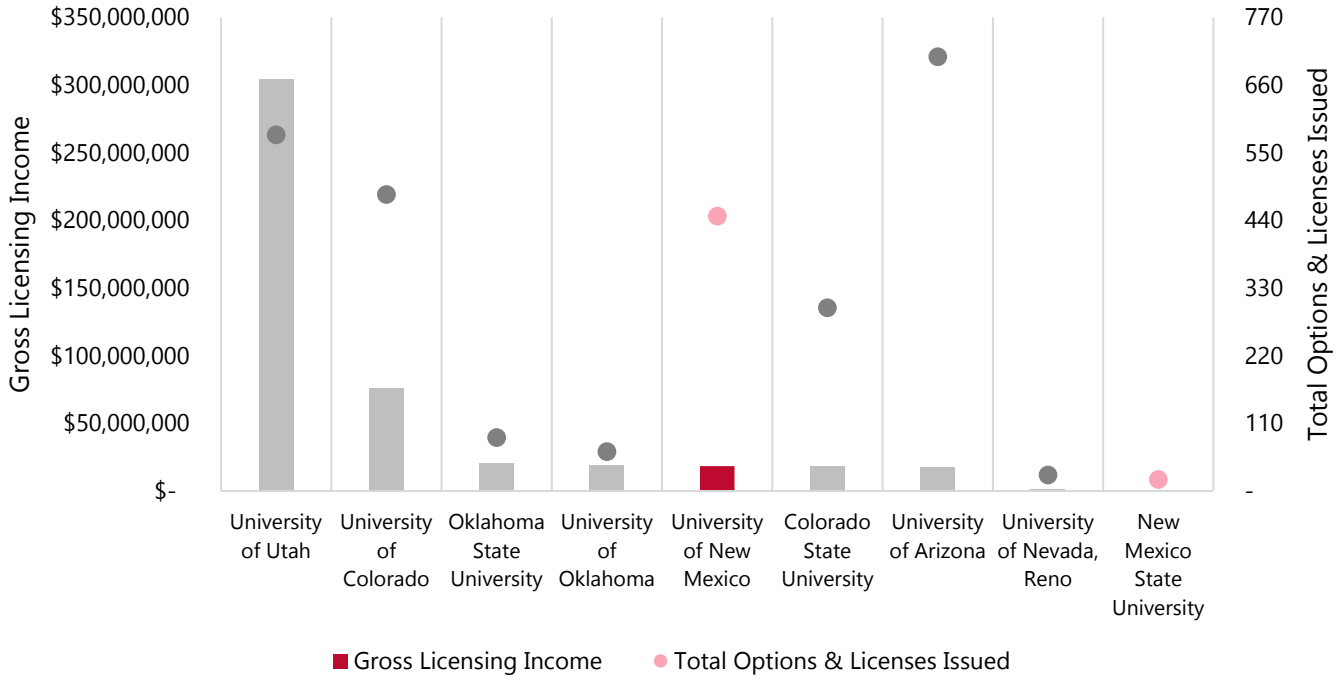


Aside from IDFs and patents, licenses are a critical method of technology transfer from higher education institutions to the private sector. Licenses allow companies, whether startups or larger firms, to access new technologies that make them more competitive in the long run by improving services and products offered. For universities, technology licenses allow these institutions to generate revenue to sustain future innovation-related activities. Figure 37 provides an overview of the total number of licenses and options issued by institutions in peer states, and the income derived from these licenses and options, from 2010 to 2018. As can be seen from the data, UNM performs comparatively well regarding the issuance of options and licenses, issuing slightly more than 440 options and licenses during this time. Combined, these generated about $18.5 million in income for UNM, similar to income generated by several peer

institutions. NMSU, however, generated significantly fewer licenses and options (19) during this time, resulting in much lower income ($77,400) from 2010 to 2018.

UNM Produces High Levels of Licenses and Options but Receives Less Licensing Income, While NMSU Produces Comparatively Few Licenses and Options

Figure 37: Data on Licenses, Options, and Gross Licensing Income at UNM, NMSU, and Institutions in Peer States, 2010–2018. Source: Association of University Technology Managers.



In addition to licenses, options, IDFs, and patents, higher education institutions can form startups that seek to commercialize products and processes developed at the institution. To increase the number of startups generated, many institutions have established technology transfer offices (TTOs); in New Mexico, several institutions have set up research parks to bring technologies to the marketplace. Many factors influence the number of startups generated by a university, including the stability of the institution's TTO, leadership and support from the institution, and the size and availability of research funding, and many of these topics are discussed throughout this section of this report.[76]

UNM and NMSU Both Perform Relatively Well in the Number of Startups Initiated at the Institution

Figure 38: Total and In-State Startups Initiated by UNM, NMSU, and Peer Institutions, 2010–2018. Source: Association of University Technology Managers.

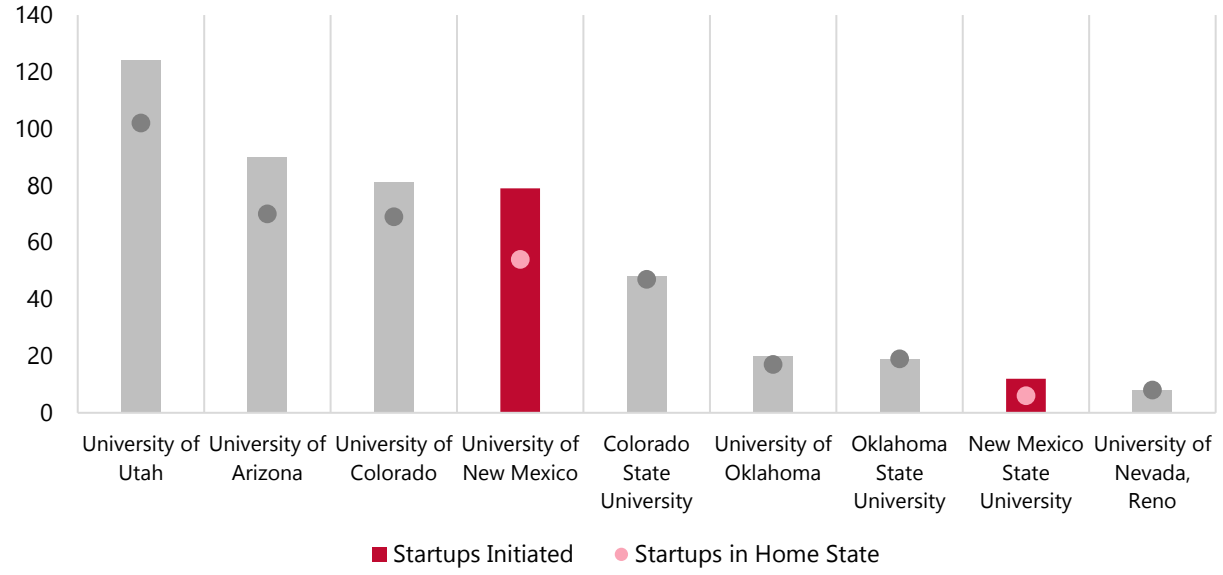


Figure 38 details the number of startups initiated by the higher education institutions examined in this report, as well as the number of these startups that are initiated in the institution's home state. The trends observed in other outputs—such as licenses, options, IDFs, and patents—are also seen in the startup data. However, there appears to be a stronger relationship between the number of IDFs filed and patents issued (Figure 36), and the number of startups initiated by an institution. Subsequently, UNM performs relatively well when examining the number of startups initiated by an institution, while NMSU performs below most peer institutions. One trend to note, however, is the lower number of startups that are being initiated in New Mexico by New Mexico's higher education institutions. Among those institutions examined here, UNM (68%) and NMSU (50%) had the lowest rates of startups initiated in-state, and the data indicate this trend is worsening over time, especially at UNM.

This trend of lower rates of in-state startup activity aligns with insights provided by stakeholders in New Mexico's innovation ecosystem. Stakeholders generally acknowledged the efforts of New Mexico's higher education institutions to increase startup activity in the state, such as through the creation of university-affiliated research parks. However, these stakeholders noted that a perceived lack of financing in the state significantly hinders the ability for these startups to take off in New Mexico, further compounded by the poor marketplace readiness of these startups. To a lesser extent, stakeholders also identified the lack of readily available business and managerial

talent that can shepherd startups to market. Each of these challenges is discussed throughout this section of the report.

Business Environment

The ability for businesses to effectively establish and grow within a state is predicated upon the presence of tangible and intangible assets. Many businesses, particularly those that are export-oriented, require strong geographic connectivity to local, regional, national, and international markets to grow their customer bases. Smaller businesses that are in the early formation and growth stages often require greater institutional assets, such as access to workspace, financing, and knowledge capital. Businesses of all kinds require a simple, stable, and receptive policy environment that make doing business easier. New Mexico has many inherent assets that make the state a more competitive place to do business, such as its proximity to key markets in the western United States, but there remain opportunities to strengthen the business environment for established, new, and future businesses in New Mexico.

Ease of Doing Business

The ability for individuals to start a business, and for existing businesses to establish and grow their operations in New Mexico, is a critical component of a state's innovation ecosystem. Different factors influence the ease of doing business in a state, including taxes, permitting, and incentives, among others. In a survey distributed by SRI to stakeholders in New Mexico that asked stakeholders to rate the policy environment for doing business in New Mexico, about 53% of respondents indicated that New Mexico's policy environment makes it difficult (40%) or very difficult (12.5%) to do business in the state. Only 15% of survey respondents found that New Mexico's policy environment makes it easier to do business in the state. The two most consistently cited challenges were New Mexico's tax code and overly complex red tape that slow down businesses.

Observations about New Mexico's tax structure are less concerned with the amount of tax and more concerned about the overall complexity of the regime. The Tax Foundation—which analyzes corporate, individual, sales, property, and unemployment insurance taxes in all U.S. states to determine the competitiveness of a state's tax system against others—found that New Mexico ranked 23rd among all U.S. states in regard to tax competitiveness. The state performed more competitively in property taxes (1st in the United States), corporate taxes (9th), and unemployment insurance taxes (9th), but less competitively in individual (31st) and sales taxes (41st). Table 8 provides an overview of New Mexico's tax performance compared to peer states in the region.[77]

New Mexico's Tax Regime Is Competitive in Many Areas, with Some Room for Improvement in Others

Table 8: Tax Foundation Rankings of New Mexico and Peer States, 2021. Source: Tax Foundation.

	2021 Tax Foundation Ranking	*Corporate Taxes*	*Individual Taxes*	*Sales Taxes*	*Property Taxes*	*Unemployment Insurance Taxes*
Nevada	7	25	5	44	5	47
Utah	8	14	10	23	7	17
Colorado	21	10	14	36	32	41
New Mexico	**23**	**9**	**31**	**41**	**1**	**9**
Arizona	24	22	17	40	11	8
Oklahoma	30	11	33	39	29	1

One measure of New Mexico's tax code that is not fully captured by the Tax Foundation's analysis is the gross receipts tax (GRT), which was routinely identified by stakeholders as a hindrance to the state's business sector. While New Mexico offers several incentives that reduce or eliminate the GRT's burden, stakeholders noted the need to apply for these incentives, as well as the changing political attitudes to private sector incentives, as a sufficient deterrent for many businesses looking to relocate to the state. In many instances, if the decision to be made is whether to relocate to a GRT state and apply for incentives or to a state with no GRT, many businesses will choose the state with no GRT structure.

Recognizing that the GRT is integral to New Mexico's tax code, identifying ways to simplify the regime and reducing uncertainty and flexibility will help to minimize the hindrance it poses to businesses. Automatic consideration for GRT credits or incentives, rather than requiring businesses to identify these incentives and apply for them, may help to streamline the recruitment process. Additionally, as with other incentives in the state, reducing the use of sunsetting clauses or lengthening how long an incentive lasts can help to limit the uncertainty of these programs in the long run.

Aside from taxes in New Mexico, stakeholders noted a generally burdensome regulatory environment that is highly fractured between different state and local agencies. This has led to what many identified as a "case-by-case" mentality in the state's regulatory framework that makes it difficult to understand what rules and regulations apply in what circumstances and for which businesses or industries. Many business leaders stated that they did not know which agencies to go to for assistance with certain rules and regulations, and oftentimes questions posed to these agencies went unanswered for several months or were never answered at all.

Overall, stakeholders recognized the need for a thorough review of the state's rules and regulations to identify opportunities for updates, simplifications, or repeals that streamline the state's regulatory system. Increasing competition from regional peers—notably Arizona, Utah, and Texas—as a primary location to do business in the southwestern United States has heightened the challenge facing New Mexico. Streamlining New Mexico's regulatory system, such as through the use of "fast track" programs for business in certain industries, could lessen the burden of the state's rules and regulations on new and existing businesses in the state. Likewise, centralizing business resources and support programs will better enable the state to serve the business community.

Startup Support Organizations

New Mexico boasts many startup support organizations that range from industry-specific incubators to general entrepreneurship assistance providers. Several colleges and universities in the state have established non-profit research parks that provide services to innovators at the institution. Other organizations that are not institutionally affiliated—including WESST, the Small Business Development Center, and New Mexico Community Capital—provide training opportunities for New Mexico's entrepreneurs to increase their business acumen and financial literacy, both of which have been identified as challenges within the state's innovation ecosystem.

Despite the presence of these organizations and programs in New Mexico, stakeholders indicated that, outside of New Mexico's larger urban areas, knowledge and accessibility of these resources are limited. Likewise, stakeholders indicated that many of these programs are targeted toward higher-technology businesses, with fewer opportunities for businesses not focused in the technology sector. This is of particular concern to New Mexico's Native American entrepreneurs, who often focus on local markets and face greater challenges accessing resources through traditional means. Expanding resource awareness and accessibility to those outside of New Mexico's principal urban areas, as well as entrepreneurs in non-technology sectors, will enable more entrepreneurs to establish and grow their businesses. Similarly, expanding the scope of certain state programs and resources, such as the New Mexico Catalyst Fund, to address disparities in urban and rural resource accessibility may provide the much-needed critical mass for New Mexico's rural and non-technology-oriented entrepreneurs.

Centralizing small business resources within a single organization or entity would also benefit New Mexico's entrepreneurs and innovators. Small business stakeholders found that New Mexico's current small business programs are attractive and competitive among regional competitors. A successful industry example of this is New Mexico Energy Manufacturing, which supports business development for manufacturers in the energy sector and connects these businesses to necessary resources. However, small business stakeholders also noted general

difficulty in qualifying for some of the programs, understanding the requirements, and accessing additional information from state agencies providing small business resources.

Early Customers & Supply Chain Partners

Connecting entrepreneurs and innovators to customers and supply chain partners requires the existence of critical mass in key industries and strong network linkages between funders, performers, and buyers of innovative products and processes. In most regions, this critical mass is driven by the clustering of key industries throughout the state, increasing the accessibility of industry partners. In New Mexico, however, critical mass is driven primarily by research themes at SNL, LANL, and AFRL New Mexico, though there do remain some strong clusters among film and agriculture industries.

- **SNL** has established itself as a leader in the research and development of additive and advanced manufacturing technologies, including nanodevices and microsystems, as well as next-generation technologies for energy production, storage, and security.
- Through its work related to national defense, **LANL** is a leader in cybersecurity technologies related to national defense and energy security.
- **AFRL New Mexico** is home to two of the Air Force's research directorates—Directed Energy and Space Vehicles—making New Mexico a competitive location for energy- and space-related industries.

SNL, LANL, and AFRL New Mexico each run programs dedicated to connecting local businesses and entrepreneurs in New Mexico to technologies and resources at the labs, providing critical market access to entrepreneurs. However, stakeholders indicated that these programs tend to benefit entrepreneurs in high-tech sectors with fewer opportunities for those engaged in less technology-intensive industries.

While the labs provide an unparalleled opportunity for certain entrepreneurs to access leading-edge research facilities, the importance for connections between smaller businesses and New Mexico's larger private sector employers should not be overlooked. A regional innovation ecosystem relies on healthy dynamics driven by connections in both the public and private sector and between private enterprises, and they can form naturally over time.

However, there remains an opportunity for New Mexico to more intentionally connect industry players to one another by establishing clear clusters of industry knowledge and talent in the state. By pursuing a clustering approach, New Mexico can assist entrepreneurs in identifying centers of industry-specific knowledge in the state and streamline the process through which entrepreneurs engage with industry leaders. Clustering has already begun to take hold in some industries in New Mexico, such as through the New Mexico Energy Manufacturing Consortium.[78] As New Mexico seeks to diversify its economy, drive private sector development, and encourage

entrepreneurship, the use of industry cluster councils or consortiums can serve multiple purposes, such as to provide entrepreneurs with a clear early-customer base and supply chain partners while supporting the development of new ideas and approaches to industry-specific challenges. This will simultaneously encourage growth in the state's target industries.

Networks & Partnerships

Networks describe how innovation resources—ideas, money, talent, or knowledge—flow through a state. The formation of networks can happen naturally over time, but often it requires a level of intentionality from stakeholders and decisionmakers to connect the various network components. In New Mexico, the ecosystem is largely influenced by SNL, LANL, and AFRL, which host or work with much of the innovation talent in New Mexico. This has centralized much of New Mexico's networks within the Albuquerque-Santa Fe-Las Vegas, NM CSA. However, New Mexico's public universities also contribute to the state's innovation networks, connecting smaller regions of the state to the necessary resources for innovation.

University-Industry Linkages

In the United States and elsewhere, partnerships between university and industry are increasingly common. These partnerships allow organizations to focus efforts on their strategic strengths and, through combining these efforts, produce high-value outputs that benefit both partners. Generally, universities are better positioned to identify challenges and more capable of pursuing a variety of solutions, whereas industry is better able to develop these solutions and bring them to market. As a result, supporting these collaborations can help regional economies play a leading role in the development of new technologies.[79]

For universities, partnering with industry provides access to non-governmental funding sources to support innovative activities like R&D. Access to non-governmental funding is important for universities to ensure their innovation-related activities are partially shielded from changes in federal government policy and priorities related to R&D. Industry partners also provide universities with insights into a market need for a product, better tailoring their research to real-world needs and challenges. For industry, university partners provide access to experts at the leading edge of certain knowledge domains. University partners also provide industry with access to new technologies and research space, meaning industry does not need to invest heavily in research infrastructure.

In New Mexico, evidence of strong university-industry partnerships is weak. Many stakeholders identified successful partnerships between some of the state's community colleges and industry—examples include Central New Mexico Community College's dynamic industry-engagement strategy and Mesalands Community College's partnership with the wind sector to develop workforce pipelines for that sector. However, stakeholders noted a clear lack of alignment between New Mexico's three research universities and industry. A few different challenges were identified for the state's universities when engaging with industry, including an overemphasis on partnerships with the national labs in New Mexico, the lack of stable financial

resources that support industry engagement by universities, and the common struggle over ownership of intellectual property (IP) developed in a partnership.

The overemphasis on partnerships with the national labs in New Mexico is a unique challenge for the state's higher education system. SNL, LANL, and AFRL are significant assets for New Mexico and its higher education institutions, bringing highly skilled industry experts to the state to work on next-generation technologies in a variety of fields. They also provide funds to the state's colleges and universities through partnerships on different projects. However, when pursuing external partnerships, stakeholders mentioned that the labs tend to capture most of the universities' attention. This is in part due to the greater resources the labs can usually provide, such as financial capital and access to state-of-the-art lab space, as well as the high concentration of expertise within specific domains, like photovoltaics. These qualities make the labs attractive partners for New Mexico's higher education institutions, especially when compared to more financially sensitive industry partners.

While stakeholders frequently mentioned the inclination of universities to work with the labs rather than with industry, stakeholders also noted that the labs can be less effective partners in instances in which there is a clear commercial application for a technology. This is primarily due to the national security focus of the labs in New Mexico—technologies developed for the nation's defense often have limited opportunities in the open market. In these instances, there is a clear need for an industry partner that understands the technology domain and, more importantly, the market for these technologies. The challenge remains, however, in incentivizing universities to partner with industry when the opportunity calls for industry expertise.

New Mexico has sought to remedy this challenge in part through the passage of the New Mexico University Research Park and Economic Development Act. This act seeks to catalyze economic development by allowing higher education institutions in New Mexico to form non-profit research parks that focus on commercializing ideas developed at New Mexican institutions. A core function of these parks, aside from commercializing university research, is to forge linkages between New Mexico's higher education institutions and the state's private sector. Each of New Mexico's three research universities has established research parks, as have some of the state's community colleges.

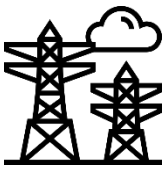
Stakeholders noted that these research parks have experienced limited success, though they continue to struggle to develop long-term relationship-based industry partnerships. Research indicates university and industry partners alike prefer relationship-based approaches to partnerships, rather than transaction-based approaches, because they reduce the need for renegotiations each time a partnership opportunity arises.[80] University-sponsored research parks, such as those in use in New Mexico, support this approach by attempting to co-locate academic researchers with market-driven innovators from industry and other organizations.

However, a critical component missing in New Mexico is the institutionalization of industry partnerships among the state's higher education institutions. Research has found that U.S. universities that experience the greatest success in partnering with industry are those that establish a central corporate relations infrastructure that is devoted entirely to seeking out and maintaining connections with industry leaders. Additionally, these internal industry-seeking offices at higher education institutions maintain constant communication with other departments within the institution that interact or should interact routinely with industry.[81] In New Mexico, this level of coordination for university-industry partnerships is largely absent from the state's major research universities, hindering the development of these partnerships.

New Mexico's State & Regional Assets

New Mexico's State & Regional Assets

Economic development is not insular. Rather, development is driven by national, state, and local characteristics that enable industrial emergence and growth. These characteristics span many different themes, but they can generally be categorized within five areas: physical infrastructure, quality of life, economy, natural resources, and governance.



Physical Infrastructure. Physical infrastructure—such as highways, railroads, airports, and broadband—speak to a region's integration with regional, national, and international value chains. Greater connectivity enables a region to participate in the multi-trillion-dollar trade of goods and services that takes place across the globe every day. Poorer connectivity may mean a region faces greater difficulty in participating in these value chains and exporting locally produced goods and services to a broader market.

Quality of Life. In many regards, quality of life influences the ability of a region to gain momentum in industrial development. In short, if a region has underperforming public schools, healthcare access challenges, or fewer amenities for locals, it will be more difficult to attract highly skilled workers in in-demand occupations. Promoting a region's amenities, like outdoor recreation, while supporting equitable and high-caliber schools helps to make a region a more attractive place to live, work, and play.

Economy. Economic diversity is a key component of development. Regions that are more heavily dependent upon one or two industries are more susceptible to shifting economic, cultural, and demographic trends. This makes local economies more volatile and less attractive to workers that work in non-traditional industries. However, the ability for a regional economy to diversify and grow is also dependent upon the ability of that region to attract and retain skilled workers.

Natural Resources. The bounty of natural resources available within a region has long been a significant factor in a region's development. Though advanced technologies have become more integrated within economies and industries, fundamental natural resources, like land, water, and minerals, remain critical for industrial development. A lack of large, accessible tracts of land or protected water access can be a hindrance to the development of larger industrial projects within a region.

Governance. Many of the policies, programs, and initiatives that make a region attractive are set at the state level. This centralization helps to ensure industries in the state can expect to face similar taxes and regulations, no matter where they are located in the state. State institutions also play a critical role in bringing businesses to the state and aligning actors around a common goal.

To understand the different dimensions of these characteristics, SRI engaged with individuals from government, academia, and industry. Stakeholders possess critical insights gained from their lived experiences within a state or region, and capturing these insights at the state and regional level is necessary to develop a comprehensive statewide strategy that speaks to the current capabilities and future ambitions of New Mexico and its regions. The discussions that follow will seek to explain trends in the quantitative data that were analyzed in the Economic Assessment and how these trends play out in New Mexico's three urban areas and micropolitan and rural communities. Additionally, and where appropriate, the discussions will identify opportunities and challenges for each region related to the state's target industries. As identified in the section **New Mexico's Target Industries**, different target industries are best positioned for growth in different areas of the state—as such, these areas will need to better direct existing and future assets toward these industrial opportunities.

While other sections of SRI's analysis are conducted at the councils of governments (COG) level, for this discussion SRI chose to assess trends at the state, metropolitan, and rural level. SRI chose this approach to best capture the natural formation and concentration of different assets and challenges in different regions of New Mexico. Additionally, SRI wished to avoid the duplication of efforts made by COGs throughout the state in assessing their regions and determining the best strategies for developing their respective regions. SRI mapped New Mexico's assets for the following geographies: New Mexico, Albuquerque-Santa Fe-Las Vegas Combined Statistical Area (CSA), Farmington Metropolitan Statistical Area (MSA), Las Cruces MSA, and Micropolitan & Rural New Mexico.

New Mexico

Physical Infrastructure

Transportation

New Mexico's transportation infrastructure consists of an extensive network of highways, rail lines, and logistics hubs. Interstate 25 serves as the main north-south corridor for the state, connecting Santa Fe, Albuquerque, and Las Cruces within the state and providing easy access to Denver. The state's primary east-west corridor, Interstate 40, connects Albuquerque to Los Angeles, Oklahoma City, and cities in the southeastern United States. In southwestern New Mexico, Interstate 10 provides Las Cruces easy access to Phoenix and Tucson to the west and the El Paso Port of Entry to the south.

New Mexico is also covered by 2,300 miles of rail, including extensive cross-country freight routes operated by Union Pacific and BNSF Railway as well as two Amtrak passenger lines. Union Pacific's Sunset Line, a 760-mile corridor between Los Angeles and El Paso that ships auto parts, industrial chemicals, metals, and renewables, passes through southern New Mexico between Lordsburg and Santa Teresa.[82] A second rail line, originating in Santa Teresa, runs northeast toward Kansas City and serves as a vital freight route between New Mexico and the Midwest. BNSF also operates two freight routes in the state, an east-west line that passes through Albuquerque and a north-south line that begins in Albuquerque and runs south into Mexico via El Paso. As such, the intersection of two interstate highways and two freight rail lines at Albuquerque makes the city a natural hub for cross-country freight.

In recent years, the Santa Teresa border region has grown rapidly due in part to increased logistics activity, additional investments in road and water infrastructure, and a moderate climate that is ideal for industrial operations.[83] Expansion of the Santa Teresa Port of Entry, built in 1992 to relieve congestion from the El Paso Port of Entry, has resulted in shorter wait times than ports in neighboring states. A major driver of this growth is Union Pacific's Santa Teresa Intermodal Terminal, a $400 million state-of-the-art rail facility located at the intersection of major interstates and rail lines. The facility has drawn substantial cross-border trucking activity to Santa Teresa, which has helped spur additional development in the area. Notably, several industrial parks and millions of square feet of industrial space have been added in recent years. The increase in efficiency and time savings for truckers, along with the region's strategic location and continued infrastructure development, gives Santa Teresa a significant competitive advantage in logistics.

Housing

New Mexico's housing stock consists predominantly of single-family homes. Multifamily units, including apartment communities, townhomes, and duplexes, are relatively rare in the state. Housing in New Mexico is generally newer than in the United States, and homeowners comprise two-thirds of all New Mexico households. However, residential construction has recently been concentrated in fast-growing urban areas, such as Las Cruces and Santa Fe, while rural regions contain many aged housing units. The most significant difference between housing stock in New Mexico and the United States is the high percentage of mobile homes. In New Mexico, mobile homes comprise 16% of housing units, whereas their share of the U.S. housing stock is 6%.[84]

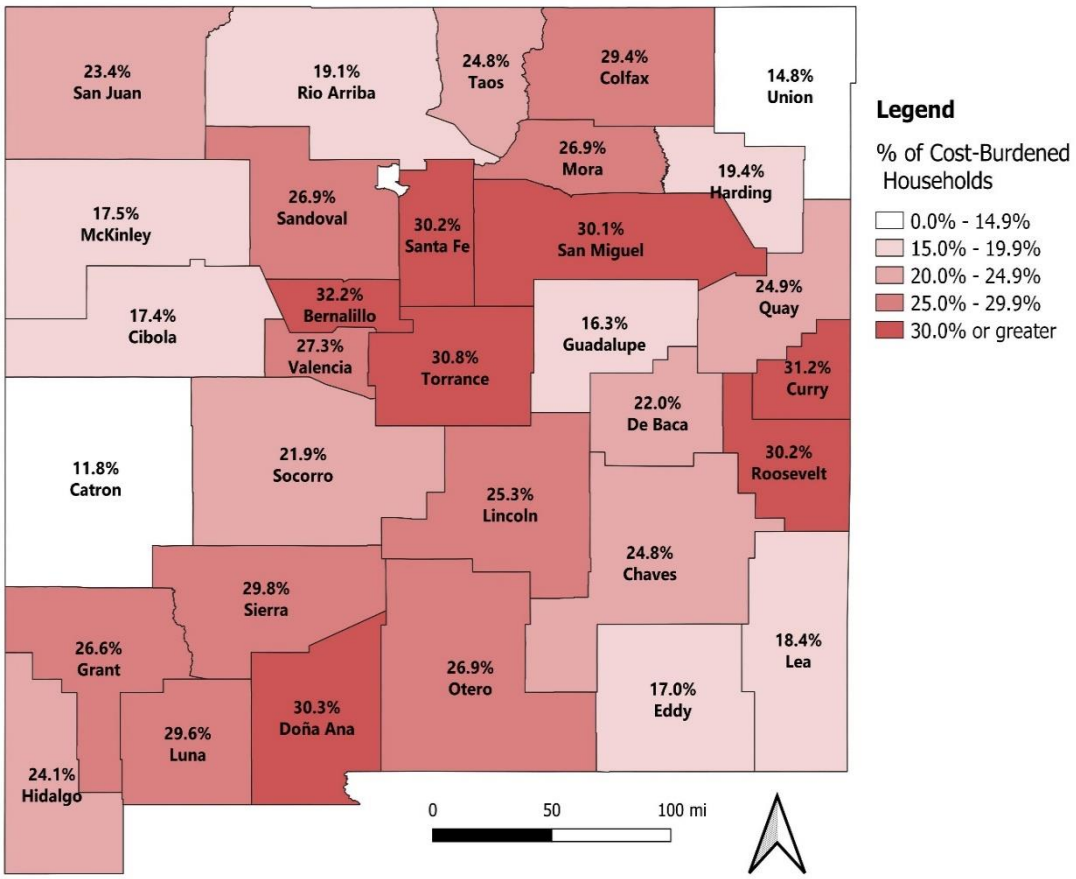
Since the Great Recession, construction of new residential dwellings has slowed. Annual additions to the housing supply averaged 30% from 1970 to 2010 but fell to 10% from 2011 to 2019. Additionally, much of the new housing being built is targeted for a high-end market and is rarely affordable to low- and moderate-income households. As a result, low-quality housing is more prevalent in New Mexico, particularly in poor and rural counties, than in the United States. 4.2% of homes lack complete plumbing and 4.5% of homes lack complete kitchens in New Mexico compared to 2.1% and 2.8% in the United States, respectively.[85]

Housing affordability in New Mexico varies between homeowners and renters. Generally, households are considered *cost-burdened* if they spend more than 30% of their income on housing costs. Households are considered *severely cost-burdened* if they spend more than 50% of income on housing. In New Mexico, homeowners have little difficulty meeting their housing needs, with only 22% being cost-burdened compared with 23% of U.S. homeowners. The lower rate of cost burden is attributed to a higher percentage of long-time residents who have paid off their mortgages. Renters, however, struggle more with housing affordability because they typically have lower incomes than homeowners. In New Mexico, 44% of renters are cost-burdened, including 22% who are severely cost-burdened.

Examining housing affordability by region, New Mexico's urban centers and counties with economies driven by military installations and oil and gas production have a greater share of cost-burdened households (see Figure 39). In areas in which a high percentage of the housing stock is used as vacation or second homes (e.g., Santa Fe, Taos, and Lincoln Counties), local residents have increasingly struggled with housing supply issues. Moreover, residents in low-income counties, such as Rio Arriba, Colfax, and San Miguel, struggle with affordable housing despite housing being less expensive than the statewide median.[86]

Urban Centers Struggle the Most with Housing Affordability

Figure 39: Percent of Households that are Cost-Burdened, by County. Source: American Community Survey, 5-Year Estimates. 2019. Note: Cost-burdened households spend more than 30% of their income on housing needs.



Compared to the United States, New Mexico's housing is affordable due to a greater percentage of homeowners and its relatively low home prices. However, poor housing conditions and affordability issues are prevalent in rural areas, which limits the economic mobility of their residents and is a significant barrier to workforce development. To better meet their housing needs, many rural residents have purchased manufactured and mobile homes, which present a more convenient and affordable option than standard single-family houses. As a result, manufactured homes comprise 30% of the housing stock in nine New Mexico counties, and the state should further investigate the viability of manufactured housing as a low-cost solution to rural New Mexico's housing challenges.[87]

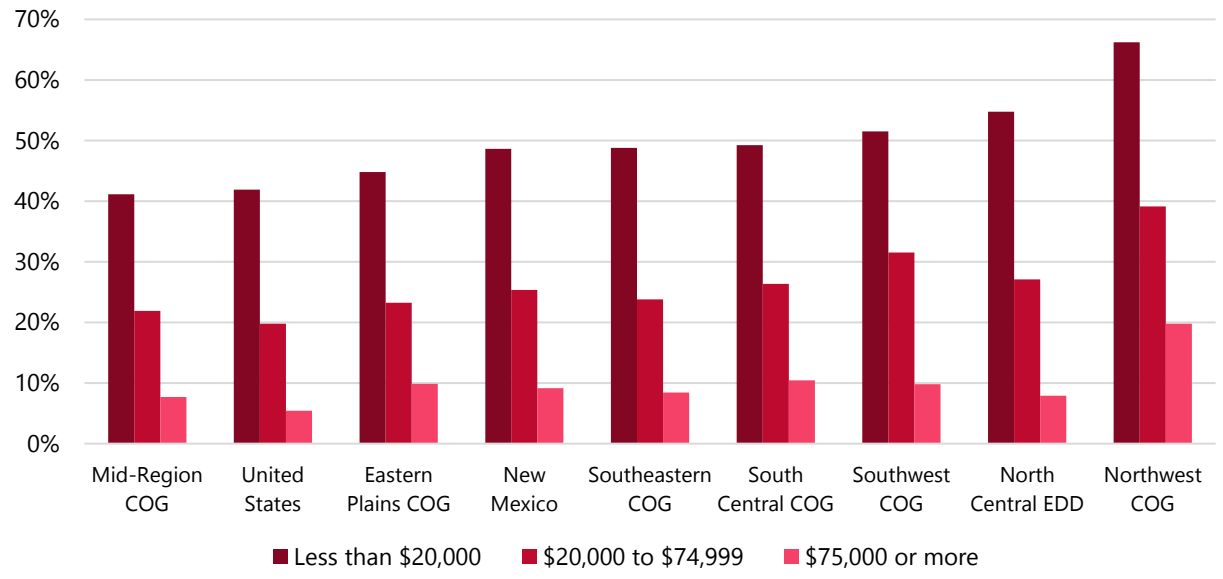
Broadband

Lack of broadband access poses a significant barrier to economic development in New Mexico's rural areas. While most urban New Mexicans have adequate broadband coverage, a significant percentage of rural residents lack access to high-speed internet. Many rural residents rely on low-speed and dial-up internet services, which are often unreliable, while others lack internet access altogether. Consequently, New Mexico is ranked 49th in broadband access among U.S. states.[88]

Regardless of the urban-rural divide, half of New Mexico households making less than $20,000 a year and a quarter of households making between $20,000 and $74,999 lack an internet subscription (see Figure 40). However, low-income residents in more urban areas, such as the Mid-Region COG, are significantly more likely to have an internet subscription than more rural areas, such as the Northwest COG.

Broadband Connectivity in New Mexico Is Driven by Household Income and Location

Figure 40: Percent of Population without Dial-Up or Broadband Internet Subscription, by Income Group. Source: American Community Survey, 5-Year Estimates. 2019.



Because broadband access is often a necessary enabler of workforce development and economic mobility—a point that was underscored by the COVID-19 pandemic—expanding broadband access should be a priority for economic developers in New Mexico's rural regions.

Many residents, even in low-income communities, have smartphones, and it is critical for internet providers to offer services that residents can afford.

The state is making substantial progress in improving broadband access, including the establishment of an Office of Broadband Access and Expansion, the Connect New Mexico Fund, and the Connect New Mexico Council. The broadband office will coordinate efforts between state, regional, and local stakeholders to improve broadband infrastructure while the Connect New Mexico Council will oversee $130 million in funding for broadband grant and infrastructure projects.[89] The expected improvements in broadband coverage will not only create opportunities for rural and low-income residents, but it is also expected to drive statewide economic development by making New Mexico more attractive to small business owners, remote workers, and corporations looking to relocate to the state.[90]

Quality of Life

Health

The health and wellness of a state and its regions is a key indicator in determining the quality of life for residents. States with higher performance in health and wellness indicators may require fewer public resources to address health challenges, allowing the state to divert resources to other areas that require attention. Accessible and high-quality healthcare can also make a state or region a more attractive place to live, facilitating the attraction and retention of highly skilled workers. Additionally, a stable supply of medical talent, particularly at the physician level, ensures a region can meet the needs of a diverse population. This is particularly true in New Mexico as the state has seen a significant influx of retirees relocating to the state.

The University of Wisconsin's Public Health Institute (PHI) maintains a robust dataset on county-level health factors and health outcomes and uses quantitative data to determine counties that are more healthy or less healthy within a state. Health factors include those environmental characteristics that influence the length and quality of life for county residents. Such characteristics include health behaviors (e.g., diet and exercise), clinical care (e.g., access to and quality of care), social and economic factors (e.g., family and social support, community safety), and physical environment (e.g., air and water quality, housing, and transit). Health outcomes characterize how healthy a county currently is, taking into consideration the county's health factors to determine the length and quality of life within a county.[91]

Table 9 and Table 10 below provide comparisons between New Mexico, peer states, and the United States against selected health factor and health outcome measures. Overall, PHI's data indicate that, at the state level, New Mexico performs about average or slightly below average

compared to the United States, but generally experiences worse health factors and health outcomes than peer states.

Regarding health factors, among the greatest challenges facing New Mexico is the state's food environment index, which considers access to *healthy* foods. The states index score of 4.2 is considerably below that of peer states and the United States, indicating that, on average, New Mexicans face greater hurdles in accessing healthy foods in the state compared to residents of peer states. According to PHI, evidence suggests that restricted access to healthy foods is related to negative health outcomes—including weight gain, activity limitations, and increased healthcare costs—and this restricted access is more likely to affect those with lower incomes.[92] Accessibility to healthy foods varies between New Mexico's communities, but the state remains well-positioned to address these challenges through the growth of its sustainable and value-added agriculture target industry. Connecting the state's agricultural producers to consumers, such as through the expansion of New Mexico's farmers market network, and supporting "farm to school" programs that connect farmers with school districts, has the dual benefit of growing a target industry and supporting healthier lifestyles in New Mexico.

Though it may appear surprising given New Mexico's vast and well-documented outdoor recreation amenities, residents of New Mexico also face limited access to exercise opportunities compared to residents of most peer states, as well as the United States. This factor considers the proximity of residents to parks and recreational facilities and factors in the greater distance to parks and recreational facilities rural residents face. As a result, access to exercise opportunities considers the ease with which residents can engage in physical exercise—in a state like New Mexico that is more reliant on personal transportation, it is expected that access to exercise opportunities would be more limited. Therefore, it is important to note that the majority of New Mexicans are not able to quickly and easily access recreational facilities.[93]

Regarding the other metrics captured in Table 9, New Mexico compares relatively positively with peer states and the United States, with lower rates of physical inactivity and uninsured residents. The state also maintains a strong and steady supply of primary care physicians, providing New Mexicans with ample opportunities to receive medical care when required.

New Mexico Has Relatively Strong Health Factors in Certain Metrics

Table 9: Selected Health Factors for New Mexico and Peer States, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute. Note: Table cells are shaded according to their position against the United States. Light red indicates whether a state performs worse against the national average, and light green indicates whether a state performs better against the national average.

	Food Environment Index	*Physical Inactivity*	*Access to Exercise Opportunities*	*Uninsured*	*Primary Care Physician Ratio*
New Mexico	**4.2**	**19%**	**77%**	**12%**	**1,336:1**
Colorado	8.4	15%	90%	9%	1,210:1
Utah	8.0	17%	86%	10%	1,730:1
Arizona	6.8	21%	85%	13%	1,520:1
Nevada	7.6	23%	93%	13%	1,710:1
Oklahoma	5.8	28%	71%	17%	1,640:1
United States	**7.8**	23%	84%	**10%**	**1,320:1**

Despite New Mexico's stronger performance in some health factors, when it comes to health outcomes, New Mexico performs consistently below average compared to peer states and the United States. Aside from Oklahoma, which scores the lowest among the states shown in Table 10, New Mexico's health outcomes demonstrate significant room for improvement. A greater share of the state's population experiences fair or poor health, poor physical health days, and poor mental health days, which results in a lower life expectancy for those living in New Mexico.

Positive Health Outcomes Remain a Challenge for New Mexico

Table 10: Selected Health Outcomes for New Mexico and Peer States, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute. Note: Table cells are shaded according to their position against the United States. Light red indicates whether a state performs worse against the national average, and light green indicates whether a state performs better against the national average.

	Population in Fair or Poor Health (%)	*Life Expectancy*	*Poor Physical Health Days*	*Poor Mental Health Days*
New Mexico	**20%**	**78.0**	**4.3**	**4.5**
Colorado	14%	80.6	3.3	3.7
Utah	15%	80.1	3.5	3.9
Arizona	19%	80.0	4.2	4.0
Nevada	19%	78.7	4.2	4.0
Oklahoma	21%	76.0	4.5	4.8

	Population in Fair or Poor Health (%)	*Life Expectancy*	*Poor Physical Health Days*	*Poor Mental Health Days*
United States	**17%**	**N/A**	**3.7**	**4.1**

While New Mexico's health metrics indicate the need for improvement, data on the state's physician workforce from the Association of American Medical Colleges (AAMC) show that the state has been effective at developing a well-trained physician workforce (see Table 32 in Appendix B). AAMC data indicate that while the number of active physicians and primary care doctors in New Mexico has remained relatively constant between 2010 and 2018, the state has dramatically increased the development of home-grown physician talent. Between 2000 and 2010, the number of students enrolled in medical (MD) and osteopathic (DO) programs in New Mexico grew by 12%. However, between 2008 and 2019, this number increased to 187%, making New Mexico the state with the fastest growing enrollment in MD and DO programs in the United States. During this time, the number of students enrolled in MD and DO programs in New Mexico increased from 17.1 per 100,000 population to 44.2 per 100,000 population, further indicating the state's strength in developing a robust physician workforce.[94,95]

Nevertheless, there remains room for improvement in the training of New Mexico's physician workforce, particularly at the residency and fellowship levels. Data from the AAMC show that, since 2010, the ratio of the number of students enrolled in graduate medical education (GME) programs in New Mexico, including residencies and fellowships, compared to the number of students enrolled in undergraduate medical education (UME) programs, including students enrolled in New Mexico's medical schools, has fallen significantly. While New Mexico was ranked 9th in the United States in 2010 for the number of GME students compared to UME students, by 2018 the state had fallen to 36th, indicating a high supply of students enrolled in medical school (UME) but a smaller supply of students continuing on to residency training (GME).

Residency training, as well as other forms of GME, is a vital phase of physician workforce development. On average, more than half of individuals who complete residency training continue to practice in the state in which they completed their residency.[96] As a result, offering competitive opportunities for individuals enrolled in New Mexico's medical schools to matriculate into in-state residency training programs can increase the number of physicians in the state and strengthen New Mexico's healthcare system. New Mexico's current retention rate (38%) of individuals completing graduate medical education programs in the state is comparatively low (41st in the United States). Nearly 40% of the state's physician workforce is over the age of 60, ranking New Mexico as the state with the oldest physician workforce in the United States. Over time, the need for new physicians will increase as current physicians retire.

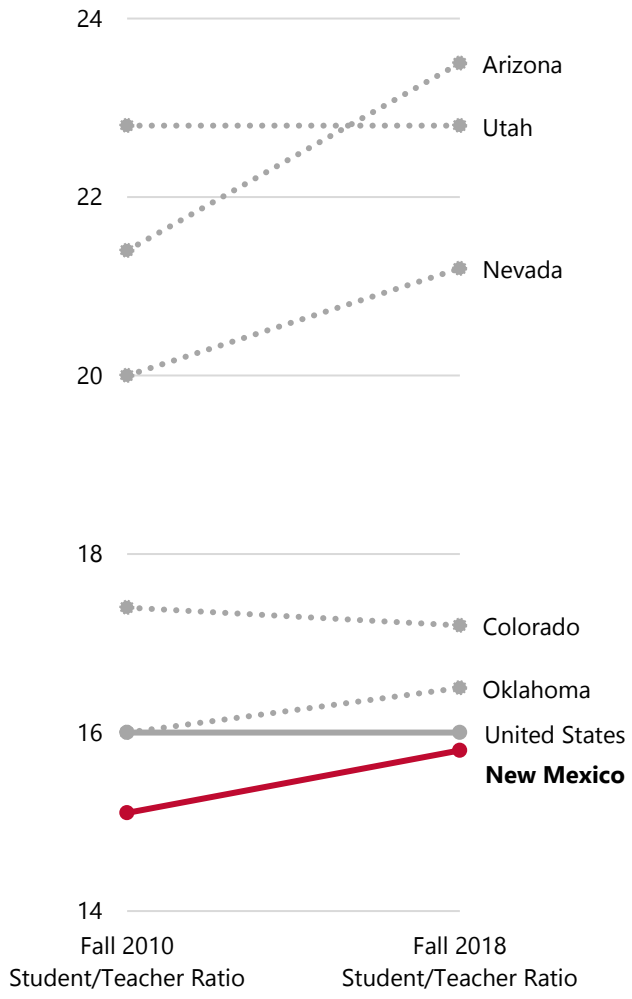
Education

K–12 Education in New Mexico

The efficacy of a state's public K–12 education system is a significant factor in the capabilities of a state's workforce. A strong public education system ensures that high school graduates have the skills necessary to enter the workforce or continue on to higher education. A weaker public education system may hinder the ability of a state to meet employers' needs by developing a workforce that lacks the skillsets necessary for their occupations. Likewise, underperforming public education systems can hinder the attraction of skilled workers from out of state who feel their children will not receive a quality education without paying for private schooling.

In New Mexico, as in most states, there are examples of high achievement and underperformance scattered throughout the state. Several stakeholders indicated a general perception of underperformance in many of the state's public education systems and, in some cases, this perception was noted as an obstacle to attracting working professionals with families to New Mexico. Data collected by the New Mexico Public Education Department (NMPED) offer insights into this perception. From 2010 to 2019, the percentage of students who were considered at least proficient in reading, math, and science decreased statewide. For reading, those students scoring as proficient or higher fell from 51.4% in 2010 to 30.0% in 2019. For math, proficiency fell from 45.4% to 27.0%, and science proficiency fell from 50.4% to 43.0%.[97] The falling performance of New Mexico's public schools related to these three subjects demonstrates the need for improvement in New Mexico's public schools.

Figure 41: Student/Teacher Ratios, by State. Fall 2010 and Fall 2018.
Source: National Center for Education Statistics.



Despite the perception of New Mexico's public education systems, several performance metrics indicate improvement at the state level. NMPED collects graduation data at the 4-year, 5-year, and 6-year level, capturing graduation rates for those students who require additional time to complete their high school education. According to these data, graduation rates at New Mexico's public high schools have consistently increased since 2010 for all demographic and learner groups. From 2010 to 2018—the most recent year for which data is available for those taking four, five, and six years to complete their high school education—graduation rates increased 10%, 19%, and 12%, respectively.[98] Increased levels of high school graduation attainment provide New Mexico's businesses with a greater pool of skilled workers from which to hire, as well as New Mexico's 2- and 4-year higher education institutions with a greater pool of qualified students to further educate.

In addition to increasing graduation rates across the state, New Mexico has managed to sustain a comparatively low student/teacher ratio when compared to peer states and the U.S. average (Figure 41).[99] Lower student/teacher ratios enable teachers to better gauge the needs of individual students and provide more attention to certain learners. While trends indicate a slight increase in student/teacher ratios in New Mexico over the last decade, the ratio remains below the national average as well as those of peer states.

Additionally, several of the state's public schools have been recognized nationally as high achieving schools, and 20 have ranked in the top 5,000 highest performing high schools in the United States. Innovative partnerships—for example, the partnership between the Albuquerque Institute of Math and Science (AIMS) and the University of New Mexico (UNM) to locate AIMS within the UNM campus—show promise throughout the state and have the potential to

reimagine the transition of students from high school to higher education.[100] Pursuing partnerships between New Mexico's public education systems and higher education institutions, as well as between these systems and the state's employers, can ensure that New Mexico's public schools are producing the talent necessary for employers and higher education institutions in the state.

An emerging area of interest for policymakers is educational opportunity—that is, the ability for students of different socioeconomic backgrounds to access educational resources within and outside of the traditional school setting. Educational opportunity is a useful metric for identifying structural obstacles for different learner groups, whether these obstacles are related to a public school system or a community at large. The Stanford Education Data Archive (SEDA) seeks to quantify educational opportunity using proficiency data from the National Center for Education Statistics (NCES), standardizing this data at the district, county, and state level. SEDA combines this proficiency data with socioeconomic data at each geographic level to determine how student proficiencies vary by demographic group. Central to this analysis is standardized test score data for grades 3 through 8 in mathematics and reading language arts (RLA).[101]

The SEDA dataset is comprised of three core metrics:

- **Average Test Scores.** This metric is used to show the educational opportunities available in a community, both in and out of school. According to SEDA, average test scores reflect students' opportunities to learn at home, in neighborhoods, in childcare, preschool, and after-school programs, from peers and friends, and at school.
- **Learning Rates.** This metric is used to show the contribution of schools to educational opportunity. According to SEDA, learning rates measure how much scores improve each year while students are in school and are a strong indicator of school quality.
- **Trends in Test Scores.** This metric is used to show the change in a community's educational opportunities, both in and out of school. According to SEDA, trends in test scores reflect both changes in school quality and changes in family and community features that provide opportunities for children.

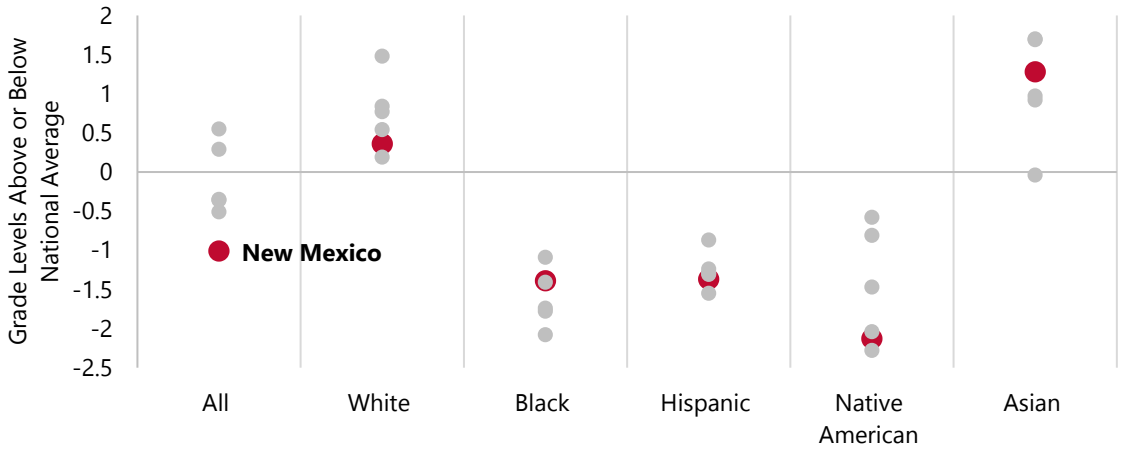
The SEDA data are useful for determining how educational opportunities vary for students of different backgrounds within a region. While most data collected by state and federal agencies capture variation in student achievement, such as through graduation rates, these data do not address how educational *opportunities* vary for students with different backgrounds. These data are helpful for determining which student groups require additional support for educational success, and where in the education cycle this support should be targeted. For example, if learning rates are particularly low for Hispanic students, state and local agencies may want to examine additional support mechanisms for schools that specialize in educating students whose first language is not English.

The SEDA data indicate the general underperformance of New Mexico's public education system. However, the SEDA data enable greater performance assessment of the state's public education system by different demographic groups. These data are helpful for identifying student groups that are struggling in New Mexico's public education system as well as inequities in student performance in the state.

Figure 42 shows the average test scores of New Mexican students and students in peer states. The data are broken up by racial background, allowing for a more granular analysis of outcome inequities in New Mexico's public schools. As can be seen from the data, average test scores vary significantly by racial background. While Asian and White students in New Mexico are more likely to outperform the national average, test scores for Black, Hispanic, and Native American students remain low compared to the national average. Moreover, compared to peer states, New Mexico's minority students underperform. This trend is particularly evident for New Mexico's Hispanic and Native American students, who are more likely to come from economically disadvantaged backgrounds and may require additional resources and more targeted education programs to enable greater educational performance.

Clear Test Score Disparities Exist among New Mexico's Students

Figure 42: Average Grade Level Performance on Standardized Tests Above or Below the National Average in New Mexico and Peer States, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show at what grade level students in different racial groups test. For example, in New Mexico, all students in grades 3 through 8 generally test about one grade level below the national average for students in that grade.



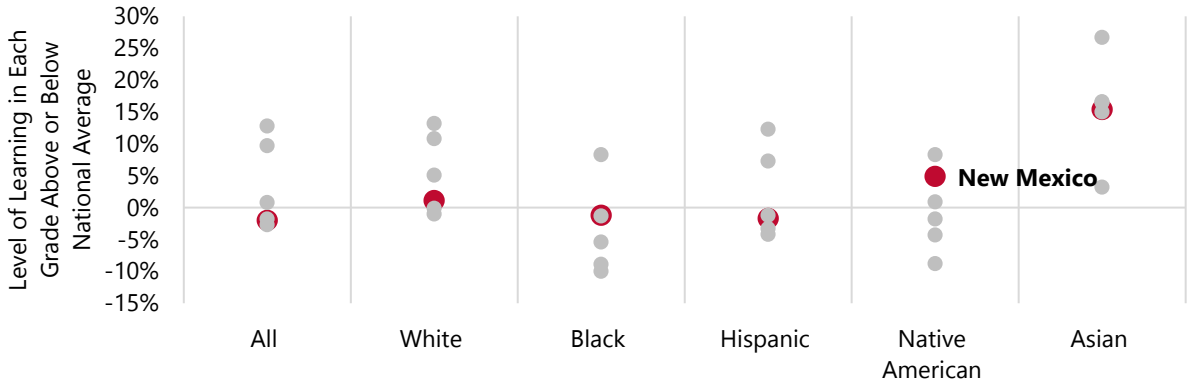
The average test score data indicate that, compared to peer states as well as the national average, students in New Mexico's public education system do not perform as well as students in other jurisdictions. This trend generally holds true for all demographics in New Mexico. Both

poor and non-poor students in New Mexico underperform compared to their counterparts in peer states. However, following national trends, non-poor students have higher average test scores than poor students, highlighting the impact that economic inequality often has on the educational attainment of children in the United States.

Learning rates—that is, the amount of information students learn in each grade that is above or below the U.S. average—help show the efficacy of a school's educational programs for different learners (Figure 43). Poorer academic performance among minority students often starts at lower grade levels and can largely be attributed to a lack of early childhood learning opportunities, a disinvestment that can compound over a student's life. While New Mexico generally underperforms compared to the U.S. average and peer states, learning rates are a relative bright spot for some of the state's minority learners, demonstrating the way the New Mexico public school system has begun to address some of the inequities that arise from students growing up in economically disadvantaged households. Notably, New Mexico's Black and Native American students outperform most peer states, and New Mexico's Native American students outperform the national average. This indicates that Native American students in New Mexico have higher-than-average rates of learning while in school.

Higher Learning Rates for Some Students in New Mexico Indicate Public Schools Are Working to Close Achievement Gaps in the State

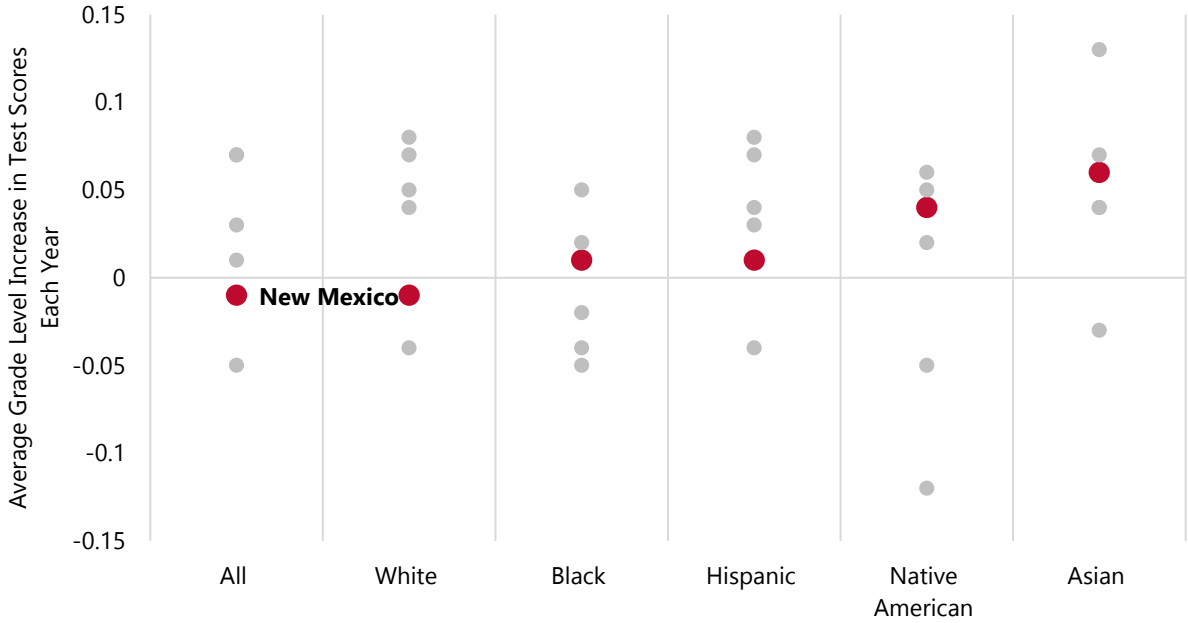
Figure 43: Level of Learning in Each Grade Above or Below National Average in New Mexico and Peer States, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show what amount of information above or below the national average students learn in regional classrooms. For example, in New Mexico, all students in grades 3 through 8 generally learn about 2% less in each grade level than the average U.S. student.



The comparatively stronger performance of New Mexico's Black and Native American students in rates of learning also translates into notably better performance in test score trends. This is

not to say that Black and Native American students have higher average test scores—as seen in Figure 42, average test scores for minority students are lower than for Asian and White students, who typically outperform state and national averages—but rather Black and Native American students in New Mexico are showing higher rates of improvement in test performance as they move through the K–12 school system (Figure 44).

Figure 44: Grade Level Increase in Test Scores During Each Academic Year in New Mexico and Peer States, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show the how much test scores increased each year, in terms of the grade level that students tested at. For example, in New Mexico, all students in grades 3 through 8 generally increase their test scores by about -0.01 grade levels each academic year.



Higher Education

New Mexico maintains an extensive network of 2- and 4-year higher education institutions. The New Mexico Higher Education Department (NMHED) places these institutions into five categories:[7]

- **Research Universities** that supply the majority of New Mexico's university-educated talent and conduct much of the academic research in the state.

[7] A list of the colleges and universities that fall into these categories can be found in Table 33 in the Appendix.

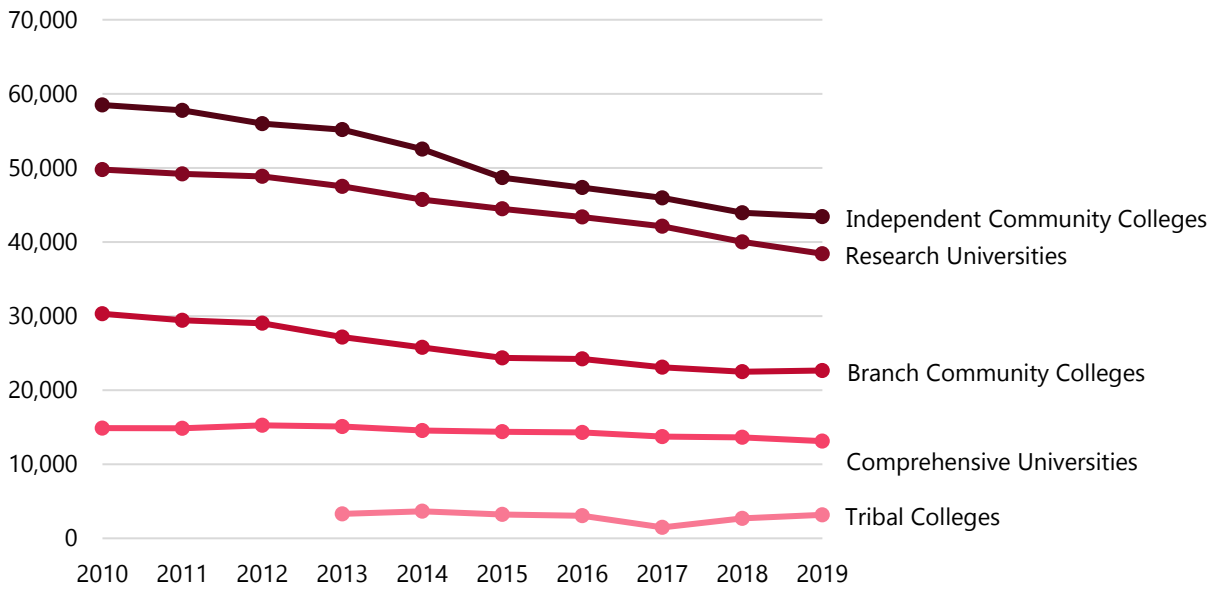
- **Comprehensive Universities** that provide opportunities for bachelor's degree and higher attainment in New Mexico's more rural regions.
- **Branch Community Colleges** that partner with New Mexico's research and comprehensive universities to provide 2-year degree options to smaller communities.
- **Independent Community Colleges** that supply a majority of New Mexico's skilled technical workers.
- **Tribal Colleges** that serve New Mexico's large Native American communities at the 2- and 4-year education levels.

This ecosystem of colleges and universities is a key component of New Mexico's education and workforce development pipeline. A dynamic higher education ecosystem with a variety of institutions, including those at the 2- and 4-year level located throughout a state's various regions, ensures that the state is able to meet the needs of employers with different skillset requirements. The diversity of institution types and locations in New Mexico's ecosystem indicates that the state has worked to expand access to a wide variety of student learners, rather than only those interested in traditional 4-year degrees or students who are located in the state's urban areas.

While New Mexico's higher education ecosystem is generally well-developed, data from NMHED indicate that, since 2010, enrollment has steadily declined in each category of higher education institution in New Mexico (see Figure 45). This decline is most notable at New Mexico's branch community colleges (-38%) and independent community colleges (-37%), though the state's research universities (-24%), comprehensive universities (-19%), and tribal colleges (-18%) all experienced declines over the last decade. It is important to note that while the COVID-19 pandemic has likely exacerbated enrollment declines from 2019 to 2020, as seen in the figure below, enrollment has been in steady decline since 2010.[102]

Enrollment Has Steadily Declined at New Mexico's Higher Education Institutions

Figure 45: Enrollment at New Mexico's Higher Education Institutions, Fall 2010 to Fall 2019. Source: New Mexico Higher Education Department.



The across-the-board enrollment declines at New Mexico's higher education and training institutions is an area of concern. Prior to the COVID-19 pandemic, part of this decline was explained by the slower population growth New Mexico has experienced since 2010, especially among college- and university-aged individuals. In a trend similar across the United States during the pandemic, enrollment at New Mexico's universities slumped for the 2020–2021 academic year; however, according to data from the National Student Clearinghouse Research Center, New Mexico's higher education institutions saw the largest decrease in the fall of 2020 enrollment (9.5%) out of all U.S. states (Table 11).[103] This reflects the pre-pandemic trend of a general decline in enrollment at New Mexico's colleges and universities.

Among Peer States, New Mexico Experienced the Greatest Decline in Higher Education Enrollment during the COVID-19 Pandemic

Table 11: Percent Change in Fall 2020 Enrollment in Postsecondary Institutions, by State. Source: National Student Clearinghouse Research Center.

	Percent Change in Fall 2020 Enrollment
Utah	+4.8%
Arizona	+0.4%
Oklahoma	-0.6%
Colorado	-3.2%
Nevada	-3.8%
New Mexico	**-9.5%**

The decline in enrollment is more notable given the increasing graduation rates at many of New Mexico's public high schools. A study by the New Mexico Legislative Finance Committee (NMLFC) found that New Mexico residents represent the largest share of the enrollment drop at UNM, and that the Albuquerque high schools that usually supply UNM with incoming freshman students have sent fewer of their students to the university in recent years. These declines occur even with tuition costs in New Mexico being the third lowest in the United States. The report found that New Mexico's higher education and training institutions will need to do two things: streamline and collaborate with one another to direct program resources to schools best positioned to deliver certain programs, and aggressively improve recruitment and retention activities to maintain or increase enrollment.[104]

Many stakeholders reflected on the challenges faced by New Mexico's higher education institutions while acknowledging the reforms that have taken place to strengthen the state's higher education system. Perhaps most importantly, skills-based data and insights from stakeholders indicate a strategic misaligning of resources and duplicating of efforts among New Mexico's higher education system. Though geographically large, New Mexico is home to a comparatively smaller number of residents, with most of these residents located in the state's urban areas of Albuquerque, Farmington, Las Cruces, and Santa Fe. However, the state maintains an expansive network of 2- and 4-year higher education institutions, often with significant overlap in course offerings and roles within the state's larger workforce development ecosystem.

The NMLFC's 2020 review of the state's higher education system found that between New Mexico's higher education institutions, 88 doctoral programs, 216 master's degree programs,

368 bachelor's degree programs, 578 associate degree programs, and 701 certificate programs were offered in the state, equating to roughly 120 programs per 100,000 adults in the state. In neighboring Texas, with a far larger population and geographic footprint, only 43 programs are offered for every 100,000 adults. This rate is also above those of peer states like Colorado (88 per 100,000 adults) and Arizona (71 per 100,000 adults). Though there is no formula for determining the ideal number of programs in a state, evidence from other states suggests that there is an opportunity in New Mexico to streamline course offerings and reduce the redundancies among the state's higher education institutions.

A renewed approach to regional specializations and strategic focus at New Mexico's higher education institutions would better enable these institutions to meet the needs of employers in the state, which would in turn enable better labor market outcomes for the state's students. Identifying 2- and 4-year higher education institutions that could serve as "knowledge hubs" in New Mexico and that are tied to the state's target industries would likely reduce the duplication of the state's higher education system and ensure that each of New Mexico's diverse regions has a role to play in the state's future economy. Colleges and universities located in New Mexico's micropolitan and rural areas are often anchors for these communities, providing many individuals with employment while enabling students to enroll in courses without relocating to one of the state's larger urban areas. As a result, efforts should be made to identify how these institutions can better serve the region's current employers, as well as industries upon which each region is best positioned to capitalize.

A few of New Mexico's colleges and universities have proven adept at engaging with industry representatives to design programs that meet immediate and projected needs within different industries. Mesalands Community College, for example, has worked alongside the wind sector to develop technician programs that produce graduates with competitive industry skills. On a more general scale, Central New Mexico Community College (CNM) has been consistently cited by representatives from several different industries as a model for New Mexico's higher education system, at least at the sub-baccalaureate level. CNM maintains a dynamic system for industry collaboration in which college administrators aggressively seek out relationships with industry leaders to develop certificate and 2-year degree programs that align with industry needs. At the research university level, however, there are far fewer examples of routinized institutional engagement with industry in New Mexico.

New Mexico's Native American-Serving Higher Education Institutions

New Mexico is home to four colleges and universities that primarily provide education and training opportunities to the state's large Native American population: Diné College, the Institute of American Indian Arts, Southwestern Indian Polytechnic Institute, and Navajo Technical University. These institutions are critical for the training and education of New Mexico's Native American population and must play a key role in any strategy centered on equitable economic development.

Enrollment at these institutions has remained relatively steady over the last several years, according to data collected by the New Mexico Higher Education Department. However, data from the National Center for Education Statistics, which tracks post-secondary credential completions at accredited higher education institutions throughout the United States, indicate that tribal colleges and universities in New Mexico struggle to provide diverse opportunities for educational attainment, particularly at the 4-year degree level. Of all degrees awarded by tribal institutions in New Mexico during the 2018–19 academic year, 87% were at the certificate or associate degree level. About 11% of these credentials were at the bachelor's degree level, and the remaining were at the master's degree level. No tribal institutions in New Mexico conferred awards at the doctorate level.

The lack of educational opportunities beyond the certificate and 2-year level speaks to a larger challenge facing New Mexico's Native American communities. A study by the Diné Policy Institute at Diné College found that Navajo communities face a consistent struggle to retain human and knowledge capital. While the Navajo Nation provides scholarships to generate this capital among the tribal population, many of these scholarships are used at off-reservation institutions, and many recipients of these scholarships do not return to their reservations after completing their education program. This intensifies the brain drain experienced by Native American communities not only in the jurisdiction served by Diné College, but throughout New Mexico.[105]

Further compounding the brain drain facing Native American communities in New Mexico is the widespread lack of sustaining employment opportunities in regions where Native American communities are located. Much of the state's Native American communities are located in northwest New Mexico, which has experienced a general economic decline over the last decade. Reinvigorating this region—and providing opportunities for Native American and non-Native American workers—will require a coordinated approach that integrates New Mexico's tribal institutions.

The current output of tribal institutions in New Mexico is heavily focused on three areas, regardless of credential level (e.g., certificate, associate, bachelor's, etc.): health professions, business management, and education. Providing support for these institutions that

> incentivizes credentials in subjects that are better aligned with high growth potential industries—notably intelligent manufacturing, sustainable and value-added agriculture, and sustainable and green energy—will better enable these institutions to provide their students with clear pathways to higher-skill, higher-wage employment.

Recreation

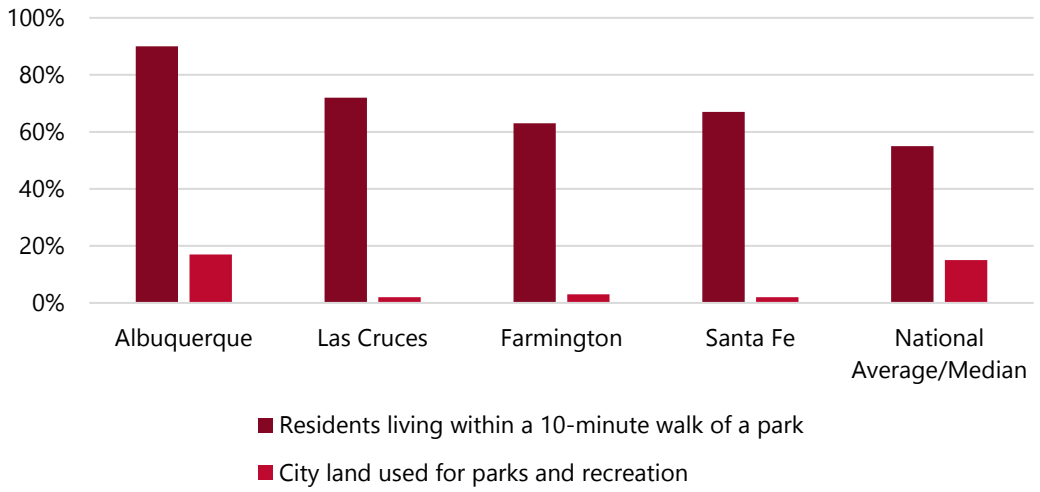
Nearly every stakeholder that SRI interviewed listed the incredible diversity and beauty of the state's geography and the unparalleled opportunities for outdoor recreation as major assets. New Mexico's forests and state and national parks contain thousands of acres with trails for hiking and biking, rivers and lakes for boating and fishing, mountain passes for skiing, preserves for wildlife viewing, and more. These natural amenities have the potential to attract many new residents. A recent study of the fastest growing companies in Utah, a peer state, found that two of the most popular factors in deciding where the companies locate and expand are the outdoor lifestyle and access to a variety of outdoor activities in an area. These both ranked higher in importance than tax rates and regulatory policy, emphasizing the value of outdoor recreation.[106]

Not only do outdoor recreation opportunities help attract businesses, but they also improve the quality of life of those nearby. Children from low-income families who visit a park regularly have been shown to have higher resiliency and less stress than those who do not.[107] Residents of neighborhoods with large, well-maintained open spaces, such as parks and forests, nearby typically report walking recreationally more and have better physical and mental health.[108][109]

Fortunately, New Mexico's vast size and the availability of relatively cheap land have supported the development of parks in its urban areas. All of New Mexico's largest cities score above the national average for park access (see Figure 46: Park access and land use in New Mexico's largest cities, 2021. Source: The Trust for Public Land.). In fact, on the Trust for Public Land's ranking of the nation's 100 most populated cities by park access and equity, Albuquerque is number 37. In Albuquerque, 90% of residents live within a 10-minute walk to a park, a number which largely holds true across racial and ethnic groups and income levels.[110]

New Mexico's Largest Cities Surpass the National Average for Park Access, Only Albuquerque Surpasses the National Median for Land Use

Figure 46: Park access and land use in New Mexico's largest cities, 2021. Source: The Trust for Public Land.



There are many New Mexicans, particularly in rural areas, who lack the same access to outdoor activities, but the state is investing in the sector and addressing this issue; in 2019, the Outdoor Recreation Division was established within the Economic Development Department and has been tasked with overseeing the Outdoor Equity Fund. This fund provides grants to municipalities and organizations across the state to support low-income youth engaging in outdoor recreation activities.

In addition to the benefits that outdoor access provides to locals, New Mexico's diverse terrain and climate have also helped the outdoor recreation industry attract more tourists over the past several years, with visitor spending on these activities increasing 24% from 2015 to 2019.[111] Still, New Mexico has greater potential to leverage its natural beauty and diversity of outdoor activities to attract new businesses and residents. The state lags behind peer states in popularity as a destination for tourists seeking outdoor recreation and to visit national parks.

New Mexico has many indoor recreation activities to offer visitors and residents as well. Its rich culture sustains many art museums, which display work ranging from traditional Native American methods to more modern pieces from Georgia O'Keeffe. Other museums cater to visitors interested in learning more about the state's role in the development of nuclear science and aeronautics or the region's unique archeology and geography. Furthermore, there are 32 casinos across the state, contributing $2.2 billion annually to the state economy.[112]

Economy

Diversification

New Mexico's economy has begun to diversify in the past decade. This economic diversification is expected to continue, despite disruptions from the COVID-19 pandemic, as the state seeks to transition its economy away from government jobs, retail, and oil. Healthcare, education, and professional services, and tourism-related industries have experienced significant job growth, offsetting the decline in government employment and driving the state's economic diversification. Though job growth in manufacturing has been flat from 2010 to 2020, the state's natural strengths in logistics and research and development (R&D) present substantial opportunities to expand the high-technology manufacturing sector.

Although the state has made significant progress, several challenges must still be addressed as New Mexico seeks to accelerate its economic diversification over the next decade. Workforce attraction and retention, as discussed in greater detail in the next section, is critical to developing the businesses and industries sought by the state. Additionally, many economic development agencies, educational institutions, and employers have their own strategies for how to diversify the state's economy, which often leads to a duplication of efforts and a fragmented economic development ecosystem. Stakeholders across the state can benefit from a more coordinated approach to industry and workforce development. Lastly, despite state agencies' close partnerships and cooperation with prospective businesses, many of these businesses, nevertheless, find it difficult to navigate New Mexico's business regulations, which has become a major drawback to attracting new businesses to the state.

Attraction & Retention of a Skilled Workforce

A low cost of living and a variety of outdoor recreation activities are two of New Mexico's greatest assets for workers interested in relocation. As the state further develops its outdoor recreation industry, potential synergies exist for workforce developers to leverage tourism activity in marketing New Mexico to prospective workers and residents. On the industry side, New Mexico's national labs and high-technology businesses attract large numbers of highly educated scientists and engineers, while the rapid growth of the healthcare sector is creating new job opportunities for workers throughout the state.

Retention of talent remains an issue for New Mexico, especially for workers with bachelor's degrees and skilled technical workers (i.e., workers who use science and engineering skills in their jobs but do not have a bachelor's degree).[113] Although universities and colleges throughout the state produce a large and varied pool of qualified workers, some of these workers eventually leave the state due to difficulties in finding jobs in suitable industries. Many others work in jobs for which they are overqualified and in which their skills are underutilized.

These factors lead to a perceived shortage of skilled labor, which discourages businesses from locating in the state. As such, some stakeholders shared a "chicken or egg" dilemma: should the state focus on retaining a skilled workforce that is attractive to industry, or should it continue to develop the industries with jobs that sustain a skilled workforce? Regardless of which strategy comes first, many stakeholders believe that building stronger ties between educational institutions and existing employers is critical to both worker retention and industry development. This involves improving the career services and resources offered to college students so that more students begin career planning when they enter college and developing partnerships with employers to better align curricula, match students to jobs and internships, and build an alumni network that strengthens the education-to-workforce pipeline.

Stakeholders also mentioned that there is competition between the national labs and private-sector employers for local talent. National labs often provide better employment conditions than non-government businesses, and stakeholders stated that some universities devote more career services resources to supplying the labs with qualified workers than to building partnerships with private-sector employers. However, competition for talent is not a zero-sum game, and cooperation between government labs, private sector businesses, and educational institutions can serve the workforce needs of all parties. Talent sharing arrangements and public-private partnerships in workforce education, for example, are two ways in which labs, businesses, and schools can collaborate to develop and utilize local talent. Thus, greater engagement between the labs, businesses, and educational institutions can yield substantial workforce benefits while improving employers' access to talent.

Environment

Land

In terms of land area, New Mexico is the fifth largest state in the country, sharing borders with Colorado, Oklahoma, Arizona, Texas, and the Mexican states of Chihuahua and Sonora in the south. In the northwest, Arizona, Utah, and Colorado come together in a region known as the Four Corners, much of which is part of the Navajo Nation. New Mexico's rugged and beautiful landscapes vary from deserts and mesas to grasslands and heavily forested mountains. Several mountain ranges run north to south through the central and western parts of the state, and the Sangre de Cristo Mountains represent the southern terminus of the Rocky Mountains. The eastern part of the state is mainly shortgrass prairie known as Llano Estacado, where large ranches are common. The northern reaches of the Chihuahuan Desert cover the southern half of the state. In the northwest, the Colorado Plateau rises into high desert. In total, very little of the state has been commercially developed (1.21%), allowing ample space for cities to grow and businesses to expand their footprint.[114]

New Mexico is known for its vast and dramatic natural landscapes, pleasant climate, and access to a variety of outdoor recreation opportunities. The state mainly has an arid to semi-arid climate, with the mountain ranges showing various smaller-scale climate differences including Mediterranean and alpine areas where snowfall is common in the winter and temperatures often drop below freezing. Mean annual temperatures vary across the state, ranging from 65 degrees Fahrenheit in the southeast to below 40 degrees Fahrenheit in the north, driven mainly by altitude differences.

The state is prone to drought and extreme heat waves, both of which are becoming more frequent due to climate change. This combination creates the perfect condition for wildfires to start. From 2012 to 2020, there were nearly 9,000 forest fires recorded across the state, collectively burning over 1.5 million acres of land.[115] The potential for fires often forces officials to close portions of state and national forests to the public for safety and prevention, reducing economically beneficial visitor traffic, while also costing the state millions of dollars in forest fire management and mitigation efforts.

Like much of the west, a large portion (32%) of New Mexico's lands is federally owned. A complex group of federal agencies, including the Bureau of Land Management, the Department of Defense, the Forest Service, U.S. Fish and Wildlife, the Bureau of Indian Affairs, and the National Park Service, manages a patchwork of land mainly in the western and southern regions of the state.[116] The Forest Service administers five national forests within the state—including Gila National Forest and Wilderness, one of the largest in the U.S. National Monuments that dot the landscape—in addition to two National Parks, the newly designated White Sands National Park and Carlsbad Caverns National Park. Federal land ownership can provide a host of benefits, including stable, well-paying jobs, infrastructure funds, and dedicated areas for outdoor recreation, but it can result in complex permitting processes for development and resource extraction.

Water

Annual precipitation ranges from less than 10 inches per year in the southern deserts to as much as 20 inches per year in the northern mountain areas. Precipitation normally comes in the form of brief, intense thunderstorms that develop during the summer due to the North American Monsoon. These thunderstorms may drop several inches of rain in a short period of time, causing localized flash floods. Winter precipitation is less common across the state, but spring snowmelt from mountainous areas is important for recharging many streams and rivers in the north and central parts of the state. Regardless of climate change, the state has long been prone to periods of drought, although the western part of the state has been more impacted by the recent "megadrought" affecting the western United States.

New Mexico's major rivers are the Rio Grande, the Pecos, the Canadian, the San Juan, and the Gila. The Rio Grande begins in Colorado and flows through Texas and Mexico to drain into the Gulf of Mexico. The Pecos—a major river in its own right—is a tributary of the Rio Grande, and their combined watershed covers much of New Mexico. These various rivers represent the lifeblood of the state, nourishing desert cities such as Albuquerque and Las Cruces, as well as rich agricultural lands throughout the state.

The Rio Grande also serves communities in Texas and Mexico, and New Mexico has an obligation to deliver usable water to Texas through the Rio Grande Compact. There is a complex interplay between the various state and local government agencies, local stakeholders, federal agencies, and international actors to ensure that water is distributed. Because of these natural and man-made conditions, there is an intense focus on water issues in New Mexico. Water rights laws in New Mexico are enforced by the State Engineer's Office and administered by 16 water planning regions. All water in the state belongs to the public, and rights are based on the idea that the earliest water user holds seniority. A complex system of water rights and the multitude of jurisdictions make policymaking and enforcement decisions difficult and creates a decision-making process that requires coordination, consultation, and problem-solving with all stakeholders.

Other Natural Resources

New Mexico's history is rooted in natural resource production, and the state is rich in minerals, oil, gas, and renewable energy resources such as solar, wind, and geothermal. With large oil and gas deposits in the San Juan and Permian basins, New Mexico is the United States' second largest oil producer and tenth largest natural gas producer. Coal associated with these basins was once the economic lifeblood of the state, but the expansion of natural gas-fired power plants and the reduction in coal use nationwide has depleted the coal industry. In 2020, oil and gas royalties made up a third of the state's general fund used for public education, health and human services, higher education, and other programs.[117] Over the past decade, oil and gas has experienced increasing volatility as renewable energy became more affordable and international events, such as the COVID-19 pandemic, affected the market. Despite these disruptions, New Mexico saw an increase in production over the last year.

The state is rich in renewable natural resources as well. With abundant sunshine, the state has immense solar energy potential. Over the last 10 years, there has been a major ramp-up of solar capacity in the state, with recent projects being approved in rural Catron and McKinley Counties. The Jicarilla Apache Nation partnered with Hecate Energy to break ground on the 400-acre PNM Solar Direct farm to provide energy for Western New Mexico University, the city of Albuquerque, and other users. As the third largest solar project on tribal lands, the farm is indicative of

renewable energy's potential to bring jobs and resources to rural and tribal lands throughout the state. Wind potential is stronger in the eastern half of the state and wind farms already dot the area near the Texas Border, with the Mesalands Community College North American Wind Research and Training Center providing state-of-the-art facilities to train technicians in research wind energy technology. Wind energy accounted for 21% of New Mexico's utility-scale electricity net generation in 2020 and is only set to grow as more turbines are installed.

Geothermal represents a largely untapped resource in the state, although the technology has not yet reached widescale economic viability like solar and wind. The state has vast geothermal resources, but only one geothermal powerplant, Lightning Dock Geothermal. However, small-scale use of geothermal resources for a variety of operations has taken place for centuries. Hot springs have been tapped for their health benefits, as well as to warm greenhouses growing flowers, crops, and even tilapia. Although geothermal has not yet scaled, it has the potential to counteract the disadvantages of wind and solar by providing steady power despite weather conditions.

Historically, New Mexico's forests have supported a booming logging industry. Today, about 17% of New Mexico's forests are classified as timberland, including a substantial amount on tribal lands, though the amount of timber harvested annually has been declining for decades. In 2012, an estimated 2,300 New Mexicans worked in the forest products industry, primarily lumber, down 29% from 2007.[118] Still, recent steep increases in demand for new home construction nationwide could lead to growth for this industry in New Mexico.

New Mexico has substantial reserves of other natural resources as well. In 2016, the state's coal mining operations generated $13.6 million in revenue, although there are fewer mines in operation today. Copper and potash mining also continue to contribute substantially to the state's economy, generating revenues of $6.8 million and $4.3 million, respectively, in 2016.[119]

Governance

Business-Friendly Environment

New Mexico's state and local agencies are vital for businesses, helping them establish, grow, and sustain their operations in the state. Stakeholders noted the agencies' willingness to engage in dialogue and to establish strong relationships with local businesses. The Economic Development Department, for example, was instrumental in guiding businesses to valuable state and local resources and have developed long-term relationships with many of the state's major employers. Stakeholders also mentioned the importance of the New Mexico Trade Alliance, the Small Business Development Center, the Manufacturing Extension Partnership, New Mexico

Partnership, and many other organizations in fostering a friendly and supportive business environment.

Although stakeholders pointed to businesses' easy access to state and local partners as one of New Mexico's strengths, some also noted a general lack of alignment in the efforts of various organizations to support business development. Companies frequently engage separately with state, regional, and local agencies, each of which have their own resources and processes for business support. While individual agencies offer some of the most generous business support programs in the nation, programs often have separate application procedures, eligibility criteria, and points of contact making it difficult for businesses to take advantage of them. Some stakeholders mention that the business environment can be greatly strengthened by a centralized portal of state, regional, and local resources and programs, through which information is easily accessible and application processes are streamlined and standardized. As a "one-stop-shop" for anyone seeking information about what business support resources are available as well as the general business environment in New Mexico, the portal would play a critical role in both attracting more businesses to the state and aligning the business support efforts of the state's various agencies. The resulting benefits in increased efficiencies, less duplication of effort, and lower costs for both agencies and businesses would significantly expand New Mexico's capability to effectively develop its target industries.

Programs & Incentives

Industry stakeholders spoke highly of the state's Job Training Incentive Program (JTIP), which funds classroom and on-the-job training for new hires in expanding or relocating businesses. The program reimburses 50–75% of employee wages for up to six months and has played a significant role in drawing businesses to the state. JTIP has been utilized extensively by New Mexico businesses in advanced manufacturing, cybersecurity, and other key industries, spurring business expansion in these sectors.

Industry-specific agencies, such as the New Mexico Film Office, the Office of Science and Technology (OST), and the Outdoor Recreation Division, administer their own business support programs, which often complement statewide programs. In addition to providing valuable information and resources, the Film Office offers a 25–35% refundable tax credit and job training incentives to filmmakers. Likewise, the Outdoor Recreation Division and OST operate various grant programs to catalyze startup and business development in their respective areas.

Although incentive programs are an important and necessary component of the state's industry development efforts, incentives are not usually what attract businesses to a state. Rather, incentives often "sweeten the deal" for businesses that are already keen on establishing or expanding operations in New Mexico. In discussions with prospective businesses, state agencies

have been known to lead negotiations with incentives rather than making the state's other assets their main selling point. As such, stakeholders recommended that the state build targeted business propositions for specific industries. These propositions, moreover, should capitalize on New Mexico's existing strengths and be proactively leveraged by the state's economic developers. As an example, the state can make the case for how its specialization in photonics and sensor R&D can translate into a competitive advantage for autonomous vehicle manufacturers. The state can then tack on incentives to its value proposition to further make the case that New Mexico is the ideal place to do business.

Taxation

New Mexico's tax structure primarily consists of a gross receipts tax (GRT) and a personal income tax (PIT). Additionally, the state derives a significant percentage of its revenue from mineral extraction taxes, which exposes its revenue to fluctuations in oil prices. The state's usage of the GRT rather than a sales tax has both advantages and disadvantages. Because of its broad base and ability to tax firms that do business with the federal government, New Mexico's GRT raises a substantial amount of revenue.[120] However, several stakeholders mentioned that New Mexico's relatively high GRT rate and its tendency for pyramiding—a process in which the tax is applied to each value-added stage and consequently increases the effective tax rate—discourage some businesses from locating in New Mexico and has created a perception among many businesses that the GRT negatively impacts profitability. The GRT, as a tax on revenue, imposes a heavier tax burden on businesses or industries with lower profit margins and higher production costs. Furthermore, it jeopardizes the ability of many startups, which have little profit but are still subject to the GRT, to remain in business.[121]

Local governments in New Mexico collect less property tax revenue relative to other localities in the United States. While the property tax is, nationally, the predominant source of local tax revenue, New Mexico's local governments rely primarily on the GRT for their funding needs. This approach works in part because a large share of K–12 education is funded at the state level, so local schools depend less on funding from their localities. Nevertheless, the relatively small amount of property taxes collected by the state and its localities impacts the state government's ability to provide adequate resources to K–12 education.[122]

The Albuquerque-Santa Fe Metro Region

Physical Infrastructure

Transportation

The Albuquerque-Santa Fe-Las Vegas region benefits from an extensive network of transportation infrastructure. I-25 and I-40, which intersect at Albuquerque, provide the region's residents and businesses with easy access to cities in New Mexico and neighboring states. The BNSF Transcontinental Rail Line, which connects the Port of Los Angeles to Chicago, runs through the region and forms a junction with an NMRX Railroad in Albuquerque. These railroads accommodate a significant amount of freight traffic while also serving Amtrak passenger trains. Additionally, a Union Pacific line, which connects freight from the Santa Teresa Port of Entry to Midwestern markets, runs through Torrance County at the region's eastern periphery.

The Albuquerque International Sunport serves as the primary international airport for New Mexico. Handling over 5.4 million passengers in 2018, the Sunport is a focus airport for Southwest Airlines and hosts domestic commercial flights by numerous other airlines. The Sunport is a significant driver of the regional economy, as it not only directly sustains thousands of jobs but also makes significant purchases of goods and services from New Mexico businesses.[123] Furthermore, out-of-state visitor spending made possible by the airport indirectly supports thousands of additional jobs in the region.

Next to the Sunport is a Foreign Trade Zone (FTZ), which allows users to avoid or defer payment of import duties on raw materials, parts, and components, among many other benefits. Strategically located along the BNSF Transcontinental Rail Line, the FTZ has become a major economic development driver by presenting industrial businesses with significant locational advantages and access to markets. The City of Albuquerque recently unveiled a new website and launched a marketing campaign that is part of a larger strategy to attract more industries with overseas operations to Albuquerque. Furthermore, it has loosened restrictions on the FTZ to allow companies to use it anywhere in Bernalillo and Valencia Counties rather than within the Sunport's footprint. Properly utilized, the FTZ can become a major asset for the state's global trade industry by attracting companies looking to move operations to the United States.[124]

Housing

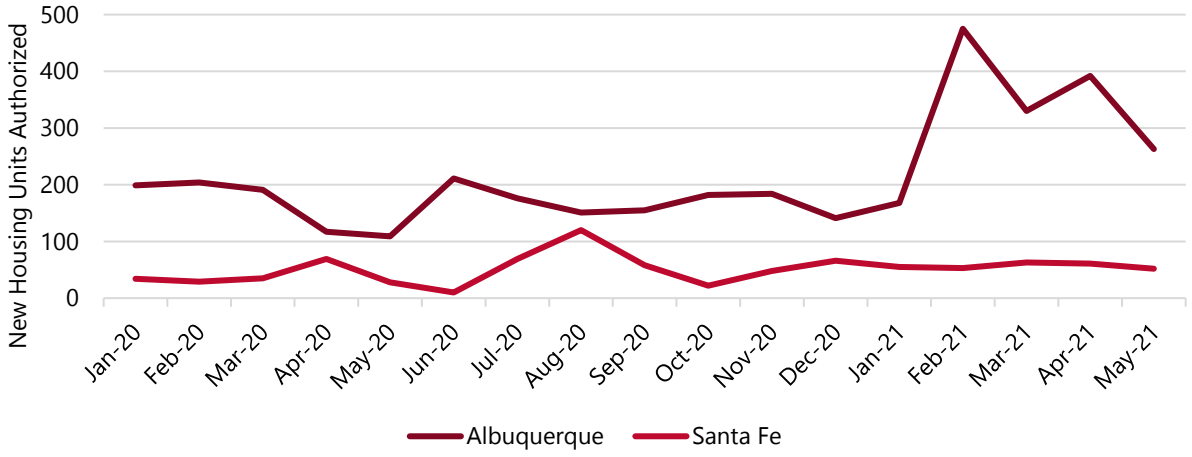
Because a significant share of the state's population resides in urban or suburban Albuquerque and Santa Fe, there is a wide variation in housing needs within the region. Both cities have experienced population growth over the last decade. Los Alamos County, while representing a much smaller population, has also experienced population growth, as well as one of the highest median household incomes in the country. Rio Arriba, San Miguel, and Torrance Counties, on

the other hand, are mainly rural counties that have seen population declines over the last decade. Prior to the pandemic, the City of Albuquerque and nearby metropolitan areas were relatively affordable for homeowners and renters, with a range of housing options available.[125] Santa Fe contended with concerns around affordability for both homeowners and renters, mainly due to high housing and rental costs. Rio Arriba and San Miguel Counties struggled with affordability largely due to substantial low-income populations.

The long-term effects of the COVID-19 pandemic are difficult to predict, especially in housing and rental markets. Over the course of the pandemic, rental prices in urban areas dropped but have recently begun to rise precipitously.[126] Albuquerque, Santa Fe, and nearby cities and suburbs—like much of the rest of the country—experienced overheated housing markets during the last year as renters en masse sought out homebuying opportunities. Declines in construction after the Great Recession in addition to homeowners choosing to hold on to their current homes due to the uncertainty caused by the pandemic resulted in limited inventory available for these new homebuyers. With reduced inventory and increasing demand, housing prices have risen sharply in early 2021 and questions of affordability are now at the forefront, especially with rental prices increasing.[127] New construction has been stymied by faltering supply chains causing lumber and construction material costs to rise. Since February 2021, requests for building permits in Albuquerque have risen sharply as New Mexico's builders seek to take advantage of the newly hot market (see Figure 47). But not all metropolitan areas have responded to increased demand, and Santa Fe has seen relatively few new housing units authorized.

Metropolitan Housing Construction Has Responded Unevenly to Increased Demand

Figure 47: New Housing Units Authorized in Albuquerque and Santa Fe, NM. Source: U.S. Census Bureau.



These short-term trends bring into question the continued long-term affordability of Albuquerque and shed light on Santa Fe's struggles with affordability and availability. Increasing development in nearby Rio Rancho, Los Lunas, and Belen has somewhat reduced affordability pressures for Albuquerque. Santa Fe, which has fewer nearby metropolitan and micropolitan areas, has worked hard to address these issues in partnership with non-profit and local organizations including Homewise[128], the Santa Fe Community Housing Trust[129], and the Santa Fe Civic Housing Authority to create affordable housing options for both homeowners and renters. Albuquerque, too, has sought out innovative strategies to address affordable housing needs, such as the Sawmill Community Trust.

Homelessness is an issue for metropolitan areas in the Albuquerque-Santa Fe-Las Vegas CSA. New Mexico's homeless population grew 27% from 2018 to 2019, but only increased 3% from 2019 to 2020.[130] The majority of this population is concentrated in the Albuquerque area, followed by Santa Fe. A statewide moratorium on evictions, as well as city investments in supportive housing programs since 2018 have helped to stem the rapid rise in the homeless population.

Outside of urban and suburban Albuquerque and Santa Fe, other areas of the CSA have experienced different trends and housing needs. High median incomes and levels of homeownership in Los Alamos County are driven by high-paying jobs at Los Alamos National Laboratory (LANL) and related industries. Housing in Los Alamos is dominated by higher-cost, large single-family homes that tend to be undesirable for small households and unaffordable for low- and middle-income residents, such as the technical workforce and students working at LANL.[131] Because of these conditions, nearly half of workers in the county commute from nearby Santa Fe, Rio Arriba, Sandoval, or Bernallillo Counties, with commutes ranging from 25–90 minutes. Potential residents of Los Alamos need more diverse housing and rental stock, including dense and mixed-use developments to serve the needs of a diverse population.

Rio Arriba and much of Torrance, Valencia, and Sandoval are rural in nature and experience similar problems to other rural areas in New Mexico, such as lack of development and aging populations. Rehabilitation, weatherization, energy-efficiency improvements, and accessibility improvements for seniors are key areas of need for rural housing. Several of New Mexico's Native American reservations and pueblos fall within Rio Arriba, Sandoval, Valencia, Bernalillo, and Santa Fe Counties. Of these, Santa Clara Indian Reservation, Ohkay Owingeh Pueblo, and Sandia Pueblo have the largest populations.

Broadband

Because the region encompasses a large amount of rural land, broadband coverage is lower than in New Mexico and the United States. Though only two out of three households have a

broadband subscription, many rural households subscribe to a satellite internet service while other households are able to access the internet without a subscription. As such, internet access in the region is substantially better than the rest of the state and is on par with the United States.

Despite Sparse Broadband Coverage, Internet Access is on Par with the United States

Table 12: Percentage of Households with Broadband and Internet Access in the Albuquerque-Santa Fe-Las Vegas CSA, New Mexico, and the United States. Source: American Community Survey, 5-Year Estimates. 2019.

	Households with Broadband Access	*Households without Broadband Access but with Internet Access*	*Households without Internet Access*
Albuquerque-Santa Fe-Las Vegas CSA	**66%**	**20%**	**14%**
New Mexico	75%	4%	21%
United States	83%	3%	14%

As the COVID-19 pandemic has shown, however, satellite internet often suffers from slow speeds and is inadequate for many forms of critical virtual activities, such as online education and telemedicine. Extending high-speed and affordable broadband coverage to the region's rural households is still an important priority for the state, as it would open up many opportunities for economic and workforce development in rural communities. Toward this end, New Mexico's renewed legislative focus on broadband is expected to release the funding and organizational resources needed to connect rural communities to high-speed internet.

Quality of Life

Health

The sprawling nature of the Albuquerque-Santa Fe-Las Vegas metro area results in a diversity of health outcomes and measures for residents of this region. As a region, residents generally fare slightly better or slightly worse than the state average when it comes to health factors and health outcomes (see Table 13 and Table 14). About half of the counties in the region have populations in better health than the state as a whole, but a few counties have demonstrably higher rates of fair or poor health (e.g., Rio Arriba and San Miguel). The region performs notably better than the state in terms of access to food, with all counties in the region having higher food environment indexes than the state.

Bernalillo, Los Alamos, Sandoval, and Santa Fe Counties generally have better health factors than Rio Arriba, San Miguel, Torrance, and Valencia Counties (see Table 13). As the former are more urban and suburban, access to exercise opportunities is as good or better than the state as a whole, which translates to lower rates of physical inactivity. Those counties also have greater access to healthy foods, as evidenced by the higher ratings on the food environment index, and slightly lower rates of uninsured individuals. Aside from Sandoval County, the four higher-performing counties also have desirable primary care physician ratios, with fewer residents per physician than the state average.

Nevertheless, the health factors data show that some counties in the Albuquerque-Santa Fe-Las Vegas metro area face challenging health obstacles. Rio Arriba, San Miguel, Torrance, and Valencia Counties generally underperform the state average in terms of physical inactivity, access to exercise opportunities, and uninsured population. The lower rate of insurance in these counties is further compounded by the above-average primary care physician ratios in each of these counties, which limits the ability of residents to seek necessary medical care. In Torrance County, there are nearly 15,600 individuals for every primary care physician, far exceeding the New Mexico state average of 1,340 and the national average of 1,320. Regarding access to healthier foods, these counties comfortably outperform the state average (4.6), but still underperform compared to the national average (7.8).

Residents of the Albuquerque-Santa Fe-Las Vegas Metro Area Generally Have Better Health Factors than the State as a Whole

Table 13: Selected Health Factors for Doña Ana County and New Mexico, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute.

	Food Environment Index	*Physical Inactivity*	*Access to Exercise Opportunities*	*Uninsured*	*Primary Care Physician Ratio*
New Mexico	**4.2**	**19%**	**77%**	**12%**	**1,340:1**
Bernalillo	7.6	15%	91%	11%	970:1
Los Alamos	8.8	11%	99%	2%	640:1
Rio Arriba	6.5	20%	76%	11%	2,170:1
Sandoval	7.3	15%	85%	10%	1,610:1
San Miguel	4.8	24%	66%	8%	1,970:1
Santa Fe	7.7	13%	79%	14%	880:1
Torrance	5.7	25%	9%	11%	15,590:1
Valencia	6.0	25%	48%	12%	2,940:1

The better health factors in Bernalillo, Los Alamos, Sandoval, and Santa Fe Counties translate into better health outcomes for residents of these counties, while the poorer health factors in Rio Arriba, San Miguel, Torrance, and Valencia Counties translate into poorer health outcomes for residents of those counties. The difference in health outcomes is most apparent in the life expectancies of residents of the counties that comprise the metro area. While residents of Los Alamos County can expect to live, on average, nearly 84 years—six years longer than the average New Mexican—residents of nearby Rio Arriba County live, on average, 10 fewer years—four years shorter than the average New Mexican.

Better Health Factors Translate to Better Health Outcomes in a Few of the Region's Counties, Though Others Struggle with Poorer Outcomes

Table 14: Selected Health Outcomes for Doña Ana County and New Mexico, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute.

	Population in Fair or Poor Health (%)	*Life Expectancy*	*Poor Physical Health Days*	*Poor Mental Health Days*
New Mexico	**20%**	**78.0**	**4.3**	**4.5**
Bernalillo	19%	78.4	4.1	4.6
Los Alamos	9%	83.8	2.7	3.2
Rio Arriba	26%	74.0	5.2	4.9
Sandoval	18%	79.0	4.4	4.4
San Miguel	26%	77.1	5.0	4.8
Santa Fe	18%	81.5	4.0	4.5
Torrance	24%	77.7	5.0	4.7
Valencia	24%	77.4	4.6	4.6

The Public Health Institute data demonstrate a clear trend in the Albuquerque-Santa Fe-Las Vegas metro area: more urban and suburban counties in the region experience better health factors and thus health outcomes, while the region's less-urban and -suburban counties experience poorer health factors and health outcomes.

Regarding medical talent, there is a clear need to expand the presence of primary care physicians beyond the region's population centers and into underserved communities. Poor access to healthcare results in greater rates of preventable deaths, and higher rates of negative health outcomes, like fair or poor health and shorter life expectancies. There is also a greater need to expand access to exercise opportunities by increasing the accessibility of public parks

and recreation facilities in the metro area. Unsurprisingly, residents of the region's more urbanized counties face fewer barriers to recreational access, likely due to the larger supply of urban and suburban amenities like parks, gyms, and community centers. Supporting the development of these resources in the region's underserved communities can increase health factors and health outcomes and make these regions of the metro area more attractive places to live for current and future residents.

Education

K–12 Education

The Albuquerque-Santa Fe metro area is serviced by several smaller and larger school districts spread throughout the counties of Bernalillo, Los Alamos, Rio Arriba, Sandoval, San Miguel, Santa Fe, Torrance, and Valencia. As the metro area is the population center of New Mexico, there exists a wide range in educational performance throughout the region. While some counties and school districts, like Los Alamos, maintain high achievement on state-level standardized tests, others struggle to provide adequate resources for different student groups.

Gaps in sufficient educational resources are often demonstrated in average performance of different student groups on state standardized tests. This trend holds true for students in the Albuquerque-Santa Fe metro area. In the majority of school districts, White and Asian students were the highest performers on math, reading, and science standardized tests while Hispanic and Native American students scored lower on average. In a few districts—including Cuba and Jemez Valley—Hispanic students scored as high or higher than their peers in their district. However, when these districts are compared to others across the region, those with high-performing Hispanic students tend not to perform as well overall.[132]

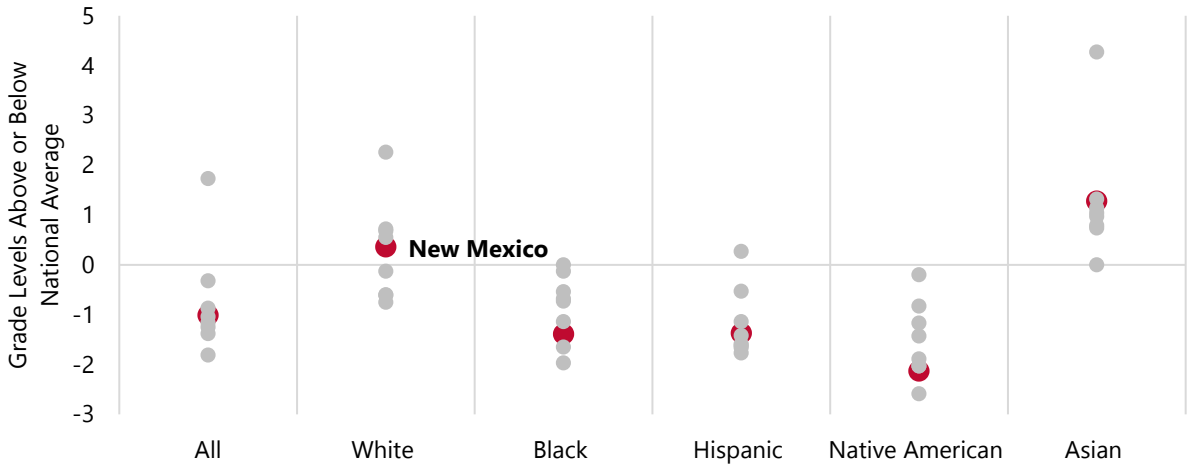
Unsurprisingly, trends in educational performance on state standardized tests also reflect trends in educational opportunity throughout the metro region. County-based data from the Stanford Education Data Archive show that high performers, like schools in Los Alamos County, also have high educational opportunity. For example, while the average learning rate—that is, the amount of information learned in an academic year that is above or below the U.S. average—for New Mexico is about -2%, indicating that most New Mexican students learn less than the average U.S. student in a school year; students in Los Alamos County learn 10% more than the average U.S. student in a single academic year.

Given the geographically large area that constitutes the Albuquerque-Santa Fe-Las Vegas CSA, there is significant variation in educational opportunities for students in different counties in the region, as well as for students with different racial and ethnic backgrounds. As Figure 48 below shows, compared to the state average, many counties in the region perform relatively strongly on standardized tests. However, a clear trend emerges when examining average test scores for

students of particular races. On average, Asian and White students perform at or above the state and national average while Black, Hispanic, and Native American students perform below the national average (though many perform above the state average). This indicates that minority students in the region generally have fewer educational opportunities, both inside and outside of school.

Average Test Scores in the Metro Area Generally Outperform the State Average

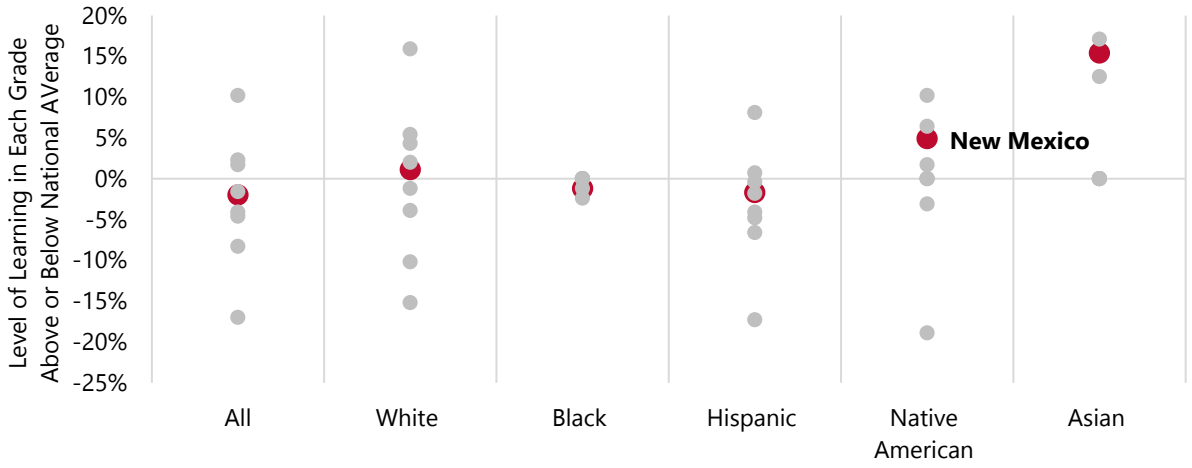
Figure 48: Average Grade Level Performance on Standardized Tests Above or Below the National Average in the Albuquerque-Santa Fe-Las Vegas CSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show at what grade level students in different racial groups test. For example, in New Mexico, all students in grades 3 through 8 generally test about one grade level below the national average for students in that grade.



Learning rates and trends in test scores are a comparative bright spot for many of the region's students, particularly Native American learners. The data indicate that many of the region's Native American and Asian students learn at above-average rates, though the region's Hispanic and Black students learn at lower-than-average rates (Figure 49). Schools in the counties of Santa Fe and Sandoval tend to have higher learning rates for Native American students, while Hispanic students in Los Alamos County have the highest learning rates for Hispanic students in the region. For Native American and Hispanic students in Santa Fe and Sandoval counties, this trend holds true for test scores, with these students experiencing the highest growth in test scores over time in those counties (Figure 50). Compared to all counties in the region, however, Hispanic students in San Miguel and Valencia Counties had the highest growth in test scores over time.

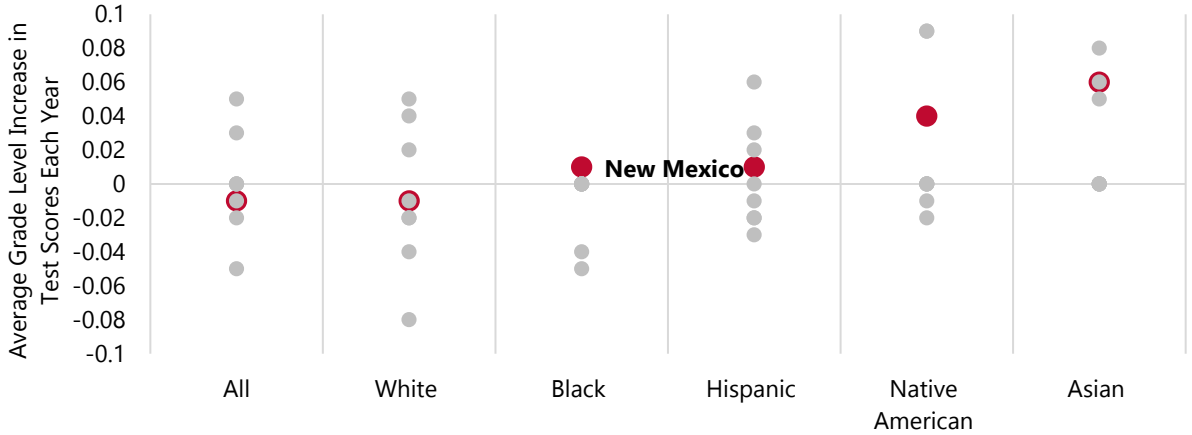
Learning Rates Generally Trend below the State Average, Though above the National Average for Certain Learners

Figure 49: Level of Learning in Each Grade Above or Below National Average in the Albuquerque-Santa Fe-Las Vegas CSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show what amount of information above or below the national average students learn in regional classrooms. For example, in New Mexico, all students in grades 3 through 8 generally learn about 2% less in each grade level than the average U.S. student.



Trends in Test Scores Perform at or Slightly below the New Mexico State Average for Most Learner Groups in the Metro Area

Figure 50: Grade Level Increase in Test Scores During Each Academic Year in the Albuquerque-Santa Fe-Las Vegas CSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show the how much test scores increased each year, in terms of the grade level that students tested at. For example, in New Mexico, all students in grades 3 through 8 generally increase their test scores by about -0.01 grade levels each academic year.



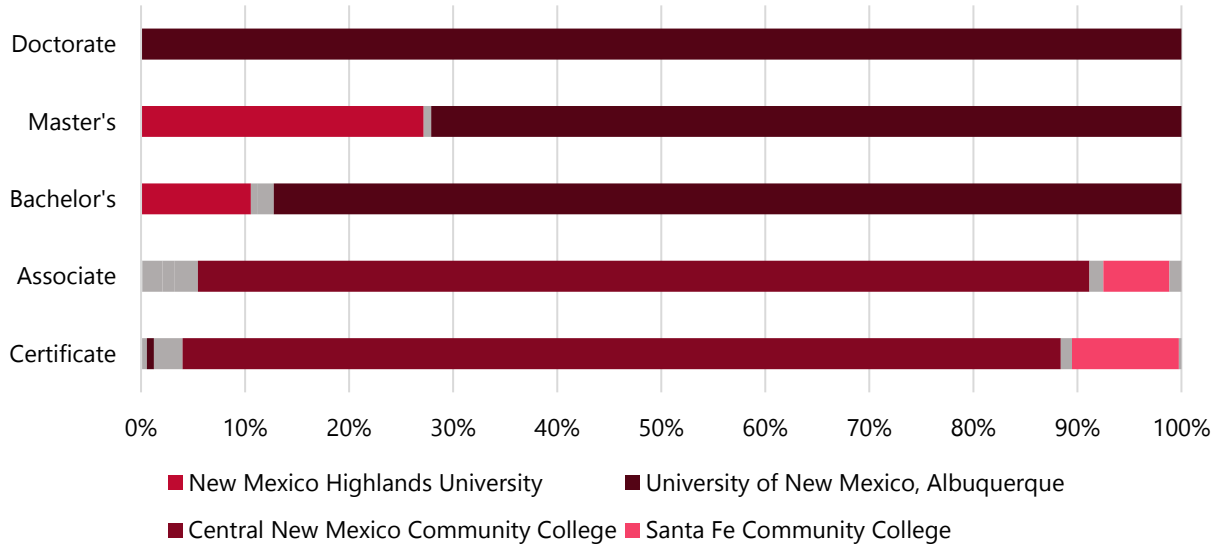
Higher Education

With a resident population of almost 1.2 million, the Albuquerque-Santa Fe-Las Vegas region is served by six 2-year and four 4-year public higher education institutions. Many of these institutions offer sub-baccalaureate credentials, like certificates and associate degrees, as well as baccalaureate and higher credentials, like bachelor's, master's, and doctoral degrees. At the 2-year level, community colleges like Central New Mexico Community College (CNM) and Santa Fe Community College (SFCC) provide many residents in the region, as well as the state at large, with the opportunity to receive micro-credentials, like certificates and certifications, as well as associate degrees in emerging areas. The Southwestern Indian Polytechnic Institute (SIPI) is an additional 2-year college that provides critical education and training opportunities for Native Americans in New Mexico, especially for those interested in environmental and natural resource topics. At the 4-year level, the metro area is home to the main campus of the University of New Mexico (UNM), in addition to branch campuses in Los Alamos and Valencia. Other 4-year education institutions in the area include New Mexico Highlands University, the Institute of American Indian Arts, and Northern New Mexico College.

Despite the presence of a large number of higher education institutions in the region, awards at the certificate, associate, bachelor's, master's, and doctorate level are highly concentrated in four of the region's institutions: New Mexico Highlands University; University of New Mexico, Albuquerque; Central New Mexico Community College; and Santa Fe Community College (see Figure 51). These four higher education institutions account for 95% of the degrees awarded by higher education institutions in the Albuquerque-Santa Fe-Las Vegas metro area.

Most Higher Education Credentials in the Albuquerque-Santa Fe-Las Vegas Metro Area Are Awarded by Just Four Institutions

Figure 51: Types of Credentials Awarded by Higher Education Institutions in the Albuquerque-Santa Fe-Las Vegas Metro Area, 2019. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System.



The colleges and universities in the Albuquerque-Santa Fe-Las Vegas metro area have different concentrations, and these concentrations vary by degree level. Of the 10 public institutions in the region examined here, six provide only certificates and associate degrees: Southwestern Indian Polytechnic Institute; Santa Fe Community College; Luna Community College; Central New Mexico Community College; University of New Mexico, Valencia; and University of New Mexico, Los Alamos. Duplicative efforts among higher education institutions in the type of degree or certificate awarded is not necessarily a negative. On the contrary, given the large geographic area that constitutes the Albuquerque-Santa Fe-Las Vegas metro area, the presence of many institutions that offer similar award levels likely provides a greater number of regional residents with access to higher education without having to relocate.[133]

However, duplication in the type of awards conferred and the *subject* of awards conferred may represent an opportunity to streamline academic offerings within a region. This level of duplication is evident in the Albuquerque-Santa Fe-Las Vegas metro area, particularly at the certificate and associate degree levels. According to the Integrated Postsecondary Education Data System (IPEDS) run by the National Center for Science and Engineering Statistics at the U.S. Department of Education, of the nearly 5,700 certificates awarded by regional higher education institutions in the 2018–19 academic year, 22% were in health professions and related programs. At the certificate level, this subject area was the most awarded at five of the region's higher

education institutions, and the second most awarded at two other institutions. A similar trend is seen at the associate degree level. Excluding the liberal arts and sciences, which is the most popular associate degree in the metro area due to the high prevalence of these degrees at Central New Mexico Community College, there is again a concentration in the health professions and related programs, with three of the region's higher education institutions focusing primarily on these degrees.[134]

Recreation

While all of New Mexico is a great place for outdoor aficionados to call home, the Albuquerque-Santa Fe metro area is ideal for those particularly interested in being near mountains. The sunny, moderate climate and unique geography of this region offer a diversity of recreational activities. Albuquerque has nearly 300 parks and four public golf courses, providing ample space for residents to enjoy the city's idyllic landscape. One of the most notable attractions is the annual Albuquerque International Balloon Festival, which brings around 900,000 visitors to the area given its ideal flying conditions for hot air balloons. Another popular destination for visitors to Albuquerque is the Sandia Peak Tramway, the longest in the Americas. The tram takes riders up the Sandia Mountains for an 11,000 square mile panoramic view of the city and surrounding terrain; from there, riders can dine, ski, and hike in the mountains. The adjacent Cibola Forest also provides an excellent spot for hiking and mountain biking.

Santa Fe and Las Vegas, both encompassed by forest, offer more opportunities to explore the outdoors with miles of hiking and biking trails. Thirty minutes outside of Santa Fe is a ski resort in the Santa Fe National Forest, while popular skiing destinations Taos and Angel Fire are just two hours north. Santa Fe is a great town to call home for New Mexicans interested in water activities, too. An hour north of Santa Fe in Pilar, several rafting companies provide guided trips down the white-water rapids. Similarly, near Las Vegas, the Gallinas River, Storrie Lake State Park, and Montezuma Hot Springs permit camping and fishing and are great spots for watching wildlife. As reflected in the health section above, the plethora of opportunities for outdoor recreation in this area has helped residents live more active and healthy lives.

The Albuquerque-Santa Fe metro area has a lot to offer those seeking indoor and cultural activities as well. There are multiple casinos in the area, many of which also have popular concert venues. The expansive Albuquerque BioPark, with its zoo, aquarium, and botanic garden, is a great spot for families, making it the most visited spot for tourists in the state. The Indian Pueblo Cultural Center teaches visitors about the history and culture of the 19 pueblos found in New Mexico. Santa Fe also has a flourishing arts scene: The Georgia O'Keefe Museum has an extensive collection of the artist's works and personal belongings, while the Meow Wolf House of Eternal Return creates an immersive art experience that is fun for all ages. The culture and

picturesque setting of Santa Fe continue to inspire creative types to call it their home, just as it has for decades.

Economy

Diversification

A core asset of central New Mexico is the size and diversity of its economy. The region has a strong presence in aerospace, manufacturing, film, information technology, and agriculture. While the public sector remains the largest employer in the region, its share of the region's jobs is shrinking while growth in professional, business, education, and health services has made the economy substantially more diverse. This growth includes a significant increase in high-paying research and development (R&D) jobs within the past 10 years as well as rapid expansion of the healthcare sector. Additionally, the extensive logistics infrastructure in and around Albuquerque has contributed to a growing transportation and warehousing sector and the development of a large food and agricultural processing industry. Economic diversification is expected to continue as the region seeks to further develop and integrate its high technology industries, thus creating significant opportunities for workers, businesses, and governments in the region.

Attraction & Retention of a Skilled Workforce

Workforce retention remains a challenge for the Albuquerque-Santa Fe-Las Vegas area. Although the region has a deep and varied talent pool coupled with strong higher educational institutions, many skilled workers leave the region due to difficulties in finding suitable jobs. Stakeholders who were interviewed for this report described a workforce that is bifurcated between researchers and engineers, most of whom hold advanced degrees, and lower-wage service sector workers. Between these two ends of the skill spectrum are workers with bachelor's degrees and skilled technical workers, many of whom are trained at local universities and colleges but leave the region due to a lack of demand for their skills. To bridge this divide, the region must continue to develop industries that employ these workers and build better partnerships between educational institutions and employers so that graduates possess the skills needed by industry. An example of such a partnership is Central New Mexico Community College's Ingenuity program, which brings students and employers together to design streamlined training specifically geared toward industry needs.

Workforce attraction and retention is further hampered by a perception that Albuquerque lacks the urban amenities that attract younger workers. Additionally, out-of-state workers unfamiliar with New Mexico often hold negative views on the region's K–12 education system and public safety record. Many of these views are attributed to a lack of knowledge about the region, and

the state should work with local governments to better market the region to outsiders. At the same time, regional stakeholders should continue to invest in urban amenities, placemaking initiatives, and activity centers in which residents can live, work, and play. Urban planning and public-private partnerships, therefore, will play a critical role in making the region's urban areas more attractive to prospective workers.

Environment

Land

The Albuquerque-Santa Fe-Las Vegas CSA sprawls across eight different counties. This region primarily has a high-desert climate, benefitting from over 300 days of sunshine in a typical year, with four distinct seasons. In Albuquerque, summer temperatures frequently rise into the 90s, but the evenings cool off. To the east of Albuquerque and the large suburb of Rio Rancho is the Cibola National Forest, a popular spot for outdoor recreation. Surrounding the rest of the metro area are several Native American pueblos of varying sizes. Still, Albuquerque is less contained by federally owned land than Santa Fe and several other western peer cities. This has allowed Bernalillo County to have the highest percentage of land dedicated to open spaces, such as parks, golf courses, and large private lawns of all of New Mexico's urbanized areas, features that attract families looking for homes with backyard space.

Northeast of Albuquerque along I-25, Santa Fe is bordered by the Santa Fe National Forest to its west and the Sangre de Cristo Mountains to its east, both of which have slightly more rain and milder temperatures than Albuquerque. On the other side of the mountain range is Las Vegas, similarly situated amidst mountains and forests.

Water

For many years, Albuquerque and its surrounds were entirely reliant on groundwater. Santa Fe's supply was split between local groundwater and surface water from the Santa Fe River. Other metropolitan and rural areas throughout the CSA also relied on groundwater drawn up by wells. With increasing demand caused by residential growth and agriculture, local groundwater levels fell rapidly, and the aquifers suffered from overuse. Subsidence—sinking land caused by the removal of groundwater—became a real concern. Beginning in the late 1990s, metropolitan areas implemented ambitious water conservation efforts to build up reliable water infrastructure and protect the aquifer for future use during drought conditions. Actions were taken to tap into surface water sources, which are considered renewable in comparison with the aquifer.

In 1997, the Albuquerque Metropolitan Area Water Resources Management Strategy was created to address the city's water needs through the year 2060. The strategy was updated in

2007 and a follow-up strategy was produced to plan for water issues in the city and county through 2120. Six capital projects were implemented based on the Water Resources Management Strategy—including the San Juan-Chama (SJC) Drinking Water Project. The SJC Project worked to supply up to 90% of metropolitan Albuquerque with drinking water by diverting surface water from the Rio Grande, and a new water treatment plant was completed in 2008 to take advantage of this water diversion. This plant allowed the city to conserve its groundwater supply and reduce the risk of subsidence.

The city and county of Santa Fe similarly worked to reduce their reliance on the aquifer. The Buckman Direct Diversion (BDD) was completed in 2010 and can divert and treat over 2,844 million gallons of surface water from the Rio Grande. Two solar plants were installed to generate 2.5MW of electricity to power the water infrastructure, meeting around one-third of the BDD's electricity needs.

These various projects have allowed metropolitan areas in the CSA to diversify their water resources and preserve groundwater for use during drought times. However, small community co-ops and rural water providers have struggled to adapt due to lack of resources. Infrastructure for rural areas, in which a few hundred residents may rely on a single well, is not suited to withstand sustained drought conditions such as those experienced over the last several years. Water deliveries have increased in the face of dry wells, and smaller communities such as Cañoncito have sought to expand access to alternative water sources through new infrastructure.[135]

Other Natural Resources

While no oil or gas are produced in the Albuquerque metro area, there are many ongoing mining operations. Across the CSA are mines for aggregate, limestone, pumice, gypsum, and a few other important stones and minerals used across industries, from construction to electronics.[136]

What the region lacks in nonrenewable energies, it makes up for with abundant sunshine. This has supported the development of many solar arrays across the eight-county area and is a big attraction for companies looking to meet internal sustainability goals. Since 2016, Facebook has been developing an expansive campus of data centers in Los Lunas, 20 miles south of Albuquerque, after choosing the location for its ability to run almost entirely on renewable energy. The data center currently employs about 200 New Mexicans, and there are plans to expand the center even further.[137] As more large corporations commit to mitigating their carbon footprint, New Mexico's capacity for solar and wind energy are primed to become a big attractor.

Las Cruces

Physical Infrastructure

Transportation

Las Cruces and Doña Ana County are crossed by two major interstates. Interstate 25 is the north-south corridor that connects Las Cruces to Albuquerque, Santa Fe, and Denver. Interstate 10 connects the region to Tucson, Phoenix, and west coast markets as well as El Paso and the US-Mexican border. To the east, Highway 70 connects Las Cruces to Roswell and Carlsbad. The road quality of the region's interstate highways and local freeways and expressways is fair. However, smaller arterial roads are in more need of repair, as one-third of mileage on these roads exhibits rough pavement conditions.[138,8]

Public transit in the City of Las Cruces is provided by RoadRUNNER Transit, which offers both fixed-route bus services and Dial-a-Ride paratransit services. In the broader region, South Central Regional Transit provides intercity transit services across Doña Ana, Otero, and Sierra Counties via four bus routes. Each route provides three round trips per day for a total of 12 daily round trips, and fares are $1.00 for adults and $0.50 for seniors. This transit infrastructure, both within Las Cruces and between cities throughout the region, provides residents with access to education, workforce, and social opportunities that otherwise would have been inaccessible.

Las Cruces International Airport is a city-owned public airport within a 10-minute drive of Las Cruces. Although the airport currently does not offer commercial flights, it is an ideal location for general and corporate aviation and the testing and development of new systems. As such, charter flights and military units regularly use the airport's facilities. The City of Las Cruces has in recent years increased infrastructure investment in a bid to drive economic development at the airport, and there is opportunity to develop land near the airport for aerospace or manufacturing operations.

The Santa Teresa Port of Entry is one of the region's most significant economic development assets. Built in 1992 to relieve pressure from the nearby El Paso border crossing, the Port of Entry was expanded in the early 2010s and was recently designated as a 12-mile overweight cargo zone. The increase in commercial traffic in the past decade has been a major driver of economic development, and stakeholders have advocated for further infrastructure upgrades and an expansion of vehicle capacity at the Port as commercial activity continues to grow. This growth has continued despite the pandemic, with cargo crossings peaking in July of 2020,[139] and

[8] The International Roughness Index (IRI) is a global standard for quantifying the roughness of road surfaces. IRI measures how much total vertical movement a standard passenger vehicle would experience if driven over a 1-mile segment of pavement; higher numbers indicate more movement. Poor quality roads are defined as those with an IRI of more than 170 inches/mile.

stakeholders have noted that that some commercial traffic have diverted to the Columbus Port of Entry in order to avoid congestion at Santa Teresa.

Industrial development in Santa Teresa has accelerated in recent years due to the growth in cross-border activity and the rising cost of land in El Paso. The regional economy has benefited from the development of Union Pacific's Santa Teresa Intermodal Terminal, which has become a major asset for the region's freight and logistics industry. Additionally, millions of square feet of industrial space have been developed for distribution and manufacturing, and further industrial growth is expected as domestic and international firms have announced plans to open facilities in the region. As the Las Cruces region continues to develop, ensuring that all residents benefit from its economic growth and coordinating with El Paso on issues such as workforce, land, and infrastructure will take on heightened importance for state and local leaders.

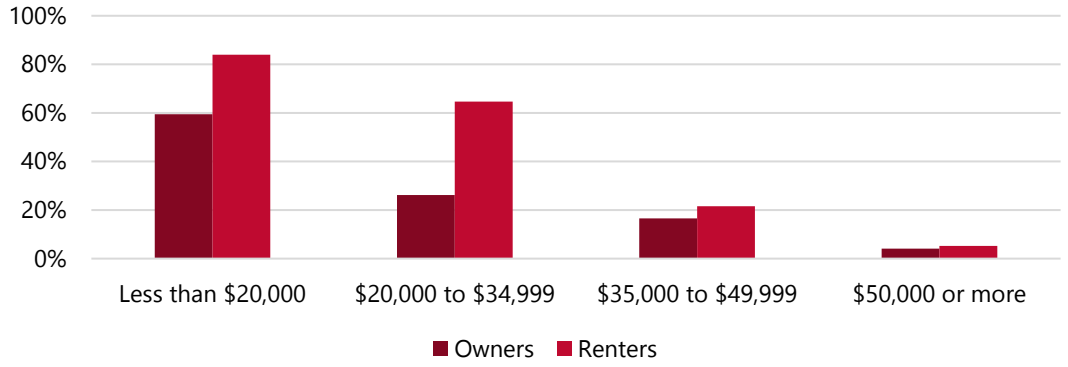
Housing

As the second most populous county in the state and the only urban county in southwestern New Mexico, Doña Ana County is the only county in the area to experience population growth over the last 10 years. Its housing stock is relatively new in comparison with the state, with one of four units being built after 2000. Economic growth centered around the border region has driven considerable demand for additional multifamily development. Nevertheless, single family homes comprise 58% of the housing stock, followed by mobile homes (22%) and apartments (20%).

The proportion of renters to homeowners is higher in the Las Cruces region, with apartment rentals concentrated in the City of Las Cruces, Anthony, and Santa Teresa. The rising demand for housing, combined with low vacancies, has created housing affordability challenges for many low-income renters. In Doña Ana County, three out of four renter households with annual incomes below $35,000 struggle with housing affordability, whereas less than half of homeowner households in the same income bracket do so (see Figure 52). As such, increasing the stock of affordable rental housing and providing other means of rental assistance can help bridge the equity divide between homeowners and renters and between low-income and high-income groups.

Three-Quarters of Lower-Income Renters Struggle with Housing Affordability

Figure 52: Percentage of Las Cruces MSA Households That Spend 30% or More of Income on Housing Costs, by Housing Tenure. Source: American Community Survey, 5-Year Estimates. 2019.



Outside of the urban areas, Doña Ana is home to 37 colonias, communities near the U.S.-Mexican border that have been formally designated as lacking critical infrastructure and basic services. Housing in colonias requires a different set of priorities than the urban and semi-urban areas, with a focus on providing public services, rehabilitating older housing, and providing safer and newer residential facilities. In its 2017 Infrastructure Capital Improvement Plan, Doña Ana County outlined a list of amenities, including paved roads, domestic water supply, sewer systems, flood protection, and public facilities, as necessary infrastructure to construct in the region's colonias. This infrastructure is expected to cost the county more than $600 million, which will be drawn from various local, state, and federal funding sources.[140]

Broadband

Doña Ana County has better broadband and cell service than the state on average, with Las Cruces ranked as having some of the highest internet speeds in the state. The county is well-connected and has excellent access to a variety of service providers. While only 63% of households have broadband access, an additional 18% have access to the internet despite lacking broadband. This is due in part to programs and partnerships that provide internet access to underserved populations. For example, the Doña Ana County's Information Technology Disaster Resource Center has worked to ensure that its colonia residents have access to Wi-Fi through free hotspots located at seven local community centers.[141] Additionally, Doña Ana Community College has provided computers and devices to students experiencing financial

hardship, while New Mexico State University has added Wi-Fi hotspots at county extension offices.[142]

Many Households That Lack Broadband Access Can Still Access the Internet

Table 15: Percentage of Households with Broadband and Internet Access in Doña Ana County, New Mexico, and the United States. Source: American Community Survey, 5-Year Estimates. 2019.

	Households with Broadband Access	*Households without Broadband Access but with Internet Access*	*Households without Internet Access*
New Mexico	**75%**	**4%**	**21%**
Doña Ana County	63%	18%	19%
United States	83%	3%	14%

Despite these efforts, many rural residents still struggle to obtain affordable and convenient internet access. According to NMSU's Center for Community Analysis, 41% of families in Gadsden and 54% of families in Hatch lack an internet subscription, which is due in part to a lack of computing devices.[143] Expanding internet access to unserved residents, with the help of the state's broadband initiatives as well as federal infrastructure funding, will enhance economic and workforce opportunities for the region's rural residents.

Quality of Life

Health

Doña Ana County, and thus the Las Cruces metro area, is ranked by the University of Wisconsin's Public Health Institute as the county with the third strongest health outcomes in New Mexico. This is likely due to the presence of many highly paid workers in the metro area, which enables residents to afford better healthcare and healthier lifestyles. Table 16 and Table 17 below provide an overview of selected health factor and health outcome metrics in Doña Ana County. Aside from a slightly higher rate of uninsured individuals and a higher primary care physician ratio, Las Cruces residents generally enjoy better access to exercise opportunities and lower levels of physical inactivity. Combined with a comparatively strong food environment index, regional residents are better able to maintain a healthy lifestyle. This healthier lifestyle is evident in the above-state-average life expectancy of regional residents (80 years).

Table 16: Selected Health Factors for Doña Ana County and New Mexico, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute.

	Food Environment Index	*Physical Inactivity*	*Access to Exercise Opportunities*	*Uninsured*	*Primary Care Physician Ratio*
New Mexico	**4.2**	**19%**	**77%**	**12%**	**1,340:1**
Doña Ana	6.0	16%	78%	13%	1,580:1

Table 17: Selected Health Outcomes for Doña Ana County and New Mexico, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute.

	Population in Fair or Poor Health (%)	*Life Expectancy*	*Poor Physical Health Days*	*Poor Mental Health Days*
New Mexico	**20%**	**78.0**	**4.3**	**4.5**
Doña Ana	24%	80.0	4.4	4.5

Nevertheless, the PHI data indicate shortcomings in the region's healthcare ecosystem. The Las Cruces metro area has struggled to retain medical talent, which limits opportunities for regional residents to access necessary healthcare resources for maintaining healthier lifestyles. This is evident in the above-average percentage of the population in fair or poor health in the region. Identifying opportunities for retaining medical talent, while increasing resident engagement with outdoor amenities, will help to improve the region's health outcomes.

Education

K–12 Education

Students in the Las Cruces metro area are served by three districts: Gadsden Independent Schools (GIS), Hatch Valley Public Schools (HVPS), and Las Cruces Public Schools (LCPS). All three districts in the Las Cruces metro area are minority-majority, and most students qualify for a free or reduced-price lunch.

Table 18: Racial Makeup of Las Cruces MSA School Districts, 2020. Source: New Mexico Public Education Department.

District	*Total Enrollment*	*White*	*Black*	*Hispanic*	*Asian*	*Native American*	*Free & Reduced-price Lunch Eligible*
Gadsden	13,657	2.8%	0.5%	96.6%	0%	0.1%	100%
Hatch Valley	1,274	4%	0.2%	95.8%	0%	0.1%	99.5%
Las Cruces	25,049	19.5%	2.5%	75.7%	1%	0.9%	74.5%

Academic proficiency in math, reading, and science in the Las Cruces metro area generally performs at or below the state average, with some exceptions. Reading proficiencies at GIS, HVPS, and LCPS schools meet or exceed the state average. This is notable given the region's high number of minority students, indicating districts in the region are effectively educating students whose first language may not be English or who have non-standard learning needs. Scores on state standardized science tests are far in excess of the state average in LCPS for all students except the district's Hispanic learners.

The Las Cruces metro area is coterminous with Doña Ana County, enabling greater comparison between the metro area and the state in terms of educational opportunity. Generally, students in the county surpass the state average for average test scores (Figure 53), learning rates (Figure 54), and trend in test scores (Figure 55). This indicates that, in general, students in the Las Cruces metro area have slightly more educational opportunity than their peers elsewhere in the state. This trend holds true for students from a variety of racial and ethnic backgrounds but is perhaps most notable for Native American students in the region. As can be seen in Figure 54 and Figure 55 below, though the region's Native American students perform below the national average, they generally perform far in excess of Native American students in other regions of the state.

Interestingly, however, learning rates for the region's Native Americans are lower than the state average, as well as those of other students in the region, bucking the trend observed in other parts of the state in which Native Americans generally have higher learning rates than students of other races. The lower learning rates for Native American students in the Las Cruces metro area may be indicative of a regional education system that is less effective at educating these students compared to other regions of the state, despite the higher average test scores of Native American students in Las Cruces.

It is also worth noting the higher average test scores, learning rates, and trend in test scores for Hispanic students in the Las Cruces metro area, especially as Hispanic students represent the overwhelming majority of students in Las Cruces-area public school systems. While test scores

are only marginally better for Hispanic students in the Las Cruces metro area compared to the state average, learning rates and trend in test scores for Hispanic students in the region comfortably exceed those of the state average. These trends in Hispanic student performance are indicative of a comparatively strong in-school and out-of-school learning environment for these students in Las Cruces.

Figure 53: Average Grade Level Performance on Standardized Tests Above or Below the National Average in the Las Cruces MSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show at what grade level students in different racial groups test. For example, in New Mexico, all students in grades 3 through 8 generally test about one grade level below the national average for students in that grade.

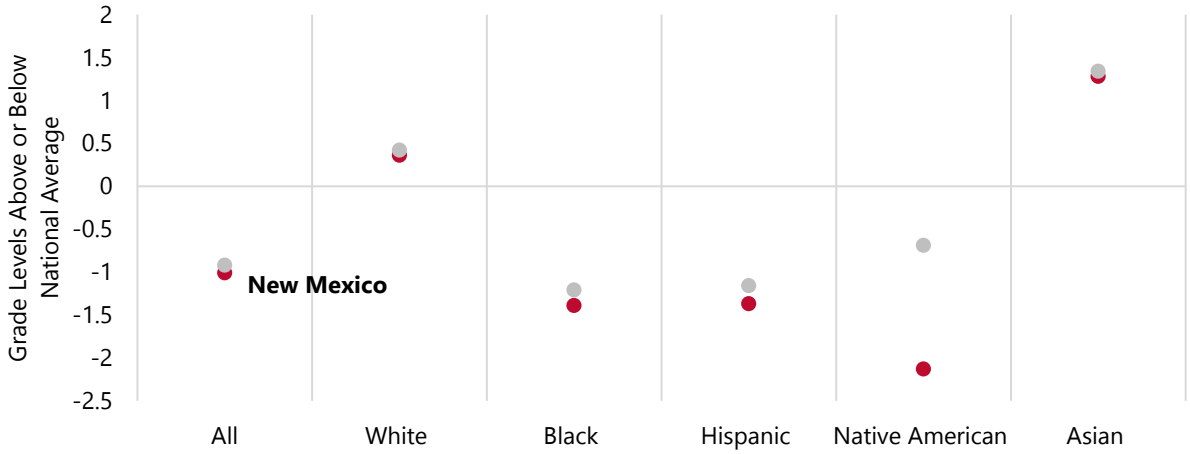


Figure 54: Level of Learning in Each Grade Above or Below National Average in the Las Cruces MSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show what amount of information above or below the national average students learn

in regional classrooms. For example, in New Mexico, all students in grades 3 through 8 generally learn about 2% less in each grade level than the average U.S. student.

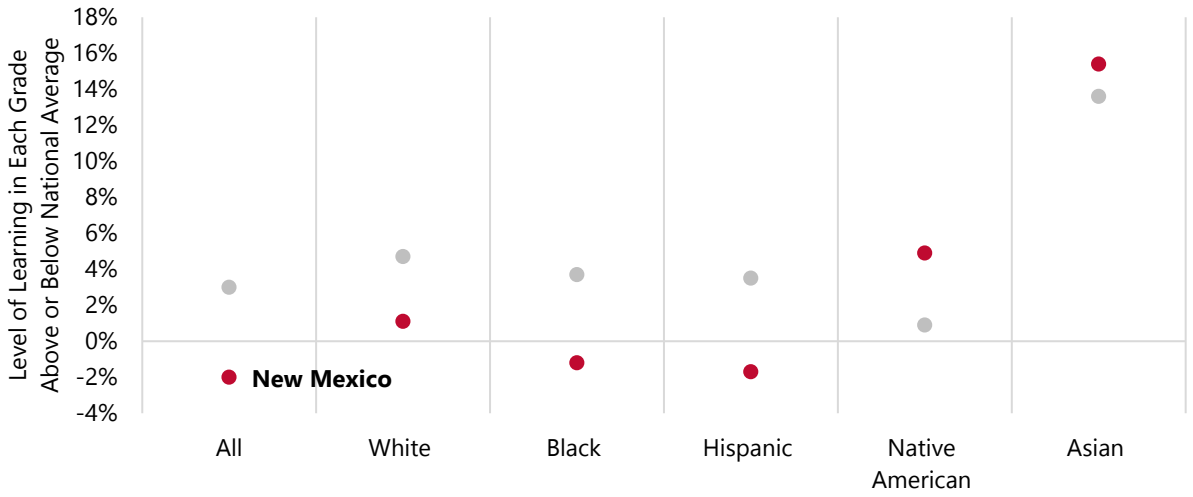
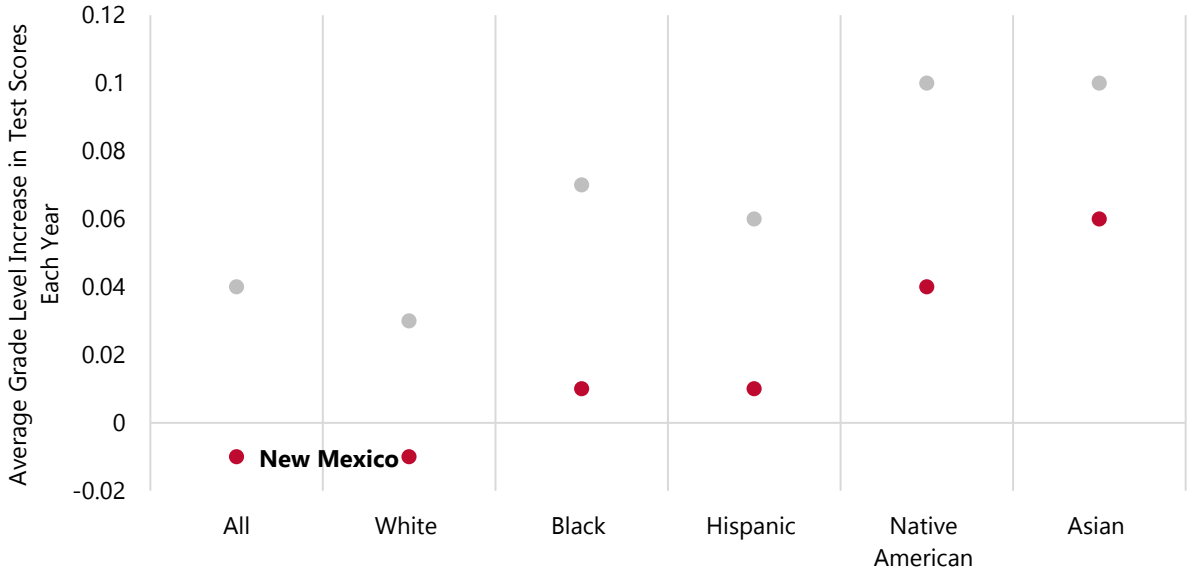


Figure 55: Grade Level Increase in Test Scores During Each Academic Year in the Las Cruces MSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show the how much test scores increased each year, in terms of the grade level that students tested at. For example, in New Mexico, all students in grades 3 through 8 generally increase their test scores by about -0.01 grade levels each academic year.

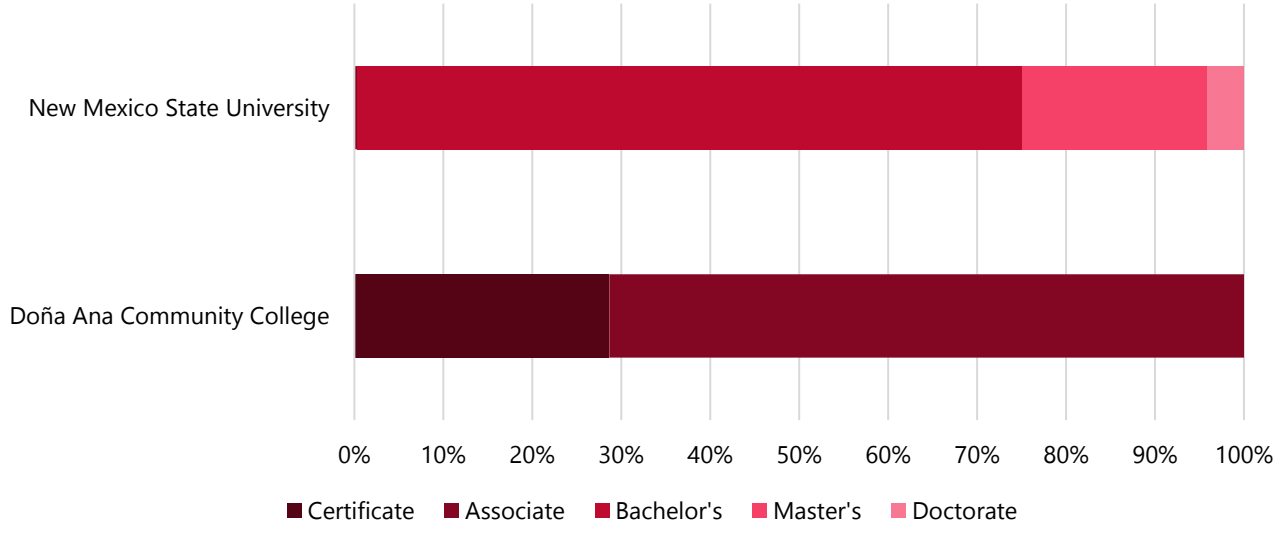


Higher Education

Las Cruces is home to New Mexico State University (NMSU) and Doña Ana Community College (DACC), an NMSU-affiliated branch community college. These two institutions are the primary higher education institutions in the Las Cruces metro area and provide the majority of the region's certificates, and associate, bachelor's, master's, and doctorate degrees. Unlike other regions of New Mexico, the two public higher education institutions in Las Cruces focus on separate types of awards: Doña Ana Community College supplies only certificates and associate degrees while NMSU generates a small number of associate degrees and many more bachelor's, master's, and doctorate degrees (see Figure 56). This split in degree level focus helps to minimize duplication among the region's higher education system, which is a challenge in other regions of New Mexico.

The Two Public Higher Education Institutions in Las Cruces Are Successful at Minimizing Duplication among Type of Credentials Conferred

Figure 56: Common Award Types Conferred by Public Higher Education Institutions in Las Cruces, 2019. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System.



As the state's only land-grant university, and one of NASA's space-grant universities, NMSU's academic focus differs from many of the other higher education institutions in New Mexico. At the bachelor's degree level, the majority of degrees are conferred in business management (15%), engineering (14%), and health professions (7%). Popular bachelor's engineering degrees at NMSU include mechanical (33%), industrial (19%), electrical and electronics (14%), civil (12%), and aerospace engineering (13%). These degrees align well with the region's target industry

opportunities, notably in the aerospace and intelligent manufacturing industries, both of which require high levels of technical expertise in engineering-related fields. However, the knowledge and talent produced at NMSU can also have an impact on other regions of New Mexico, particularly those dependent upon scientific and engineering expertise. This includes target industries like cybersecurity and sustainable and value-added agriculture, both of which have high potential to grow in New Mexico if they are provided with qualified talent.[144]

While the data suggest that NMSU is relatively well-aligned to the region's target industries, DACC's focus on the liberal arts at the certificate and associate degree level indicate an opportunity to better align instruction with in-demand occupations within New Mexico's target industries. Of the roughly 1,000 associate degrees awarded by DACC in the 2018–19 academic year, just under half were awarded in the liberal arts. Slightly more than 30% were awarded in business management (11%), health professions (11%), and homeland security studies (9%), combined. A similar trend is observed at the certificate level at DACC: About 43% of the certificates awarded by DACC in the 2018–19 academic year were in health professions (28%) and liberal arts (15%).[145]

The health data discussed in the prior section indicate the need for dedicated health workforce pipelines in the Las Cruces region, as the metro area has fewer healthcare professionals on average than the state, and both NMSU and DACC provide a strong supply of health-related graduates. However, there remains an intense need in Las Cruces and New Mexico for workforce development related to the state's target industries. As a land-grant institution, NMSU remains well-positioned to support several of these industries—notably aerospace, sustainable and value-added agriculture, and intelligent manufacturing—through the development of industry-aligned programs at the bachelor's or higher degree level. There remains greater opportunity for DACC to better align with the region's comparative strengths in target industries like aerospace and intelligent manufacturing. This is particularly true given the lack of a need for a 4-year degree for many occupations in the manufacturing industry.

Recreation

In addition to several parks and aquatic centers found in Las Cruces, the city also maintains miles of hiking and biking trails around the city, including La Llorona trail that runs along the Rio Grande River. Less than an hour's drive northeast of Las Cruces is one of New Mexico's two national parks, White Sands, which annually sees around 600,000 visitors to the region's impressive sand dunes. Here, visitors can camp, hike, bike, horseback ride, and even sled the dunes. Closer to Las Cruces in the Organ Mountains, adventurers can ride off-highway vehicles at popular sites, such as the Prehistoric Trackways National Monument.

Doña Ana County is a great place to settle for those interested in culture and cuisine as well. Just 40 miles north of Las Cruces along I-25, Hatch, the Chile Capital of the World, attracts roughly 30,000 people annually for its Hatch Chile Festival held every Labor Day weekend. Locals and tourists alike can enjoy visiting the more than 50 art galleries and museums in the area, including several based at New Mexico State University. Many of these provide an opportunity to learn about the unique geology and history of southern New Mexico while others focus on the defense and space industries that have developed in New Mexico over the past century.

Economy

Diversification

Healthcare and social assistance is one of the most common employment sectors for those living in Doña Ana County, employing 15.4% of workers. The county and the city of Las Cruces serve as a hub for regional healthcare in southwest New Mexico, and residents of surrounding rural counties often travel to the area to seek service and specialists.[146] With the increasing number of seniors in the region, home health and elderly care service jobs have expanded rapidly over the last 10 years, and the city of Las Cruces represents an attractive destination for seniors and retirees looking for access to services.

Government has the second highest concentration of jobs among industries in the Las Cruces MSA, with White Sands Missile range and NASA accounting for most of the federal employment within the area. State and local governments employ upwards of 16,000 people. With a large concentration of workers employed in local and state government, the economy can be vulnerable to budget cuts. However, federal positions are overall more stable.

In 2019, the city of Las Cruces conducted a target industry assessment, which identified three important industries for targeted growth: aerospace and defense, advanced manufacturing, and value-added agricultural products. Given the region's proximity to White Sands Missile Range, NASA's White Sands Test Facility, NMSU's Physical Science lab, and a wide array of private aerospace firms, Doña Ana County is well-positioned to further develop its aerospace industry. The region's manufacturing sector has benefited from the increase in commercial activity near the Santa Teresa Port of Entry. Domestic and international manufacturers, drawn to Santa Teresa for its strategic location, rapidly improving infrastructure, and inexpensive land, have announced plans to open facilities near the Port. Additionally, the reshoring of manufacturing supply chains presents further opportunities for southern New Mexico. Agriculture is another important sector with a strong presence in the region. Doña Ana County produces most of the pecans in New Mexico, and the state leads the country in pecan production. Agriculture and food processing is a significant component of the regional economy, and innovation in agricultural technology and new opportunities in hemp and cannabis suggest that there is room for further growth.

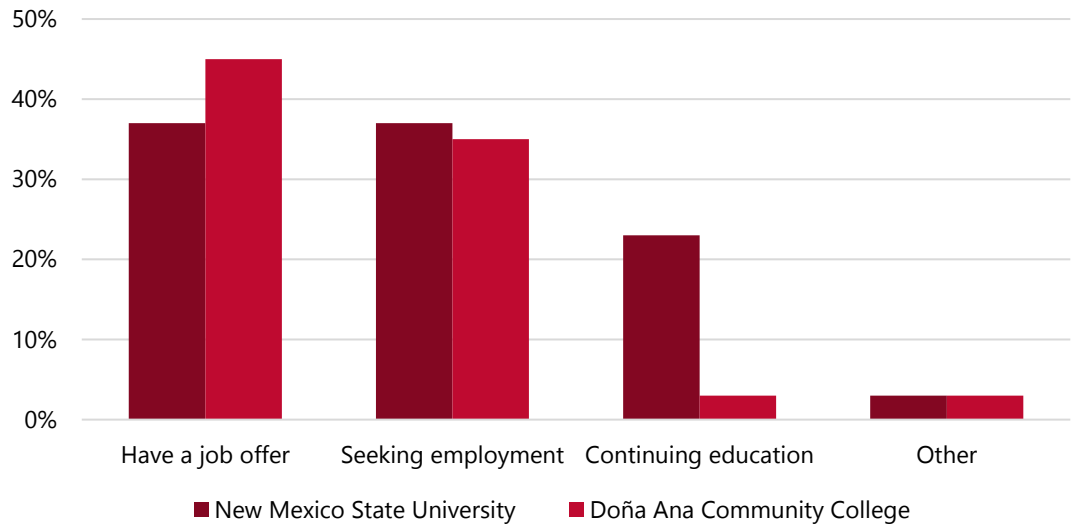
Attraction & Retention of a Skilled Workforce

Doña Ana County's growing economy, low cost of living, and outdoor recreation opportunities, make it an attractive location for workers. The abundance and variety of jobs in healthcare, engineering, manufacturing, and logistics is a major pull factor for local graduates and prospective out-of-state workers, many of whom are also drawn to the region's quality of life. Local educational institutions, such as NMSU, provide a consistent pipeline of skilled workers for the region's employers, while affiliated organizations, such as the Arrowhead Center and the Center for Community Analysis, contribute to the region's workforce development through entrepreneurship support and data-driven economic analysis. Lastly, institutions such as the Mesilla Valley Economic Development Alliance and The Bridge of Southern New Mexico play a pivotal role as strategic planners, coordinators, and facilitators of regionwide workforce development efforts.

Like the rest of New Mexico, workforce and talent retention is a key challenge in the Las Cruces MSA. Despite the many economic, natural, and institutional assets at the region's disposal, 41% of employed NMSU graduates left for jobs outside of New Mexico in 2017. The workforce retention rate among Doña Ana Community College graduates is much higher, with 88% of employed graduates working within the state. Talent retention challenges are exacerbated by the fact that 37% of NMSU college graduates and 35% of DACC graduates are still seeking employment after graduation (see Figure 57).[147] These graduates are more likely to look for employment outside of the region if their job search continues to be unsuccessful.

Approximately One in Three Graduates from NMSU and DACC Are Still Seeking Employment upon Graduation

Figure 57: Employment Plans of New Mexico State University and Doña Ana Community College Graduates, 2016–2017. Source: Center for Community Analysis, New Mexico State University. Note: New Mexico State University graduates shown are from the university's baccalaureate program; master's and doctoral degree recipients are excluded from this figure.



The region's higher education institutions, namely NMSU and DACC, have a unique ability to address the region's workforce retention problems by introducing more students to career planning and preparation early on in their post-secondary education. Rather than offer career development resources toward the end of students' college education, NMSU and DACC can take a more proactive approach to helping their students explore career options. They can, for example, introduce students to major employers in the region during their freshman and sophomore years, help match students to local internship and externship opportunities, and connect students to local alumni in similar fields and professions. By educating their students about career opportunities and pathways in their communities and by developing stronger relationships with local industry, educational institutions are uniquely positioned to increase the proportion of graduates who have job offers upon graduation while improving the quality of matches between graduates and employers.

Environment

Land

Located in the Chihuahuan Desert, most of the population of Doña Ana County is centered around the Mesilla Valley flood plain of the Rio Grande River, which receives abundant sunshine and little precipitation annually. The county is dotted by several mountain ranges, including the dramatic and beautiful Organ Mountains, and the inactive Potrillo volcanic field in the southwest. In 2014, the nearly 500,000 acres of the Organ Mountains Desert Peaks was proclaimed a national monument, in large part due to its prehistoric and geological significance.[148] Aside from the privately owned land along the I-25 corridor, a large majority (75%) of Doña Ana County is federally owned by either the Bureau of Land Management or the Department of Defense; 12% is state trust land.[149] The southwest corner of White Sands Missile Range, including all of the San Andres National Wildlife Refuge and part of White Sands National Park, can be found in Doña Ana County. Just 2.5% of the land in the county has been developed to any extent.

Water

Doña Ana County's climate is mainly arid, with an average annual precipitation of around 10 inches. Population in the county is closely tied to the Rio Grande, an important source of water for not only New Mexico, but Texas and Mexico. Las Cruces and surrounding towns draw water from two aquifers known as the Jornada and Mesilla Basins. The Mesilla Basin is recharged by the Rio Grande, while the Jornada Basin is a confined aquifer that recharges extremely slowly.[150] Water level declines in the Jornada Basin have resulted in the city of Las Cruces working to tap groundwater resources in the more renewable Mesilla Basin and designating the Jornada Basin as an alternative water supply during drought years. Much of the water diverted is for irrigated agriculture (87%) while public water supply only accounts for around 9% of water used in the Lower Rio Grande Basin. Current projections indicate that if severe drought continues to be the norm over the next few decades, the region could face drastic shortages in water supply compared to expected demand.[151] To prepare for that eventuality, in 2018, the city of Las Cruces produced a 40-year water development plan to map out how to provide a safe and reliable water supply and address issues of water conservation, legal constraints, and groundwater sustainability.

Other Natural Resources

Unlike in most other parts of the state, Doña Ana County has limited nonrenewable natural resources available for extraction. Several aggregate mines dot the county, along with a few scoria and gypsum mines, but no coal, oil, or natural gas are found in the region.[152] There is rich

solar energy potential, but currently there are only a handful of solar arrays in the county. As New Mexico and neighboring states look to bolster the resiliency of their power grids and meet clean energy commitments in the face of climate change, Doña Ana County has the resources to build solar energy capacity and help meet this growing need.

Farmington

Physical Infrastructure

Transportation

There are no interstate highways in the Four Corners region of New Mexico, but the region is served by U.S. Highways 64, 491, and 550, which connect Farmington, Bloomfield, and Aztec residents to Albuquerque, Santa Fe, and the I-25 north-south corridor. Additionally, New Mexico Highway 371 connects Farmington to I-40, with easy access to Albuquerque and Flagstaff. However, approximately one-third of Farmington's principal and arterial roads were considered poor quality according to the International Roughness Index,[9] even though Farmington residents travel on average 20 miles per day.[153,154] In 2019, 87% of the region's residents drove to work alone, while 11% carpooled, which is a higher percentage of carpoolers than the statewide average.[155] The average commute time in the Farmington MSA in 2019 was 24 minutes.

The City of Farmington operates Red Apple Transit, a regional public bus system that serves Farmington, Aztec, Bloomfield, Kirtland, and other San Juan County communities. With five routes within Farmington and three routes out to surrounding towns, Red Apple Transit has enjoyed substantial growth in demand, with monthly ridership expanding from 1,600 riders per month to over 11,000 per month.[156] In addition to fixed-route bus service, the Red Apple Transit also provides on-call transit services for residents with disabilities.

The Four Corners Regional Airport, northwest New Mexico's primary airport, is expected to resume commercial flights for the first time in three years. The airport has in recent years completed runway upgrades with the aid of federal and state grants, and it has contracted with SkyWest Airlines to operate regular flights between Farmington and Denver. The resumption of commercial air service is a pivotal step in promoting outdoor recreation and diversifying the economy in the Farmington region.[157] Because the region markets itself for its outdoor recreation opportunities and its potential as a retirement destination, reestablishment of a direct air connection to Denver International Airport will significantly enhance Farmington's access to markets throughout the United States. Furthermore, commercial flights out of Farmington will offer residents a convenient and affordable alternative to Albuquerque International Sunport, a 3-hour drive from Farmington.

[9] The International Roughness Index (IRI) is a global standard for quantifying the roughness of road surfaces. IRI measures how much total vertical movement a standard passenger vehicle would experience if driven over a 1-mile segment of pavement; higher numbers indicate more movement. Poor quality roads are defined as those with an IRI of more than 170 inches/mile.

Housing

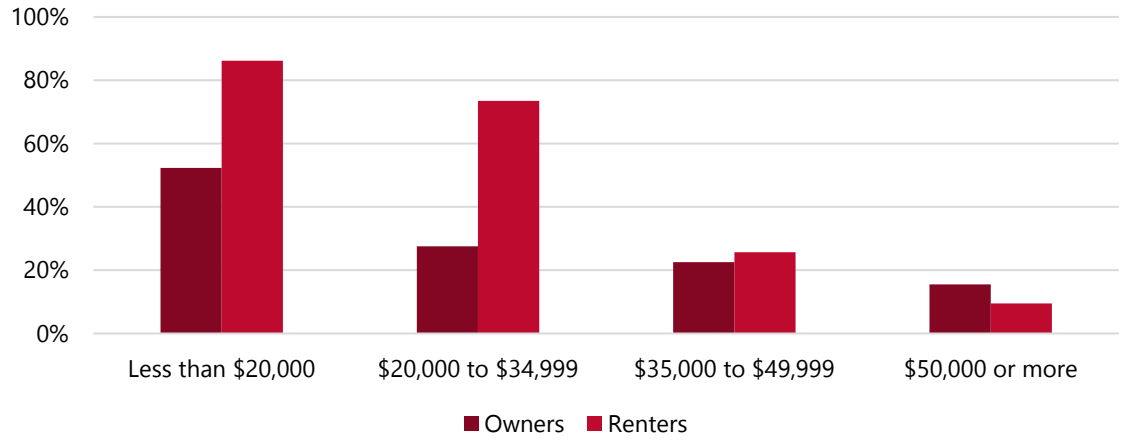
The Farmington Region's housing stock consists predominantly of detached, single family homes (57%) and mobile homes (33%), while multi-unit apartments comprise the remaining 10%. Despite the shortage of apartments, 29% of all housing units are renter-occupied, suggesting that many households were unable to or chose not to own homes.

Much of the region's housing stock is aging, with over 40% of occupied housing units being built before 1980. New construction, furthermore, has been sparse due in part to the region's negative population growth and a residential vacancy rate of 15%. Approximately 100 new building permits were issued in 2019, almost all of which were for single family units.

Housing affordability in the Farmington MSA varies significantly by household income and by housing tenure. As Figure 58 shows, a notably higher proportion of lower-income households spend more than 30% of their income on housing costs compared to higher-income households. However, the fact that low-income households that rent struggle substantially more with housing affordability than low-income homeowners suggests that economic disparities in the region are associated with homeownership as much as with income.

The Majority of Lower-Income Renters Struggle with Housing Affordability

Figure 58: Percentage of Farmington MSA Households That Spend 30% or More of Income on Housing Costs, by Housing Tenure. Source: American Community Survey, 5-Year Estimates. 2019.



An analysis of the demographic characteristics of the Farmington region's renter households reveals that the heads of these households tend to be younger and less educated (see Table 19). Approximately 60% of these household heads are under 45 years old, and 84% have at most an

associate degree or some college education. Furthermore, householders who rent are overwhelmingly likely to be either Native American or Non-Hispanic White. Given the unique housing affordability challenges faced by this group and the role of housing affordability in exacerbating broader inequalities in the region, it is critical for local and state governments to develop housing solutions that will impart a greater degree of social mobility for low-income renters.

Heads of Renter Households in the Farmington MSA Tend to Be Younger, Less Educated, and Either Native American or Non-Hispanic White

Table 19: Select Demographic Characteristics of Heads of Renter-Occupied Households in the Farmington, New Mexico MSA. Source: American Community Survey, 5-Year Estimates. 2019.

	Renter-Occupied Housing Units	*Percent of Renter-Occupied Housing Units*
Race of Householder		
Native American	5,403	43%
Non-Hispanic White	5,058	40%
All other races	2,113	17%
Educational Attainment of Householder		
High School or Less	5,013	40%
Some College or Associate Degree	5,563	44%
Bachelor's Degree	1,998	16%
Age of Householder		
Under 35 years	4,660	37%
35 to 44 years	2,847	23%
45 years and over	5,067	40%

Broadband

Broadband access in the Farmington MSA is lower than that of New Mexico as a whole. Only 66% of households have access to broadband of any type. Of the households that lack broadband access, the majority (86%) do not have internet access while the remainder use a dial-up connection or access the internet without a subscription (see Table 12). Although broadband infrastructure is well-developed along the Farmington-Aztec-Bloomfield corridor as well as sections of U.S. Highways 491 and 550, coverage is lacking along New Mexico Highway 571 and in parts of the region's Navajo Nation communities.

One in Three Households in the Farmington MSA Lack Broadband Access

Table 20: Percentage of Households with Broadband and Internet Access in San Juan County, New Mexico, and the United States. Source: American Community Survey, 5-Year Estimates. 2019.

	Households with Broadband Access	*Households without Broadband Access but with Internet Access*	*Households without Internet Access*
San Juan County	**66%**	**5%**	**29%**
New Mexico	75%	4%	21%
United States	83%	3%	14%

Despite existing challenges, the region is beginning to make progress toward greater connectivity. Recent broadband initiatives adopted by the state's legislature, increased federal funding on broadband infrastructure, and the emerging adoption of alternative technologies such as satellite-based internet present the region with multiple opportunities to substantially provide more of its residents with high-speed internet. For example, the 2021 launch of the Tribal Broadband Connectivity Program will provide nearly $1 billion in federal funding to establish broadband infrastructure and affordable broadband programs on tribal lands.[158] This program is expected have a lasting impact on the region's Navajo Nation communities by bridging the digital divide in education and workforce development.

Quality of Life

Health

In San Juan County, data from the Public Health Institute (PHI) at the University of Wisconsin indicate that positive health outcomes remain a challenge for the region. The county, and thus the Farmington metro area, is an incredibly diverse region of the state, with a significant presence of Native Americans throughout the region. With much of the metro area's population, including the Native American population, located in less urban areas of the county, ensuring sufficient access to healthcare resources, in addition to factors that enable healthier lifestyles, is a heightened challenge. This challenge is reflected in Table 21 and Table 22 below, which show San Juan County's performance in selected health factors and health outcomes compared to New Mexico.

Compared to the state average, residents in the Farmington metro area experience less access to exercise opportunities, which limits the ability for these residents to regularly exercise and lead healthier lifestyles (see Table 21). This is notable given the general perception that New Mexico's outdoor amenities provide residents throughout the state with ample opportunities to

maintain healthy, outdoor-oriented lifestyles. Further inhibiting healthier lifestyles for Farmington residents is a higher-than-average primary care physician ratio that indicates residents have fewer opportunities to seek medical advice and assistance when necessary.

Farmington Residents Generally Experience Poorer Health Factors Than the State as a Whole

Table 21: Selected Health Factors for San Juan County and New Mexico, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute.

	Food Environment Index	*Physical Inactivity*	*Access to Exercise Opportunities*	*Uninsured*	*Primary Care Physician Ratio*
New Mexico	**4.2**	**19%**	**77%**	**12%**	**1,340:1**
San Juan County	6.1	23%	56%	13%	1,870:1

Lower health factors in San Juan County correlate with poorer health outcomes for the region's residents (see Table 22). A greater share of the region's population experiences fair or poor health (24%) compared to the state (20%), as well as an increased number of poor physical and mental health days. Ultimately, this leads to a lower life expectancy for residents in the Farmington metro area. It is important to note, however, that these outcomes are driven by a variety of socioeconomic factors that go beyond those listed in the table above, as well as the full list of factors captured in PHI's county health rankings. Nevertheless, the data indicate a need to improve access to exercise opportunities and develop local healthcare talent.

Poorer Health Factors Translate into Poorer Health Outcomes in Farmington

Table 22: Selected Health Outcomes for San Juan County and New Mexico, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute.

	Population in Fair or Poor Health (%)	*Life Expectancy*	*Poor Physical Health Days*	*Poor Mental Health Days*
New Mexico	**20%**	**78.0**	**4.3**	**4.5**
San Juan County	24%	76.0	5.0	5.0

Education

K–12 Education

Students in the Farmington metro area are served by four school districts: Central Consolidated Schools (CCS); Farmington Municipal Schools (FMS); Aztec Municipal Schools (AMS); and Bloomfield Schools. Enrollment at these four districts for the 2018–19 school year was more than 23,200, with most students enrolled in FMS and CCS schools. The school districts in the Farmington metro area are predominantly minority-majority, except for AMS; FMS, CCS, and Bloomfield all serve a large Native American student population (see Table 23). Additionally, the majority of students in each district are eligible for free or reduced-price lunches, indicating a higher rate of economic disadvantage in the region's schools.

The Majority of School Districts in the Farmington Metro Area Are Minority-Majority, and Most Students Qualify for Food Assistance

Table 23: Demographic Makeup of Farmington Metro Area School Districts, 2020. Source: New Mexico Public Education Department.

District	*Total Enrollment*	*White*	*Black*	*Hispanic*	*Asian*	*Native American*	*Free & Reduced-Price Lunch Eligible*
Farmington	11,723	32.4%	1.2%	31.4%	1%	33.7%	78%
Consolidated	5,818	5.9%	0.1%	3.8%	0.4%	89.7%	99.1%
Aztec	2,992	52.9%	0.9%	31%	0.4%	14.6%	74.5%
Bloomfield	2,711	27%	0.9%	34.4%	0.3%	37.4%	100%

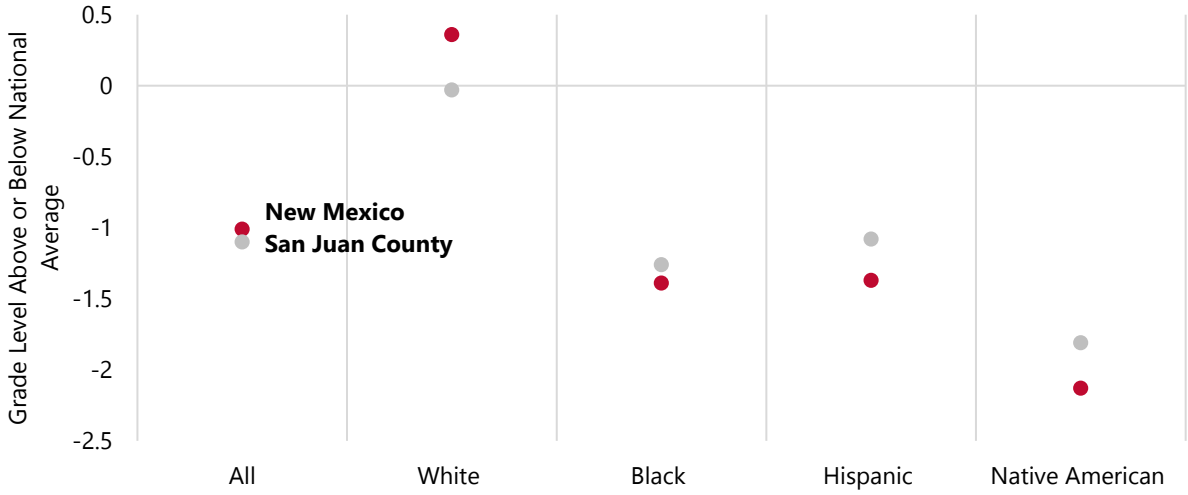
Math, science, and reading proficiency in the school districts that make up the Farmington metro area varies by district and race. Compared to New Mexico's overall performance, FMS is the only district in the region that performs above the state average. Districts with higher percentages of Native American students, such as CCS and Bloomfield, tend to perform more poorly than the state and other districts in the region. This trend indicates the difficulties that many minority students face in New Mexico's public-school systems, particularly Native American students.

County-level data from the Stanford Education Data Archive (SEDA) aims to go beyond proficiency-based assessments of K–12 students to identify the opportunities students from different backgrounds have to improve their academic performance. As the Farmington metro area is coterminous with San Juan County, data for San Juan County are used to determine the

metro area's educational opportunities for different student groups. A county-based approach also enables better comparisons between different regions of the state.

The Stanford data indicate that the Farmington metro area closely follows state-level trends in average test scores (Figure 59). Though the region slightly underperforms the state average, minority students in the district—that is, Black, Hispanic, and Native American students—on average perform slightly better than their counterparts at the state level.

Figure 59: Average Grade Level Performance on Standardized Tests Above or Below the National Average in the Farmington MSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show at what grade level students in different racial groups test. For example, in New Mexico, all students in grades 3 through 8 generally test about one grade level below the national average for students in that grade. Due to the small percentage of Asian students in regional schools, data are not available for this group of learners to protect student anonymity.



Learning rates for students in the Farmington metro area indicate that, while they may score at or below average on most tests, they learn at higher-than-average rates compared to their peers at the state level, as well as the national average (Figure 60). For Farmington's Black and Native American students in particular, time spent in school yields significant educational opportunities, evidenced by their above-average learning rates. Part of the higher learning rates for these students is driven by their comparatively lower starting point, but the high rates are also indicative of effective programs to engage these students and help them excel in school. These higher learning rates are also reflected in trends in test scores among the metro area's students; Farmington's White, Black, and Hispanic students are increasing their performance on tests at a quicker rate than the state and national average (Figure 61). While the region's Native American

students are improving their scores at lower rates than the state as a whole, they far outpace the national average.

Figure 60: Level of Learning in Each Grade Above or Below National Average in the Farmington MSA by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show what amount of information above or below the national average students learn in regional classrooms. For example, in New Mexico, all students in grades 3 through 8 generally learn about 2% less in each grade level than the average U.S. student. Due to the small percentage of Asian students in regional schools, data are not available for this group of learners to protect student anonymity.

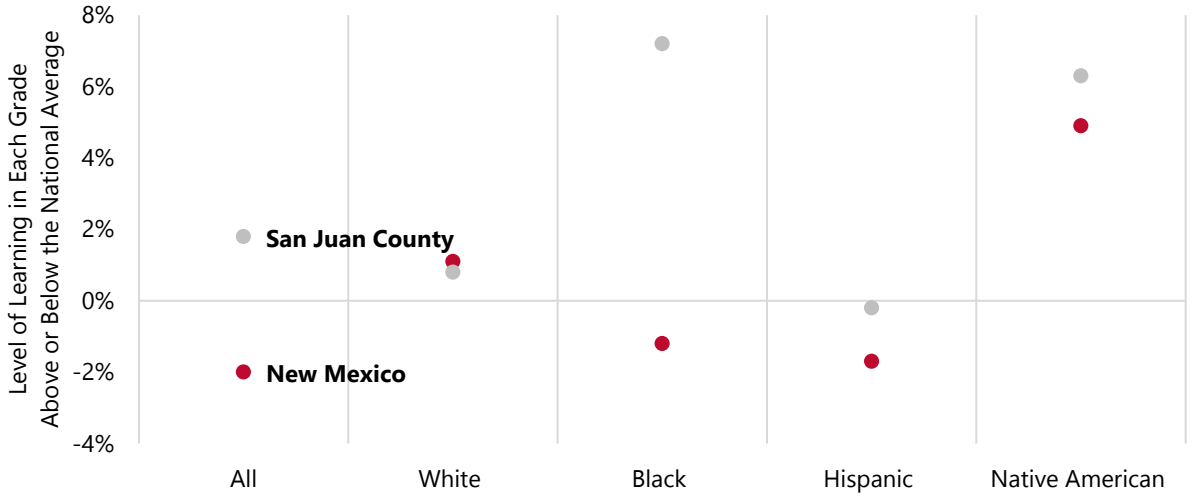
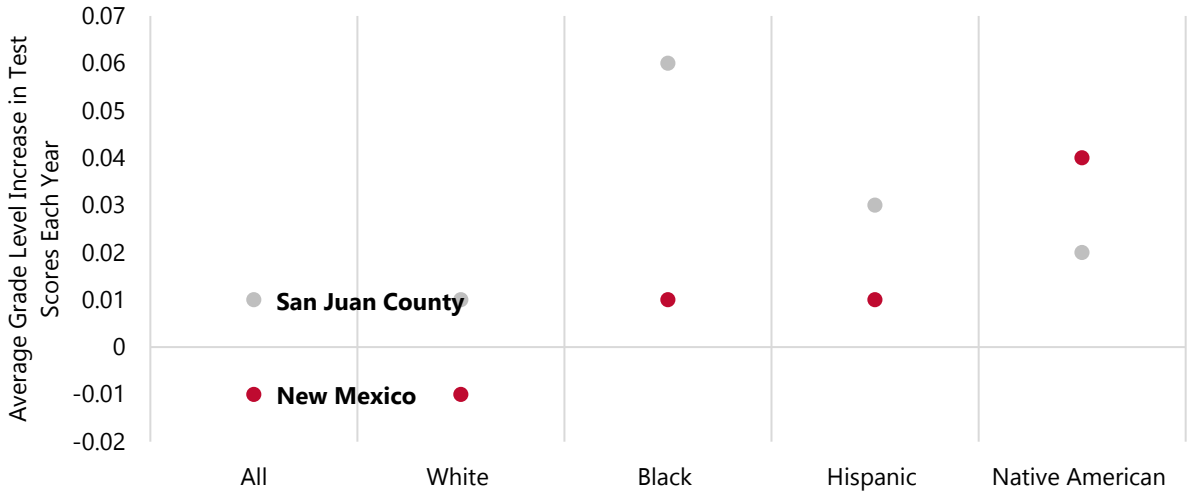


Figure 61: Grade Level Increase in Test Scores During Each Academic Year in the Farmington MSA, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show the how much test scores increased each year, in terms of the grade level that students tested at. For example, in New Mexico, all students in grades 3 through 8 generally increase their test scores by about -0.01 grade levels each academic year. Due to the small percentage of Asian students in regional schools, data are not available for this group of learners to protect student anonymity.



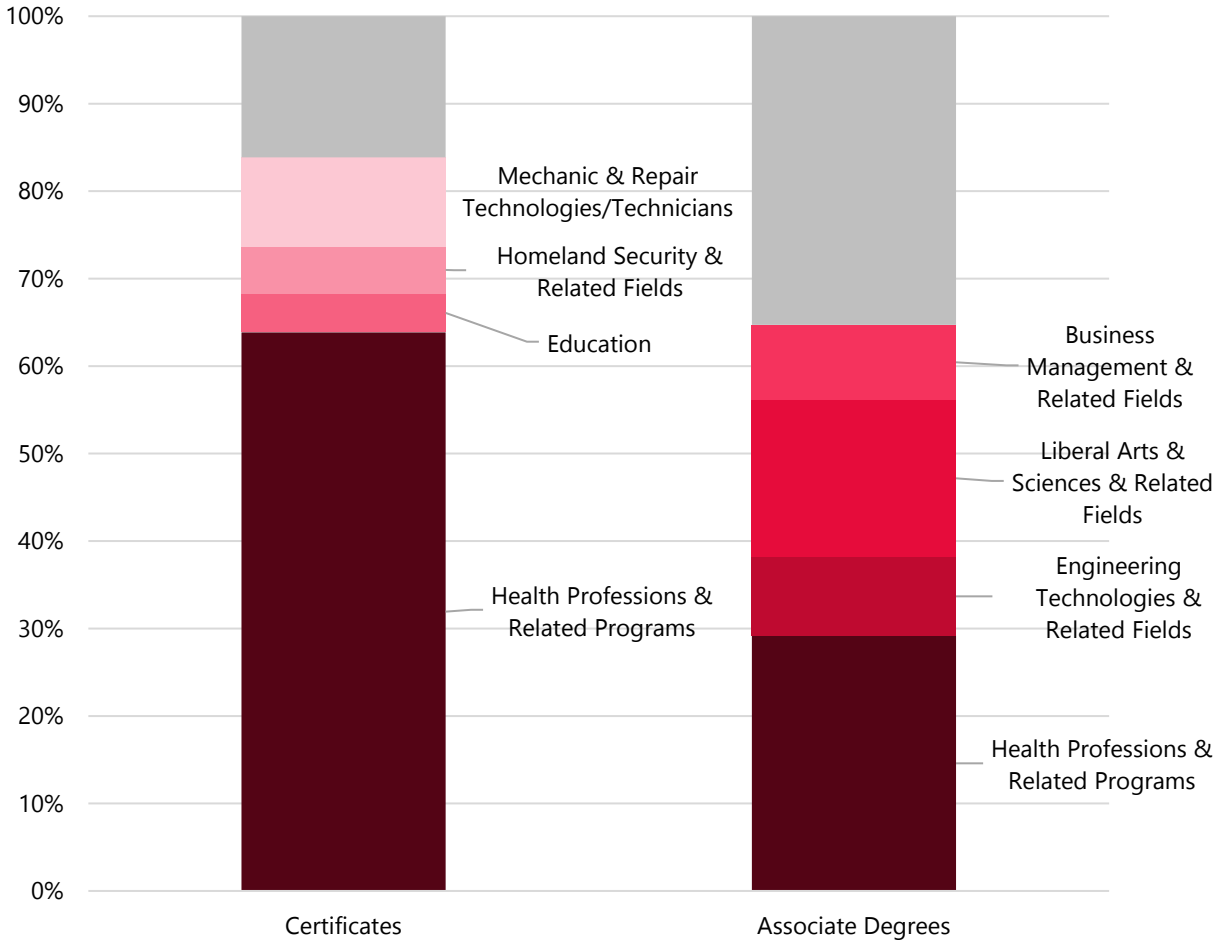
Higher Education

The Farmington metro area is supported by several 2- and 4-year higher education institutions, the most notable being San Juan College (SJC) and a branch of the Diné College System. SJC is a 2-year community college administered by the Higher Education Department, operating three campuses in Farmington and two in the surrounding communities. SJC is the principal higher education institution in Farmington and as such operates a large number of programs at the certificate and associate degree level. Partnerships with New Mexico's larger 4-year universities enable students enrolled at SJC to transfer into in-state bachelor's and master's degree programs, while dual enrollment programs allow area high school students to graduate high school with an associate degree.[159] The Navajo-based Diné College operates two campuses in New Mexico, one each in Shiprock and Crownpoint. These campuses provide Native Americans in the Farmington region with critical access to education and training resources on-reservation, rather than requiring Native American students to leave the reservation for education and training opportunities.

According to the National Center for Education Statistics, certificates and associate degrees awarded by SJC and Diné College are concentrated in four primary areas (see Figure 73). At the certificate level, nearly 85% of awards are conferred in health professions (64%), mechanic and repair technologies/technicians (10%), homeland security (5%), and education (4%), combined.

At the associate degree level, about 65% of awards are conferred in health professions (29%), liberal arts (18%), engineering technologies (9%), and business management (9%), combined.[160]

Figure 62: Certificates and Associate Degrees Awarded by Public Higher Education Institutions in the Farmington Metro Area, 2019. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System.



Interestingly, despite the popularity of health-related certificates and associate degrees at SJC and Diné College, the region continues to perform poorly in many health metrics (see Table 21 and Table 22). This is likely caused by the drain of medical talent in the region to other areas of New Mexico, or other states entirely. Other popular areas for certificates, such as education and mechanic and repair technicians, are more focused on local needs in critical areas, such as public education. At the certificate and associate degree level, conferred awards align less with the region's opportunities in certain target industries, like outdoor recreation and value-added agriculture.

Efforts are underway, however, to capitalize on emerging industries in the region—such as agribusiness, food processing, and technology—as a way to revitalize economic growth in the Farmington metro area, and the general northwestern region of New Mexico.[161] To grow these industries, however, will require a realignment of the region's higher education institutions to the needs of these employers. Many of the emerging industries in the region are those that pay higher wages and require higher skills but do not necessarily require a 4-year degree. This is a significant opportunity for SJC and Diné College to play a leading role in the development of this workforce and the diversification of the region's economy.

This will require a committed approach to industry-institution collaboration for the development of an industry-relevant workforce. Examples of such collaborations are becoming more apparent in the region, such as through the signing of a memorandum of understanding between SJC, the City of Farmington, the Farmington Electric Utility System, and Enchant Energy to design workforce development programs integrating carbon capture and storage technologies for the region's power station.[162] Programs such as these have several benefits; they capitalize on a region's historic strengths, like mining and fossil fuel extraction, to lay the foundation for emerging industries in similar fields, like clean technology. Similar opportunities for industry-institution alignment have emerged at Diné College, where programs related to nutrition, environmental, and life sciences contribute to the development of a local workforce that is well positioned for employment in emerging industries, like agribusiness.[163]

Aside from opportunities for sub-baccalaureate workforce development, it is worth noting the lack of higher education opportunity beyond the 2-year degree level in the region. Between the two colleges discussed here, only certificate and associate degree programs are offered, though SJC does provide students with the opportunity to transfer to one of New Mexico's 4-year universities. However, the lack of degree opportunities in the region accelerates the depletion of regional knowledge capital to other areas of the state or to other states altogether. This challenge is particularly salient for the Farmington region's large Native American population, that must leave the reservations for any in-person instruction at the baccalaureate or higher level. This compounds the issues facing many Native American reservations in New Mexico, which are already facing declining populations as younger residents relocate to New Mexico's urban areas for better higher education opportunities.

Recreation

The Farmington metro area is home to a number of attractive outdoor amenities. The City of Farmington maintains over 50 parks and open spaces, and the nearby cities of Aztec and Bloomfield also maintain several aquatic and recreation centers, playgrounds and picnic areas, and jogging trails.

Those seeking history and culture can visit Aztec Ruins National Park or Chaco Culture National Historic Park, a 90-minute drive from downtown Farmington. Thousands of acres of public land surrounding Farmington provide endless trails for hikers to explore. Adventurous people can kayak or raft the whitewater of the Animas River that runs through the city. The Chokecherry Canyon Glade Run Recreation Area is a popular spot for off-roading with mountain bikes, ATVs, and even horses. Lake Farmington provides a serene spot for fishing, camping, and swimming. The top-rated Pinon Hills Golf Course brings in people from all over to play a round in the beautiful terrain surrounding Farmington.

There is an abundance of cultural activities in the city of Farmington. The Farmington Museum, Bolack Museums, and Sherman Dugan Museum provide a great place to learn more about paleontology, geology, and the region's history and culture. Salmon Ruins in Aztec teaches visitors about pueblos and pioneer life in the area. Additionally, Farmington is home to two popular casinos, Northern Edge Navajo Casino and SunRay Park and Casino.

Economy

Diversification

Historically, coal, oil, and natural gas have been the dominant industries in the region. However, the financial impact of the Great Recession, the nationwide shift away from coal, and the drop in natural gas prices from fracking threatens the viability of the industries on which the region's economy has traditionally depended. Additionally, Farmington's two major power plants—San Juan Generating Station and the Four Corners Power Plant—have downsized their operations and workforce to comply with air quality regulations. The reduction of coal mining and power generation has contributed to the region's population decline and is placing pressure on local governments' ability to maintain public services while making the investments needed to diversify the regional economy.[164,165]

While the future of the region's energy industry is challenging and uncertain, the region is making a substantial effort to diversify its economy into other sectors. In 2017, Highland Economics prepared a report for the region. *Regional Economic Assessment & Strategy for the Coal-Impacted Four Corners Region* identified large-scale food processing, petrochemical manufacturing, tourism, and crop production as key opportunities for the region.[166] Outdoor recreation and tourism in particular are areas in which the region can utilize its natural assets to rebrand itself as a destination area, and the formation of the Outdoor Recreation Industry Initiative by community leaders has mobilized efforts throughout the region to attract more guides, outfitters, and manufacturers of outdoor gear to San Juan County. The region is also developing a retail sector, successfully marketing itself as a retirement living destination, and has become a popular site for the film industry, leveraging San Juan County's pristine landscape and

predictable weather. Regional manufacturers such as Raytheon's Diné facility, which stores and assembles parts for the company's advanced weapons programs, provides a foundation on which the region and its Navajo Nation communities can develop a core manufacturing workforce whose technical and engineering skills can attract additional manufacturers to the region. Lastly, the region's existing infrastructure in food processing and agriculture, centered around the Navajo Agricultural Products Industry, can be repositioned in a way that attracts food manufacturers and other elements of the supply chain to the region.

Attraction & Retention of a Skilled Workforce

Assisting dislocated workers to overcome obstacles to retraining and reskilling is critical to workforce retention in the region. As the economy diversifies into outdoor recreation, healthcare, retail, and manufacturing, economic development organizations should identify how energy workers' skillsets can best be transitioned toward local growth industries and implement training programs through its educational institutions and workforce development resources.[167] Many of the region's miners and energy industry workers hold technical skills that are broadly transferable to other industries, while San Juan College offers well-developed science, technology, engineering, and mathematics (STEM) programs that communities can utilize to aid in retraining efforts. These efforts, combined with the region's economic diversification, will create jobs that offer competitive wages and reverse the out-migration of dislocated workers from the region.

As San Juan County develops its tourism and outdoor recreation economy, entrepreneurship and small-business skills will become an important asset to the regional workforce. To foster a strong small-business environment, communities must invest in the institutional capacity and networks that increase the chances of success for small-business owners while utilizing state resources, such as the Outdoor Recreation Division, for organizational and financial support. By investing in the social infrastructure, such as business support services, mentorship programs, entrepreneur networks, and incubator spaces, communities can help their current and aspiring small-business owners succeed in a new and diversified regional economy.

Environment

Land

Farmington is surrounded by a combination of tribal-owned and federally owned land. The Ute Mountain Reservation is to the northwest and extends into Colorado while the Navajo Nation is to the west and extends into Arizona. Except for privately owned land in the towns and a few state-owned lots, the Bureau of Land Management owns much of the rest of the land in San

Juan County, providing Farmington an idyllic setting with lots of public areas for outdoor recreation. Only about 1.5% of San Juan County has been developed to any extent. Most of the land is classified as desert shrubbery, the kind of terrain many tourists expect when they visit New Mexico.

Water

Due to its high desert climate, San Juan County enjoys four moderate seasons, receiving an average of 7.5 inches of rainfall and 12.3 inches of snow annually. Like most of the state though, the northwest region of New Mexico has faced extreme drought over the past decade. This has applied pressure to the San Juan Water Planning District to practice responsible water management. This region relies largely on surface water from the San Juan River and its tributaries. The Animas River runs through Aztec and is a tributary of the San Juan; it has been dammed up to create Farmington Lake, which serves as the primary water storage for the City of Farmington. Additionally, the construction of Navajo Dam on the San Juan and the resulting reservoir have helped the region bolster its water supply during drought years. The Navajo Dam also serves as a hydroelectric power plant, providing a renewable source of energy. Municipalities in this area have implemented restrictions on water usage during periods of drought, but public water supply only amounts to about 3% of water usage in the region, while agriculture accounts for about 75%. Still, based on current projections, the city's water rights allow it to divert a volume that is more than adequate for the expected needs of the population over the next few decades.[168]

Other Natural Resources

San Juan County has historically had a thriving coal mining industry; however, nationwide decreases in demand for coal, due to environmental concerns and decreasing prices of other resources, have led to the closure and reclamation of most of the mines. Today, two of the state's three operational coal mines are located just outside of Farmington. Similarly, the western portion of the county has substantial uranium resources, but there are no longer any mines in operation due to lack of demand.

The San Juan Basin in the northeast half of the county is rich in oil and gas reserves and has been a longstanding boon to the region's economy. The San Juan Basin is considered more mature than the Permian Basin and requires more expensive and technologically-advanced drilling methods to extract the remaining resources.[169,170] Royalties from oil and gas drilling are divided up between the state, federal agencies, and municipalities, depending on which entity owns the land being leased; these royalties help San Juan County and the City of Farmington

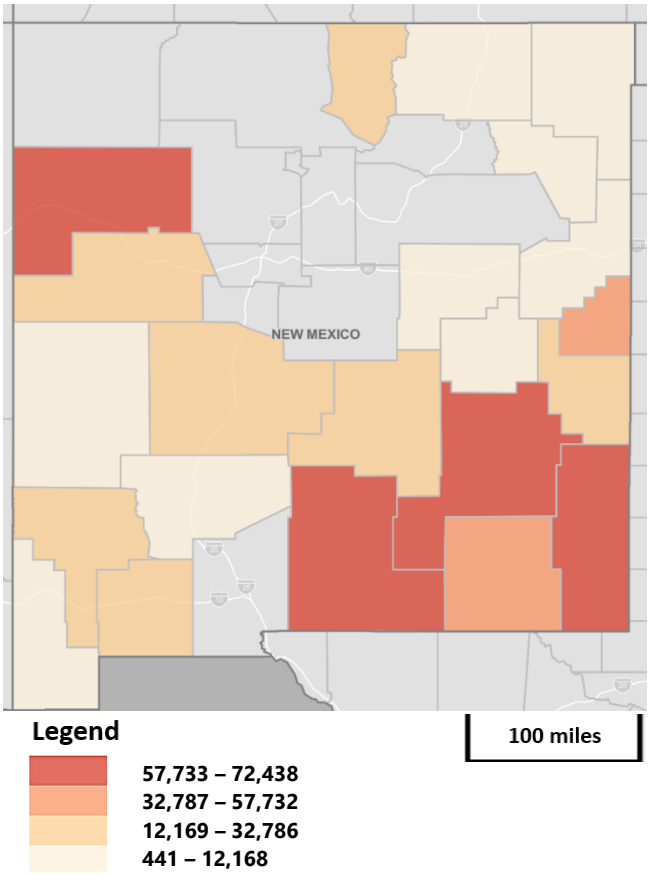
support and make investments in their communities, but dependence on them can also devastate the communities during market downturns.

Micropolitan & Rural New Mexico

Micropolitan and rural New Mexico is made up of 23 counties throughout the state, with populations ranging from 441 people in Harding County to 72,438 people in McKinley County (see Figure 63). Just over 30% of the population of New Mexico lives in these counties. The highest population densities in these counties fall in the southeastern and northwestern corners of the state in the cities of Roswell, Hobbs, Alamogordo, Carlsbad, Gallup, and Artesia.

New Mexico's Rural and Micropolitan Counties Are Home to 30% of the State's Population

Figure 63: Population of Micropolitan and Rural Counties in New Mexico, 2020. Note: Greyed out counties in New Mexico are discussed in other sections. Source: U.S. Census Bureau.



Physical Infrastructure

Transportation

Rural and micropolitan New Mexico is served by several interstate highways (see Figure 63). I-25 runs north to south across the center of the state, and I-40 runs east to west across the northern half of the state. I-10 runs from the Arizona border in the southwest of the state and ends in Las Cruces. The southeastern portion of the state, including Carlsbad, Artesia, Roswell, and Hobbs, is unserved by an interstate highway. Southwestern New Mexico is home to three border crossings, two of which fall within Luna and Hidalgo Counties. Columbus Port of Entry, a 24-hour crossing point, saw nearly 300,000 pedestrian crossings in 2019 and more than 350,000 vehicle crossings. An $85.6 million update to Columbus was completed in 2018 to address increasing traffic and security concerns.[171] In the past, Antelope Wells Port of Entry has received so little traffic that Customs and Border Patrol does not report official statistics for the crossing. However, a new facility was completed in 2013. This facility was temporarily closed in April 2020 due to reduced traffic and border restrictions during the COVID-19 pandemic and has not been re-opened as of May 2021. Both ports of entry are served in the United States by 2-lane state roads, and commercial traffic must travel 40–60 miles before reaching a highway. Increased traffic across the border in the Borderplex region may result in longer wait times and commercial traffic moving further west in hopes of avoiding crowds.

Around 2,300 miles of rail cover the state, with two interstate Amtrak lines running through the north and south of the state. The Southwest Chief line stops in Raton in the north, then exits the state with a stop in Gallup. The Sunset Limited, with its more southerly route through rural New Mexico, makes stops in Deming and Lordsburg in the far southwest of the state. During the pandemic, Amtrak implemented several reductions in service on both lines, but plans to resume pre-pandemic service. Passenger rail can be a vital link for rural communities, allowing residents without cars to access metropolitan services such as specialized healthcare. Other rural rail links include the Rail Runner (discussed in the **Economic Assessment**).

Housing

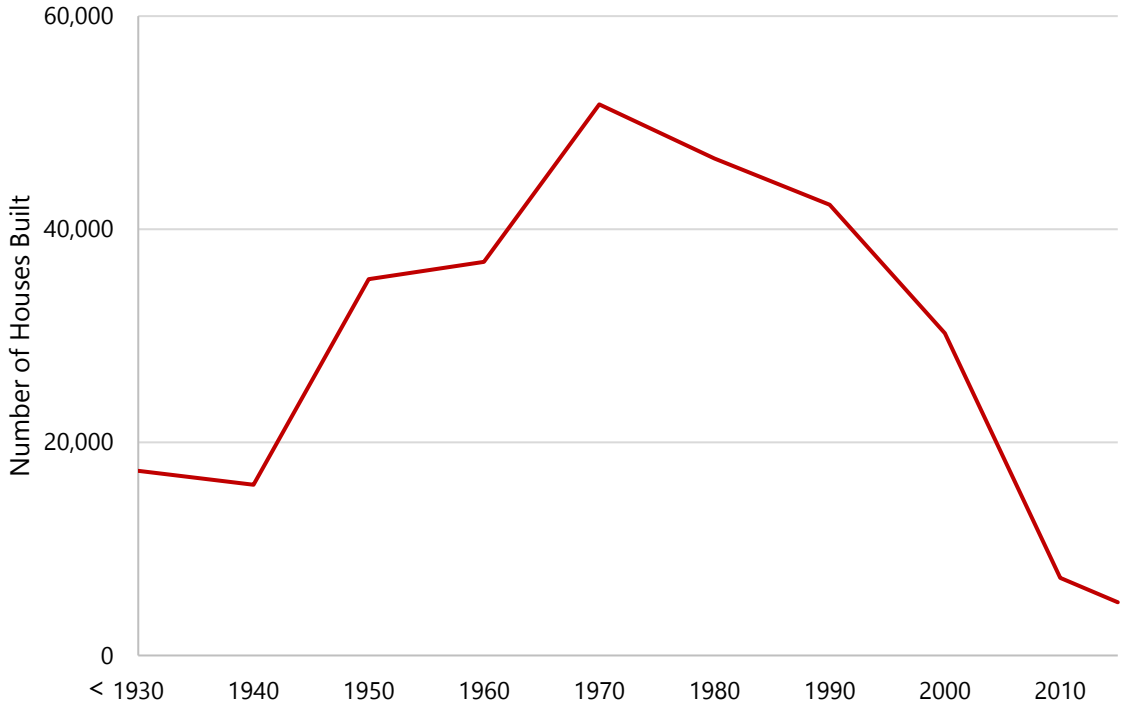
There were two housing booms in rural and micropolitan New Mexico driven by different regions experiencing different economic factors (see Figure 64). The first took place during World War II and the immediate post-war years in southeastern New Mexico and was related to military investments in the area. The second, larger housing boom peaked in the 1970s in the northwestern and north central counties due to the expansion of large-scale extractive industries, such as coal mining and oil and natural gas, as well as a general housing boom throughout the western states. Construction of residential housing throughout rural and

micropolitan counties began to decline in the 1990s. Housing construction dropped rapidly during the Great Recession and has stagnated outside of major metropolitan areas since then.

Statewide, more than 51% of housing units were constructed prior to 1980. In rural and micropolitan New Mexico, this number is 55% with 6% built prior to 1940. Northeastern counties have some of the smallest percentages of new housing stock in the state. The age of housing stock is generally viewed as an indicator of housing conditions and the likelihood of needing repair or rehabilitation.[172] The U.S. Department of Housing and Urban Development (HUD) estimates that 90% of units built before 1940 used lead paint, compared to 80% of units built from 1940 to 1959 and 62% of units built from 1960 to 1979. In addition to aging housing stock, New Mexico's rural and micropolitan counties are contending with a growing senior population in need of more accessible housing.

Residential Housing in Rural and Micropolitan Counties Is Often Older Than the State Overall

Figure 64: Building in Rural and Micropolitan Counties, by Year. Source: U.S. Census Bureau, 2020.



Substandard housing is an especially important issue in New Mexico's rural and micropolitan counties and has only become more acute with the COVID-19 pandemic. For example, 35% of housing units lack either or both complete plumbing and complete kitchens in McKinley County.

The county also ranks the highest in the state for overcrowding. Due in part to poor housing and overcrowding, McKinley County suffered some of the heaviest impacts from the pandemic in the state.

Housing demands vary across the state, but several rural and micropolitan counties are experiencing decreasing populations. Northern and eastern counties must focus on rehabilitating older housing stock, weatherizing, and improving accessibility for seniors as well as providing safer, more affordable housing for low-income residents. Eastern counties have an acute need for senior-friendly housing. Southwestern counties that have experienced population growth thanks to their proximity to Las Cruces, NM and El Paso, TX as well as the border, need affordable housing for agricultural workers as well as for potential industrial parks in Deming and Lordsburg. Southeastern counties, especially Lea and Eddy Counties, struggle with fluctuating populations due to the boom-bust cycle of the oil and gas industry and have a lack of rental units during boom times. Other southeastern counties have more varied, less unstable economies and require more affordable housing and rental units on a consistent basis.

Broadband

Access to broadband continues to be a challenge for rural New Mexico, especially in Socorro, Catron, and Hidalgo Counties. Socorro County has only 4.5% broadband coverage, the lowest in the state. However, southeastern New Mexico counties have some of the highest percentages of broadband coverage in the state on par with major urban areas in central New Mexico. Recent state legislation has launched several initiatives to expand wired broadband access throughout rural areas. In early 2021, Senate Bill 93 established the Office of Broadband Access and Expansion to centralize and coordinate broadband activities across state and local government agencies. House Bill 10 established the Connect New Mexico Fund and Connect New Mexico Council to provide grant funding for broadband infrastructure as well as to increase the annual distribution from the State Rural Universal Service Fund. Expanding broadband access for rural, micropolitan, and tribal residents is essential to not only increase equity across the state, but also to attract newly flexible remote workers in the wake of the COVID-19 pandemic.

Quality of Life

Health

When considering health, rural and micropolitan New Mexico covers a wide range of factors and outcomes as seen in Table 13 and Table 25. As a general trend, among New Mexico's rural and micropolitan communities, less populated and more rural counties have average or slightly above average health indicators, though the availability of primary care physicians remains a

challenge in less populated counties. Regarding health outcomes in the rural and micropolitan communities in New Mexico, while a few counties outperform the state in selected metrics, most of these communities in New Mexico have below-average health outcomes. For example, life expectancy in New Mexico's micropolitan and rural counties generally falls below the average life expectancy for the state (78 years), with many counties experiencing life expectancies less than 76 years.

The health factors shown in Table 13 highlight the challenges residents of New Mexico's micropolitan and rural communities must overcome to live healthier lifestyles. Many of the state's micropolitan and rural residents have below-average access to exercise opportunities, which considers the proximity of residents to parks and recreational facilities. The lower-than-average access to exercise opportunities results in higher rates of physical inactivity in these communities—all micropolitan and rural counties in New Mexico, except for Taos and Grant Counties, experience higher rates of physical inactivity than the state average (19%), and several counties experience higher rates than the national average (23%). Increasing the prevalence of parks and recreation facilities like community centers would provide greater opportunities for the region's residents to integrate physical activities into day-to-day life making New Mexico's smaller communities more attractive places to live.

Aside from Access to Healthier Foods, Residents of New Mexico's Smaller Communities Face Poor Health Factors

Table 24: Selected Health Factors for New Mexico and its Rural & Micropolitan Counties, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute. Note: Counties are organized by decreasing population.

	Food Environment Index	*Physical Inactivity*	*Access to Exercise Opportunities*	*Uninsured*	*Primary Care Physician Ratio*
New Mexico	**4.2**	**19%**	**77%**	**12%**	**1,340:1**
McKinley	2.8	26%	43%	16%	1,314:1
Lea	8.1	28%	84%	13%	3,164:1
Otero	6.3	23%	55%	12%	2,385:1
Chaves	6.8	26%	71%	12%	1,504:1
Eddy	7.4	25%	70%	9%	3,047:1
Curry	6.5	29%	78%	11%	1,831:1
Taos	6.0	12%	83%	12%	1,095:1
Grant	6.5	19%	78%	8%	1,367:1
Cibola	5.0	29%	66%	12%	1,783:1
Luna	5.0	33%	70%	12%	2,663:1

	Food Environment Index	*Physical Inactivity*	*Access to Exercise Opportunities*	*Uninsured*	*Primary Care Physician Ratio*
Lincoln	6.4	22%	85%	12%	1,956:1
Roosevelt	6.4	30%	80%	12%	2,678:1
Socorro	5.2	23%	53%	12%	2,391:1
Colfax	4.9	28%	76%	9%	3,028:1
Sierra	5.1	26%	87%	11%	2,194:1
Quay	6.9	27%	70%	10%	4,127:1
Guadalupe	6.6	29%	55%	7%	2,171:1
Hidalgo	6.1	23%	47%	10%	2,120:1
Union	7.2	25%	76%	12%	4,118:1
Catron	3.0	24%	74%	8%	1,789:1
De Baca	7.3	28%	85%	11%	1,781:1
Harding	3.9	30%	7%	8%	NA

Though micropolitan and rural counties in New Mexico experience challenges with access to recreational facilities, these counties strongly outperform the New Mexico state average for access to a healthy food environment. This is likely due to the presence of a large agriculture industry in the state's rural regions, which more directly connects locals with healthy food options. Likewise, an extensive network of farmers markets throughout these counties provides residents of these counties the opportunity to support local producers while purchasing healthier foods.

Healthcare access remains an area of concern for micropolitan and rural New Mexico. While the region's uninsured rate is generally no higher than New Mexico's rate, the majority of the counties in micropolitan and rural New Mexico have a shortage of primary care physicians in their communities. Two counties are the exception: McKinley and Taos. The lower primary care physician ratio in Taos is likely due to the county's popularity as a vacation destination, which helps attract healthcare talent to the state. Taos County is also home to the Holy Cross Medical Center and a network of rural clinics, which bring medical talent to rural residents. In McKinley, the presence of several Indian Health Service facilities and a Branch of the New Mexico Cancer Center help to provide a greater number of physicians to the county's residents.

Despite the stronger performance of some counties in terms of health factors, many counties in micropolitan and rural New Mexico face poorer health outcomes than the state average. This is particularly true for residents of McKinley County, which ranks last in all four health outcome metrics identified in Table 25 below. Widespread poor health outcomes throughout New Mexico's micropolitan and rural communities hint at the need for better health practices and

opportunities for healthier lifestyles. Enabling more residents to engage with local outdoor amenities and increasing the retention of local medical talent will help to improve healthcare access as well as residents' lifestyles.

Poorer Health Factors Lead to Poorer Health Outcomes for Many of the Region's Residents

Table 25: Selected Health Outcomes for New Mexico and its Rural & Micropolitan Counties, 2021. Source: County Health Rankings, University of Wisconsin's Public Health Institute. Note: Counties are organized by decreasing population.

	Population in Fair or Poor Health (%)	*Life Expectancy*	*Poor Physical Health Days*	*Poor Mental Health Days*
New Mexico	**20%**	**78.0**	**4.3**	**4.5**
McKinley	31%	72	6.5	6.2
Lea	23%	76	4.6	4.2
Otero	22%	78	4.9	4.8
Chaves	25%	76	4.7	4.6
Eddy	21%	75	4.0	4.3
Curry	22%	77	4.7	4.5
Taos	21%	80	4.4	4.4
Grant	20%	78	3.9	4.2
Cibola	29%	76	5.7	5.5
Luna	30%	76	5.2	4.9
Lincoln	18%	78	4.1	4.4
Roosevelt	22%	77	4.6	4.6
Socorro	26%	78	5.3	5.1
Colfax	22%	79	4.6	4.5
Sierra	22%	74	4.9	4.9
Quay	25%	75	5.0	4.7
Guadalupe	24%	76	4.3	4.0
Hidalgo	26%	77	4.9	4.8
Union	22%	80	4.5	4.5
Catron	20%	82	4.5	4.7
De Baca	24%	76	4.8	4.8
Harding	21%	N/A	4.3	4.3

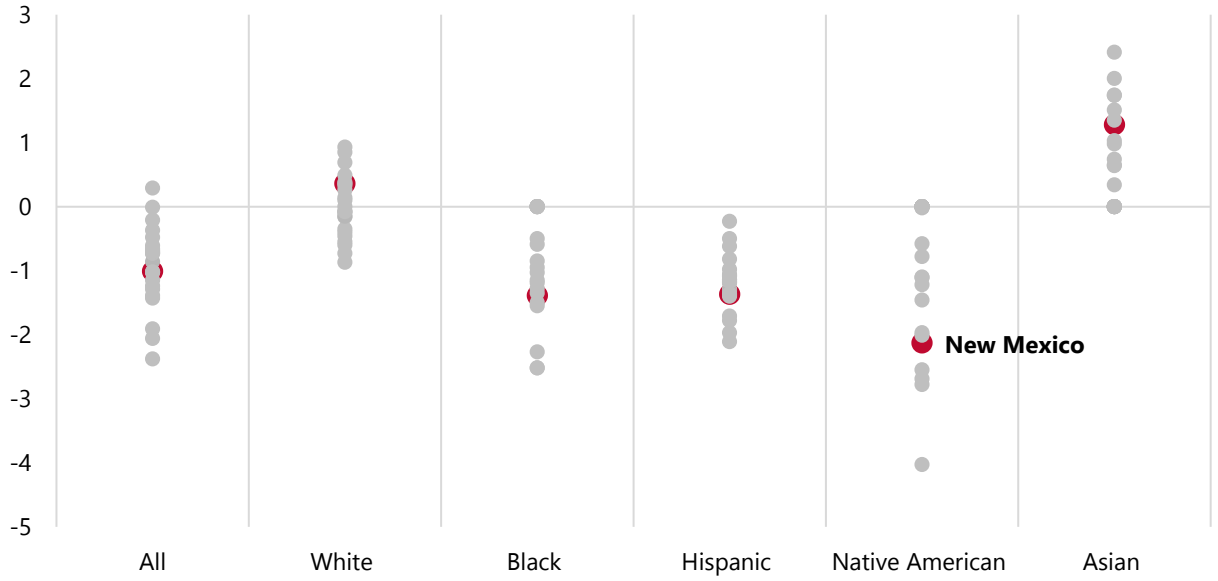
Education

Public K–12 Education

Micropolitan and rural New Mexico constitutes a majority of the state's counties, resulting in a diversity of educational opportunities and outcomes for students in these counties. Micropolitan and rural regions present challenges for state and local governments in providing quality education for students, driven in large part by the dispersion of a small number of students throughout a large geographic area. This trend holds true in New Mexico, with the added consideration of the state's large Native American communities, located mostly within rural areas of the state.

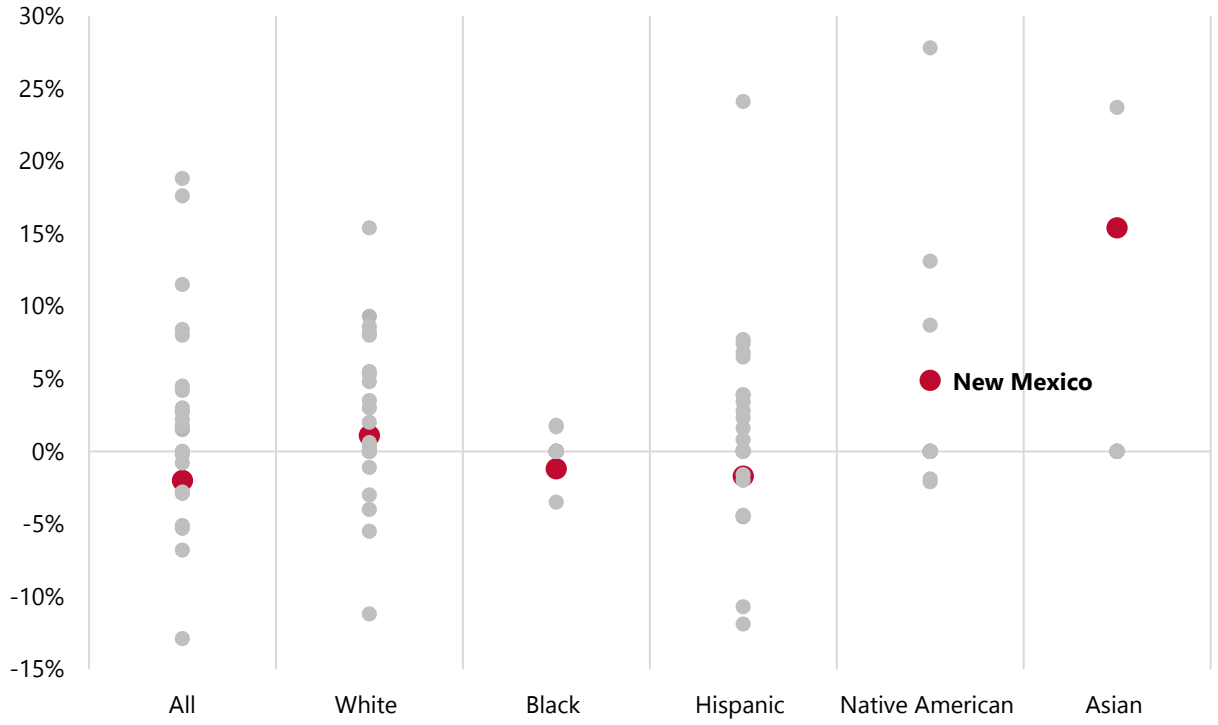
As shown in Figure 65, average test scores for rural and micropolitan counties in New Mexico vary widely, with students in Union, De Baca, and Harding Counties consistently scoring above the state average while others, like McKinley, Socorro, and Luna Counties score below the state average. As in other regions of the state and the United States, higher performance is concentrated among Asian and White students, while Black, Hispanic, and Native American students in New Mexico's rural communities, particularly in Socorro County, struggle to perform as well. The lower scores for most minority students in New Mexico's rural communities is indicative of a lack of educational opportunity throughout these communities.

Figure 65: Average Grade Level Performance on Standardized Tests Above or Below the National Average in Micropolitan and Rural New Mexico, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show at what grade level students in different racial groups test. For example, in New Mexico, all students in grades 3 through 8 generally test about one grade level below the national average for students in that grade.



Data on learning rates in rural and micropolitan New Mexico show that student grades generally increase with additional schooling, illustrating the high impact of public schools in rural areas of the state. Important to note, however, are the differences between counties in how students of different racial and ethnic backgrounds learn in school. For example, Native American students in Otero and Lincoln Counties have significantly higher learning rates than their Native American peers in other regions of the state, while Hispanic students in Sierra and McKinley Counties have the highest learning rates among Hispanic students in rural New Mexico.

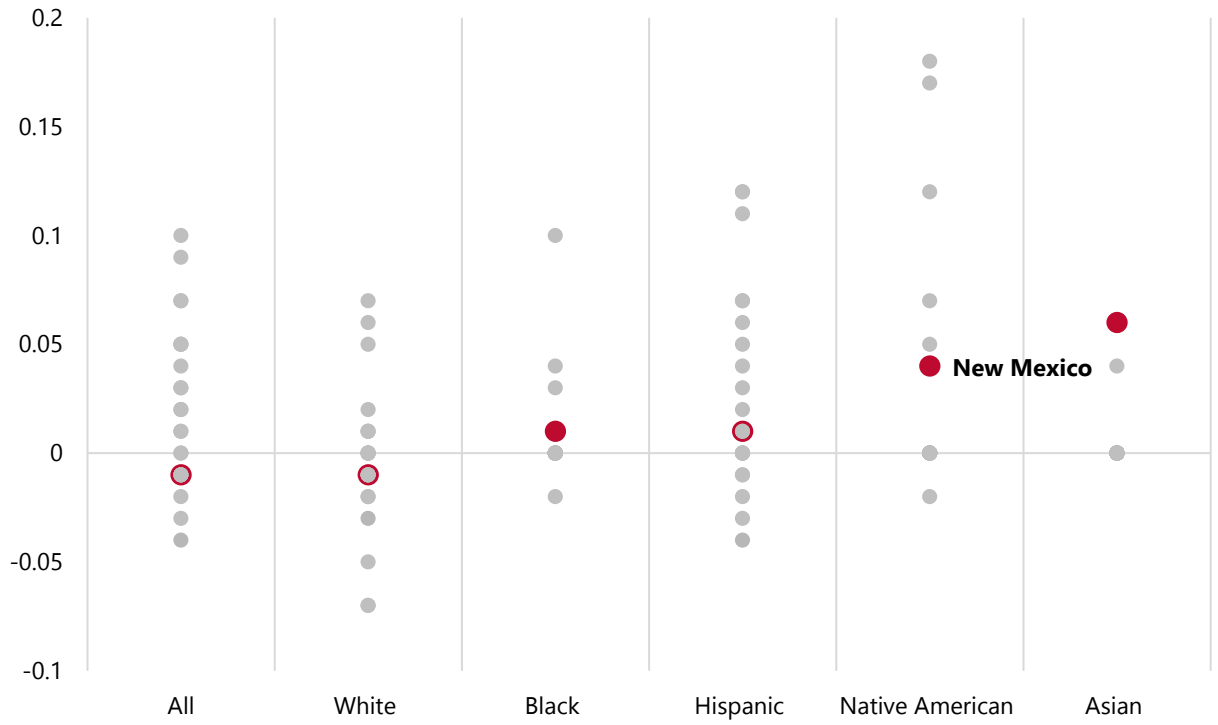
Figure 66: Level of Learning in Each Grade Above or Below National Average in Micropolitan and Rural New Mexico, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show what amount of information above or below the national average students learn in regional classrooms. For example, in New Mexico, all students in grades 3 through 8 generally learn about 2% less in each grade level than the average U.S. student.



The trend in test scores for micropolitan and rural communities in New Mexico shows that several counties are well on the path to improvement, such as the counties of Cibola, Roosevelt, and Sierra. Improvement is particularly notable among the state's rural Native American students, with those in Socorro and Otero Counties demonstrating high growth in test scores.

Hispanic students in Roosevelt, Sierra, and Hidalgo Counties also experience a greater-than-average trend in test scores.

Figure 67: Grade Level Increase in Test Scores During Each Academic Year in Micropolitan and Rural New Mexico, by Racial Background, 2009–2018. Source: Stanford Educational Opportunity Project. Note: The national average is represented by "0" on the y-axis. Chart data show the how much test scores increased each year, in terms of the grade level that students tested at. For example, in New Mexico, all students in grades 3 through 8 generally increase their test scores by about -0.01 grade levels each academic year.



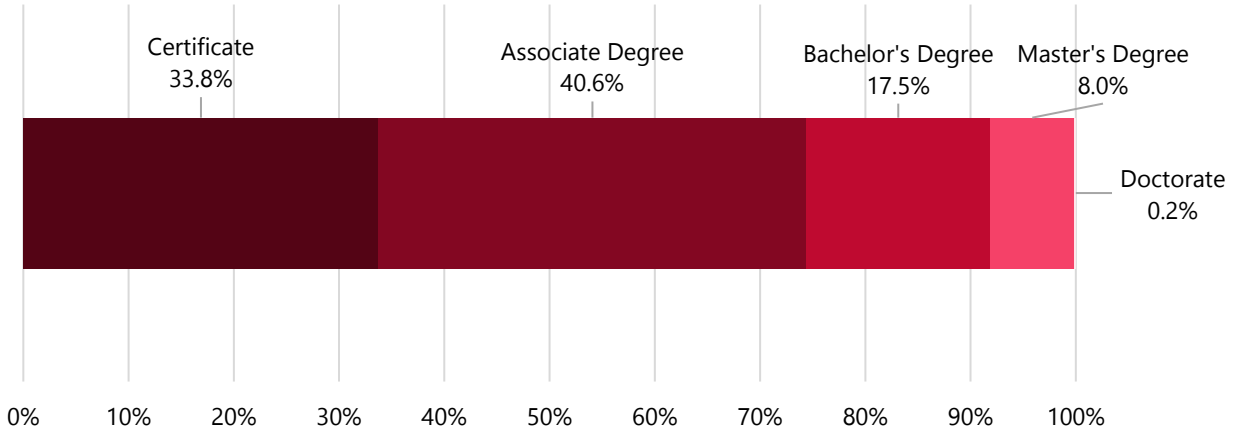
Higher Education

Micropolitan and rural New Mexico contains many of the state's 2- and 4-year higher education institutions. The majority of these institutions provide certificate and associate degrees to the state's rural population. Of the 15 public higher education institutions examined here, 12 conferred only certificates or associate degrees for the 2018–19 academic year. The remaining three—Eastern New Mexico University, Western New Mexico University, and New Mexico Institute of Mining & Technology—awarded over 930 bachelor's degrees (17% of all credentials), 420 master's degrees (8%), and 8 doctorate degrees (0.2%). About 1,800 certificates (34%) and

nearly 2,200 associate degrees (41%) were awarded by institutions in this region of New Mexico (see Figure 68).[173]

Higher Education Institutions in New Mexico Focus Primarily Upon Certificates and Associate Degrees

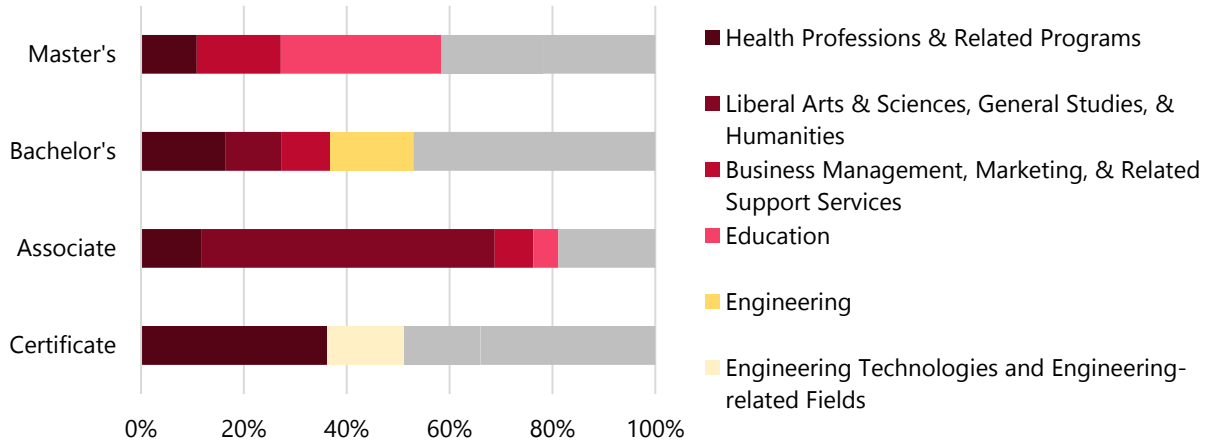
Figure 68: Credentials Awarded by Higher Education Institutions in Micropolitan & Rural New Mexico, 2019. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System.



Credentials produced by higher education institutions vary slightly, though many of these credentials fall into one of four categories, regardless of credential level: Liberal arts (27% of all credentials), health professions (23%), business management (7%), and education (6%). The popularity of these areas varies by credential level (see Figure 69). For example, health is the most common subject area for those pursuing certificates and bachelor's degrees in micropolitan and rural New Mexico and is less popular among those pursuing associate and master's degrees. At the associate degree level, liberal arts remains the most popular subject area for students, while education is the most popular for those pursuing master's degrees.

Liberal Arts Is the Most Popular Subject Matter Area for Students in Micropolitan and Rural New Mexico

Figure 69: Popular Subject Areas, by Credential Type, 2019. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System.



The credential data demonstrate that, despite being a large and diverse region of New Mexico, higher education institutions in micropolitan and rural New Mexico generally follow a similar trend as institutions in other regions of the state. That is, many produce graduates in similar subject areas, especially at the certificate and associate degree level, despite the wide geographic distribution of these institutions. Table 34 in Appendix B provides an overview of the most common subject area for credentials produced at micropolitan and rural public higher education institutions. Of the 12 institutions in micropolitan and rural New Mexico that provide credentials at the certificate level, eight (67%) were heavily concentrated in certificates related to health professions. At the associate degree level, 11 of the 15 institutions (73%) offering associate degrees produced these credentials primarily in liberal arts and sciences. This indicates that for higher education institutions offering certificates and associate degrees in micropolitan and rural New Mexico, there is a high degree of overlap in institutional offerings.[174]

Increasing the opportunity for micropolitan and rural institutions to specialize in certain thematic areas that better align with local industry need, as well as forecasted industry opportunity, will enable these institutions to play an increased role in the state's workforce development ecosystem and strengthen regional economies. Mesalands Community College is a model example of this kind of specialization; the college has developed industry-aligned education and training programs that support the region's burgeoning wind sector, providing clear career pathways for regional residents while assisting the growth of one of New Mexico's key target industries. While the college does provide certificates and associate degrees in other

subject areas—such as liberal arts and sciences and business management—it remains focused primarily on engineering-related degrees that support the wind sector.

Recreation

Access to wide open spaces and natural areas represents a huge draw for both residents and visitors to rural and micropolitan New Mexico. While smaller towns with less population density often have fewer options for municipal parks and community centers, the surrounding terrain presents ample opportunity for outdoor recreation, one of New Mexico's greatest allures. Some of the most popular activities are horseback riding, snow sports, climbing, hiking, camping, fishing, and off-road driving. Snow sports are especially important in the northern Taos Ski Valley, which is ranked among the top ski areas in the western United States.

Despite being surrounded by open public lands, many New Mexicans living in rural communities lack access to outdoor recreation options. Some of these activities require prohibitively expensive equipment, and sometimes the closest trails can still be dozens of miles away from homes or are not well maintained. Fortunately, the state's new Outdoor Recreation Division (ORD) is working to support rural communities as they address some of these issues. In addition to the outdoor equity grants program discussed earlier, ORD also oversees the Outdoor Recreation Trails+ program, which provides grants to tribal and nontribal municipalities for improvements to outdoor infrastructure. Investments in projects, such as developing and maintaining trails, improving signage, and constructing boat docks, can improve access to and increase the appeal of outdoor amenities in rural areas for both residents and tourists alike.

Economy

Diversification

The economy of rural and micropolitan New Mexico is as varied as its landscapes. Agriculture is a core industry for much of the state and is especially important in the eastern, southern, and central counties. Dairy and cattle ranching are essential for the economies of the eastern counties, and southeastern New Mexico has a thriving cheese industry that ships nationwide and internationally. New Mexico's rural counties grow a diverse range of crops, including several world-famous varieties of chiles, such as Hatch and Pueblo chiles. Onions, corn, pecans, hay, and cotton as well as greenhouse crops are all grown in these areas. Diverse crops are important for dealing with the effects of climate change as well as the dangers of disease that come with monocultures. Rural New Mexican farmers are exploring innovative and alternative methods of crop growth in geothermally warmed greenhouses as well as alternative livestock in the form of tilapia farms and aquaculture. Agriculture not only provides jobs, income, and food for residents, but it also attracts transitory labor from around the United States and Mexico.

Mining as well as oil and gas extraction play an important role in the northwestern and southern counties. Mining tends to be most important in the southwest counties of Luna, Hidalgo, and Grant, while oil and gas are more important around the major basins and refineries in the northwest and southeast. Coal mining, while still important, has seen dramatic shifts over the last decade as natural gas-fired power plants have become increasingly common. Extractive industries tend to be volatile and attract a transitory workforce but also provide high-paying jobs during boom times. Increasing automation has also allowed extractive businesses to reduce their overall workforce. The environmental impacts of these industries are more and more controversial and permitting is often a multi-year, multimillion-dollar effort. Clean-up, especially around abandoned mines and tailings ponds, often falls to federal agencies, such as the Environmental Protection Agency (EPA), and leads to poor health outcomes for nearby residents. Opportunities exist as new metals and minerals become important for renewable energy technology and U.S. manufacturing expands in the wake of efforts by the federal government to reshore supply chains. Renewable energy itself represents an area for rural New Mexico to grow and diversify its industrial mix. With ample sunshine, wide-open spaces, and geothermal resources, rural New Mexico has a plethora of options for expansion.

Outside of extractive and agricultural industries, the education and healthcare sectors are important employers in rural and micropolitan New Mexico. McKinley and Taos Counties have strong healthcare industries with deep roots in rural and Indian health services. Education is also an important sector throughout the state.

The arts are an important industry in New Mexico, and the state enjoys a national reputation for its cultural heritage. Beginning with Native American communities, New Mexico's residents have a rich history of producing art in the form of jewelry, woven crafts, paintings, architecture, dance, and song. Even rodeo is part art and part sport. The state's complex history and diverse peoples have contributed to a distinct artistic culture that defines and elevates New Mexico. Local and state government have taken care to recognize the importance of the arts, providing grants for rural arts trails and urban outdoor arts. Art, along with natural landscapes and outdoor recreation, provide a major draw for visitors to the state while also improving overall quality of life for residents. Cultural tourism and outdoor recreation are important industries for rural New Mexico and areas like Gila National Forest, White Sands National Park, and Taos Ski Valley, and the historical and cultural treasures of the region draw visitors from the United States and internationally.

Attraction & Retention of a Skilled Workforce

Most rural and micropolitan New Mexican counties have seen declining or plateauing populations since the 2010 U.S. Census. Attracting a skilled workforce is important, but rural

areas have always aspired to retain local talent. Many young people would prefer to stay close to family and remain within their communities, but opportunities to utilize their skills elsewhere draw them across the border to Texas, Arizona, and major metropolitan areas. With the loss of young people and skilled workers, rural New Mexico is often left with an older population bereft of plumbers, electricians, construction workers, and healthcare workers. To attract and retain a rural and small-town workforce, skilled workers need to make a living wage and support their families. The pandemic and the national move toward flexible and remote work presents an opportunity to this end. Better broadband and cellular service will allow workers to live and work where they prefer. Residents can also take advantage of new markets and seek out new business and training options online. If given the skills and tools, local entrepreneurs can take advantage of opportunities to address the needs of residents.

Environment

Land

Micropolitan and rural New Mexico covers vast swaths of land in the state and represents a diverse set of landforms including forest, mountains, plains, deserts, and tablelands. Canyons, valleys, and arroyos dot the landscape. One of New Mexico's greatest assets is its land, and this is even more apparent in rural New Mexico. Subsequently, there is a wide range of industries that take advantage of the land—including agriculture, outdoor recreation, mining, oil and gas production, renewable energy, and lumber. With wide-open spaces and lack of light pollution, rural New Mexico's skies also provide a draw for visitors and astronomers in search of dark skies.

Large portions of land within these counties are administered by federal agencies—including the Bureau of Land Management, the Forest Service, the National Park Service, the Department of Defense, U.S. Fish and Wildlife, and the Bureau of Indian Affairs. Gila National Forest and White Sands Missile Range and National Park represent some of the largest federally owned lands within the state. Gila National Forest spans Catron and Grant Counties and is the sixth largest national forest in the United States at 3.3 million acres. White Sands Missile Range covers 2 million acres over five counties: Otero, Socorro, Sierra, Lincoln, and Doña Ana. Private land ownership is more common in the northeastern and eastern parts of the state where grasslands predominate, and ranches and croplands are common.[175]

Water

The most common climate among these counties is arid to semi-arid although alpine climates are present in northern New Mexico. Rural New Mexico is home to most of the large reservoirs

within the state, which store water from the San Juan, Rio Grande, Pecos, and Canadian Rivers.[176] Rural residents often rely on wells, which draw up groundwater from various aquifers. The U.S. Geological Survey, the Office of the State Engineer, and the New Mexico Bureau of Geology and Mineral Resources map and monitor aquifers throughout the state.[177] Aquifers have been more heavily tapped during periods of drought due to lower surface water levels, which can lead to drawing from aquifers at a rate faster than they can recharge. Since 2014, aquifer storage levels in southern and eastern counties have dropped. Aquifers are also frequently employed to serve the needs of agriculture, oil and gas, and mining industries in rural areas.

Other Natural Resources

Historically, mining and drilling has taken place on rural lands in New Mexico. One out of the remaining three operating coal mines in the state is located in McKinley County. Other important minerals and metals, such as gold, gypsum, and agate, are also mined across the state, with four large copper mines still in operation in Grant County.[178] Two uranium sites are located in McKinley County, but no uranium mining has occurred there for three decades due to health concerns and changes in the market.[179] Currently, one of New Mexico's Mining and Minerals Division's primary responsibilities is overseeing the reclamation of retired and abandoned mines. These reclamation efforts include mines in rural areas on federal land, which are principally funded by the U.S. Department of the Interior.

New Mexico's major oil and gas reserves are the San Juan Basin near Farmington in the northwest and the Permian Basin in the southeast. While royalty earnings from oil and gas leases provide funding for public benefits such as schools, hospitals, and other programs throughout the state, the industry has a more direct benefit to the economies in Lea and Eddy Counties. A recent study found that the Permian Basin provides 22,000 high-paying oil and gas jobs in the state.[180] Oil and natural gas extraction is a volatile industry and the economic benefit from these reserves fluctuates greatly depending on geopolitical factors and national demand. Environmental concerns—especially around water and climate change, make extractive industries controversial despite their importance to the state economy.

Rural and micropolitan New Mexico also has an abundance of renewable energy resources as well, and ample land provides the necessary space for locating wind and solar farms. Renewable energy projects have been constructed across the state, especially in the south and east with several new projects in development. One of the nation's largest wind energy projects, Broadview, is near its final stage of development and stretches from Curry County into the Texas panhandle.[181] The wind farm portion of the project became operational in 2017 and generates 324 MW of clean energy, which is sold and transmitted to southern California. While most employment opportunities in wind energy are available during the construction phase of

projects, development of new wind farms is expected to continue across the state for at least the next 15 years.[182]

Strategies for New Mexico's Economic Path Forward

Strategies for New Mexico's Economic Path Forward

Over the next 20 years, New Mexico must build a more diverse, resilient, and inclusive economy to ensure sustained prosperity for current and future New Mexicans. As the state's primary economic development organization, the New Mexico Economic Development Department (EDD) will play a leading role in the reshaping of New Mexico's economy to capitalize on opportunities as they emerge and to build the capacity necessary to drive future growth and diversification.

The recommendations contained in this strategic plan are rooted in the findings of extensive stakeholder engagement, in collaboration with EDD, as well as analysis of relevant quantitative data sources. While the recommendations found in the action plan were developed in response to these findings, specific data points are not cited in each action item. Rather, the findings of the analysis and the data that informed them can be found in the following sections:

1. New Mexico's State & Regional Economies
2. New Mexico's Target Industries
3. New Mexico's Innovation Ecosystem
4. New Mexico's State & Regional Assets

Ultimately, the analysis finds New Mexico to be a land of immense opportunity with significant potential to transform the state's economy over the next 20 years. However, capitalizing on this opportunity remains contingent upon EDD and other stakeholder organizations collaborating across sectors to address a wide variety of challenges that face New Mexico's communities and economy. These challenges are discussed below.

The findings of this report, outlined in greater detail in the sections identified above, and the recommendations made in the subsequent action plan are built in consultation with existing strategies, plans, and studies developed by non-governmental stakeholders in New Mexico—such as the New Mexico Chamber of Commerce and the New Mexico Partnership—as well as governmental organizations—including New Mexico's seven councils of governments (COGs), the Indian Affairs Department (IAD), the Energy, Minerals, and Natural Resources Department (EMNRD), the Higher Education Department (HED), and the Department of Workforce Solutions (DWS), among others. Direct engagement with more than 100 organizations provided further insights that shape the recommendations presented in this strategy report.

Building a Coalition of Stakeholder Support

While this plan is comprehensive, it is not intended to be the final step in the reimagination of economic development in New Mexico; rather, this plan serves as a critical *first step* for unifying New Mexico's economic development ecosystem. The analysis identified many broad opportunities and challenges for New Mexico—including access to high-quality education, quality of life challenges in urban and rural communities, and the growing impacts of climate change—that are identified in this plan but that will require further attention in order to craft a long-term response by a coalition of state, local, and tribal leadership. As a result, EDD—alongside state agencies like DWS, HED, IAD, and EMNRD, regional and local governments, and New Mexico's non-profit community—must strengthen and maintain collaborative relationships in the long term to ensure that the wide-reaching economic and societal challenges in New Mexico are sufficiently addressed.

The development of this plan has provided the impetus for the creation of long-term, routinized collaboration among stakeholders in New Mexico's economic development ecosystem, and many of the recommendations that follow will sustain these collaborations through innovative partnerships. Additionally, the newly formed Sustainable Economy Task Force will play a critical role in supporting the successful implementation and execution of this strategy.

Understanding the Strategic Plan Framework

A long-term strategic plan that seeks to develop and diversify New Mexico's economy must reflect the aspirations of stakeholders in New Mexico while accounting for the current capabilities of the state and its regions. Additionally, this plan must unify stakeholders in New Mexico around a common goal for a more resilient, prosperous, and equitable economy that sustains and empowers the state and its communities over the long term. Most importantly, however, a long-term economic development and diversification strategic plan must be actionable—stakeholders must be able to identify concrete steps to be taken by specific organizations that work to achieve the goal of a new, inclusive economy for New Mexico.

This strategic plan is comprised of four primary components.

The **vision** is the broadest component of the strategic direction and action plan. It communicates a desired "end state" that is reached upon full completion of the action plan. To achieve this vision, **strategies** are identified that capture the opportunities and challenges facing New Mexico's communities. Each strategy is comprised of a series of priorities. **Priorities** focus on a specific component of a strategy; for example, if a strategy is focused on economic diversification, a priority within that strategy may be a specific industry that should be targeted to achieve this diversification. Lastly, each priority within each strategy is made actionable through a number of specific **actions** that are recommended to EDD and stakeholder organizations.

A 20-Year Vision for New Mexico's Economic Path Forward

A 20-year strategic plan requires a unifying idea that guides stakeholders' activities and envisions the desired result of strategic success. This vision must capture and succinctly communicate the ambitions of stakeholders in New Mexico and its regions. Stakeholders identified several themes and desires for New Mexico's future and overwhelmingly noted the importance of a more **inclusive** and **prosperous** society in New Mexico, one that provides greater opportunities for members of New Mexico's diverse communities. Many noted that the best way to unlock these opportunities is to build a more **diverse** and **sustainable** economy that engages the diversity of New Mexico's communities and the capabilities of the state's workforce. Finally, stakeholders noted the entrepreneurial spirit of New Mexicans and the opportunity to engage this **entrepreneurialism** to drive **innovation** in all corners of the state's economy.

To build a diverse and robust economy that engages local talent, cultivates innovation, and delivers prosperity for all New Mexicans.

Strategies & Priority Areas

To achieve this vision of a more equitable, diverse, and innovative economy, concrete steps must be taken by the state of New Mexico and stakeholder organizations to address common challenges identified by stakeholders and seen in the data. Through interviews, focus groups, surveys, and a review of existing stakeholder strategies and plans, six key challenges became apparent, each requiring coordinated efforts by EDD and other state and local agencies, other economic development organizations, and industry. These challenges are:

Lack of collaboration between economic development stakeholders. As a state with a large geographic footprint but a smaller population, New Mexico has traditionally utilized a decentralized, ad hoc approach to economic development. Local and tribal governments, along with other economic development stakeholders, have historically been empowered to lead development within their jurisdictions while statewide organizations have played a relatively minor role. While this approach prioritizes the needs of local communities, it relies heavily upon local organizations' capacities to support economic development projects, leading to some regions of the state excelling in growing their economies while other regions have fallen behind.

Difficulty attracting and retaining talent in urban, rural, and tribal communities. New Mexicans are well aware of the benefits of living in New Mexico, including the state's immense outdoor assets and relatively affordable cost of living. Nevertheless, data indicate that each of New Mexico's seven COG regions has struggled to attract new residents, with each region relying heavily upon natural increase (i.e., new births) to grow their populations. Stakeholders had several theories to explain this struggle, including underperforming K–12 education systems, higher crime rates, and increasing housing costs in certain communities.

Misalignment between higher education and industry. For a state with a smaller population, New Mexico maintains an extensive network of 2- and 4-year higher education institutions. Stakeholders noted that some of these institutions, such as Central New Mexico Community College, have been highly effective at engaging with industry and designing industry-relevant curricula. However, stakeholders also noted that many of New Mexico's higher education and training institutions are increasingly disconnected from the needs of industry, and the data support this assertion. Though

New Mexico aims to grow industries requiring heavy science, technology, engineering, and mathematics (STEM) skills, New Mexico's higher education system is increasingly producing graduates in non-STEM fields.

Disengagement of socioeconomically disadvantaged communities in planning processes. New Mexico is a minority majority state and includes a significant Native American population. Traditional models of economic development in New Mexico have led to many of these communities being disengaged from the development planning process, institutionalizing inequities between communities and individuals with resources and those without. Economic opportunity is concentrated in certain areas of the state, and many of the broader societal challenges disproportionately affect members of socioeconomically disadvantaged communities. As a result, New Mexico's nonprofits and social groups are often left to address these issues through short-term interventions. Permanent, long-term solutions are needed to support these communities and unlock their potential as an engine for New Mexico's future growth.

Public sector dominance in New Mexico's innovation ecosystem. As the home of two federal national laboratories and an Air Force Research Laboratory, New Mexico has a proven history with innovation. However, evidence suggests that this track record of innovation is less apparent among New Mexico's private sector, in which many young firms have struggled to successfully scale in the state. Data suggest the lower rate of successful high-technology entrepreneurs in New Mexico may have to do with the perceived quality of these entrepreneurs and the resources at their disposal to improve their chances in the marketplace. Stakeholders confirm this finding, highlighting the need for targeted support for New Mexico's entrepreneurs in building technical capabilities and accessing funding.

Concentration of the economy in a few key industries. Historically, New Mexico's economy has been dependent upon a few key industries that have driven development in the state. These industries include the government, retail, and oil and gas. These industries will continue to play an important role in the state's economy, especially as they provide well-paying jobs to many individuals throughout New Mexico's regional economies. Nevertheless, as the effects of climate change grow, and as EDD aims to reduce volatility in employment and economic growth, new programs and policies will be necessary to enable diversification and development.

As discussed in other areas of this report, the development and diversification of economies is a comprehensive process, one that requires coordination among stakeholders to ensure resources are used effectively and sustainably. It calls for the strengthening of communities to support current residents and bring new talent to the region. It necessitates the creation of a highly

skilled workforce at different education levels that can meet the needs of employers in various industries. The economic development and diversification process works best when all communities are engaged in the planning and execution of related projects. Failure to include communities that represent notable portions of a state's population and serve as critical economic engines throughout a state's regions, such as New Mexico's Native American communities, exacerbates existing inequalities and the inability of a state to reach its full economic potential. Development and diversification are not only increasingly dependent upon innovation and the creation of new products and ideas to open new markets and generate new opportunities for a diverse class of worker, but they are more intertwined than ever before and will ensure that economies can withstand the impact of external shocks and recover quickly when these shocks disrupt the status quo.

With this in mind, six corresponding strategies have been identified to address these challenges. These strategies represent broad, high-level approaches for tackling the challenges and achieving the vision outlined above. These strategies are:

Collaborative New Mexico

Modernize New Mexico's Economic Development Ecosystem

Priority 1.1. Align the efforts of stakeholders in New Mexico's economic development ecosystem.

Priority 1.2. Streamline and simplify New Mexico's rules and regulations.

Priority 1.3. Strengthen New Mexico's business recruitment and retention efforts.

Dynamic New Mexico

Strengthen New Mexico's Communities

Priority 2.1. Increase community capacity for economic development projects and initiatives.

Priority 2.2. Redefine New Mexico's urban regions.

Priority 2.3. Commit to the economic sustainability of New Mexico's rural and tribal communities.

Skilled New Mexico

Reimagine Education & Training

Priority 3.1. Improve the quality of New Mexico's higher education and training programs through industry engagement and institutional reform.

Priority 3.2. Reform New Mexico's workforce development ecosystem to align with industry needs.

Priority 3.3. Prepare New Mexico's students for success.

Inclusive New Mexico

Promote Equity Through Economic Justice

Priority 4.1. Encourage state, regional, and local organizations to increase collaborations with tribal communities.

Priority 4.2. Expand access to resources for entrepreneurs from disadvantaged backgrounds.

Priority 4.3. Improve education and workforce outcomes for underserved populations.

Innovative New Mexico

Enable High Quality Home-Grown Innovation

Priority 5.1. Build capacity among New Mexico's entrepreneurs.

Priority 5.2. Remove barriers to financial resources for entrepreneurs.

Priority 5.3. Sustain an entrepreneur-friendly business environment.

Priority 5.4. Connect entrepreneurs and innovators to critical industry knowledge and resources.

Resilient New Mexico

Diversify New Mexico's Economy

Priority 6.1. Aerospace.

Priority 6.2. Biosciences.

Priority 6.3. Cybersecurity.

Priority 6.4. Film & Television.

Priority 6.5. Outdoor Recreation.

Priority 6.6. Sustainable & Value-Added Agriculture.

Priority 6.7. Intelligent Manufacturing.

Priority 6.8. Global Trade.

Priority 6.9. Sustainable & Green Energy.

Action Plan

The Action Plan translates the content of the Strategic Direction into concrete steps to be taken by stakeholders in New Mexico's economic development ecosystem in support of statewide development goals. It describes the specific activities to be performed and designates lead and supporting organizations responsible for conducting these activities. Each action has an approximate time frame for execution, as well as a rough indication of the estimated costs to execute the action. Estimated costs and timelines are determined based on respective three interval scales.

Estimated Costs	Timelines
$ is roughly less than $500,000	Short-term refers to the next 1 to 2 years
$$ is roughly $500,000 to $1,000,000	Medium-term refers to the next 3 to 5 years
$$$ is roughly greater than $1,000,000	Long-term refers to the next 6 to 20 years

Timelines for actions are classified as short, medium, and long. Activities with a short timeline could be mostly accomplished or completed within 2 years. Those in the medium category could plausibly be conducted in 2 to 5 years. Activities with long timelines may require 6 or more years to carry out but could exhibit meaningful progress in a shorter period with prompt implementation.

Estimated Costs for actions are classified on a three-value scale ($, $$, and $$$). An action with lower estimated costs may be accomplished with less than $500,000. Activities in the moderate category are likely to need more investment, generally in the range of $500,000 to $1,000,000. Higher estimated costs indicate that the activity requires a large level of investment, likely in excess of $1,000,000.

Strategy 1: Collaborative New Mexico Modernize New Mexico's Economic Development Ecosystem

Priority 1.1. Align the efforts of stakeholders in New Mexico's economic development ecosystem.

Greater alignment between economic development organizations—including state agencies, regional, local, and tribal governments as well as many of the non-profits in New Mexico—is necessary to develop and diversify New Mexico's economy. Stakeholders throughout New Mexico frequently described a confusing landscape of public, private, and non-profit organizations that address overlapping components of New Mexico's economic development ecosystem. This overlap oftentimes results in a duplication of effort and inefficient use of resources, contributing to a "scarcity mentality" among stakeholders. As the state's primary economic development organization, EDD must play a leading role in driving the realignment of economic development organizations in New Mexico to best serve the needs of the state's communities and industries.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Provide dedicated funding to NewMARC to establish organizational leadership and increase collaboration between COGs and state agencies.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	COGs	$$	Short-term

COGs play a critical role in guiding regional and local economic development efforts. However, there currently exists few collaboration mechanisms that encourage COGs to work together to share best practices, collectively recruit businesses, and cohesively develop New Mexico's regions. A new organization, NewMARC, was established to help jumpstart this collaboration but has yet to be appropriated funds to support this effort. EDD should work with stakeholders and federal agencies to secure funding for NewMARC to establish a leadership team that can begin the process of aligning COGs with one another, as well as with state-level economic development goals. By supporting NewMARC, EDD is enabling the coordination of planning efforts that aligns with regional needs and captures the rural perspective.

EDD Recommendation 2: Empower NewMARC to establish industry councils for target industries comprised of businesses, organizations, and state, local, and tribal governments that determine the health of the industry and recommend actions to support the industry's growth.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, NewMARC	DWS, HED, tribal governments, workforce boards	$	Short-term

New Mexico is home to a growing number of businesses in diverse industry sectors. To further the state's diversification efforts, the governor's office has identified nine target industries that show potential in New Mexico. However, a better understanding of the target industry landscape in New Mexico is necessary for EDD, COGs, and other stakeholder organizations to best support these industries. Additionally, a more proactive approach is necessary to ensure that members of different communities, in particular tribal communities, in New Mexico are sufficiently engaged in support of target industries.

Industry councils are an emerging tool used by national, state, and local governments to better understand the real-time needs and pain points of firms in key industries. Such councils provide real-time data on market conditions and, in some instances, provide recommendations to public sector decisionmakers on policies, programs, or initiatives that could be implemented to address industry-wide concerns. In the New Mexico context, the industry councils should be used to this end. Invited members from the business community should be tasked with producing quarterly, biannual, or annual "State of the Industry" reports that identify near-term constraints and long-term trends as well as recommendations for decisionmakers to mitigate constraints and capitalize on opportunities. The Federal Reserve Bank of St. Louis utilizes a similar approach to understand business dynamics within its jurisdiction through the use of "brown books" that are published by the bank's target industry councils.[183]

State agencies—including EDD, DWS, and HED—will play an important role in ensuring that New Mexico pursue a unified approach to growing its target industries. However, given the different assets and capabilities of New Mexico's regions, empowering a regionally focused development organization, such as NewMARC, to convene industry stakeholders will enable state agencies to focus their resources on developing new policies and programs. Similarly, NewMARC's role as a convening authority for New Mexico's COGs will ensure local needs and capabilities are reflected in industry discussions. An example of this regional focus can be found in western Michigan, where West Michigan Works!, the workforce development board for the

region, has supported the creation of industry councils focused on developing industry-relevant workers in the region.[184] In New Mexico, the regional approach is preferential, but NewMARC and other organizations must ensure the perspectives of smaller communities, in particular the state's many Native American communities, are adequately represented in the industry councils. This can be achieved by inviting representatives from Native American-owned businesses to serve on the councils, as well as leadership from different tribes that have a keen interest or expertise in a specific target industry.

EDD Recommendation 3: Repackage the EDD website into a modern, user-friendly information portal that consolidates business development resources, site selection and socioeconomic data, and marketing materials while being accessible to non-English speakers.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NM Partnership, COGs	$$	Medium-term

Overall, there is a disconnect between New Mexico's economic development resources and the businesses and workforce they are meant to serve. Public and private stakeholders in New Mexico frequently cited challenges in understanding which state agency they should go to for information on maintaining regulatory compliance, applying for incentives, or accessing critical business information. In some cases, business-oriented nonprofits in the state have resorted to developing their own "roadmaps" for navigating New Mexico's bureaucracy. Confusion on which agency is responsible for what part of the business recruitment and expansion process slows down the business development process and can risk the loss of opportunities to bring new businesses to New Mexico.

Stakeholders brought up the potential of the EDD website to provide insight into these issues and streamline access to information about resources available across state agencies. As it is now, they find the website unclear and difficult to navigate. Some important information on economic development is available not on the EDD website, but on the NM Partnership website. Terminology across economic development sites within the state—such as on the various COG, NM Partnership, and economic development organizations' websites—is not consistent. Furthermore, it is critical that information and resources are accessible to non-English speakers. A careful redesign and reorganization of the structure to create a user-friendly portal should

incorporate business development and socioeconomic data, include site selection information and marketing materials, and be accessible to non-English speakers.

EDD Recommendation 4: Hire of a dedicated grant and proposal writer at EDD who can support applications for federal and non-profit funding opportunities at EDD and economic and community development organizations.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	N/A	$	Short-term

Many regional and local economic development organizations in New Mexico rely on grants and other forms of outside funding to support different programs. Writing grants and proposals can take time and resources away from other activities on which these organizations are often focused, such as business outreach and entrepreneur development. Hiring a dedicated staff member at EDD who can assist EDD, COGs, and other economic development organizations in writing grants and proposals and winning funding can ensure that New Mexico capture the full amount of funding it needs to support various projects. As a smaller state with a large geographic footprint, New Mexico runs the risk of leaving money on the table when federal agencies and non-profit groups announce new funding streams for topics important to New Mexico. Mitigating this risk and receiving all possible funding will help New Mexico and its regions implement the programs and projects necessary to develop and diversify state and regional economies.

EDD Recommendation 5: Establish a competitive fund for regional, local, tribal, and non-profit organizations to provide the matching funds required by EDA, USDA, and other similar grants.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-FUNDIT	N/A	$$	Short-term

Numerous organizations operate in New Mexico to support the state's economic development agenda. The work of these organizations is critical to addressing many of the economic and

broader societal challenges that face different regions of the state. However, the efforts of these organizations are often capital intensive and require adequate funding to hire workers, collect data, and engage with local communities. While these organizations can access funding through third parties, such as the federal Economic Development Administration or national nonprofits like the Kellogg Foundation, many of these funding programs require matching funds that many organizations do not have. Additionally, by providing different local and tribal agencies and non-profit organizations with state funding, EDD can ensure that state-level priorities, such as the development of New Mexico's target industries, are addressed through projects implemented by other organizations. Subsequently, the development of a matching fund, which could be administered through EDD's existing FUNDIT program, could serve as an incentive for other organizations to maintain alignment with EDD's statewide priorities as outlined in this strategy.

EDD Recommendation 6: Establish recurring virtual quarterly meetings between EDD and stakeholders in New Mexico's economic development ecosystem.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Economic development organizations	$	Short-term

The extensive network of economic development stakeholders, including public agencies as well as nonprofits, calls for greater collaboration between stakeholders to ensure development-related activities are achieving maximum impact. While other actions in this plan are focused on increasing the efficacy of economic development interventions in New Mexico, there remains a need for greater communication among development stakeholders in the state. Establishing recurring virtual quarterly meetings that allow stakeholders to update the New Mexico development community on planned activities will ensure that EDD is aware of development activities in the state and reduce the chance that EDD and stakeholder organizations duplicate efforts.

EDD Recommendation 7: Work with the Sustainable Economy Task Force to provide annual updates to the state legislature on this strategic plan and the progress made over the preceding year related to economic diversification, climate change mitigation, and impacts on underserved communities.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Sustainable Economy Task Force	$	On-going

This strategic plan has been developed to guide the efforts of EDD and its stakeholder community over the next several years. Separately, the New Mexico State Legislature created the Sustainable Economy Task Force (SETF) in early 2021, which is tasked with ensuring New Mexico's economy grows and develops in an economically and environmentally sustainable manner, with a particular focus on underserved communities. EDD should collaborate with the SETF in the implementation of this strategy and the presentation of strategic updates to the New Mexico State Legislature, which the SETF is required to provide annually.

Priority 1.2. Streamline and simplify New Mexico's rules and regulations.

Enabling businesses to better and more easily maintain compliance with New Mexico's rules and regulations will make the state an easier place to do business. Likewise, identifying superfluous rules and regulations that place an undue burden on businesses is necessary to ensure New Mexico's regulatory environment does not push businesses to neighboring states with lower compliance costs. Though EDD is not a regulatory agency, it monitors the pulse of industry sentiment in New Mexico and is responsible for ensuring industry is able to succeed in the state while maintaining worker safety and environmental health.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Work with state regulatory agencies to identify bottlenecks and inefficiencies in New Mexico's permitting, licensing, and incentive approval processes and address these challenges through regulatory reform.

Lead:	Support:	Estimated Cost:	Timeline:
EDD		$	Short-term

	TRD, Secretary of State, RLD	

Stakeholders routinely noted the complexity of New Mexico's state and local permitting processes as a hindrance to attracting and retaining businesses in New Mexico. Many of these rules and regulations are integral to the protection of workers' rights, environmental conservation, and safe building and construction standards. However, opportunities exist to simplify this process at the state level and to collaborate with local jurisdictions to identify best practices that support a more business-friendly environment. In addition to ensuring businesses operate in a safe and responsible way, permitting processes should be consistently applied, predictable, and timely.

This challenge is not unique to New Mexico, but other states have been more proactive in addressing obstacles to quick and easy business establishment and expansion. For example, Virginia established a three-year regulatory reduction pilot program in 2018 that required two agencies—the Department of Professional and Occupational Regulation (DPOR) and the Department of Criminal Justice Services (DCJS)—to develop a baseline regulatory catalog and reduce their regulatory requirements. By 2021, DPOR had reduced regulatory requirements by roughly 27% and DCJS by 14%.[185] Based on these successes, other executive departments in the Virginia state government were required to identify opportunities to reduce regulatory burdens.[186]

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Design and implement a detailed, rotating, multiyear evaluation cycle for New Mexico's tax incentives that identifies opportunities to improve incentive efficacy.

Lead:	Support:	Estimated Cost:	Timeline:
TRD	EDD	$$	Ongoing

Stakeholder Recommendation 2: Create a Governor's Office of Regulatory Reform, as recommended by the New Mexico Chamber of Commerce and Industry, that is tasked with continuously reviewing and simplifying New Mexico's current rules and regulations.

Lead:	Support:	Estimated Cost:	Timeline:
Office of the Governor	EDD, RLD	$$	Ongoing

Priority 1.3. Strengthen New Mexico's business recruitment and retention efforts.

As states and regions increasingly compete with one another to attract businesses to their jurisdictions, New Mexico will need to clarify its value proposition to businesses in a wide variety of industries. This is particularly true as neighboring states become more aggressive in their attraction of businesses and talent. Ensuring the relocation process is smooth, transparent, and predictable makes New Mexico a more attractive place for businesses to relocate. Additionally, ensuring local communities are positioned to meet the needs of new employers, such as through infrastructure development, enables more communities to participate in the economic development process.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Publish a digital "relocation roadmap" for businesses looking to relocate to New Mexico that identifies each step of the relocation process, the incentives available, who administers each incentive, and which agency should be contacted for questions on specific topics related to relocation.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NM Partnership	$	Short-term

Relocating a business from one state to another is a complicated process that involves identifying a suitable site for the business, connecting with local workforce development institutions, and working with state and local agencies to understand applicable rules and regulations. Opportunities to simplify this process and enable businesses to more quickly set up shop in New Mexico will make the state a more attractive place to do business. Given the expansive incentive offerings in New Mexico, as well as the existing rules and regulations that govern enterprises in various industries, centralizing information for businesses looking to

relocate to the state is highly valuable. This would reduce the amount of time businesses must spend contacting state and local agencies for additional information and ensure that businesses have access to all pertinent information for the relocation process.

EDD Recommendation 2: Advocate for increased funding for economic development-related marketing efforts that allow EDD, NM Partnership, and other business recruitment organizations to attend domestic and international trade shows, conferences, and development-related summits.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NM Partnership, Chambers of Commerce	$$	Short-term

New Mexico occupies a strategic position in the United States and, more broadly, North America. With an international border crossing with Mexico and a well-developed Borderplex region, New Mexico should be attracting more large producers to the state that ship goods within the United States and to other nations. A significant part of this challenge is a lack of awareness by many companies and foreign countries of New Mexico, driven in large part by the limited budget economic development organizations in New Mexico have to market the state's assets to outside organizations. While many other states—including several of New Mexico's regional competitors, like Texas and Colorado—have established a global brand to attract businesses to the state, New Mexico does not currently have a comprehensive marketing strategy to brand the state as a competitive place to do business. This means that other states, including many of New Mexico's neighbors, are better able to connect with U.S. and foreign companies.

Expanding funding for economic development organizations that work to attract businesses to New Mexico, including EDD and NM Partnership, will better enable the state to develop a recognized brand. This funding should be used to host industry and trade shows, send representatives from state agencies to domestic and international conventions, and develop a cohesive marketing pitch for why businesses should locate in New Mexico.

EDD Recommendation 3: Create an "industry representative" role in EDD's Business Retention & Expansion Program (BRE) whose aim is to proactively address business retention challenges in target industries as they arise.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Industry Councils, Chambers of Commerce	$$	Short-term

In many cases, keeping businesses in New Mexico is just as important as recruiting them to the state. EDD's Business Retention & Expansion program addresses the need for business retention through "regional representatives," each of whom is responsible for a region of the state as defined by EDD's Community, Business, and Rural Development (CBRD) division. In addition to regional coverage, however, EDD should create an "industry representative" role whose main responsibility is to maintain dialogue with target industry businesses and to identify and address problems that may lead these businesses to leave New Mexico.

This responsibility is already being fulfilled by EDD staff for some target industries. For instance, the Film Office engages closely with industry stakeholders on a daily basis, the Outdoor Recreation Division conducts extensive outreach to outdoor recreation businesses, and the Office of Science and Technology maintains close relationships with stakeholders in cybersecurity and the biosciences. For the remaining target industries, however, EDD should assign an industry representative role to additional staff members. All industry representatives should be mandated to conduct regular check-ins with businesses in their respective industries, and they should also play a leading role in organizing and facilitating industry council activities (see EDD Recommendation 1 in Priority 1.1).

EDD Recommendation 4: Work with the New Mexico Partnership and local developers to create an inventory of properties that can be converted into attractive shovel-ready sites with future investments in infrastructure.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NM Partnership	$	Medium-term

According to stakeholders interviewed, the lack of shovel-ready sites is the most common reason for businesses choosing not to locate in New Mexico. Several factors contribute to this lack of attractive sites for businesses. First, New Mexico does not have a standard definition for what constitutes a shovel-ready site, and some candidate sites pitched to prospective businesses as shovel-ready in fact lacked the requisite infrastructure and facilities. As such, EDD should engage with its industry partners, the New Mexico Partnership, and local communities to create a set of standards for shovel-ready sites in order to align expectations when recruiting out-of-state businesses. Second, prospective businesses have found it difficult to find sites that meet their basic requirements. Oftentimes, for example, candidate sites lacked the transportation or utilities infrastructure needed for industrial operations.

Given the passage of the American Jobs Plan in 2021, EDD should work with the New Mexico Partnership and local communities to create an inventory of properties for development into shovel-ready sites in anticipation of future infrastructure funding. With an inventory of candidate sites for infrastructure investment at hand, the state and its communities will be well-equipped to prepare shovel-ready sites when the funding becomes available.

Strategy 2: Dynamic New Mexico Strengthen New Mexico's Communities

Priority 2.1. Increase community capacity for economic development projects and initiatives.

EDD currently maintains a few different programs that are aimed at supporting community-level capacity for economic development initiatives, most notably FUNDIT, LEADS, and MainStreet. These programs are critical for providing New Mexico's communities with the resources necessary to address challenges facing community members, including infrastructure, business development, and community amenities. However, providing financial resources is only part of the community development equation. Many regional and local economic and community development organizations in New Mexico lack the capacity to manage these funds and plan for their usage in a community. Expanding the funding and scope of some of EDD's community-focused initiatives will help to increase the impact of these programs on New Mexico's communities and catalyze further investment by other organizations in the long term.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Increase funding for EDD's FUNDIT program to create a grant-writing technical assistance fund for economic and community development organizations.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-FUNDIT	N/A	$	Medium-term

EDD's FUNDIT program is one of the primary ways EDD connects communities to critical resources necessary for community development projects. While the provision of financial resources to communities is critical for the development of underserved regions of New Mexico, many of the communities and organizations that receive funding through FUNDIT do not have the capacity to manage the funds and implement them in an effective way. To increase the efficacy of FUNDIT, EDD should advocate for greater funding that dedicates more resources to the program. Doing so would enable EDD and partner agencies to dedicate more time to the review of FUNDIT proposals and increase the value of investments made in applicant communities. Similarly, using some of the increase in funding to establish a grant-writing technical assistance fund within FUNDIT would allow EDD to provide direct support to

communities in need of assistance with writing proposals for grants and other funding opportunities. Such funding could be used to hire grant writers or project managers, enroll staff in short-term project management courses, or invest in other technical capacity building efforts.

EDD Recommendation 2: Increase overall funding for EDD's LEADS program to enable EDD to better meet the needs of applicant communities and develop a specific carve-out of LEADS funding that is reserved for planning efforts related to economic and community development projects.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-LEADS	N/A	$$	Medium-term

Similar to EDD's FUNDIT program, LEADS provides much needed financial resources to New Mexico's communities. However, the program routinely receives funding requests far in excess of the program's annual budget, indicating an intense need for assistance among New Mexico's communities but a distinct lack of available funding. Supporting the expansion of LEADS' annual appropriation would allow EDD to make a greater number of investments in communities that have a strategic need for development. Similarly, setting aside a portion of the LEADS funding for planning grants that are funded by EDD would allow more of New Mexico's communities to develop clear, concise documents that identify their most intense economic and community development-related needs. These documents would enable EDD to identify the alignment between a region's stated needs and the requests being made through the LEADS program, as well as other funding opportunities that are provided by EDD.

Priority 2.2. Redefine New Mexico's urban regions.

Revitalizing New Mexico's urban areas is an important part of attracting and retaining young, educated workers to the state. Younger generations are increasingly interested in living in walkable communities with park space, sports fields, concerts, art shows, and other entertainment opportunities. By supporting localities as they carry out more intentional development projects, Albuquerque, Santa Fe, and other urban areas can hope to see the kind of population growth more like what neighboring Phoenix is currently enjoying.

While urban Albuquerque and Santa Fe have taken the spotlight due to their large populations, smaller cities within the state are equally important in terms of economic development. Throughout the United States, small- and medium-sized cities have seen growth over the last decade due to their relative affordability and increasing focus on providing attractive urban

amenities similar and equal to large cities. New Mexico cities are generally affordable, but their positive traits are not well known outside the state. The state has a real opportunity to take advantage of its natural beauty in combination with its unique culture to grow and redefine its urban areas and provide the amenities necessary to attract and retain residents.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Provide increased funding on an on-going basis to urban-focused MainStreet programs for technical assistance and capital outlays for infrastructure and investigate co-funding opportunities through LEADS and FUNDIT.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-MainStreet	LEADS, FUNDIT	$$	Long-term

The New Mexico MainStreet program provides an excellent area for EDD to push community development initiatives in both rural and urban New Mexico. For urban areas, MainStreet grants and technical assistance support Urban Commercial Corridors and Arts & Culture Districts. EDD should work to increase funding to the MainStreet programs focused on urban areas. EDD should also investigate how to expand collaborative funding grants with MainStreet, LEADS, and FUNDIT. Collaborative efforts with the LEADS and FUNDIT programs could provide an opportunity to expand economic development funding into the community development initiatives on a larger scale than current MainStreet initiatives. With increased funding for urban initiatives, MainStreet should investigate new opportunities to support different types of urban communities, such as offering micro-grants and technical expertise focusing on urban neighborhoods with high SEDI populations that may have different needs than Urban Commercial Corridors and the Art & Culture Districts.

EDD Recommendation 2: Promote and invest in urban outdoor recreation programs, access, and entrepreneurship, especially in SEDI communities, through developments such as bike shops, streeteries, and community gardens.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-ORD, EDD-MainStreet	NM TD, local government	$$	Long-term

Outdoor spaces are an important part of the fabric of New Mexico's cities and raise the quality of life for its residents. Residents who live away from parks and other greenspaces are said to live in park deserts and have poorer health outcomes overall. Park deserts are especially common in SEDI communities. Outdoor recreation is an important target industry for the state and is one of the few target industries that creates both jobs and visible quality of life improvements for residents. ORD's Outdoor Equity Fund is a great tool for increasing access to outdoor recreation opportunities for underrepresented children.

Strategic community development, especially in urban areas, can also help improve outdoor access by bringing together community and industry partners with local government. Investing in more outdoor programs, such as community gardens and skate clubs, is not only a great way to make cities more attractive to young adults and families but also to improve physical and mental health outcomes of residents. ORD should investigate ways to bring together urban SEDI stakeholders and community action groups with partners in the outdoor recreation industry to identify and invest in potential urban outdoor programs and businesses in urban areas. A statewide study of urban outdoor access needs would create a foundation for a follow-up detailed analysis for each city within the state.

Priority 2.3. Commit to the economic sustainability of New Mexico's rural and tribal communities.

Most rural New Mexican communities have seen falling populations since the 2010 U.S. Census. Attracting a skilled workforce is important, but rural areas have always aspired to retain local talent. Opportunities for young people to make more money and utilize their skills draw them to Texas, Arizona, and other major metropolitan areas and away from rural areas. With the loss of the working age population and skilled workers, rural New Mexico is often left with a larger senior population without access to plumbers, electricians, healthcare, and childcare workers. To attract and retain a rural and small-town workforce, skilled workers need to make a living wage and support their families. The pandemic and the national move toward flexible and remote work presents an opportunity to this end. Better broadband service and increased access to alternative transit will allow workers to live and work where they prefer. Rural areas in New Mexico struggle with different quality of life issues than nearby cities, and unique solutions must come from residents and stakeholders within these communities.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Support the hiring of a regional representative dedicated to the development of rural communities in New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	DFA	$	Medium-term

While New Mexico is not among the most rural states in the United States, a significant share of New Mexicans lives in rural communities, including many of the state's Native Americans. Many of the challenges faced by New Mexico's rural communities are consistent throughout the state's rural and tribal areas: depopulation, loss of talent, poor physical and digital infrastructure, and high unemployment being a few examples. New Mexico currently boasts many programs and organizations that work to address challenges in rural communities. For example, EDD maintains regional representatives that serve rural New Mexico, the COGs provide support for rural communities within their jurisdictions, and NMSU oversees a network of communities that are part of USDA's Stronger Economies Together (SET) program.

These represent only a few examples of the rural-focused programs in New Mexico, but it is clear that rural and tribal communities continue to struggle with addressing many of their most formidable challenges. This is likely due to the diffusion of limited resources through a wide variety of organizations and programs, requiring rural communities to maintain relationships with several different organizations to access resources. Centralizing these resources, or at least the information necessary to access these resources, would simplify the application process for capacity-strained rural communities. New Mexico has made recent efforts to establish a central rural development official, evidenced by the recent hiring of a "rural equity ombud" at the DFA. As the state's primary economic and community development agency, EDD should ensure that it has a dedicated rural development specialist that serves a role similar to the current regional representatives, but that is focused entirely on rural development. This specialist should work in tandem with these regional representatives, as well as DFA's rural equity ombud and other rural development organizations in New Mexico.

The hiring of a dedicated rural development specialist at EDD will fulfill the near-term need for a renewed focus on rural development in New Mexico. However, a long-term solution to the challenges in rural New Mexico will likely require a greater degree of centralization of resources into a "one-stop shop" for rural communities. Over the last several years, other states have begun this resource concentration process to assist their rural communities. Two notable

examples are the Center for Rural Pennsylvania,[187] housed within the Pennsylvania state legislature, and Georgia's Rural Center,[188] formed by the Georgia state legislature and located within the Abraham Baldwin Agricultural College. As an extension of the state legislature, the Center for Rural Pennsylvania serves primarily to provide high-quality research on Pennsylvania's rural communities to inform policymaking, whereas the university-affiliated Georgia's Rural Center provides research while working alongside rural communities to build capacity and access funding for critical projects.

EDD Recommendation 2: Provide increased, on-going funding for rural-focused MainStreet programs.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-MainStreet	Sustainable Economy Task Force	$$	Long-term

The New Mexico MainStreet program acts as the main vehicle through which EDD supports community development initiatives throughout New Mexico. For rural areas, MainStreet grants and technical assistance support Frontier & Native American Communities and Arts & Culture Districts. EDD should work to increase funding for the MainStreet programs focused on rural and tribal areas in addition to investigating how the Sustainable Economy Task Force can assist rural and tribal communities in engaging with this plan and implementing actions and strategies. Increased funding for rural initiatives in the MainStreet Program in addition to increased collaboration with Task Force stakeholders could help engage rural and tribal communities in the implementation of this plan.

EDD Recommendation 3: Promote existing microtransit and flexible transit opportunities, such as New Mexico Department of Transportation's NMGo! partnership with Enterprise Rent-a-Car, among rural small- and medium-sized businesses receiving economic and workforce development incentives. In partnership with employers and NM Department of Transportation, investigate new opportunities for alternative transit options.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NMDOT	$	Medium-term

Many rural areas and small communities struggle with providing alternative transit options for residents. Where rural transit networks exist, they often combine fixed-route bus service and some type of "dial-a-ride" service that tends to serve disabled and senior residents. These limited options result in rural residents choosing to drive personal vehicles, which contribute to greenhouse gas emissions and cost car owners thousands of dollars per year in insurance, maintenance, and gas. Age, ability, and income restrictions make car ownership and driving prohibitive for many residents. Lack of reliable and accessible transit options results in loss of economic opportunity and social isolation for some of the most vulnerable members of society.

The New Mexico Department of Transportation (NMDOT) recently partnered with Enterprise Rent-a-Car to provide flexible transit opportunities in the form of microtransit, essentially a technologically updated, on-demand carpooling program. The program serves to connect employees living near each other with a van or SUV, while providing commuter discounts. This is an excellent start to updating rural transit options, and further opportunities should be explored in partnership with the Department of Transportation and private industry.

For these programs to succeed, they must have buy-in from various groups, including local businesses and state, local, and tribal economic development groups. An EDD rural representative should partner with NMDOT as well as local and tribal governments to investigate the transit needs of rural employers and employees and to make sure that companies receiving incentives and technical assistance know about and use these types of alternative transit programs by providing corresponding business incentives.

EDD Recommendation 4: Expand access to digital infrastructure in New Mexico's rural and tribal communities through the implementation of a rural co-working spaces grant program.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	COGs, Tribal governments	$$	Medium-term

Broadband connectivity remains one of the most formidable threats to the long-term economic sustainability of New Mexico's rural and tribal communities. While New Mexico has made recent progress in providing greater support for rural broadband development, as evidenced by the governor's recent announcement of a dedicated fund for broadband expansion in rural communities, there is a pressing need for connectivity in the immediate future. The COVID-19 pandemic has brought to light many challenges for urban and rural communities, but the lack of

strong digital connectivity in rural areas hinders the ability for these regions to participate in an increasingly digitalized economy.

In the long term, greater broadband infrastructure development is needed to ensure New Mexico's rural communities are best positioned for growth. However, providing "hubs" of connectivity in rural and tribal communities, such as through the development of rural co-working spaces, can help to expand digital connectivity in the near term. In Utah, a similar lack of rural broadband connectivity led the Office of Rural Development at the Utah Governor's Office of Economic Development to implement the Rural Co-Working and Innovation Center Grant Program.[189] The Utah program focuses on the creation of facilities that provide rural individuals with the infrastructure and equipment necessary to participate in the online workforce in counties designated as "rural" by the state. In New Mexico, a similar program could be implemented in partnership with libraries across the state to improve library facilities and expand their programmatic offerings. The Grants County CO.STARTERS program is one example of an activity that could be expanded statewide and offered through these hubs to support rural entrepreneurs.[190]

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Support national, state, and tribal government agencies in expanding broadband access to rural areas.

Lead:	Support:	Estimated Cost:	Timeline:
NM DoIT	Local and tribal government agencies, EDD	$$$	Long-term

Stakeholder Recommendation 2: Adapt housing to realities of changing population and climate by investing in affordable weatherization and accessible housing programs, as well as ongoing outreach to rural communities who use these programs.

Lead:	Support:	Estimated Cost:	Timeline:
NM MFA	Local government agencies, EDD	$$	Long-term

Stakeholder Recommendation 3: Enhance access to high-quality and sustainably built affordable housing for low-income, first-time homeowners through targeted homeowner financing programs.

Lead:	Support:	Estimated Cost:	Timeline:
NM MFA	EDD	$$	Medium-term

Stakeholder Recommendation 4: Increase opportunities for behavioral and physical health paraprofessional training in both rural and remote environments.

Lead:	Support:	Estimated Cost:	Timeline:
HSD, DOH	EDD, DWS	$$	Medium-term

Stakeholder Recommendation 5: Partner with the Aging and Long-Term Services Department (ALTSD) to expand retiree volunteer programs that train younger workers and undertake economic and community development projects. Investigate stipends for retirees.

Lead:	Support:	Estimated Cost:	Timeline:
ALTSD	DWS, EDD	$	Long-term

Strategy 3: Skilled New Mexico Reimagine Education, Training, & Workforce Development

Priority 3.1. Improve the quality of New Mexico's higher education and training programs through industry engagement and institutional reform.

Economic development and diversification are dependent upon the presence of a high-quality workforce with the knowledge, skills, and qualifications to meet the needs of industry. Over the last several years, stakeholders have identified a growing disconnect between what is taught at New Mexico's colleges and universities and what is needed by the state's most critical industries. Because EDD is tasked with driving New Mexico's development and diversification agenda, and thus maintains strong connections to the state's private sector, the department is strongly positioned to connect New Mexico's colleges and universities with some of the state's largest employers. EDD should also work with HED to ensure that necessary reforms to the state's higher education system are carried out so that the system maintains relevancy in the face of a changing economy.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Facilitate productive collaborations between New Mexico's colleges and universities and industry.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	HED, Higher Education, DWS	$	Ongoing

Ensuring graduates have the knowledge and skills necessary to succeed begins with strong connections between New Mexico's higher education and training institutions and employers. Stakeholders throughout the state noted a clear disconnect between the programs offered by New Mexico's higher education and training institutions and the needs of industry. Stakeholders also noted a misalignment between these institutions and the state's economic development ambitions. EDD should support strengthened connections between these institutions, industry, and the state's economic development organizations to ensure a productive dialogue is maintained.

Supporting the development of permanently funded industry relations offices at New Mexico's higher education and training institutions, identified further below in the recommendations for

economic development stakeholders, is a critical first step. Without permanent funding for these offices, many institutions in the state will not be able to maintain relationships with industry partners in the long term. Another step EDD can take to ensure institutions in the state are producing industry-relevant graduates is to connect these institutions with the industry councils recommended in Priority 1.1. As these councils will serve as a central hub of knowledge for the trends influencing New Mexico's target industries in the short, medium, and long term, they will be effective tools for informing New Mexico's higher education and training institutions of industry employers' current and future needs.

In some ways, New Mexico's higher education and training institutions have begun developing these industry relationships. The most notable example is Central New Mexico Community College (CNM), which was routinely cited by industry stakeholders in New Mexico as one of the state's most effective institutions for developing industry-relevant curricula. Much of CNM's success stems from the institution's consistent, proactive engagement with many of New Mexico's most vital employers and the relationships it maintains and builds upon with these employers over time. This approach, while common at institutions in many other states, remains novel in New Mexico, where many higher education and training institutions engage with industry on an ad-hoc basis. Enabling greater and more frequent collaborations between institutions and industry in New Mexico will help EDD maintain alignment between the state's workforce and the department's long-term vision for the state's economy.

EDD Recommendation 2: Expand the use of industry-certified short-term non-degree certificate programs that connect New Mexico workers with existing and projected employment opportunities in New Mexico's target industries.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	HED, DWS	$$	Medium-term

Among the awards conferred by New Mexico's higher education and training institutions, certificates have quickly become one of the most popular. However, many of these certificates are awarded in subjects that are not well aligned to New Mexico's target industries—such as liberal arts—resulting in a surplus of New Mexicans with certificates that do not meet industry needs. To support the expansion of industry-certified short-term non-degree certificate programs, EDD should leverage the industry councils identified in Priority 1.1. to identify pressing skills needs and collaborate with institutions in New Mexico to design industry-certified certificates that meet these needs.

Many occupations in New Mexico's target industries do not require a traditional 2- or 4-year degree, but instead require highly skilled technical workers who use complex scientific principles in their day-to-day careers. Designing certificate programs that focus on these skills and principles and that have buy-in from industry partners is an effective way to develop clear workforce "pathways" from high school to high-paying non-degree jobs. New Mexico has already seen success in this area, as evidenced by Mesalands Community College's wind energy technician program, which was designed with industry in mind to ensure program graduates have the skills required by wind energy employers. Expanding this model of industry-designed certificate programs will help New Mexico's workers find employment in industries that show promise in New Mexico in the long term.

EDD Recommendation 3: Identify higher education and training institutions throughout New Mexico that can serve as regional hubs of talent development, aligned with regional industrial strengths and opportunities.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	HED, DWS	$	Short-term

The analysis conducted in this report shows that different regions of New Mexico have clear opportunities in certain target industries, while other industries are less relevant to that region. As discussed above, the analysis also shows a mismatch between the skills employers need and the skills graduates have. There remains an opportunity for New Mexico to pursue a regionalized approach to industry-workforce-academia alignment, in which regional colleges and universities develop programs aligned with the needs of employers in their communities. Working with New Mexico's colleges and universities, including tribal colleges, EDD should identify key industries with which regional institutions can engage to support local economic development efforts throughout the state.

An example of this can be seen in northwest New Mexico where the hydrogen economy shows immense potential due to the region's historic strengths in natural gas. Bayotech, a hydrogen company that emerged from Sandia National Laboratories and recently relocated back to New Mexico, has partnered with San Juan College to develop a post-graduate certificate that focuses on skills in the hydrogen industry that Bayotech will need as it expands in the state. Helping colleges and universities focus their industry engagement on key industries, as with the case of San Juan and the hydrogen industry, will better enable regions to integrate their higher education and training institutions with current and anticipated opportunities in the region.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Require New Mexico's higher education and training institutions to conduct and submit annual performance reviews of their courses to the Higher Education Department to identify consistently low-producing programs.

Lead:	Support:	Estimated Cost:	Timeline:
HED	DWS, EDD, Higher Education	$$	Ongoing

Stakeholder Recommendation 2: Require New Mexico's higher education and training institutions to have their programs recertified by the Higher Education Department every seven years, ensuring courses taught by in-state institutions are current and relevant.

Lead:	Support:	Estimated Cost:	Timeline:
HED	DWS, Higher Education	$$	Ongoing

Stakeholder Recommendation 3: Empower the Higher Education Department to classify general curriculum courses in the Common Course Numbering System as "similar" to enable greater transferability of credits between in-state institutions.

Lead:	Support:	Estimated Cost:	Timeline:
HED	Higher Education	$	Ongoing

Stakeholder Recommendation 4: Establish a permanent industry relations office at select New Mexico colleges and universities that seek enduring relationships with industries in New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
HED	EDD, DWS, Higher Education	$$	Medium-term

Stakeholder Recommendation 5: Work with the 4-year universities to improve their career services, focusing on preparing freshmen and sophomores for careers with New Mexico industries, in order to strengthen the classroom-to-workforce pipeline.

Lead:	Support:	Estimated Cost:	Timeline:
HED	UNM, NMSU, NM Tech, EDD	$$$	Medium-term

Priority 3.2. Reform New Mexico's workforce development ecosystem to align with industry needs.

Curriculum is only one component of workforce development. Other organizations, such as regional workforce development boards, play central roles in the education and training of New Mexico's workers. Ensuring these boards, as well as other workforce development organizations in New Mexico, have the tools and organizational structure to best meet the needs of a diversifying and expanding economy is paramount. In collaboration with DWS and other stakeholders, EDD should strengthen the institutional frameworks in New Mexico to ensure these stakeholders are working toward the common goal of an industry-relevant workforce.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Support the consolidation of New Mexico's regional workforce boards into an urban workforce board and rural workforce board to better reflect the needs of employers in New Mexico's urban and rural regions.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, DWS	N/A	$$	Medium-term

Workforce boards are critical resources for maintaining a high-quality regional workforce. In New Mexico, the challenges identified by employers in the state hint at a misalignment between the current workforce board network and the needs of industry. Additionally, because the workforce board regions do not align with COG or EDD regions, priorities for these different organizations can compete with one another. In partnership with DWS, EDD should support the reorganization of New Mexico's current workforce boards into two comprehensive boards

focused on the state's urban and rural corridors. Board leadership should be comprised of EDD, DWS, higher education, and select private industry stakeholders.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Create a taskforce of representatives from the health industry to standardize training, licensing, and certification requirements for health workers to ensure the current framework adequately supports and encourages more individuals to enter the healthcare workforce.

Lead:	Support:	Estimated Cost:	Timeline:
DOH, HSD, WSD	EDD, HED	$	Short-term

Priority 3.3. Prepare New Mexico's K–12 students for post-high school success.

The quality of New Mexico's K–12 education system was one of the most frequently cited concerns by stakeholders. Without a strong education system, young adults are less interested in staying in the state to raise children, and employers have a difficult time finding qualified talent. Increasing access to child care and pre-kindergarten programs can prevent students from disadvantaged communities from getting behind in school at a young age, and establishing partnerships between high schools and employers can develop a stronger pipeline between school and gainful employment.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Facilitate partnerships between school districts and large regional employers to create P-TECH high schools and other apprenticeship training programs for upper-level high school students.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, local school districts	PED	$$	Medium-term

Many stakeholders expressed concern with the quality of high school graduates across the state, noting that they often lack the soft skills necessary for success in a job, such as showing up on time and staying on task throughout the day. Establishing apprenticeship opportunities for high school students can help to develop a strong work ethic while also providing valuable training in a high-demand field. This exposure to target industry jobs can help young individuals become interested in careers they might not have considered otherwise and fill critical skills gaps.

Pathways in Technology Early College High (P-TECH) schools are a great way to establish a pipeline between high school and target industry careers. To become a recognized P-TECH school, a school needs to establish a partnership between a community college and a nearby employer that is interested in growing the local talent pool. Students who participate in a P-TECH program graduate high school with an associate degree earned by taking courses at the partner community college and with meaningful real-world work experience, so students can be hired into the industry upon completion. These programs are a great way to increase diversity and equity in industries that have historically been limited to individuals who are able to take on college coursework and unpaid training programs.

Some examples of successful partnerships between school districts, community colleges, and employers include programs in which students graduate with an associate degree in health science, nursing, or pharmacy technology and receive training with a local hospital; an associate degree in computer programming or user experience design and receive training with a software company; or an associate degree in information technology or cybersecurity and receive training with a local technology services company. Regional employers can be inspired to participate in programs such as this with the promise of a larger qualified talent pool, increased visibility in their communities, and expanded capacity.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Continue to increase state financial support for pre-kindergarten programs to expand access for students from low-income families.

Lead:	Support:	Estimated Cost:	Timeline:
State legislature	PED, CYFD, ECECD, EDD	$$	Short-term

Stakeholder Recommendation 2: Work with the Public Education Department and school districts to support more college readiness programs, such as Advancement Via Individual Determination (AVID), and expand dual credit offerings with local community colleges in key economic industries.

Lead:	Support:	Estimated Cost:	Timeline:
PED, local school districts	HED, EDD	$	Short-term

Stakeholder Recommendation 3: Work with the Public Education Department to apply the Collaborative for Academic, Social, and Emotional Learning (CASEL) model at the district and school level to support social and emotional development, especially for at-risk student groups.

Lead:	Support:	Estimated Cost:	Timeline:
PED, local school districts	EDD	$	Short-term

Stakeholder Recommendation 4: Support the expansion of child care accessibility throughout New Mexico by implementing a grant program to subsidize the cost of expenditure on child care facilities and equipment.

Lead:	Support:	Estimated Cost:	Timeline:
ECECD	EDD	$$	Medium-term

Strategy 4: Inclusive New Mexico Promote Equity through Economic Justice

Priority 4.1. Encourage state, regional, and local organizations to increase collaboration with tribal communities.

In a state in which over 10% of the population consists of native and indigenous individuals who have been historically excluded from many economic opportunities, it is critical that these groups are given a voice in New Mexico's economic development, especially as the state works to meet goals set by the Energy Transition Act. Economic development organizations should collaborate with tribal communities to ensure that the impact that their decisions could have on native individuals is fully considered and intentional and to better support entrepreneurs from tribal communities.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: In partnership with IAD, develop a tribal engagement training program for EDD, NewMARC, and other economic development organization staff that informs outreach staff of the proper protocols for partnerships with tribal communities.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	IAD, NewMARC, economic development organizations	$	Short-term

Collaborations with tribal governments require a unique approach that differs from traditional partnerships. Oftentimes, different laws apply to Native American lands, including Federal Indian Law and laws implemented by individual tribal communities. Likewise, tribal cultural traditions require additional consideration as some tribes maintain both legal and cultural frameworks that dictate economic policy on tribal lands. These varying levels of rules and regulations that exist in addition to New Mexico state guidelines can seem insurmountable for economic development practitioners who do not have long histories of collaborations with tribal communities. Ensuring that these state and local practitioners are aware of these different rules and regulations, as well as the cultural traditions maintained by native communities and the ways in which they

determine the scope and pace of economic development projects, is critical for the inclusion of native communities in the economic development process.

EDD Recommendation 2: Require new EDD, NewMARC, and COG initiatives to consider how the initiative will improve equity and how the organization will conduct outreach for the program to historically marginalized communities.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	IAD, NewMARC, COGs	$	Short-term

The historical injustices that Indigenous and Native American individuals in the state and across the nation have faced for centuries have led to poorer health and education outcomes, poverty, and fewer economic opportunities. As such, it is important that EDD and their economic partners take a targeted approach to providing better support for Native Americans, including both those who live on tribal lands and those who do not. EDD should collaborate with IAD to establish requirements for each proposed economic development program to engage IAD representatives and to detail how it will equitably benefit all New Mexicans, particularly rural and historically excluded populations. Each program proposal should also include a strategy for ensuring eligible New Mexicans are aware of the new opportunity, potentially through signage and pamphlets at libraries and community centers or letters mailed to relevant households.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Develop a set of best practices for tribal community engagement, such as those provided by the University of North Carolina American Indian Center,[191] to ensure that the voices of Native Americans are considered and supported.

Lead:	Support:	Estimated Cost:	Timeline:
IAD	Tribal governments	$	Short-term

Stakeholder Recommendation 2: Create procurement preference and certification requirements[192] for New Mexico-based tribal and minority businesses bidding on state government contracts.

Lead:	Support:	Estimated Cost:	Timeline:
General Services Department	EDD, Tribal governments	$	Short-term

Priority 4.2. Equip entrepreneurs from disadvantaged backgrounds with the knowledge and support necessary for success.

New Mexico benefits from high rates of entrepreneurship, but for many individuals from historically disadvantaged groups, there are barriers that make it harder to start and grow a business. By working with existing entities supporting these entrepreneurs and by creating programs specifically for individuals from SEDI backgrounds, EDD can support more equitable access to venture capital and the financial literacy needed to build a strong business that grows the economy for all New Mexicans.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Develop and support funding mechanisms that provide credit enhancement specifically for entrepreneurs from SEDI backgrounds that lack access to startup capital.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	U.S. Treasury, NMFA	$$$	Short-term

Entrepreneurs from historically disadvantaged backgrounds, especially women and Native Americans in the state, frequently cited the challenge of obtaining loans through traditional banking institutions due to lack of collateral, inability to afford the matching requirements, and other barriers. The current collateral assistance program that EDD offers aims to address this challenge, but it prioritizes target industries in which these groups may be less involved, and it still requires the individual to work with a bank and supply 50% of the collateral. EDD should

collaborate with local banks, CDFIs, and other micro-loan programs that target the underbanked to help SEDI businesses access additional funding.

EDD Recommendation 2: Work with existing small business incubators, accelerators, and economic development organizations that focus on SEDI groups to increase capacity and expand access to support services.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	IAD, Nonprofits, incubators, accelerators	$$$	Medium-term

Current small business incubators and accelerators, such as WESST, Native Women Lead, and First Nations Development Institute, play a vital role in New Mexico's economy of training new entrepreneurs on business basics and providing risk capital. These entities often see high demand for their services and have honed a strategy for identifying promising businesses in which to invest through trainings and character-based lending programs. By working with these incubators and providing them more money to disburse to their enterprising clients, they can stay abreast of all of the initiatives EDD has to offer and allow them to serve more entrepreneurs.

EDD Recommendation 3: Establish a fund of funds to invest in community investment funds and technical assistance programs that focus on entrepreneurs from SEDI backgrounds.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	U.S. Treasury, Community investment funds	$$$	Long-term

Using funds allocated by the U.S. Treasury Department, EDD should establish a "fund of funds" that provides financial resources to organizations that invest in or provide technical assistance to SEDI-owned businesses. Due to New Mexico's anti-donation clause, EDD is not able to invest directly into private businesses. However, several organizations in New Mexico have emerged in

recent years that provide much needed funding and technical assistance to entrepreneurs from socioeconomically disadvantaged backgrounds. This financial and technical assistance is critical for many SEDI-owned businesses that have historically lacked access to traditional funding mechanisms offered by private financial institutions. EDD can support the expansion of funding and technical assistance availability to SEDI-owned businesses by providing funding to the organizations that invest in these businesses.

EDD Recommendation 4: Provide a dedicated ambassador program to partner with tribal economic development entities and provide streamlined access and assistance for potential Native American entrepreneurs.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Tribal and regional economic development agencies	$	Long-term

Native American entrepreneurs within the state are often working to start and maintain businesses across jurisdictional lines. Opportunities and programs may be available at the local, tribal, state, and federal level with information scattered across several agencies and websites. Lack of institutional knowledge and capacity, in addition to barriers created by poor internet and phone access, stymies the growth of small Native American businesses.

EDD provides a tribal liaison, but Native American individuals are not necessarily starting or running businesses on reservation lands with the assistance of tribal governments. The tribal liaison should empower individual Native American entrepreneurs by providing advice and sharing information about the resources available across jurisdictions including state and local resources in Arizona and Colorado as well as contacts in tribal economic development organizations. To do so, the tribal liaison should frequently collaborate with the Indian Affairs Department, the new rural equity ombud at the Department of Finance and Administration, and other state departments' tribal and rural ambassadors. Because many Native Americans face challenges due to inadequate transportation and child care, this liaison should have both a physical office in the northwest quadrant and regularly travel to meet with tribes and pueblos to provide face-to-face consultations. This expansion of duties could also serve to identify greater opportunities to partner with tribal governments.

EDD Recommendation 5: Secure funding to establish a Justice, Equity, Diversity, and Inclusion (JEDI) Office to support entrepreneurs from minority and disadvantaged backgrounds.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	State Legislature	$$	Medium-term

EDD's recent creation of a JEDI coordinator role is a great first step toward addressing some of the systemic inequities faced by entrepreneurs from SEDI backgrounds. Still, to fully prioritize increasing opportunities for these individuals, EDD should establish a JEDI office with more dedicated staff. JEDI office staff should meet with entrepreneurs to share information and help them take advantage of available programs, such as the Community Navigator program. In addition, this office should manage any funds created to support these businesses, as recommended above, and collaborate with local agencies and nonprofits that are also working to lift up and empower entrepreneurs from SEDI backgrounds. This should include working with incubators and accelerators, the New Mexico Small Business Investment Corporation, community development finance institutions, and other organizations that provide financing for small businesses.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Increase state funding for individual development accounts to help more low-income individuals meet their goals of home or business ownership or further education.

Lead:	Support:	Estimated Cost:	Timeline:
State Legislature	EDD, Nonprofits	$$	Medium-term

Stakeholder Recommendation 2: Allocate funding for IAD to hire more staff to support tribal and Native American-owned businesses and work with EDD's tribal liaison.

Lead:	Support:	Estimated Cost:	Timeline:
State Legislature	IAD, EDD	$$	Medium-term

Priority 4.3. Improve education and workforce outcomes for underserved populations.

Since individuals from rural and tribal communities and historically disadvantaged backgrounds are often less likely to attend college, targeted efforts should be made to ensure these groups can still prosper after high school. By increasing the number and awareness of student and young adult training programs and revising high school curricula to better fit rural communities' needs, EDD can help narrow the rural-urban divide in student outcomes.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Identify and promote rural employer training programs locally through high school and community college outreach.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	HED, DWS, PED	$	Short-term

Through connections with the Industry Councils recommended in Strategy 1, EDD should compile a full list of training programs available for community college and high school students related to the target industries. This list should be a living document with a section dedicated to rural employer training programs and apprenticeships, with EDD gathering information and resources that are most useful for connecting local students to local employers. In partnership with HED, DWS, and PED, EDD can commit to outreach activities through high school guidance counselors, job fairs, and community college career advisors.

EDD Recommendation 2: Partner with HED, tribal colleges, and local businesses to expand the DWS internship portal to include micro-internship opportunities that offer part-time, working, and disabled students the ability to gain paid experience and connect local students with local companies.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, DWS	HED, tribal colleges, local businesses	$$	Medium-term

Micro-internships are short-term opportunities for individuals to quickly gain work experience on a specific project or task for a company. Many individuals have responsibilities that make it difficult to dedicate an entire summer or school semester to a traditional internship opportunity but want to develop a particular skill and gain exposure to an industry. By working with DWS and local employers, EDD can facilitate increasing the number of micro-internships available so that more students have access to them, and employers can receive the short-term help they need. Additionally, EDD should work with colleges' and universities' career services divisions to increase awareness of these opportunities amongst their students.

EDD Recommendation 3: Increase awareness of the federal Indian Employment Credit and the American Indian Lands Tax Credit among New Mexican employers.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	TRD, IAD	$	Short-term

The federal government maintains a few programs that support Native American employment and increase the number of businesses located in tribal communities. Two notable programs are the Indian Employment Credit, which provides a 20% tax credit on qualified income and benefits to employers that hire Native American employees, and the American Indian Lands Tax Credit, which allows businesses located on tribal lands to claim accelerated federal depreciation of their buildings, lowering their tax burden. In many states, these programs are underutilized due to smaller Native American populations. However, due to New Mexico's large Native American population, ensuring that employers in the state are aware of these incentives and understand the application process will enable more businesses to capitalize on these incentives, benefiting tribal communities and companies alike. Additionally, allowing businesses to couple the Indian Employment Credit with New Mexico's JTIP program could accelerate the development of critical industry skills among New Mexico's Native American population.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Increase STEM participation of underrepresented groups by establishing programs in middle schools that recruit adult volunteers to provide supplemental tutoring in math, improving students' performance and long-term

interest in math and other STEM fields. See initiatives run by Austin Partners in Education, a partnership between a local school district and chamber of commerce.[193]

Lead:	Support:	Estimated Cost:	Timeline:
PED, local school districts	EDD	$	Medium-term

Stakeholder Recommendation 2: Work with public high schools to establish courses on managerial and business skills in tribal areas to develop a pipeline of business leaders.

Lead:	Support:	Estimated Cost:	Timeline:
PED, local school districts	EDD	$	Medium-term

Stakeholder Recommendation 3: Encourage non-tribal higher education institutions to support Native American students through resource groups, business associations, and tribal management coursework.

Lead:	Support:	Estimated Cost:	Timeline:
HED	EDD	$	Medium-term

Stakeholder Recommendation 4: Develop a live map of child care needs in New Mexico's communities to determine regions of the state that are facing shortages in care.

Lead:	Support:	Estimated Cost:	Timeline:
ECECD	EDD	$$	Medium-term

Strategy 5: Innovative New Mexico Fuel High Quality Homegrown Innovation

Priority 5.1. Build capacity among New Mexico's entrepreneurs.

Data show that New Mexico's population is highly enterprising. Among regional peers, New Mexico has some of the highest rates of entrepreneurship, with small businesses providing critical income to many New Mexicans. However, stakeholders in New Mexico routinely noted a capacity challenge for many of New Mexico's small businesses and startups. The challenges were related to two prevailing themes: an understanding of basic business and financial principles and the ability to expand an entrepreneur's business's reach outside of the local community. While New Mexico is home to a variety of business support organizations, there is a role for EDD to play in increasing the quality of New Mexico's small businesses and startups so that they reach larger markets, gain access to necessary funding, and provide prosperity for their proprietors.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Collaborate with stakeholders in business and financial communities to develop a standardized, non-degree business and financial literacy training program for small businesses that is taught by business support organizations.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Incubators, accelerators, nonprofits	$$	Short-term

Despite the high levels of entrepreneurship seen in New Mexico, many stakeholders noted the generally poor financial literacy and business acumen of many New Mexican small businesses as an obstacle to their success. Particularly for businesses that are interested in growing their market share outside of New Mexico, understanding the basics of how to run a business and the documentation necessary to secure funding—whether a bank loan or venture capital—is vital. Some of the incubator and accelerator programs in New Mexico, such as WESST, already offer business and financial literacy programs. However, the pressing need identified by many of these organizations indicates an accessibility and, perhaps, a quality challenge for such programs.

Subsequently, EDD should work with business support organizations in New Mexico—including incubators, accelerators, higher education and training institutions, and others—to develop a standardized business and financial literacy training course that is easily replicable by other organizations throughout the state. To determine the content of this program, EDD should consult with organizations currently offering such programs to identify common challenges experienced by entrepreneurs, as well as local financial institutions to better understand common reasons for loan rejection.

EDD Recommendation 2: In partnership with New Mexico Small Business Development Center and New Mexico Minority Business Development Agency's (MBDA) Business Center, implement a micro-grant program that provides financial support to small businesses looking to establish an online presence to reach markets outside of New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, SBDC, MBDA	Economic development organizations	$	Medium-term

Small businesses increasingly must compete with businesses of various sizes in other states and countries. The increasingly globalized nature of this competition has increased the need for an online presence for many small businesses, but the COVID-19 pandemic exacerbated this need to an unprecedented level. Now more than ever, many small businesses rely on a digital presence to reach consumers, but for some businesses the cost of building a website can be prohibitive. Frequently, businesses must buy a domain name, hire an outside consultant to build the website, and pay occasional maintenance fees to ensure their website is fully functional.

To help mitigate these costs, EDD can provide funding to organizations that support small businesses, such as New Mexico SBDC and New Mexico MBDA's Business Center, that can be used to provide micro-grants up to $10,000 to help small businesses establish their online presence and reach new markets. Importantly, EDD is providing the initial funding to non-business entities and not directly to businesses. Rather, EDD would be allowing organizations that support small business development to better serve these small businesses by providing the funding necessary for creating an online presence. With this approach, these organizations are empowered to identify the small businesses in greatest need of digital support and provide them with micro-grants. These organizations could also partner with others, like New Mexico

Community Capital and tribe-affiliated business support organizations, to ensure the micro-grants reach communities throughout the state.

EDD Recommendation 3: In partnership with New Mexico's existing small business support organizations, design a standardized "digital skills for small businesses" training program that is taught by New Mexico's incubators, accelerators, and other entrepreneurship-oriented organizations.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, SBDC, MBDA	Economic development organizations	$$	Medium-term

Digital skills are increasingly necessary for small businesses to succeed. While having a website is a critical component of reaching more customers, understanding the value of digital connectivity and presence, and knowing how to leverage this connection to sustain and grow a business, is also important for ensuring New Mexican entrepreneurs can use digital platforms with maximum efficacy. Building upon the strong partnerships many small business support organizations have with their local communities—including stakeholders like New Mexico Community Capital that maintain strong connections with New Mexico's Native American entrepreneurs—EDD should support the implementation of a standardized small business digital skills training program that can be taught by stakeholder organizations.

The Arizona Commerce Authority (ACA) recently designed and implemented a Small Business Digital Academy aimed at increasing the digital literacy of small businesses and entrepreneurs in the state.[194] The program is held four times a year, with each session lasting six weeks, and covers topics such as website design, social media, e-commerce, search engine optimization, customer relationship management, and other digital analytics tools. Entrepreneurs can register for different modules over the course of the program to build skills in areas critical to their specific needs. While the ACA executes the academy throughout the year, given the diversity of New Mexico's communities and the wide variance in needs of entrepreneurs in these communities, EDD would likely have greater success by developing a curriculum in collaboration with regional stakeholders and having these stakeholders execute the program.

EDD Recommendation 4: Conduct an in-depth analysis of the needs of New Mexico's advanced technologies industries to determine the role of EDD's Technology Research Collaborative.

Lead:	Support:	Estimated Cost:	Timeline:
EDD–Technology Research Collaborative	N/A	$	short-term

The Technology Research Collaborative (TRC) housed within EDD requires a concrete mission to drive the development, scaling, and implementation of advanced technologies in New Mexico. Given the existing network of organizations that support entrepreneurs and startups in New Mexico, it is necessary to analyze the gaps that must be filled to accelerate technology development and commercialization and determine TRC's role in the existing innovation ecosystem. This report provides a solid foundation upon which to identify gaps, but further analysis is necessary to determine the most effective use of the TRC.

Priority 5.2. Remove barriers to financial resources for entrepreneurs.

Capital is a necessity for entrepreneurs. Whether accessed through a traditional financial institution, such as a local bank, or raised through a multi-million-dollar venture fund, financial capital ensures entrepreneurs are able to procure the equipment and talent they need to take their business to the next level. In New Mexico, stakeholders shared a general perception of capital scarcity throughout the state—part of this is due to a lack of knowledge of funding resources offered by public and private institutions. However, data indicate an opportunity for New Mexico to provide capital support for growth-oriented entrepreneurs through targeted investments. Expanding funding opportunities ensures New Mexican entrepreneurs are market-ready and best positioned to grow their businesses into the future.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Design industry-specific state-sponsored investment funds that provide matching funds up to 49%, catalyzing small business investments in key target industries.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	State Investment Council	$$$	Long-term

A consistent challenge cited by stakeholders in New Mexico was the accessibility of different financing mechanisms within the state, particularly for entrepreneurs seeking pre-seed and early-stage funding. This challenge has been experienced in many U.S. states, given that three states capture 75–80% of venture funding in the United States. Most states have responded to this challenge by implementing creative tax incentives, such as those supporting research-intensive startups, or by establishing a state-funded venture capital fund or "fund of funds." New Mexico utilizes a number of tax incentives to support venture funding, including an angel investment tax credit, and maintains a few different funds that target investments in New Mexico-based startups.

Nevertheless, there remains greater opportunity to harness state resources to target investments in New Mexico-based growth-oriented small businesses and startups in key industries. Acknowledging that venture financing comes with a significant level of risk, developing a matching funds program, whereby New Mexico matches up to 49% of an investment from a non-state agency or organization, can serve as a catalyst for venture investment in New Mexico. The use of matching funds, rather than unmatched investments, helps to ensure that public funds are being invested into startups that have greater chance of success, defined as those startups that have received partial investments from other sources. Additionally, targeting these investments in companies that align with New Mexico's target industries ensures that the investments support job creation in industries with long-term potential in New Mexico and those industries that support the state's overall economic diversification.

EDD Recommendation 2: Support New Mexico's higher education and training institutions in establishing prototype funds that provide academic researchers access to critical gap funding to advance their technologies to more developed technology readiness levels.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-OST	Higher Education	$$$	Long-term

Before a technology can be commercialized and brought to market, it goes through several stages of development to improve its readiness for the marketplace. As technologies move through the technology readiness levels (TRLs), innovators require additional funding to refine their inventions. For innovations derived from a corporate or national laboratory, this funding is oftentimes provided by the lead firm or federal agency supporting the research. However, for researchers at universities, this funding must often be procured through competitive grant applications or other less consistent funding streams. To remedy this challenge, some universities in other states have established "prototype funds" that provide gap funding to university-based researchers to hire assistants, purchase equipment, or address another resource challenge preventing the technology from advancing to higher TRLs.

States, too, have established prototype funds, usually tied to a specific area like agriculture technology. For example, North Dakota's Agricultural Products Utilization Commission (APUC) established the Prototype and Technology Grant to support the development of technologies that enhance the products of agricultural production and processing.[195] EDD could support a similar prototype funding program in New Mexico for researchers at New Mexico's colleges and universities to assist them in advancing their technologies to market readiness. The fund could either be managed at the state level, which would likely provide the greatest reach, or each university could implement its own prototype fund using enrollment dollars and other support from the state legislature.

EDD Recommendation 3: Establish a permanent funding stream for incubators and accelerators located in New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	State legislature	$$	Short-term

New Mexico currently has an extensive network of independent incubators and accelerators, many of which have received certification from EDD. However, most of the funding for these programs is derived from one-time grants or appropriations, making it difficult for incubators and accelerators to make long-term investments in programs and expanded services. As the certifying entity for incubators and accelerators in New Mexico, there is a clear need for EDD to provide consistent, sufficient funding to the state's incubators and accelerators so that they may continue to provide critical services to the state's small businesses and startups.

EDD Recommendation 4: Work with the New Mexico State Investment Council to identify potential mechanisms that would increase public sector investments in New Mexico-based startups.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, State Investment Council	Legislative Finance Committee	$	Short-term

In recent years, the Legislative Finance Committee has identified ways to increase state investment for businesses and startups located in the state, rather than those located in other states or countries. Part of the challenge has been the relatively small number of startups based in New Mexico, as well as the low percentage of those startups that are likely to have long-term success. Other recommendations in this action plan focus on building capabilities among New Mexico's entrepreneurs so that they attract more funding from private investors. However, increasing the level of public sector investment that flows to in-state businesses can limit the number of startups that leave the state to access critical funding for further technology development, testing, or scaling. EDD should collaborate with the State Investment Council to identify new tools that could be used to increase the state's investments in startups while recognizing the limitations for direct public sector investments in private businesses due to New Mexico's Anti-Donation Clause.

Priority 5.3. Sustain an entrepreneur-friendly business environment.

Establishing a business can be difficult. Entrepreneurs frequently need to navigate a complex system of state and local rules and regulations in addition to accessing seed funding to start their business. As a state agency that works with businesses every day, EDD is in a competitive position to strengthen New Mexico's business environment and make it a more attractive place to start and grow a business.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: Establish a New Mexico Incubator and Accelerator Network that coordinates the efforts of various incubator/accelerator programs in New Mexico and supports the emergence of new programs.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Incubators and Accelerators	$	Short-term

According to EDD's website, seven incubators/accelerators operate in New Mexico. While a few of these operate as part of a college or university, most are independent organizations established by local governments or nonprofits to support local entrepreneurs. Notably, however, there exists no coordinating body for these incubators/accelerators in New Mexico, with any communication or collaboration dependent upon one program reaching out to another. Encouraging collaboration between these programs can help New Mexico's incubators/accelerators identify best practices, determine what programs do and do not work, and share success stories to cultivate a culture of collaboration among New Mexico's startup community.

In 2005, the Business Incubator Association of New York State (BIANYS) was established as a non-profit membership-based organization to support the development of a dynamic startup ecosystem in New York state.[196] Members include non-profit and government-supported incubators and accelerators, college- and university-based programs, and private sector laboratories that each work to grow and sustain New York's entrepreneurship ecosystem. BIANYS members provide financial support to the organization and allow BIANYS to offer a variety of programs supporting entrepreneurs in New York, such as an international exchange program, mentorship, and education programs for first-time entrepreneurs. While EDD will likely need to provide the initial impetus for the creation of a similar network in New Mexico, the organization would ideally become self-sustaining over time after new member organizations join the network.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: Fully digitize the business creation process, allowing entrepreneurs to apply for permits and licenses online, submit documentation virtually, and connect with support.

Lead:	Support:	Estimated Cost:	Timeline:
Secretary of State	EDD	$$	Medium-term

Priority 5.4. Connect entrepreneurs and innovators to critical industry knowledge and resources.

Successful innovation requires collaboration between many stakeholders to develop a product or technology that meets a market need. Many innovations fail because they do not clearly address a market need. Connecting entrepreneurs and innovators to industry knowledge and resources ensures that New Mexico's innovators focus resources on ideas and products that have potential in the marketplace. Increasing the commercialization of home-grown intellectual property will support the emergence of new industries in New Mexico and make the state a more competitive player in an increasingly advanced global economy.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: In partnership with HED, design a grant program for academic researchers at New Mexico's higher education institutions that incentivizes researchers to collaborate with industry partners.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, HED	DWS, Higher Education	$$	Medium-term

Collaborations between academia and the private sector often occur through the execution of research projects focused on addressing an industry or societal challenge. These collaborations, however, can be expensive, at times requiring access to purpose-built lab space or equipment

that is not readily available at the university or through the industry partner. Minimizing the financial cost of collaboration, such as through a grant program, can encourage university-based researchers to engage with industry partners and can serve as an incentive for industry representatives to work with higher education and training institutions.

In an effort to increase collaborations between state universities and industry leaders, the University of Wisconsin founded the Promoting Industry Collaboration Initiative, which provides grant awards ranging from $50,000 to $200,000 to researchers at the University of Wisconsin-Madison.[197] Researchers are required to partner with the private sector to advance a shared research goal related to social, economic, or environmental challenges, and the lead investigator on the project must be a faculty member at the university. In some instances, funding can be provided to doctoral students with dissertator status to pursue internships with industry leaders. Additionally, industry partners are required to provide some level of matching funding, and no funds from the university can be used to fund industry personnel.

EDD Recommendation 2: Leverage New Mexico's incubators, accelerators, laboratories, and higher education and training institutions to create a New Mexico Entrepreneur Mentor Network that serves as a resource for business knowledge and management support for early-stage startups.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Higher Education	$	Short-term

As the home of several research-and-development-intensive companies and organizations, there exists significant scientific and technical expertise in New Mexico. These experts are often at the forefront of their fields and work on ground-breaking research. In some instances, these innovators look to start their own companies to further develop and commercialize a technology. However, while New Mexico is well-endowed with technical experts, many startup and business support organizations in the state noted a lack of managerial talent to help these companies through the early stages of formation, funding, and industry-relevant technology development.

Developing a network of volunteer mentors who have graduated from New Mexican higher education and training institutions or from one of the many incubator/accelerator programs offered in the state is an effective way of centralizing knowledge of the startup process and directing this knowledge toward growth-oriented entrepreneurs. Aside from those with roots to New Mexico's business community, the significant influx of retirees to the state represents an

additional opportunity to cultivate meaningful relationships between those with years of industry experience and entrepreneurs looking to enter the market. Building off of the incubator/accelerator network recommended in Priority 5.3, New Mexico can create a clear, high-profile network of business and managerial talent to support the state's entrepreneurs.

EDD Recommendation 3: Build a network of accessible and flexible laboratory and maker spaces that are available to innovators throughout New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	N/A	$$$	Long-term

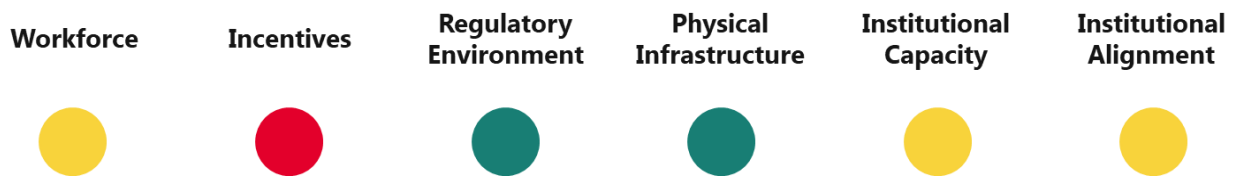
Many innovation-related activities, like research and development, require expensive equipment and lab space to safely and effectively carry out these activities. This is especially true for many startups related to New Mexico's target industries, such as those in biosciences, sustainable and value-added agriculture, and sustainable and green energy. Some stakeholders in these industries identified a lack of such spaces in New Mexico, with some firms resorting to renting out warehouse space and converting it to a makeshift lab to conduct research. Infrastructure constraints such as these incentivize innovators in science- and technology-intensive industries to relocate to other regions that are better able to meet their needs, enabling the further drain of talent and opportunity from New Mexico. To stymie this outflow of innovation, and to keep more talent in and attract more talent to New Mexico, EDD should support the development of a network of flexible, mixed-use lab space throughout the state that meets innovators where they are, rather than relying on existing spaces at universities or the national labs.

Strategy 6: Resilient New Mexico
Diversify New Mexico's Economy by Growing Target Industries

Priority 6.1. Aerospace.

The aerospace industry remains an opportunity for New Mexico, though in recent years competition in this industry from other states—especially in the space sector—has increased significantly. As a result, features of New Mexico's aerospace ecosystem, such as Spaceport America, do not have the competitive "pull factor" they had a decade ago. However, New Mexico's role in the "space triangle" in the western United States—defined as the three cities of Albuquerque, NM, Colorado Springs, CO, and Los Angeles, CA—means that the state does, in fact, maintain a competitive edge over many others.

SRI's analysis of New Mexico's aerospace industry focused on six core components:



As can be seen from the figure above, New Mexico must strengthen its aerospace workforce and incentives, while building greater institutional capacity and alignment, in order to compete with other U.S. and international regions vying to lead the next generation of aerospace technologies.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Institutional Capacity, Institutional Alignment).* Prioritize the development of an aerospace industry council that connects stakeholders in New Mexico's aerospace industry with higher education and training institutions in the state, focusing on the development of industry-relevant curricula at the certificate, 2- and 4-year degree, and graduate degree levels.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NewSpace New Mexico, DWS, HED	$	Short-term

New Mexico is home to several aerospace organizations and companies, many of which operate at the leading-edge of aerospace research and development (R&D). Some organizations—notably NewSpace New Mexico—have worked to connect stakeholders in New Mexico's aerospace industry and develop the critical mass necessary to drive the industry's development. Nevertheless, many stakeholders in New Mexico's aerospace industry noted the lack of coordination between industry stakeholders, academia, and state-level decisionmakers as an obstacle to the industry's growth.

EDD should capitalize on the networks built by private sector and non-profit organizations in New Mexico to develop a routinized approach for supporting this industry, such as the Ohio Aerospace Institute and the newly commissioned Oklahoma Aerospace Institute for Research and Education. As discussed in Priority Area 1.1., establishing an industry council has been an effective mechanism in other states for building dialogue between state decisionmakers and industry representatives. In New Mexico, this dialogue is particularly important in order to understand and mitigate the challenges experienced by the state's aerospace companies in areas such as incentives and workforce development. An aerospace industry council could work alongside EDD to monitor other states' efforts to attract aerospace companies and startups and identify new incentives, whether financial or otherwise, that maintain New Mexico's standing as a competitive player in the aerospace industry.

Many stakeholders noted the efforts of New Mexico's higher education and training institutions to develop programs that support the aerospace workforce—such as UNM's COSMIAC program and CNM's certificates and credentials related to drone operations—but also identified a conspicuous lack of talent in critical areas in which New Mexico has a competitive advantage. These areas include microelectronics, optics, computer software, and computer engineering. Establishing an industry council for aerospace would enable employers in the industry to directly engage with New Mexico's higher education and training institutions on a routine basis to identify skills and knowledge gaps among New Mexico's aerospace workforce and develop the necessary education and training programs to fill these gaps.

EDD Recommendation 2: *(Incentives).* Develop a matching fund for aerospace-related infrastructure development critical to New Mexico's aerospace industry, particularly around Spaceport America.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Spaceport America	$$$	Short-term

Spaceport America was a critical investment in New Mexico's aerospace industry that put New Mexico on the map as a key player in the U.S. aerospace industry. However, as other states have sought to grow this industry and develop key infrastructure to support the industry's long-term viability, New Mexico has fallen behind. In particular, stakeholders noted the remoteness of Spaceport America and its relative disconnection to key aerospace assets in New Mexico as an obstacle. Better enabling growth and engagement with Spaceport America—including through the manufacturing and tourism industries—will increase the attractiveness of New Mexico to aerospace companies and reduce the financial burden for capital-intensive aerospace companies relocating to the state.

Florida has undertaken a similar program to expand aerospace-related infrastructure, particularly as it relates to the space industry, through Space Florida's Space Transportation Infrastructure Matching Fund.[198] Using the applications received through this program, Space Florida identifies a proposed list of spaceport capacity improvement projects that seek to increase common-use infrastructure for the state's aerospace industry, and submits these proposals to the Florida Department of Transportation for approval. Designing a similar program for New Mexico's aerospace industry can help EDD identify key missing components from the state's aerospace infrastructure and address them accordingly.

EDD Recommendation 3: *(Incentives).* Attract aerospace entrepreneurs to New Mexico by developing an annual "Spaceport America Space Camp" that showcases New Mexico's space-related capabilities and provides cash prizes to startup teams that are able to effectively address an emerging challenge for the space industry.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Spaceport America, Tourism department	$$	Medium-term

To compete with the growing number of aerospace-intensive states, New Mexico must develop a compelling value proposition for entrepreneurs and innovators in the aerospace industry. In an annual ranking of states' competitiveness in the aerospace manufacturing industry, neighboring states like Texas (4th), Arizona (7th), Colorado (12th), Utah (18th), and Oklahoma (28th) placed among the most competitive in the United States, while New Mexico placed 36th.[199] Though this ranking is focused on aerospace manufacturing, and New Mexico maintains comparative

strengths in aerospace R&D, it remains clear that other states, some with similar constraints to New Mexico, have quickly emerged as key players in this industry.

As the home state for many research-intensive aerospace organizations, New Mexico has a valuable ecosystem into which aerospace startups can immerse themselves. Showcasing these assets and building connections between in-state resources and out-of-state entrepreneurs can help to increase New Mexico's exposure to the larger space industry community and attract entrepreneurs in this industry to New Mexico. Engaging other organizations in New Mexico that operate in the space industry, such as the Air Force Research Lab's Space Vehicles Directorate and NewSpace New Mexico, can increase the attractiveness of the program to entrepreneurs.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Workforce).* Develop an aerospace-focused online workforce portal that connects students, researchers, and employers in the aerospace industry to opportunities in New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
NewSpace New Mexico	EDD, DWS, HED, Higher education	$$	Medium-term

Priority 6.2. Biosciences.

Biosciences is a nascent but growing industry that is well-positioned to become a key driver of economic growth in New Mexico. The state's national labs and higher education institutions produce a talented bioscience workforce, while its strengths in R&D have supported the formation of numerous bioscience startups. A lack of alignment between institutions in pursuing shared goals, however, remains a challenge that can be addressed through interdisciplinary collaboration. Furthermore, because bioscience is a capital-intensive industry in which many companies require specially designed lab space, establishing adequate lab space infrastructure is critical to the ability of bioscience startups to expand in New Mexico.

Workforce	Incentives	Regulatory Environment	Physical Infrastructure	Institutional Capacity	Institutional Alignment
●	●	●	●	●	●

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Institutional Alignment).* Organize a biannual bioscience industry conference aimed at exploring collaboration opportunities between bioscience companies, identifying supply chain complementarities, and strengthening relationships between industry, academia, and national labs.

Lead:	Support:	Estimated Cost:	Timeline:
EDD S&T	NMBio	$$	Short-term

New Mexico's bioscience companies are diverse in both scope and size, from lab-based startups and medium-sized biomanufacturers to established AI software developers focused on bioscience applications. Many bioscience companies share overlapping or complementary research areas, and untapped opportunities exist for industry players to collaborate on shared problems and business needs through mechanisms such as joint ventures. Artificial intelligence (AI), for example, has become integral to many aspects of drug development and health diagnostics, and collaboration between traditional lab-based firms and bioscience-focused AI companies has the potential to accelerate the growth of both types of companies. Additionally, all bioscience firms benefit from the extensive R&D infrastructure established by New Mexico's national labs and higher education institutions.

Despite these advantages, stakeholders noted that New Mexico's bioscience industry is fragmented and that opportunities for collaboration and coordination are present but are not capitalized upon. While NMBio, the state's bioscience trade association, hosts monthly luncheon meetings for industry players, in-depth collaboration typically requires day-long or multiday conferences during which industry stakeholders share ideas, network, and seek collaboration opportunities. To this end, EDD's Office of Science and Technology should, with assistance from NMBio, organize an industry-wide conference that serves as a venue for collaboration, coordination, and dialogue. While the conference aims to accelerate industry development

through increased technical collaboration, the event will also explore broader economic development and policy issues that affect the bioscience industry.

EDD Recommendation 2: *(Institutional Capacity).* Establish a specialized resource center for environmental remediation small businesses in partnership with EMNRD with personnel trained in both environmental regulations and federal contracting who can offer technical assistance for securing and maintaining federal contracts.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	EMNRD, NMED	$	Short-term

In 2020, the University of New Mexico prepared a report for the New Mexico Legislature Indian Affairs Committee on the economic opportunities of uranium mine cleanup in the state. In that report, they brought up many of the challenges faced by local and small remediation companies that struggle to access the large federal contracts available for cleaning up abandoned mine sites. Although this report was focused on cleanup of uranium mines on reservation lands, the business issues discussed are broadly applicable to all environmental remediation businesses headquartered in New Mexico. Small businesses tend to lack administrative capacity, and federal contracts and subcontracts have strict paperwork and certification processes that serve as barriers to local companies. Often, these contracts and subcontracts go to large, out-of-state businesses.

One of the recommendations of this report was for EDD to open a small business assistance center focused on uranium mine remediation and locate it in the northwestern quadrant of the state. But environmental remediation can cover a host of activities, from mine clean-ups to brownfields remediation. A broadly focused environmental remediation business center would build capacity among local small businesses to identify and access large federal contracts and subcontracting opportunities related to mine clean-ups and other remediation efforts. The center would need to keep a current list of federal and state contracts and subcontracts for local and regional environmental services. Staff would also aid in meeting the administrative requirements for obtaining those contracts and subcontracts, as well as providing pertinent regulatory information and updates. An ambassador from EMNRD or the New Mexico Environment Department (NMED) could identify relevant workshops, conferences, and contacts to assist local companies.

EDD Recommendation 3: *(Physical Infrastructure).* Conduct a feasibility study for the development of a circular clean fuel economy by linking existing bioscience, agriculture, and green energy supply chains with a focus on sustainability, carbon intensity, and the reduction of industrial waste.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Industry councils	$	Short-term

Biofuels stand at the intersection of biosciences research, sustainable energy, and value-added agriculture. R&D in biofuels is a major focus area at the national labs and research universities, and existing supply chain networks in agriculture and green energy have the potential to provide the foundation for a thriving biofuel cluster in New Mexico. For instance, biofuel co-products are increasingly used in cattle feed, which presents an opportunity for the state's enormous cattle industry to become a partner in biofuel production. This complementary relationship between biofuel production and cattle farming—in which waste products in one industry become inputs in another—is an example of a circular economy for which the necessary supply chain infrastructure already exists in New Mexico.

As such, industry leaders should conduct a supply chain feasibility study to identify complementary areas in the bioscience, agriculture, and green energy supply chains and determine how these supply chains can become further integrated within a circular biofuel economy. The study, furthermore, should focus on potential reductions in industrial and agricultural waste as a result of increased circularities in supply chains.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Physical Infrastructure).* Engage with and assist life-science-focused real estate developers to repurpose suitable vacant properties into wet lab space.

Lead:	Support:	Estimated Cost:	Timeline:
NM Partnership	EDD and NMBio	$	Short-term

Priority 6.3. Cybersecurity.

The cybersecurity industry is supported by a strong network of cyber-focused programs at the national labs and higher education institutions and by the Cybersecurity Center of Excellence (CCoE), an organization that coordinates industry development efforts and promotes cybersecurity awareness and training. Demand for cybersecurity services is expected to drastically increase in the next two decades, but the supply and quality of cybersecurity are still lacking in New Mexico. Two barriers to industry growth in the state are a lack of knowledge by cybersecurity entrepreneurs of intellectual property and technology transfer law and a lack of investment by New Mexico companies to improve their cybersecurity capabilities. Addressing both challenges will require EDD to support and closely coordinate with the CCoE.

Workforce	Incentives	Regulatory Environment	Physical Infrastructure	Institutional Capacity	Institutional Alignment
🟡	🟢	🟢	🔴	🟡	🟡

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Institutional Capacity).* Provide funding and staffing for the Cybersecurity Center of Excellence to establish business and legal advising services for cybersecurity entrepreneurs.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	CCoE	$$	Medium-term

In New Mexico, business formation in the cybersecurity industry frequently depends on the research performed at the national labs and universities. Because cybersecurity innovation is often a collaborative effort between industry, academia, and the national lab, intellectual property considerations can prevent a new technology from being commercialized while regulations governing technology transfer can hinder business development. Moreover, cybersecurity entrepreneurs, many of whom are researchers and scientists, often lack the business and legal knowledge to deal with intellectual property issues.

To address this problem, EDD should help fund and support the creation of a business and legal advising service at the CCoE to assist entrepreneurs in navigating the legal and business challenges within the cybersecurity industry. As of the writing of this plan, CCoE lacks the

staffing to offer business and legal consultations, and its capabilities would be expanded by hiring a dedicated legal and business advisor. This advisor would, on behalf of entrepreneurs, engage with the national labs and universities to resolve technology transfer disputes, and they would also assist cybersecurity businesses in securing startup capital.

EDD Recommendation 2: *(Institutional Alignment)*. Provide funding and organizational support for the expansion of the CyberReady program to include regular one-on-one consultations and follow-ups, with the goal of ensuring that New Mexico businesses can pass the Cybersecurity Maturity Model Certification (CMMC).

Lead:	Support:	Estimated Cost:	Timeline:
EDD	CCoE	$$	Medium-term

In recent years, the Department of Defense (DoD), a major customer of many New Mexico businesses, required its contractors to comply with a set of cybersecurity standards called the Cybersecurity Maturity Model Certification (CMMC). By 2025, all DoD contractors will be required to meet CMMC standards. The cybersecurity investments required to pass the CMMC takes substantial time and money on the part of businesses, and many smaller contractors in New Mexico lack the resources and guidance to become CMMC compliant. CCoE's launch of the CyberReady workshop is a first step toward helping businesses upgrade their cybersecurity procedures, but it should be expanded to include technical assistance and one-on-one consultations and evaluations in a manner similar to the Manufacturing Extension Partnership. To this end, EDD should assist the CCoE in expanding support to New Mexico businesses to achieve CMMC compliance.

Recommendations for Economic Development Stakeholders in New Mexico

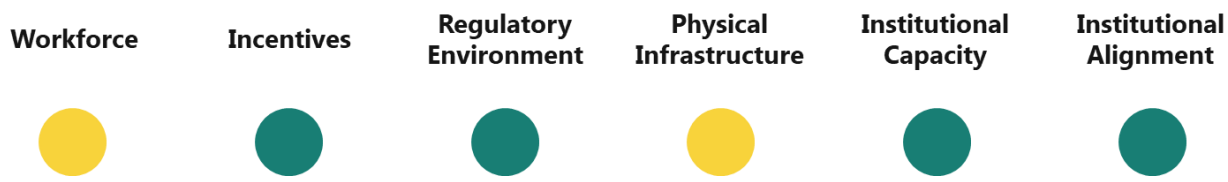
Stakeholder Recommendation 1: *(Physical Infrastructure)*. Incorporate basic cybersecurity training into broadband expansion initiatives so that newly connected residents and businesses are properly trained in safe internet practices.

Lead:	Support:	Estimated Cost:	Timeline:
CCoE	EDD	$$	Medium-term

Priority 6.4. Film & Television.

The film industry has been a strong performer in New Mexico's economy over the last 20 years. New Mexico is increasingly the home of major motion pictures, award-winning television series, and a growing number of independent films written by home-grown talent. Film industry stakeholders were unanimous in their support for New Mexico's current slate of film industry incentives and credit these incentives with the emergence and growth of the industry in the state over the last several years. As the film industry diversifies away from its historical roots on the West Coast, however, New Mexico faces competition from a growing number of regions, both in the United States and internationally, that threaten the growth seen in New Mexico in recent years.

Maintaining New Mexico's competitive advantage in film and increasing this advantage over other domestic and foreign competition will require coordinated efforts from EDD and stakeholder organizations. In particular, efforts are needed to strengthen New Mexico's film workforce, as well as the state's physical infrastructure for the film industry.



Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Incentives, Physical Infrastructure).* Conduct a review of New Mexico's existing film industry incentives to assess their economic impact on the state and identify opportunities to enhance these incentives and maximize their impact on the state's film industry.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-NMFO	TRD	$	Medium-term

Many stakeholders noted the importance of New Mexico's film industry incentives in enabling the industry to emerge and grow in the state. However, as the industry has grown and its needs have evolved, there is an opportunity to optimize New Mexico's current film industry incentives. First, it is necessary to understand the impact these incentives have had in New Mexico over the last several years and the benefits they have brought to the state's communities. Using this understanding, the New Mexico Film Office (NMFO) should work with legislators, industry, and other state agencies to optimize these incentives for the modern film industry in New Mexico. For example, identifying opportunities to support infrastructure development for the film industry in partnership with production and post-production studios through the use of matching funds could help to spur the development of industry-critical infrastructure.

EDD Recommendation 2: *(Incentives).* Develop and implement an ongoing marketing campaign geared toward industry decisionmakers, state legislators, and the community that will help grow the industry in New Mexico, advocate for the optimization of existing incentives, and advertise the industry as an employment opportunity for New Mexicans.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-NMFO	N/A	$$	Short-term

Despite the long history of film industry incentives in New Mexico, there remains a clear disconnect between the impact of these incentives on New Mexico's economy and communities and decisionmakers' perspective on the incentives' efficacy. NMFO must increase awareness of New Mexico's film industry and the enabling environment the state has built to allow it to grow. Similarly, NMFO should better promote the industry as an employment opportunity for a variety of workers at different education and skill levels. As an industry firmly rooted in skilled labor, the film industry presents many New Mexicans, particularly those without a traditional college degree, with the opportunity to build a career that provides ample opportunities for advancement, as well as occupations that provide competitive benefits like medical care and retirement. Better communicating this message will build community support for the New Mexico film industry while also getting the word out on employment opportunities for those interested in the industry.

EDD Recommendation 3: *(Workforce).* Promote diversity in entertainment by developing a workshop for aspiring film industry workers in New Mexico that connects creators to industry representatives and allows them to strengthen their professional skills.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-NMFO	Higher education	$	Medium-term

New Mexico is home to one of the most diverse populations in the United States. Despite this, the promotion of diverse voices from around New Mexico has been a challenge. Stakeholders routinely cited the need for a more purposeful approach to the way in which New Mexico cultivates film industry talent from a diverse range of backgrounds. New York state, facing a similar challenge, developed PITCHNY, a program focused on promoting diversity in the entertainment industry and highlighting the diverse content created by New Yorkers.[200] Participants in PITCHNY are given the opportunity to "speed pitch" their content to industry professionals and receive feedback on how to best sell their content to industry leaders. Developing a similar program in New Mexico would provide an opportunity for New Mexico's content creators to fine-tune their pitching skills while making tangible connections with the state's film industry.

EDD Recommendation 4: *(Workforce).* Establish a New Mexico Film Academy that serves as a one-stop shop for high quality education and training programs offered in partnership with New Mexico's higher education and training institutions.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-NMFO	HED, Higher education	$$	Medium-term

The film industry requires talent at a variety of education and skill levels, and this talent is usually classified as "below-the-line" (BTL) or "above-the-line" (ATL). Stakeholders routinely noted the strength of New Mexico's BTL workforce, though they identified a likely shortage of these workers as the industry expands in New Mexico. However, New Mexico's ATL workforce was frequently cited as underdeveloped, with many industry leaders having to import ATL talent to New Mexico for productions. To minimize the need to import talent, New Mexico must focus on building high-quality and consistent education and training programs for the film industry.

Many higher education and training institutions in New Mexico have implemented film industry programs over the last several years. The quality of these programs, though, has been inconsistent among institutions, leading to a surplus of programs that may not provide graduates with the skills and knowledge necessary to succeed in the industry. As the state's leading agency for the development of the film industry, NMFO should work with higher education and training institutions in New Mexico to streamline the programs offered in the state and ensure that they are offering relevant, high-quality education to students.

Georgia, another state experiencing rapid growth in the film industry, faced a similar challenge with an underdeveloped ATL workforce and a pressing need for more BTL workers. In partnership with the University System of Georgia and the Technical College System of Georgia, the state government established the Georgia Film Academy (GFA) to centralize education and training programs offered in the state, ensure that these programs are high quality, and increase the reach of these programs throughout the state.[201] The GFA connects individuals to learning opportunities at various education and skill levels and ensures that individuals are best prepared to meet the needs of film industry stakeholders in Georgia.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Workforce).* Work with industry to develop certified programs and curricula for post-production, animation, and other film-adjacent specialties.

Lead:	Support:	Estimated Cost:	Timeline:
Higher education	HED, EDD-NMFO, DWS	$$	Medium-term

Priority 6.5. Outdoor Recreation.

New Mexico's natural and outdoor recreation amenities are widely cited as one of the state's greatest assets. Outdoor recreation activities have seen rapid growth in popularity, and this trend has only accelerated during the COVID-19 pandemic. Outdoor recreation is primed to play an important role in New Mexico's economic recovery and diversification. The creation of the Outdoor Recreation Division (ORD) at EDD provides a foundation from which the state can support industry development efforts. However, the industry in New Mexico is still relatively

smaller than it is in most of its peer states, and New Mexico's outdoor recreation assets are less well-known nationally than states such as Colorado. However, greater support for outdoor recreation businesses and increased investment in trail infrastructure can accelerate growth in the industry and contribute to EDD's goal of making outdoor recreation a key driver of the state's economic growth.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Physical Infrastructure).* Fund outdoor recreation infrastructure projects by working with rural communities and industry stakeholders to inventory areas for investment and to identify funding sources in addition to the ORD-led Outdoor Recreation Trails+ infrastructure grant.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-ORD	EMNRD, USDOI, USDA	$$$	Medium-term

New Mexico's abundance of public lands provides an attractive destination for hikers, mountain bikers, and horseback riders. However, the fact that some areas lack well maintained infrastructure and facilities limits their accessibility and growth potential and can lead to environmental degradation. Furthermore, New Mexico lags peer states in permanent funding for conservation and outdoor recreation infrastructure. Financing development and maintenance of trail routes, wildlife viewing stations, and fishing and boating docks can make the state's outdoor amenities accessible to more residents and increase the popularity of outdoor activities.

To this end, ORD should convene representatives from the state's outdoor recreation and tourism industries, community stakeholders, and liaisons from interested tribes to identify areas of the state where infrastructure investment is most needed. This inventory will help ORD maximize the benefits of grants from the Outdoor Recreation Trails+ fund that it manages. Additionally, ORD should identify other funding sources to help finance the outdoor

infrastructure projects identified by stakeholders, such as the Land and Water Conservation Fund or state and local bond projects, and potential partners, such as the U.S. Department of Agriculture (USDA) and the U.S. Department of the Interior (USDOI), and support interested parties with navigating the application process.

EDD Recommendation 2: *(Institutional Capacity).* Hire a Trails Planner to work with MainStreet districts and other key local stakeholders to inventory priority outdoor recreation infrastructure projects and create the necessary construction documents to get them shovel-ready.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-ORD	EDD-MainStreet	$	Short-term

Hiring a designated staff member to facilitate outdoor infrastructure development, one of ORD's main roles, will help ORD achieve its vision. A Trails Planner can manage the inventory of outdoor infrastructure projects to prioritize for investment, as detailed in the previous recommendation. Because the required paperwork for construction can be burdensome to small organizations with limited capacity, the Trails Planner can work with communities and builders to prepare the selected sites for construction.

EDD Recommendation 3: *(Institutional Capacity, Incentives).* Enable the Outdoor Recreation Division to assist outdoor recreation entrepreneurs in seeking small business financing through programs such as the U.S. Department of Agriculture's Rural Business-Cooperative Service and a permanent EDD fund.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-ORD	USDA	$$	Medium-term

The growth of New Mexico's outdoor recreation industry is characterized by the formation of small businesses, many of which are started by outdoor entrepreneurs to meet the growing demand for guided tours, specialized equipment, trail preservation, and other goods and services. Many of these businesses face substantial upfront equipment costs, whether they are a manufacturer or a rafting tour group, which can hinder growth in this industry. ORD's Outdoor Recreation Incubator and Accelerator Grant program provides financial support to these

businesses, but it lacks consistent funding. By establishing a permanent revolving fund, managed by ORD, that provides loans to help outdoor recreation businesses at both the startup and growth stages, New Mexico can bolster this industry as it grows in popularity.

Additionally, there are federally administered small business grants and loans, such as the USDA's Rural Microentrepreneur Assistance Program and the Rural Business Development Grants, that are available to help businesses in this industry, but entrepreneurs are sometimes unaware of these options or find the application process cumbersome. By assisting businesses with grant writing and serving as a mediator between businesses and federal lenders, ORD can play a key role in helping entrepreneurs secure the necessary financing to start and grow their outdoor recreation businesses.

EDD Recommendation 4: *(Institutional Alignment).* Improve marketing of New Mexico's outdoor recreation opportunities to a national audience through local, regional, and tribal partnerships.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-ORD	NMTD, EMNRD	$	Short-term

New Mexico's outdoor recreation assets are relatively less popular at the national level compared to those of other western states. Improving the marketing, branding, and storytelling of New Mexico's recreation assets is therefore an opportunity that has historically been underutilized. An effective outdoor marketing campaign not only draws tourism to New Mexico but can also attract new businesses and workers that were previously unaware of the breadth and scope of the state's outdoor recreation opportunities. To this end, ORD should expand its partnership with the New Mexico Tourism Department (NMTD) and work with localities to launch an outdoor marketing campaign that aims to draw workers and businesses to the state as much as attract tourists, emphasizing the unique topography of each region of the state and the outdoor activities easily accessible from common road trip routes and byways. Marketing campaigns can also focus on how the state's outdoor recreation opportunities are more affordable and less crowded than Colorado and other peer states. ORD should work with towns and tribes that are interested in increasing visitor traffic to identify priority areas on which NMTD should focus its marketing efforts.

EDD Recommendation 5: *(Institutional Alignment)*. Serve on the governor's 30x30 Committee and advocate for the consideration of outdoor recreation opportunities.

Lead:	Support:	Estimated Cost:	Timeline:
EDD-ORD	30x30 Task Force	$	Ongoing

Governor Lujan Grisham's recent executive order committing to conserving at least 30% of the state's lands and waters by 2030 is an ambitious and admirable endeavor that will ensure the vitality of New Mexico's natural spaces, and it has the opportunity to increase access to outdoor recreation opportunities. As a member of the governor's 30x30 Committee, the ORD director should advocate for prioritizing the conservation of lands and waters that are ideal for expanding outdoor recreation access. Conserving land and water intentionally for outdoor recreation activities will often take investments in infrastructure, creating an opportunity for the ORD director to use this directive as leverage for securing additional funding for outdoor infrastructure projects.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Physical Infrastructure).* Work with local, state, tribal, and federal land managers to identify trails facing threat of overuse or effects of climate change and develop a stewardship plan.

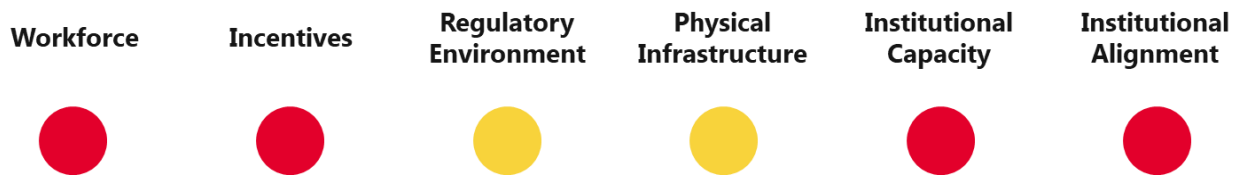
Lead:	Support:	Estimated Cost:	Timeline:
EMNRD, USDOI	EDD-ORD	$$$	Long-term

Priority 6.6. Sustainable & Value-Added Agriculture.

The current agriculture industry in New Mexico is heavily focused on production of raw agricultural goods that are often shipped to other states for processing and refinement. New Mexico misses out on the value-added component of the agriculture industry in which raw agricultural products can be used to develop higher-value products. At the state level, there is also an opportunity to increase the in-state consumption of New Mexico-grown agricultural products. In addition, climate change and an aging agricultural workforce threatens the

sustainable growth of agricultural activity as temperatures rise and water becomes less available. Many of the necessary components of a sustainable and high-value-add agriculture industry are already present in New Mexico.

New conservation technologies, such as those related to optimized water use, must be deployed at greater rates and utilized across the state to ensure New Mexico remains competitive in its current strengths while providing resources for new growers and ranchers. Increasing food processing capacity in New Mexico will require additional and more stable funding mechanisms for producers in the state. In this area, EDD must act as a partner to the New Mexico Department of Agriculture and industry stakeholders that need assistance accessing incentives and building capacity.



Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Institutional Capacity, Institutional Alignment, Regulatory Environment).* Launch a cannabis business office to offer technical support, regulatory compliance assistance, and assistance with securing the capital necessary to begin and maintain a recreational or medicinal marijuana business within the state.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Cannabis Control Division, NM Department of Agriculture, NMED	$	Short-term

The legalization of recreational cannabis represents a new area for agricultural and business diversification that must be harnessed. Medicinal marijuana and hemp cultivation have a long history, with New Mexico leading the way in legalizing medical and therapeutic use of marijuana in 1978. But the state has lagged its neighbor Colorado in legalizing recreational use, and large

cannabis producers and distributers already exist within easy driving distance of northern New Mexico. California, too, already has an established recreational marijuana industry with large producers. Homegrown businesses will struggle to compete with larger mostly out-of-state cannabis businesses looking to establish themselves in a new market. Small businesses of all kinds tend to lack the necessary capital, administrative skills, and technical knowledge to compete. Cannabis also has emerging opportunities with multiple value-added products and cutting-edge sustainable growing technologies that require specialized knowledge and have their own regulatory requirements. Other states have invested in cannabis small business offices that focus mainly on social equity licensees[202], with funding available through grants based on a variety of equity-related factors.

EDD can work to level the playing field and give local entrepreneurs the tools and knowledge to take advantage of new opportunities in emerging markets. EDD should open a cannabis small business office—in close partnership with the New Mexico Department of Agriculture, the Cannabis Control Division, and the NMED Cannabis and Hemp Bureau—that serves small, local producers and entrepreneurs by providing regulatory compliance assistance and pathways to technical knowledge and resources. This small business office should be staffed by personnel knowledgeable in local and state regulations, programs and funding opportunities, as well as the current state of the marijuana industry. From the knowledge perspective, New Mexico already has a mature medical marijuana industry, which now falls under the purview of the Cannabis Control Division. These established growers are an important pool of knowledge and resources, and partnerships can be encouraged through fostering apprenticeship opportunities and training sessions. Although it is outside EDD's mission to support retail—except in communities with a population less than 15,000—it can still play an important role in supporting value-added production of marijuana products and bringing together various state agencies to assist local businesses. In the case of communities with small enough populations, EDD can advise potential cannabis retail operations on how to apply for LEDA funds.

This office should serve as a source of information for the state government by identifying where regulation and procedures can be streamlined as well as where new incentives are needed to support the growth and diversification of local operations. Staff should also identify and attract conferences and workshops on sustainable technologies and methods relevant to the cannabis industry, especially for small producers. In the future, the office could provide guidance to the state on how to prioritize programming and assistance for entrepreneurs from SEDI communities that have been disproportionally affected by the criminalization of marijuana.

EDD Recommendation 2: *(Institutional Capacity, Institutional Alignment).* Attract agricultural and water technology innovation conferences and partnerships to promote collaboration and spur local innovation.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NM Department of Agriculture, EMNRD, NMSU	$$	Medium-term

Innovation in water and agricultural technologies is moving at a breakneck speed in response to climate change. New Mexico's farmers live and work in a delicate environment in which climate change is already causing issues. Water access, changing weather patterns, changing markets, and an aging workforce all serve to drive more and more farmers away from the industry. But New Mexico is not alone in farming in a fragile environment, and many states and countries have developed programs to address water issues and innovate agricultural technologies. Regional partnerships are another area to investigate, as Arizona, Texas, Nevada, and Southern California are experiencing similar effects from climate change and similar stresses on agriculture. The Nevada Governor's Office of Economic Development partnered with the Desert Research Institute (DRI) to create WaterStart[203], a water technology incubator that partnered with Israel to bring innovation to water resources in the state.

To keep New Mexico's agricultural producers and main water users at the leading edge, EDD should attract and promote agricultural and water technology conferences. Already the New Mexico Department of Agriculture hosts an Organic Farming Conference and the Bureau of Reclamation supports the Brackish Groundwater National Desalination Research Facility, both of which support bringing together private and public sector stakeholders. Offering a variety of conferences to a wider range of stakeholders can spur innovation and promote collaboration between technology innovators and farmers.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Incentives, Physical Infrastructure).* Design an Agriculture Best Management Practices (AgBMP) loan program, similar to that of the Minnesota Department of Agriculture,[204] to promote and support innovative agriculture and aquaculture practices, such as soil protection, water conservation, shortening supply chains, and reducing waste streams among producers.

Lead:	Support:	Estimated Cost:	Timeline:
NM Department of Agriculture	NMED, EDD	$$$	Long-term

Stakeholder Recommendation 2: *(Physical Infrastructure).* Increase in-state consumption of locally grown produce through the expansion of farm-to-table and food festival promotions.

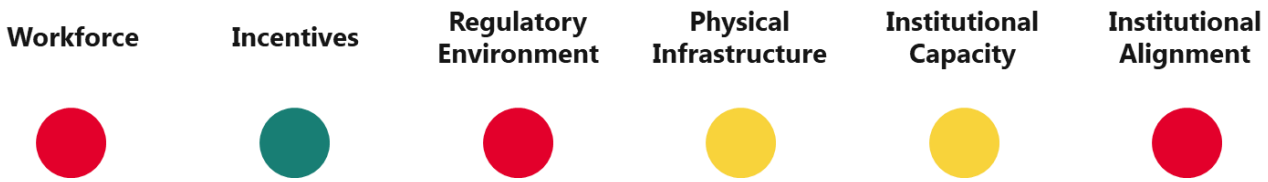
Lead:	Support:	Estimated Cost:	Timeline:
Tourism Department	EDD	$	Short-term

Stakeholder Recommendation 3: *(Physical Infrastructure, Regulatory Environment).* Increase funding and regulatory support to improve and further develop food processing plants in New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
NM Department of Agriculture	NMED, EDD, FDA	$$	Long-term

Priority 6.7. Intelligent Manufacturing.

New Mexico has a diverse manufacturing sector that enjoys strong support from state agencies and organizations in the form of incentives, technical assistance, and organizational support. However, a lack of suitable and shovel-ready sites presents a challenge to attracting prospective manufacturers to the state, while existing manufacturers continue to struggle with hiring skilled workers and with making the capital investments necessary to adapt to new technologies and process innovation.



Several opportunities exist for the state to address these challenges. The development of industrial rail parks in both southern and central New Mexico presents a pathway for the state to leverage its rail infrastructure for manufacturing recruitment. New Mexico, furthermore, is well-positioned to take advantage of reshoring and nearshoring trends, and it can benefit from a clearer understanding of how it can better direct its business development efforts to complement these trends. The proposed Industrial Finance Corporation Act, in which government takes on a more active role in project financing, presents a blueprint for New Mexico to spur investment in its own manufacturing industry. Additionally, the state's established manufactured housing industry and its strengths in 3D printing innovation positions New Mexico to best utilize innovative home construction technologies to address its affordable housing and rural development challenges. Lastly, there is significant opportunity for New Mexico communities to improve the way in which they recruit manufacturers, particularly in their negotiating strategies.

From a regulatory perspective, the state should discuss the possibility of enhancing its incentive programs to assist manufacturers with investments in new technologies, equipment, and facility upgrades that will keep them globally competitive. Technologies such as additive manufacturing and artificial intelligence are expected to disrupt many segments of the manufacturing sector, and there is a pressing need for manufacturers to adapt by investing in automation and new technologies as well as by making their businesses cybersecure. State assistance on these investments can, therefore, ensure that New Mexico manufacturers retain a leading edge over both domestic and foreign competitors.

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Physical Infrastructure).* Fund, support, and promote the development of industrial rail parks in both southern and central New Mexico as attractive manufacturing locations with easy rail access.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	Rail park developers, NM Partnership	$$	Medium-term

The growing popularity of industrial rail parks in New Mexico presents a promising solution to the site selection challenges that make it difficult for the state to attract prospective manufacturers. These parks, complete with trans-load and multimodal facilities, are specifically designed for manufacturers and industrial businesses that seek direct rail service to enhance their access to markets and suppliers. Two examples of these parks are the Santa Teresa Gateway Rail Park, which is the only commerce center connected to Union Pacific's massive intermodal terminal, and the Central New Mexico Rail Park near Albuquerque, which is served directly by the BNSF Transcontinental Railroad. This level of rail facility access—and the supply chain advantages that come with it—has become increasingly attractive to manufacturers as transportation companies face a shortage in truck drivers and the efficiency of U.S. rail operations has improved. According to a 2018 study by the American Trucking Association, moving products by rail is 45 percent less expensive than by truck, and while rail has historically taken longer to transport goods than trucks, rail operators are closing this time gap through improved planning and logistics.[205]

Industrial rail parks can therefore serve as a source of shovel-ready sites that EDD and the New Mexico Partnership can utilize to attract prospective manufacturers. Though some manufacturers require specific facilities and infrastructure that rail parks may not offer, EDD can support rail park developers in constructing these facilities as a means of attracting certain high-value manufacturers. This support can come in the form of a matching facility construction fund, for example, or site promotion assistance to prospective manufacturers. In short, EDD and the New Mexico Partnership should utilize industry rail parks as a key site selection asset when recruiting manufacturers.

EDD Recommendation 2: *(Institutional Alignment)*. Conduct a supply chain gap analysis in key manufacturing sectors to identify business recruitment opportunities that align with reshoring and nearshoring trends.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	MEP	$$	Short-term

In the face of tariff uncertainty, escalating labor costs, and supply chain vulnerabilities, which were brought to light during the COVID-19 pandemic, many manufacturers have begun efforts to reshore or nearshore their internationally based operations. New Mexico is an attractive destination for both reshoring and nearshoring. Its stable climate, low cost of labor and land, and access to manufacturing centers in Mexico make the state an attractive destination for companies seeking to move their supply chains back to North America. The nearshoring trend, in which companies move their global operations to Mexico, bodes especially well for New Mexico because the state's industrial base is a major supplier for factories south of the border. Specifically, many New Mexican manufacturers produce the materials and components for factories in Mexico, which assemble finished goods such as computers, consumer electronics, and automobiles that they then ship back to U.S.-based businesses, frequently via New Mexico's transportation and logistics infrastructure. The movement of additional manufacturing to Mexico, therefore, presents an opportunity for New Mexico's manufacturing sector to position itself at the center of the new bi-national manufacturing supply chain.

To this end, EDD should conduct a supply chain gap assessment that aims to identify business recruitment opportunities that align with ongoing trends in reshoring and nearshoring. Understanding the supplier and customer needs of the manufacturers relocating to Mexico and the United States will inform EDD on how best to reposition its own manufacturing industry to meet those needs. The assessment will, specifically, inform EDD on which types of manufacturers can become critical suppliers to manufacturing operations that are relocating to Mexico, as well as how the state itself can best capture manufacturing operations relocating to the United States. Thus, findings from the assessment will serve as the evidence-based rationale for future decisions related to industrial development, such as determining what site facilities to prepare and what skills to prioritize in manufacturing workforce training.

EDD Recommendation 3: *(Institutional Capacity).* Establish a state-owned industrial finance corporation, modeled after the Industrial Finance Corporation Act of 2021, which makes long-term loans, equity investments, and purchase guarantees to bridge the financing gap in New Mexico's high-tech and capital-intensive manufacturing sector.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	TRD, MEP	$$$	Medium-term

The reliance of U.S. manufacturers on private capital has resulted in what many deem a persistent shortcoming of American manufacturing, which can be characterized by substantial public sector support when new technologies are in the basic research stage followed by a notable lack of financing options as the technology is on the verge of commercialization and mass production. Few U.S. institutions, for instance, are willing to finance a new production line or a state-of-the-art manufacturing facility that incorporates a novel technology, especially when its return on investment is unclear.[206] As a result, many promising U.S.-based manufacturers view offshoring as the only avenue for scaling up a new technology for mass production.

To close this manufacturing finance gap, several U.S. senators have proposed establishing a government-owned corporation that can directly provide loans, make equity investments, and execute purchase agreements to support U.S.-based high-tech manufacturing.[207] While this bill may or may not become legislation at the federal level, EDD should work with the New Mexico legislature to establish its own Industrial Finance Corporation (IFC) that helps provide the financing of capital-intensive manufacturing projects. The IFC would, for existing manufacturers, enable the capital investments necessary to make technological upgrades and expand capacity, and it would serve as a major pull factor for prospective manufacturers seeking access to capital. Nevertheless, the IFC should complement, rather than compete with, private capital by establishing safeguards in which public dollars incentivize private investment in New Mexico's manufacturing sector. Managed appropriately, the IFC can become an effective tool in bridging the financing gap for New Mexico's manufacturers, encouraging additional private investment in advanced manufacturing, and maintaining high environmental, social, and labor standards in a resurgent manufacturing sector.

EDD Recommendation 4: *(Physical Infrastructure)*. Work with the New Mexico Manufactured Housing Association, R&D institutions, and CNM's FUSE Makerspace to explore the potential of using 3D printed manufactured housing to address challenges in affordable housing and rural development.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	NM Manufactured Housing Association, R&D institutions	$$	Long-term

The need for quality yet affordable housing is especially acute in New Mexico's rural counties, where manufactured housing, including mobile homes, is viewed by many to be the only affordable housing solution. However, as the state's rural housing stock ages and rural residents struggle to obtain newer and quality homes, there is a growing need to explore innovative homebuilding technologies to address challenges in affordable housing and rural development. In recent years, home builders have increasingly turned to 3D printing (also known as additive manufacturing) to build houses that are cheaper and more energy efficient. Homebuilding using 3D printing, furthermore, is often much faster and produces less emissions than typical home construction using concrete and lumber. 3D printing may eventually become the predominant method for homebuilding, and New Mexico is well-positioned to take advantage of this technology for affordable housing and rural development. Its national labs and universities conduct groundbreaking research in 3D printing applications, and its manufactured housing industry—whose employment concentration is 2.5 times the national average—is highly specialized. Supporting the manufacturing sector in developing better solutions to the state's housing and rural development challenges, so that rural residents have access to quality yet affordable housing, is an opportunity on which EDD should capitalize.

To this end, EDD should initiate discussions with manufactured homebuilders and institutions with 3D printing expertise in exploring opportunities for making the state a leader in innovative manufactured housing construction. Coordinating the effort between institutions with 3D printing capabilities (e.g., national labs and CNM's FUSE Makerspace) and key players in the manufactured housing space, EDD should guide stakeholders through a "proof of concept" stage by which homebuilding technology is tested in rural communities. As scaling up manufacturing capacity for 3D printed homes will be capital-intensive, EDD's business development resources will also play a critical role as manufactured homebuilders ramp up production to address the state's affordable housing challenges.

EDD Recommendation 5: *(Institutional Alignment).* Hold negotiation planning sessions with local government stakeholders to craft a compelling business proposition prior to negotiations with prospective manufacturers.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	MEP, NM Partnership	$	Short-term

In discussions with out-of-state manufacturers considering a move to their communities, local governments and representatives have been known to lead negotiations with incentives rather than making the assets of the state and its communities the main selling point. Although incentive programs are an important and necessary component of manufacturing recruitment, incentives are not usually what attract manufacturers to a community. Rather, incentives often "sweeten the deal" for businesses that are already keen to establish or expand operations due to other community strengths, such as a skilled workforce, supply chain complementarities, and suitable sites and infrastructure. As such, there is a strong need for New Mexico's communities to develop clear and compelling business propositions that highlight local and state assets which are particularly relevant to the manufacturer a community is seeking to recruit.

Prior to negotiations with a prospective manufacturer, EDD should hold negotiation planning sessions with community stakeholders, the New Mexico Partnership, and the Manufacturing Extension Partnership to develop a negotiating strategy using a compelling value proposition highlighting the reasons the manufacturer should locate in the community. This proposition can be crafted along various dimensions, such as a community's strategic location and access to markets (e.g., Santa Teresa), complementary industries in which New Mexico is particularly strong (e.g., synergies from photonics R&D for autonomous vehicle manufacturers), and specific community facilities and infrastructure that are conducive to manufacturing activities. These negotiation planning sessions not only help local and state stakeholders "get on the same page" in terms of their approach to business recruitment, but they also indirectly help local communities identify assets—both at the local and the state level—that can be better marketed to make specific communities more attractive to manufacturers.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Workforce Development).* Create model curricula for career & technical education (CTE) providers geared specifically toward developing skills sought by New Mexico manufacturers.

Lead:	Support:	Estimated Cost:	Timeline:
HED	EDD, MEP, DWS	$	Medium-term

Stakeholder Recommendation 2: *(Institutional Alignment).* Sponsor an advertising campaign of New Mexico MEP's *New Mexico Made* program, modeled after the New Mexico True Program, to promote national and international awareness about products made by the state's high-tech manufacturers.

Lead:	Support:	Estimated Cost:	Timeline:
New Mexico True	EDD, MEP	$$	Long-term

Priority 6.8. Global Trade.

Global trade is one of New Mexico's fastest-growing industries, driven in part by rapid industrial development of the Santa Teresa region and continued infrastructure investments in the Santa Teresa Port of Entry. A key enabler of the industry is the state's extensive transportation infrastructure, which provides the state with easy access to both domestic and international markets. The Albuquerque region, in particular, is strategically located at the intersection of major cross-country freight corridors, but the region has not fully taken advantage of its locational advantage for economic development. As such, capturing the economic benefits of freight passing through the state, as well as ensuring that growth in the border region is sustainable and equitable, should be key industry priorities for EDD.

Workforce	Incentives	Regulatory Environment	Physical Infrastructure	Institutional Capacity	Institutional Alignment
●	●	●	●	●	●

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Physical Infrastructure).* Offer LEDA support to the City of Albuquerque for the creation of a warehouse and distribution district, located at the intersection I-40 and I-25, to capture cross-country freight activity passing through central New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	City of Albuquerque	$$$	Long-term

The Albuquerque region lies at the center of an extensive network of road, rail, and air transportation infrastructure. It is also strategically located at the intersection of two interstate highways that connect the West Coast to the East Coast and Mexico to Canada, lies equidistant to both the Port of Los Angeles and the Port of Houston on the BNSF Transcontinental Railway, and is a half-day truck drive from the Santa Teresa Port of Entry.[208] Despite these advantages, the overwhelming majority of freight traffic passes through the region without stopping for any meaningful value-adding process from which the region can benefit.

There is a significant opportunity for the Albuquerque region to pursue warehousing and storage as a complementary and value-added activity to cross-country freight that passes through the area. This is because the region is an attractive location for merchants and distributors to store their goods due to its easy access to national and international markets. As such, EDD can use its LEDA incentive program to support the City of Albuquerque in creating a warehouse and distribution district that takes advantage of the billions of dollars in truck, rail, and air cargo that passes through the region each year. This district, furthermore, should be located near the intersection of I-40 and I-25 while having easy access to local rail facilities and the Sunport.

EDD Recommendation 2: *(Institutional Capacity, Institutional Alignment).* Conduct an economic impact analysis of a full expansion of the Santa Teresa Port of Entry with the goal of identifying economic development opportunities and challenges.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	New Mexico Border Authority	$$	Short-term

The continued expansion of the Santa Teresa Port of Entry will present New Mexico with new economic development opportunities as well as challenges related to sustainability and equity. What the port's expansion means for New Mexico's global trade industry and broader economy, however, is unclear. Conducting an economic impact analysis to identify the economic and fiscal impact of the expansion, including which economic sectors will benefit from it, can aid EDD in its long-range planning efforts. The study can also help New Mexico communities manage growth in the Santa Teresa region in a way that is sustainable and equitable. Lastly, quantifying the expansion's economic impact can help justify a full expansion of the port and demonstrate a return on the infrastructure investments made by federal, state, and local governments.

EDD Recommendation 3: *(Physical Infrastructure).* Identify federal grants and other funding sources for the proposed development of an international rail crossing west of the Santa Teresa Port of Entry.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	New Mexico Trade Alliance, NMDOT	$	Short-term

New Mexico officials have long recognized the limitations of the U.S.-Mexico rail crossing in El Paso, where trains can only operate during the day and railroad operations are constrained by urban development surrounding the tracks. A 2016 study that examined the feasibility of a bi-national rail bypass through Santa Teresa identified a corridor that can serve as an international rail crossing directly from Mexico to Santa Teresa and estimated the project to cost $471 million.[209] While funding sources for the project have not yet been determined, federal dollars are likely needed to cover a substantial portion of its cost. As such, EDD should identify federal grant applications that can improve the financial feasibility of an international rail bypass into Santa Teresa. In particular, EDD should review the eligibility requirements and application

procedures for Federal Railroad Administration grants such as the Consolidated Rail Infrastructure and Safety Improvements Program (CRISI) in anticipation of the study's Phase 2 report, which will focus on project funding and implementation.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Physical Infrastructure).* Complete Phase 2 of the Santa Teresa International Rail Study to determine funding sources and secure presidential permit approval for a bi-national rail bypass near the Santa Teresa Port of Entry.

Lead:	Support:	Estimated Cost:	Timeline:
NM Border Authority	EDD, NMDOT	$$	Medium-term

Stakeholder Recommendation 2: *(Institutional Capacity; Institutional Alignment).* Conduct a "lessons learned" exercise from New Mexico's success in recruiting Taiwanese manufacturers and strategically plan additional trade missions to high-value international markets.

Lead:	Support:	Estimated Cost:	Timeline:
New Mexico Trade Alliance	EDD	$	Short-term

Stakeholder Recommendation 3: *(Institutional Capacity; Institutional Alignment).* Utilize federal resources, such as the Office of the U.S. Trade Representative and congressional representatives, to actively promote the state to an international audience.

Lead:	Support:	Estimated Cost:	Timeline:
New Mexico Trade Alliance	EDD	$	Medium-term

Stakeholder Recommendation 4: *(Physical Infrastructure).* Create an Airport Innovation District at the Sunport to increase shipping activity in high-tech and high-value air cargo to and from the national labs, universities, and businesses in central New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
City of Albuquerque	Innovate ABQ, EDD	$$$	Long-term

Priority 6.9. Sustainable & Green Energy.

New Mexico's location and climate make the state a natural home to renewable energy production. A sunny climate with few natural disasters increases the state's potential for sustainable and green energy development in solar, wind, geothermal, and hydrogen. New Mexico has placed renewables at the forefront of its energy sector through policies such as the 2019 Energy Transition Act, which requires the state to be completely carbon free by 2045 and derive 50% of its energy from renewables by 2030. The creation of the Renewable Energy Transmission Authority (RETA) in 2007 also placed New Mexico in a small group of states that have developed a state-level transmission authority to enable greater integration of renewables within the state's energy infrastructure. However, according to stakeholders, infrastructure remains a key issue as the lack of adequate transmission capability is a major barrier to the advancements in the industry.

The rising demand regionally for renewables and alternative energy sources provide an opportunity for New Mexico to export locally generated sustainable and green energy. The expansion of this industry also creates employment opportunities for the residents of rural counties and tribal areas. Aside from the traditional wind and solar resources, New Mexico is also positioned to lead in the growing hydrogen economy. Not only could New Mexico play an important role in regional energy markets, but it could also take an active role promoting small-scale community renewable resources such as community solar and combined heat and power (CHP), which empower local businesses and residents to strengthen and shorten energy supply chains.

Workforce	Incentives	Regulatory Environment	Physical Infrastructure	Institutional Capacity	Institutional Alignment
●	●	●	●	●	●

Recommendations for the New Mexico Economic Development Department

EDD Recommendation 1: *(Physical Infrastructure, Incentives)*. Promote opportunities for employers in the state to operate 100% renewable energy offices through the deployment of a reward system, micro-installations such as Combined Heat and Power, and community renewables like community solar.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	EMNRD, NMSU, MEP, U.S. Department of Energy	$$	Short-term

More and more employers and business owners are interested in running businesses that rely on renewable energy to fight climate change. Others view renewable resources as the future of cheap, clean energy that will allow them to operate their businesses more efficiently. Whatever the reasoning, businesses in the state should be encouraged to pursue opportunities to easily switch over. EDD already supports the Rural Efficient Business Program in partnership with several other agencies, which provides technical assistance to rural businesses looking to increase their energy efficiency and obtain tax incentives.

EDD should seek to expand the size and scope of this program and include urban businesses as well, providing greater incentives and shining a light on companies that are moving to renewable and energy efficient processes. An awards program that designates companies as gold, silver, and bronze, rated for their level of renewable and efficient operations with corresponding tax breaks, could incentivize more companies to access the EDD program. An efficient business program should also provide clear guidance on current tax credits and incentives available for companies looking to be energy efficient. This could also serve to attract out-of-state companies that want to prove that they are committed to running efficient, environmentally friendly businesses. EDD could also identify companies that have climate and efficiency goals and campaign to these companies to demonstrate how moving to the state would meet their goals. In addition, partners in the expanded efficiency program could provide connections and incentives for local institutions to act as "anchor institutions" for community renewables,[210] such as Combined Heat and Power microgrids and community solar.

EDD Recommendation 2: *(Workforce).* In partnership with HED, DWS, San Juan College, and local energy producers, design more expansive model workforce development programs for the hydrogen industry to expand in northeast and southwest New Mexico.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	DWS, HED, Industry partners, EMNRD	$$$	Medium-term

Thanks to the extensive oil and gas production in the northwest and southeast regions of New Mexico, there is an excellent opportunity for the state to lead in the production of blue hydrogen from methane, with an eye to also developing other forms of hydrogen production including green and turquoise. The production and use of blue hydrogen can reduce the release of greenhouse gasses that contribute to climate change. San Juan College—a minority-serving institution in Farmington—recently partnered with BayoTech to develop an education and training program to build a hydrogen workforce within the state.[211] Currently, the program is focused on providing certifications for post-graduate students in the technical skills needed for working with hydrogen as an energy source. The U.S. Department of Energy also recently awarded a $2 million contract to several major research groups to develop a workforce for hydrogen technologies.[212]

EDD should facilitate connections though the industry councils, DWS, and HED to expand opportunities for building the hydrogen workforce. Hydrogen research is important, but cultivating the technical skills required to build and maintain hydrogen infrastructure among the oil and gas workforce is key for diversifying the industry and providing opportunities for oil and gas workers to expand their skillsets. EDD should work to identify which industry partners are most receptive to assisting in developing and implementing training programs as well as how these programs can be offered (i.e., higher education, internships, apprenticeships, etc.)

EDD Recommendation 3: *(Workforce).* In partnership with DWS, HED, industry councils, and other stakeholders, identify workforce gaps and needs for solar, wind, and other related alternative energy industries (such as geothermal, carbon capture, and energy storage) within the state.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	DWS, HED, Industry partners, EMNRD	$$	Medium-term

Like hydrogen, there have been several programs run by various groups to address the needs of solar and wind energy industries within the state. Some, such as the Mesalands Community College Wind Energy Technology School, are exemplary of successful actions taken to address workforce needs within a local industry. Other programs have been less effective due to the high cost of training equipment and difficulty in getting students invested. The training wind turbine at Mesalands Community College cost around $4.1 million provided by federal and state grants.

New Mexico has potential in several renewable and green energy industries, but stakeholders identified important gaps between the current and needed workforce in several of these industries. This is an area in which EDD can lead in building local workforce and training opportunities for both solar and wind, which are expanding rapidly, and less established industries like geothermal, which have strong potential in the state. These training programs often require expensive equipment and specialized tools for students to gain hands-on experience, and federal and state funds as well as industry partnerships are often needed to get a program started and provide students with job opportunities after completion. EDD can work through the industry councils to identify potential training opportunities, determine sources of funding, and connect institutions of higher education to industry partners. These programs can be a boon for local industries in providing easy access to employees, interns, and apprentices while allowing New Mexicans to obtain well paid industry employment.

EDD Recommendation 4: *(Institutional Alignment, Regulatory Environment).* Investigate the feasibility and implementation of a New Mexico Green Bank to centralize and simplify financing for renewable and green industries within the state.

Lead:	Support:	Estimated Cost:	Timeline:
EDD, EMNRD	NMFA	$	Short-term

The integration of renewables into the electrical grid poses challenges throughout the United States, including New Mexico. With an electrical grid infrastructure originally built to support centralized energy generation, regions that make greater use of decentralized renewables—such as wind and solar—require greater investments in infrastructure that connects these generators to customers within and beyond the region. New Mexico's Energy Transition Act, which requires the state's investor-owned utilities to use 50% renewable energy by 2030 and 100% by 2045, places heightened importance on the need for modernizing New Mexico's electrical infrastructure to enable greater integration of renewables into the state's generating capacity.

Expansion of electrical infrastructure is capital intensive. A study by New Mexico's Renewable Energy Transmission Authority (RETA) found that the development, construction, and operation of new renewables and transmission infrastructure in New Mexico would cost between $9.3 billion and $11.2 billion through 2032.[213] This significant investment is critical for New Mexico to reach its carbon reduction goals over the next three decades, as well as to enable renewable generators in the state to export their energy to other markets. To address the financing challenge faced by the public and private sectors when expanding infrastructure for sustainable energy, other states have turned to innovative financing programs like "green banks" to help catalyze private sector investments in infrastructure expansion.

According to the American Green Bank Consortium and the Coalition for Green Capital, at least 15 states had an existing green bank in 2020, while at least 10 others had taken action to explore the creation of a green bank.[214] Creating a green bank in New Mexico would require the centralization, alignment, and expansion of several programs, offices, and financing mechanisms that already exist separately, as well as buy-in from various state and local government groups. How it fits in with the current Anti-Donation Clause and regulatory requirements would also need to be examined. A coalition of EDD and EMNRD should pursue a green bank implementation study to understand the feasibility of this financing mechanism within the state. This implementation strategy should examine the unique regulatory circumstances present in New Mexico and whether a green bank or a broader infrastructure bank would better serve the state.

EDD Recommendation 5: *(Physical Infrastructure, Institutional Capacity).* Partner with EMNRD as part of an RTO task force to study various market design options for a Regional Transmission Operator to analyze direct and indirect benefits, induced tax revenue, job creation, and transmission development.

Lead:	Support:	Estimated Cost:	Timeline:
EDD	EMNRD, NM SLO	$	Short-term

Regional transmission organizations (RTOs) operate regional electricity markets that span multiple states. Regional markets are common on the East Coast and in the Midwest, and a western regional market connecting disconnected state markets has been a topic of discussion for years. Western states are increasingly aligned on environmental targets to reduce greenhouse gasses while encouraging innovation and adoption of wind, solar, geothermal, and storage technologies from private industry. State policies like renewable portfolio standards

(RPS) already shape market outcomes and are often focused on addressing current energy market shortcomings. But implementation of larger and more inclusive RTO markets, as well as questions about governance and design remain major areas of concern among many stakeholders.

New Mexico and various regional stakeholders have sought to address these issues through the adoption of a western RTO. In the state, an EMNRD representative is participating in various regional dialogues on the creation and implementation of an RTO, including the Western Wholesale Electricity Market Configurations study[215] and Western Interstate Regional Electricity Dialogue (WIRED)[216] as well as the EMNRD Grid Modernization Advisory Group.[217] This Advisory Group recommended that an RTO task force[218] be created in partnership with EDD and the State Land Office (SLO) as well as local stakeholders. EDD would investigate the market design options for an RTO, analyzing direct and indirect benefits, tax revenue, job creation, and transmission development for the group.

Recommendations for Economic Development Stakeholders in New Mexico

Stakeholder Recommendation 1: *(Physical Infrastructure).* Enable greater integration and diversification of renewables into New Mexico's electrical grid—particularly for producers in rural areas of the state—by expanding transmission infrastructure in accordance with the findings of the Renewable Energy Transmission Authority's (RETA) study of New Mexico's transmission infrastructure.

Lead:	Support:	Estimated Cost:	Timeline:
RETA	EDD, EMNRD	$$$	Long-term

Stakeholder Recommendation 2: *(Physical Infrastructure).* Pursue USDOT Federal Highway Administration "Alternative Fuel Vehicle Corridor" designations for interstate highways I-10, I-25, and I-40.

Lead:	Support:	Estimated Cost:	Timeline:
NMDOT	EDD, EMNRD	$$$	Long-term

Stakeholder Recommendation 3: *(Regulatory Environment)* Investigate obtaining state primacy for carbon capture permitting from the EPA.

Lead:	Support:	Estimated Cost:	Timeline:
EMNRD	EDD	$$$	Long-term

Stakeholder Recommendation 4: *(Institutional Capacity).* Expand staffing capacity at the SLO Office of Renewable Energy in accordance with the findings of Headwaters Economics' recent study on Diversifying Revenue on New Mexico State Trust Lands.

Lead:	Support:	Estimated Cost:	Timeline:
NM SLO	EMNRD, EDD	$$	Long-term

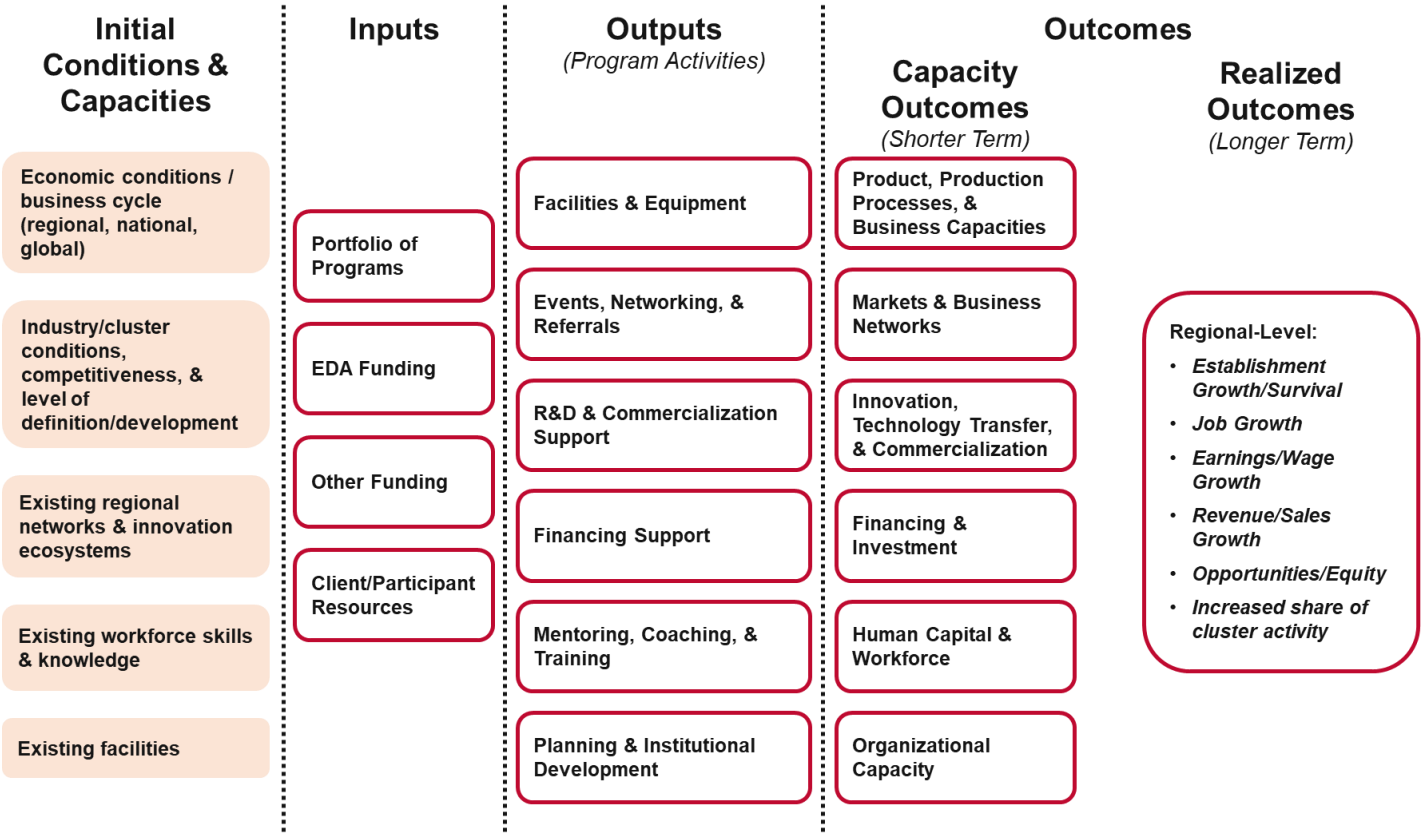
Stakeholder Recommendation 5: *(Institutional Alignment, Incentives; Workforce).* Continue work under the Economic and Energy Diversification program at EMNRD to understand business wants and needs to foster a good business climate. This includes accurately reporting on current incentives, addressing gaps, and developing workforce training as needed.

Lead:	Support:	Estimated Cost:	Timeline:
EMNRD	EDD, DWS	$	Ongoing

Metrics for Determining Strategy Success

Metrics for Determining Strategy Success

For most economic development programs, it is challenging to establish direct, causal relationships between program activities and long-term outcomes. Logic models help to address this challenge by establishing theoretical "if-then" relationships across a program's activities, outputs, and immediate outcomes. As such, they are useful tools for structuring program evaluations, helping to account for immediate, measurable impacts that stem from a program's activities, while logically relating these outputs to longer-term quantitative outcomes. The illustration below shows a generalized logic model for non-infrastructure economic development programs.[219]



The performance measures presented here allow EDD and its stakeholders to first measure progress toward its strategies and then to adapt and improve its work. Many activities proposed in this strategic plan can help New Mexico execute multiple economic development strategies and multiple activities can help the state successfully complete one strategy. Performance measures include some program activities (largely conducted by EDD) in support of community

and economic development but are primarily outcomes for the state. These outcomes include a mix of capacity outcomes that enhance New Mexico's capabilities, and longer-term realized outcomes such as job and wage growth.

It should be noted that many performance measures presented in this evaluation framework require EDD to collect new data, often from other state agencies and organizations. This is because the metrics often pertain to specific aspects of New Mexico that are not captured by publicly available datasets such as the American Community Survey. As EDD implements its strategies and works to monitor its progress, it must ensure that its staff has the capacity and resources to collect this data on an ongoing basis.

Metrics should not be interpreted as evaluations of any single organization or group of organizations.

Performance Measures

Strategy 1: Collaborative New Mexico

Modernize New Mexico's Economic Development Ecosystem

Priority 1.1. Align state, regional, local, and tribal economic development efforts.

Metric 1.1.1: Number of target industry associations established by NewMARC

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
Nine industry associations established	Industry Associations	NewMARC	New collection	Total since 2021

Metric 1.1.2: Number of applications and inquiries initiated through the EDD website

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Online applications and inquiries	EDD Information Systems Bureau	New collection	Annual

Metric 1.1.3: Amount of federal and non-profit grants awarded to regional, local, tribal, and non-profit organizations due in part to support from a state-sponsored matching fund

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Dollars	EDD	New collection	Annual

Priority 1.2. Streamline and simplify New Mexico's regulatory regime.

Metric 1.2.1: Percent of rules and regulations cut or revised from New Mexico's permitting, licensing, and incentive approval processes

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Number of revisions to ED-related rules and regulations	TRD, RLD	New collection	Total since 2021

Priority 1.3. Strengthen New Mexico's business recruitment and retention efforts.

Metric 1.3.1: Number of jobs created through business recruitment efforts

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Jobs	EDD	New collection	Annual

Metric 1.3.2: Number of candidate shovel-ready sites identified (i.e., sites which can be easily converted to shovel-ready status given future infrastructure investments).

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
Ten or more candidate sites across New Mexico	Sites	EDD, NM Partnership	New collection	Total since 2021

Metric 1.3.3: Annual funding to state government agencies for economic development-related marketing activities

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Dollars	DFA	New collection	Annual

Strategy 2: Dynamic New Mexico
Strengthen New Mexico's Communities

Priority 2.1. Redefine New Mexico's urban regions.

Metric 2.1.1: Percentage growth in the prime working age population (ages 25-54) in New Mexico's urban areas

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	U.S. Census Bureau	American Community Survey	Annual

Metric 2.1.2: Unemployment and poverty rate in urban New Mexico.

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	Bureau of Labor Statistics, U.S. Census Bureau	Local Area Unemployment Statistics American Community Survey	Annual

Priority 2.2. Commit to the economic sustainability of New Mexico's rural and tribal communities.

Metric 2.2.1: Percentage of New Mexico's rural and tribal population with broadband access

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	U.S. Census Bureau	American Community Survey	Annual

Metric 2.2.2: Unemployment and poverty rate in rural New Mexico

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	Bureau of Labor Statistics, U.S. Census Bureau	Local Area Unemployment Statistics	Annual

			American Community Survey	

Metric 2.2.3: Number of healthcare professionals working in rural New Mexico

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Number of healthcare professionals	Bureau of Labor Statistics	Occupational Employment and Wage Statistics	Annual

Strategy 3: Skilled New Mexico
Reimagine Education, Training, & Workforce Development

Priority 3.1. Improve the quality of New Mexico's higher education and training programs through industry engagement and institutional reform.

Metric 3.1.1: Percentage of university and community college graduates employed in New Mexico six months after graduation

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	HED and higher education institutions	New collection	Annual

Metric 3.1.2: Percentage of New Mexico workers in science and engineering occupations

Goal:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	National Center for Science and Engineering Statistics	State Indicators	Annual

Metric 3.1.3: Percentage of New Mexico workers who hold a Bachelor's degree as their highest level of education and are underemployed[10]

Goal:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	U.S. Census Bureau	American Community Survey	Annual

Priority 3.2. Reform New Mexico's workforce development ecosystem to align with industry needs.

Metric 3.2.1: Number of vacant job positions filled with assistance from the urban and rural workforce boards

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Number of new hires	DWS	New collection	Six months

Metric 3.2.2: Difference between the Job Opening Rate and the Hires Rate among New Mexico employers

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	Bureau of Labor Statistics	Job Openings and Labor Turnover Survey	Monthly

Priority 3.3. Prepare New Mexico's K-12 students for post-high school success.

Metric 3.3.1: Percentage of graduating high school seniors who have completed a P-TECH or apprenticeship training program.

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	PED	New collection	Annual

[10] Workers are underemployed if their educational attainment is higher than the education level required by their job. These requirements can be found in the *Occupational Projections and Worker Characteristics* table of the Bureau of Labor Statistics' Employment Projections program.

Metric 3.3.2: Number of children from low-income families participating in New Mexico PreK

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Number of NM PreK participants	CYFD	New collection	Annual

Strategy 4: Inclusive New Mexico
Promote Equity through Economic Justice

Priority 4.1. Encourage state, regional, and local organizations to increase collaborations with tribal communities.

Metric 4.1.1: Distressed Communities Index of tribal communities

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Index of socioeconomic distress	Economic Innovation Group	Distressed Communities Index	Annual

Priority 4.2. Equip entrepreneurs from disadvantaged backgrounds with the knowledge and support necessary for success.

Metric 4.2.1: Number of jobs created in SEDI-owned businesses

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Jobs	U.S. Census Bureau	Annual Business Survey	Annual

Metric 4.2.2: Difference in share of jobs in SEDI-owned businesses in New Mexico compared to that of the United States

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Percentage	U.S. Census Bureau	Annual Business Survey	Annual

Priority 4.3. Improve education and workforce outcomes for underserved populations.

Metric 4.3.1: Unemployment rate, labor force participation, and high school graduation rate of minorities, women, and foreign-born residents

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
Unemployment rate *LF participation & HS graduation rates*	Percentage	U.S. Census Bureau	American Community Survey	Annual

Metric 4.3.2: Percent of workers in high-wage jobs who are from SEDI backgrounds

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	U.S. Census Bureau	American Community Survey	Annual

Strategy 5: Innovative New Mexico
Fuel High Quality Homegrown Innovation

Priority 5.1. Build capacity among New Mexico's entrepreneurs.

Metric 5.1.1: Failure rate of small business establishments

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	Bureau of Labor Statistics	Business Employment Dynamics	Annual

Metric 5.1.2: Percentage of small businesses establishments which added jobs during the year

Goal:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	Bureau of Labor Statistics	Business Employment Dynamics	Annual

Priority 5.2. Remove barriers to financial resources for entrepreneurs.

Metric 5.2.1: Annual venture capital funding disbursed per $1 million of gross domestic product

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Dollars	National Center for Science and Engineering Statistics	Science and Engineering State Indicators	Annual

Metric 5.2.2: Number of businesses which received investments that utilized the Angel Investment Tax Credit

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Businesses	TRD	New collection	Total since 2021

Metric 5.2.3: Total venture capital dollars per year invested in companies headquartered in New Mexico

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Dollars	Pitchbook	Pitchbook Deals Database	Annual

Priority 5.3. Sustain an entrepreneur-friendly business environment.

Metric 5.3.1: Number of business establishments created in New Mexico annually, by industry

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Businesses	Bureau of Labor Statistics	Business Employment Dynamics	Annual

Priority 5.4. Connect entrepreneurs and innovators to critical industry knowledge and resources.

Metric 5.4.1: Number of business which originated from or are affiliated with New Mexico's universities

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Businesses	Association of University Technology Managers	Statistics Access for Technology Transfer Database	Total since 2021

Metric 5.4.2: Number of businesses which originated from or are affiliated with New Mexico's national labs

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Businesses	EDD	New collection	Total since 2021

Metric 5.4.3: Number of startups graduating from a New Mexico-based incubators and accelerators

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Businesses	EDD	New collection	Total since 2021

Metric 5.4.4: Occupancy rate of New Mexico-based incubators and accelerators

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	EDD	New collection	Six months

Metric 5.4.5: Number of full-time employees working at companies that have graduated during the last year from incubators and accelerators

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Full-time Employees	EDD	New collection	Annual

Strategy 6: Resilient New Mexico
Diversify New Mexico's Economy by Growing Target Industries

General Target Industry Metrics

Metric 6.0.1: Employment growth in target industries (individually and in aggregate) relative to that of the United States

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
Higher growth than that of the U.S.	Percentage	Bureau of Labor Statics	Quarter Census of Employment and Wages	Annual

Metric 6.0.2: Target industries' share of New Mexico's total employment

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Percentage	Bureau of Labor Statics	Quarter Census of Employment and Wages	Annual

Metric 6.0.3: Number of businesses in each target industry, by size

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Businesses	Bureau of Labor Statics	Quarter Census of Employment and Wages	Annual

Metric 6.0.4: Average annual wage in each target industry

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Dollars	Bureau of Labor Statics	Quarter Census of Employment and Wages	Annual

Priority 6.1. Aerospace.

Metric 6.1.1: Number of jobs created and sustained by Spaceport America

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Jobs	Spaceport America	New collection	Annual

Metric 6.1.2: Aerospace Manufacturing Attractive Rankings published by PwC

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Ranking	PwC	Aerospace Manufacturing Attractive Rankings	Annual

Metric 6.1.3: Number of private sector or federal tenants at Spaceport America

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Tenants	Spaceport America	New collection	Annual

Priority 6.2. Biosciences.

Metric 6.2.1: Total amount of wet lab space in New Mexico

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Square feet	EDD	New collection	Annual

Metric 6.2.2: Number of federal and state environmental contracts and subcontracts awarded to New Mexico-based companies

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Awarded contracts	EDD	New collection	Total since 2021

Priority 6.3. Cybersecurity.

Metric 6.3.1: Number of businesses that have obtained the Cybersecurity Maturity Model Certification (CMMC).

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Businesses	CCoE	New collection	Total since 2021

Metric 6.3.2: Number of new cybersecurity businesses created with assistance from the Cybersecurity Center of Excellence.

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Businesses	CCoE	New collection	Total since 2021

Priority 6.4. Film & Television.

Metric 6.4.1: Number of productions filming in New Mexico per year

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Film and TV productions	NM Film Office	NM Film Office Statistics	Annual

Metric 6.4.2: Percentage of film graduates from New Mexico higher education institutions employed in the state's film industry

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Percentage	HED, NM Film Office	New collection	Annual

Priority 6.5. Outdoor Recreation.

Metric 6.5.1: Number of completed capital improvement projects related to trail and park infrastructure

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Projects	EMNRD, ORD	New collection	Total since 2021

Metric 6.5.2: Number of outdoor recreation businesses that were awarded grant funding or have obtained other forms of financing during the year

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Businesses	ORD	New collection	Annual

Priority 6.6. Sustainable & Value-Added Agriculture.

Metric 6.6.1: Average time required for farmers and ranchers to process raw food products

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Time	NM Department of Agriculture	New collection	Annual

Metric 6.6.2: Number of patents and publications related to agricultural sustainability and water conservation originating from New Mexico research institutions

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Patents and publications	NMDA, EMNRD, NMSU	New collection	Annual

Priority 6.7. Intelligent Manufacturing.

Metric 6.7.1: Number of new manufacturing and industrial operations opened in or within five miles of industrial rail parks

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Business establishments	EDD	New collection	Total since 2021

Metric 6.7.2: Number of jobs created by manufacturers successfully recruited through state and local economic development efforts

Target:	*Unit:*	*Source:*	*Dataset:*	*Reporting Period:*
	Jobs	EDD	New collection	Total since 2021

Metric 6.7.3: Percent increase in JTIP qualifying hours for intelligent manufacturing jobs over a historical baseline in traditional manufacturing jobs

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	EDD	New collection	Annual

Priority 6.8. Global Trade.

Metric 6.8.1: Value of goods exported from New Mexico to international markets

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Dollars	U.S. Census Bureau	State Export Data Series	Annual

Metric 6.8.2: Job growth in the warehouse and distribution industry

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	Bureau of Labor Statistics	Quarter Census of Employment and Wages	Annual

Priority 6.9. Sustainable & Green Energy.

Metric 6.9.1: Number of jobs in upstream renewable energy production, such as wind turbine technicians and hydrogen fuel cell assemblers

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Jobs	Bureau of Labor Statistics	Occupational Employment and Wage Statistics	Annual

Metric 6.9.2: Share of energy sold by New Mexico's investor-owned utilities that originates from a renewable source

Target:	***Unit:***	***Source:***	***Dataset:***	***Reporting Period:***
	Percentage	EMNRD	New collection	Annual

Appendix A: Acknowledgments

Empower & Collaborate: New Mexico's Economic Path Forward is the outcome of a collaborative process involving dozens of institutions throughout New Mexico. The project would not have been possible without their participation. We thank the following organizations that contributed to this effort:

3D Glass Solutions

AhShi Beauty

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Arrowhead Center, New Mexico State University

Arrowhead Innovation Fund

Artesia Chamber of Commerce & Economic Development

Aztec Well Servicing

Bioscience Center

Boeing

Carlsbad Department of Development

Central New Mexico Community College

Circa

City of Albuquerque Economic Development Department

City of Sunland Park

Clovis Economic Development

Cottonwood Venture Capital

Deming Luna County Economic Development

Eastern Plains Council of Governments

El Paso Electric

Emergent Wave

EndeavOR New Mexico

Greater Gallup Economic Development Corporation

Greater Raton Economic Development Corporation

Greater Tucumcari Economic Development Corporation

Guadalupe Community Development Corporation

High Plains Processing Company, LLC

High Water Mark

Ingram Professional Services, Inc.

Intel

Interwest Energy Alliance

Jack's Plastic Welding

Laguna Economic Advancement

Living Earth Art + Design

Los Alamos National Lab

Los Alamos National Laboratory, Richard P. Feynman Center for Innovation

Marty's Meals, Inc.

Mesalands Community College

Middle Rio Grande Economic Development Association

Mid-Region Council of Governments

Montech, Inc.

Mount Taylor Organic Farm

Native Women Lead

Navajo Tribal Utility Authority

NBCUniversal

Netflix

New Mexico Angels

New Mexico Biotechnology & Biomedical Association

New Mexico Chamber of Commerce

New Mexico Department of Workforce Solutions

New Mexico Early Childhood Education and Care Department

New Mexico Economic Development Department

New Mexico Economic Development Department, Outdoor Recreation Division

New Mexico Economic Development Department, Science & Technology Division

New Mexico Energy Manufacturing Consortium

New Mexico Energy, Minerals, and Natural Resources Department

New Mexico Energy, Minerals, and Natural Resources Department, Energy Conservation and Management Division

New Mexico Film Office

New Mexico Higher Education Department

New Mexico Indian Affairs Department

New Mexico Institute of Mining and Technology

New Mexico Manufacturing Extension Partnership

New Mexico Minority Business Development Agency Business Center

New Mexico Partnership

New Mexico Renewable Energy Transmission Authority

New Mexico State Investment Council

New Mexico Trade Alliance

New Mexico Workforce Connection

North Central New Mexico Economic Development District

Northwest Council of Governments

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Pattern Energy

Pivotal New Mexico

Prent Manufacturing

Questa Economic Development Fund

RiskSense

Rocky Mountain Youth Corps

Roosevelt County Community Development Corporation

Sandia National Lab

Sandoval County

Santa Fe Office of Community & Economic Development

Small Business Development Center

SolAero

Sony Pictures Television

South Central Council of Governments

Southeast Council of Governments

Southwest New Mexico Council of Governments

Spaceport America

The Border Industrial Association

The Espanola Mercantile Company

Trane Technologies

Truchas Services Center, Inc.

United States Space Force

University of New Mexico Rainforest Innovations

Village of Los Lunas

WESST

Western Ecology, LLC

Western Grid Group

Western New Mexico University

Western Resource Advocates

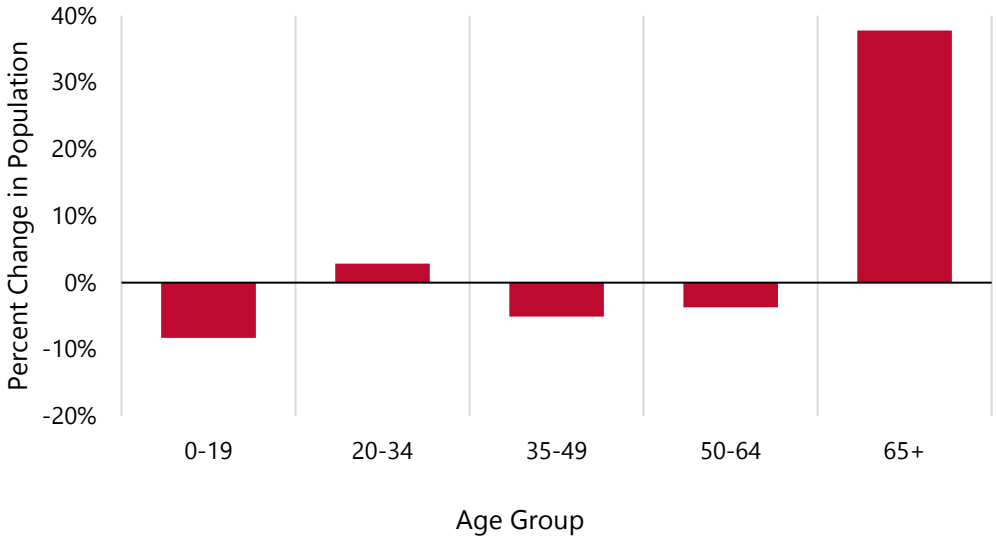
XBow Launch Systems

Appendix B: Additional Visualizations

New Mexico's State & Regional Economies

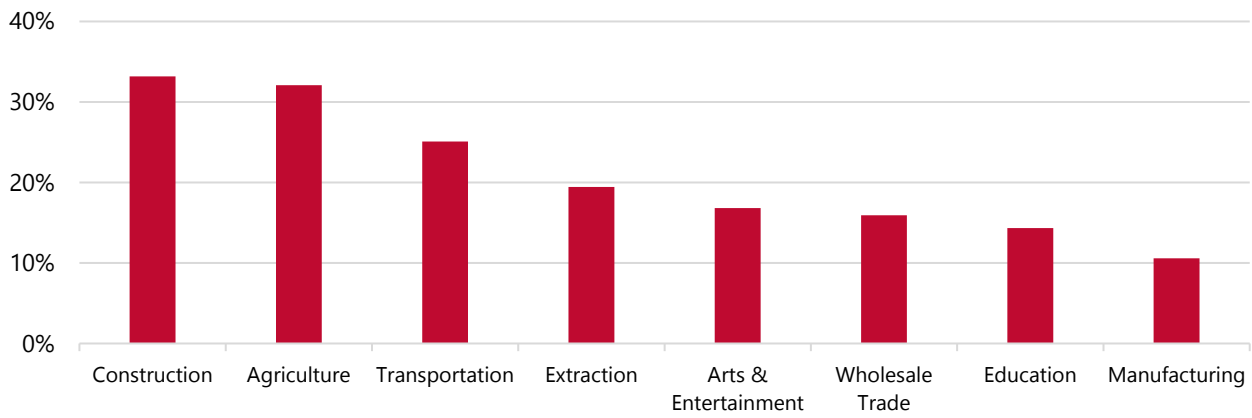
New Mexico Should Focus Efforts on Attracting Working-Age Populations, as Well as Workers with Families

Figure 70: Population Change between New Mexico and Peer States, by Age, 2010–2019. Source: U.S. Census Bureau Population Estimates.



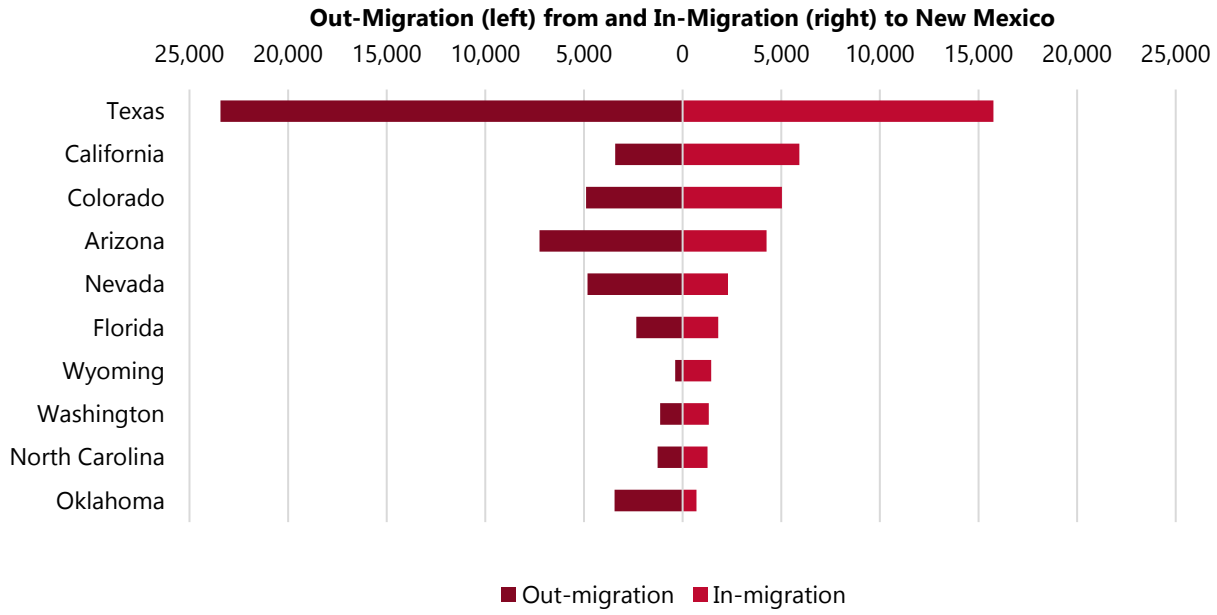
Immigrants Comprise a Significant Share of the Workforce in New Mexico's Key Industries

Figure 71: Immigrant Share of All Workers, by Industry, 2019. Source: American Community Survey 1-Year Estimates.



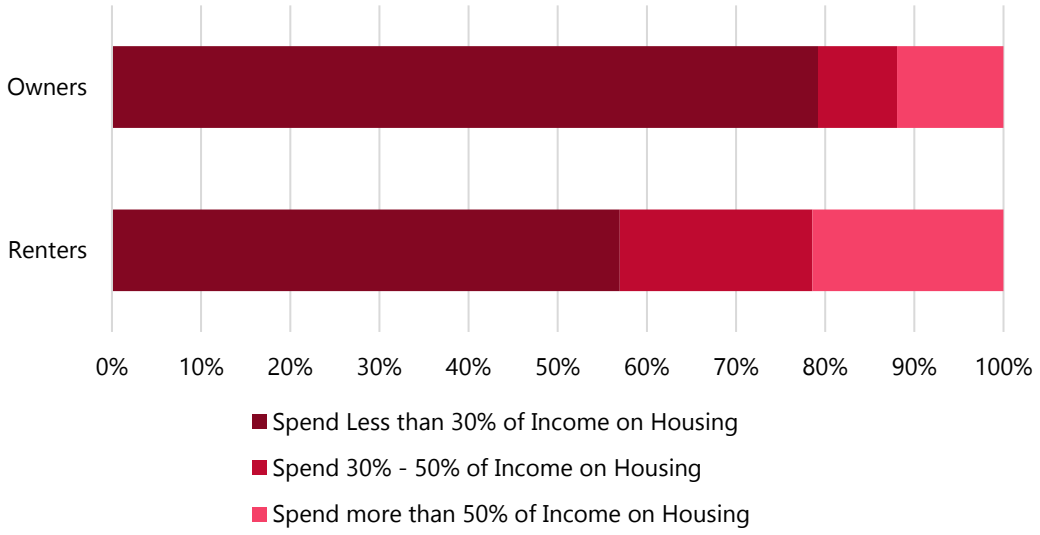
Nearby Western States Account for the Majority of Migration to and from New Mexico

Figure 72: New Mexico In-Migration and Out-Migration, by State of Origin and Destination, 2019. Source: 2019 State-to-State Migration Files, U.S. Census Bureau.



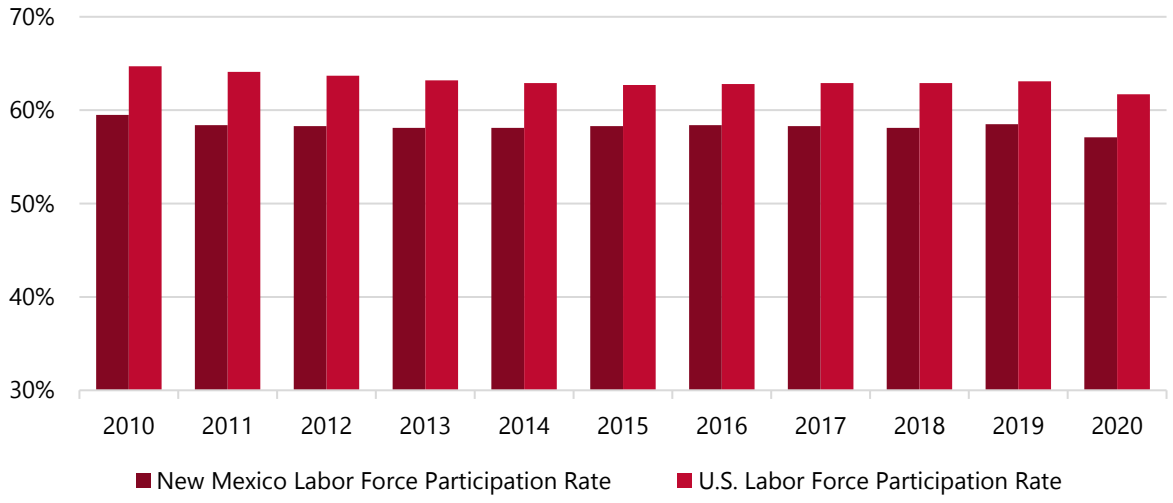
Renters Struggle Much More with Housing Affordability than Owners, which can Exacerbate the Existing Inequality Gap in the State

Figure 73: Percentage of Monthly Income Spent on Housing Costs in New Mexico, by Tenure, 2015–2019. Source: American Community Survey 5-Year Estimates.



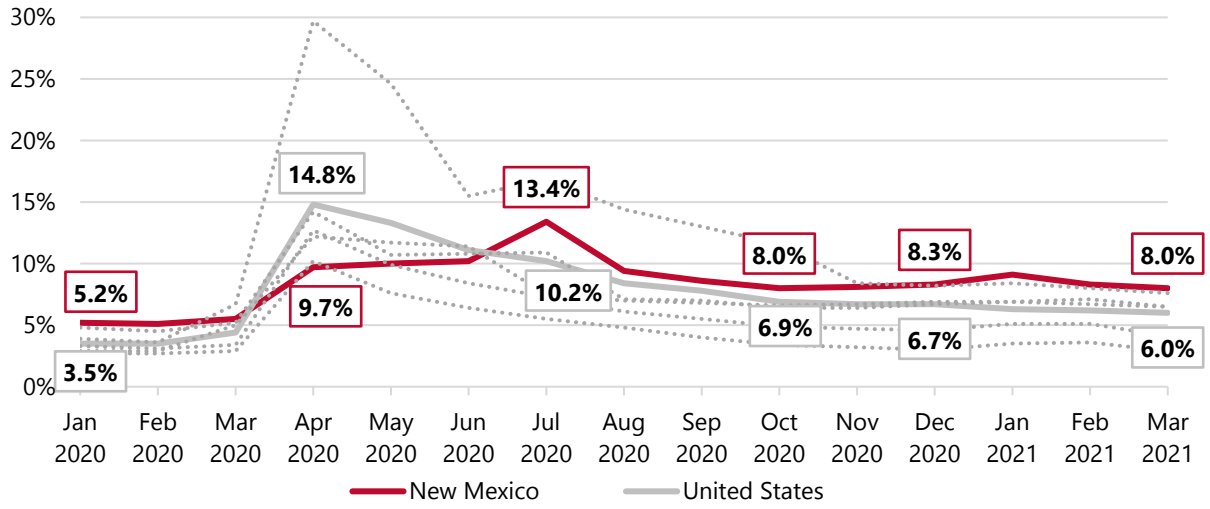
New Mexico's Labor Force Participation Rate Has Traditionally Been Lower than that of the United States

Figure 74: Labor Force Participation Rate in New Mexico and the United States, 2010–2020. Source: Bureau of Labor Statistics.



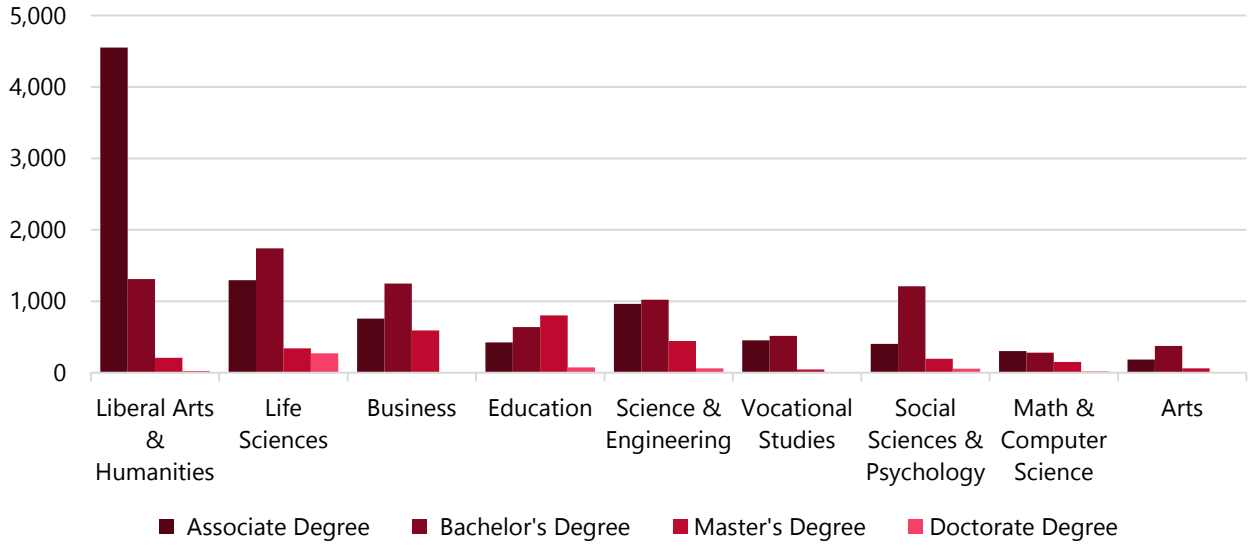
Since June 2020, Unemployment Rate During the COVID-19 Pandemic has Been Higher than that of the United States

Figure 75: Monthly Unemployment Rate, by State and the United States, 2010–2020. Peer states include Arizona, Oklahoma, Nevada, Colorado, and Utah. Source: Bureau of Labor Statistics.



Popular Fields of Study Include the Liberal Arts, Life Sciences, Business, Education and Science & Engineering

Figure 76: Degrees Awarded in New Mexico by Level of Degree and Field of Study, 2019. Source: Integrated Postsecondary Education Data System, National Center for Education Statistics.



New Mexico's Workforce is Better Suited to the Needs of Some Target Industries over Others

Table 26: Target Industries by the Five Largest Occupations in Each Industry, Occupation's Share of Industry Jobs in New Mexico and the United States, Surplus/Shortage of Workers in New Mexico Relative to the United States, and Median Hourly Earnings, 2020. Source: Emsi.

Target Industry	*Top 5 Occupations (U.S.)*	*Share of Industry Jobs*		*Difference: New Mexico – United States*	*Surplus / Shortage*	*Median Hourly Earnings (New Mexico)*
		United States	*New Mexico*			
Aerospace	Project Managers	3.6%	4.0%	0.4%	Surplus	$34.88
	Operations Managers	2.7%	3.3%	0.6%	Surplus	$45.02
	Secretaries	1.5%	4.4%	2.9%	Surplus	$16.82
	Engineering Technicians	1.0%	3.5%	2.5%	Surplus	$37.67
	Physicists	0.8%	4.8%	4.0%	Surplus	$81.66
Biosciences	Medical Scientists	7.2%	1.7%	(5.6%)	Shortage	$30.03
	Software Developers	4.6%	2.8%	(1.7%)	Shortage	$44.23
	Biological Technicians	4.0%	1.0%	(3.1%)	Shortage	$20.15
	Natural Sciences Managers	3.8%	1.0%	(2.8%)	Shortage	$47.07
	Project Managers	3.6%	4.0%	0.4%	Surplus	$34.88
Cybersecurity	Software Developers	21.9%	14.7%	(7.2%)	Shortage	$44.23
	Computer Analysts	7.2%	4.9%	(2.3%)	Shortage	$35.87
	Computer Support Specialists	7.0%	8.2%	1.2%	Surplus	$19.62
	IT Managers	4.8%	3.2%	(1.6%)	Shortage	$52.82
	Sales Representatives	3.7%	4.1%	0.3%	Surplus	$23.49
Film & Television	Producers and Directors	16.3%	20.2%	4.0%	Surplus	$27.94
	Actors	10.8%	6.3%	(4.5%)	Shortage	$10.82
	Film and Video Editors	6.0%	6.5%	0.6%	Surplus	$32.71
	Special Effects Artists	3.5%	2.8%	(0.7%)	Shortage	$23.21
	Laborers and Freight Movers	3.5%	3.0%	(0.5%)	Shortage	$13.21
Outdoor Recreation	Amusement Attendants	14.2%	9.6%	(4.6%)	Shortage	$10.96
	Groundskeeping Workers	10.1%	11.2%	1.1%	Surplus	$13.85
	Waiters and Waitresses	8.2%	9.4%	1.2%	Surplus	$9.48
	Cooks	3.3%	3.7%	0.4%	Surplus	$12.03
	Retail Salespersons	3.2%	3.3%	0.2%	Surplus	$12.31
Sustainable & Value-Added Agriculture	Farmworkers – Crop	27.8%	29.0%	1.2%	Surplus	$9.61
	Farmers and Ranchers	16.8%	19.4%	2.5%	Surplus	$29.99
	Farmworkers – Animals	10.9%	11.5%	0.6%	Surplus	$15.71
	Agricultural Workers, All Other	5.9%	6.2%	0.3%	Surplus	$13.86
	Equipment Operators	4.1%	4.3%	0.2%	Surplus	$13.62
Intelligent Manufacturing	Assemblers and Fabricators	12.9%	4.6%	(8.3%)	Shortage	$14.27
	Electromechanical Assemblers	4.7%	2.7%	(2.1%)	Shortage	$17.54
	Software Developers	3.7%	2.6%	(1.1%)	Shortage	$44.23
	Welders	3.5%	3.0%	(0.5%)	Shortage	$24.22

Target Industry	*Top 5 Occupations (U.S.)*	*Share of Industry Jobs*		*Difference: New Mexico – United States*	*Surplus / Shortage*	*Median Hourly Earnings (New Mexico)*
		United States	*New Mexico*			
	Machinists	3.4%	1.8%	(1.5%)	Shortage	$23.51
Global Trade	Assemblers and Fabricators	5.6%	4.1%	(1.5%)	Shortage	$14.27
	Packaging Machine Operators	4.0%	4.7%	0.7%	Surplus	$13.54
	Supervisors	4.0%	4.9%	0.9%	Surplus	$29.49
	Laborers and Freight Movers	3.5%	3.8%	0.3%	Surplus	$13.21
	Inspectors	3.2%	2.9%	(0.3%)	Shortage	$20.59
Sustainable & Green Energy	Power Plant Operators	15.7%	3.1%	(12.6%)	Shortage	$44.51
	Wind Turbine Technicians	8.9%	2.7%	(6.2%)	Shortage	$28.68
	Power-Line Installers	5.1%	3.3%	(1.8%)	Shortage	$29.37
	Electrical Engineers	5.0%	11.6%	6.5%	Surplus	$55.93
	Operations Managers	3.9%	7.4%	3.5%	Surplus	$45.02

Growth in Healthcare, R&D, and Oil & Gas Offset Declines in Government and Education

Table 27: Employment and Employment Change of Selected Industries in New Mexico, 2010–2020. Source: Quarterly Census of Employment and Wages, Bureau of Labor Statistics.

Select Growing Industries	*Jobs added*	*% Job growth*	*2010 Employment*	*2020 Employment*
Elderly and Disability Services	7,150	54%	13,250	20,400
R&D in Physical, Engineering, and Life Sciences	4,850	22%	21,600	26,450
Support for Oil & Gas Operations	3,500	44%	7,950	11,450
Hospitals	3,250	16%	19,850	23,100
Telemarketing and Contact Centers	3,150	99%	3,200	6,350
Home Healthcare	3,050	27%	11,150	14,200
Health Insurance Carriers	2,900	129%	2,200	5,100
Oil & Gas Infrastructure Construction	2,150	124%	1,750	3,900
Outpatient Care Centers	1,500	230%	650	2,150
Specialized Freight Trucking, Local	1,500	100%	1,450	2,950
Select Declining Industries	*Jobs (lost)*	*% Job (decline)*	*2010 Employment*	*2020 Employment*
Elementary and Secondary Schools	(7,600)	(15%)	50,350	42,750
Colleges, Universities, and Professional Schools	(3,700)	(14%)	26,600	22,900
Federal Government, Civilian	(3,150)	(10%)	30,350	27,200
Staffing Firms	(2,700)	(38%)	7,000	4,300
State Government	(2,300)	(9%)	24,400	22,150
Commercial Banking	(1,750)	(27%)	6,450	4,700
Semiconductor Manufacturing	(1,300)	(31%)	4,200	2,900
Highway and Street Construction	(900)	(25%)	3,650	2,750

Navigation Instrument Manufacturing	(900)	(76%)	1,200	300
General Freight Trucking, Long-Distance	(850)	(41%)	2,050	1,200

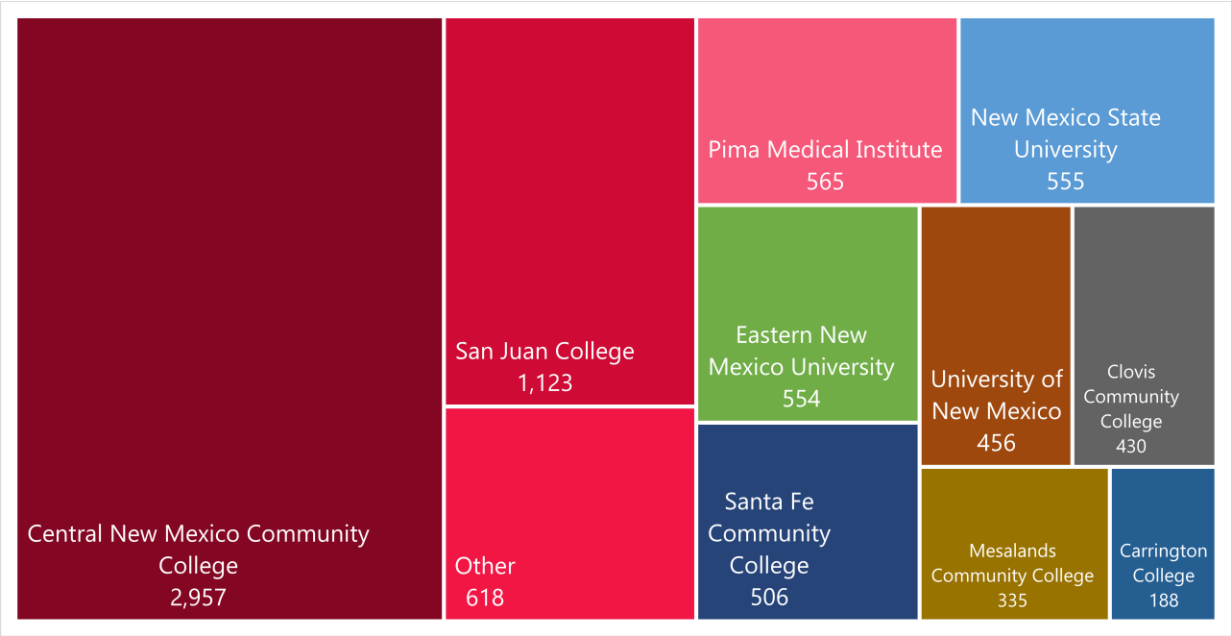
New Mexico's Economic Growth and Key Industries Vary by Region, Presenting Both Opportunities and Challenges

Table 28: Regional share of state GDP and employment, employment growth and select industries within reach region, 2010–2020. Source: Quarter Census of Employment and Wages, Bureau of Labor Statistics.

Region	*% of State GDP*	*% of State Jobs*	*2010–2020 Jobs Growth (% Growth)*	*Key Industries*	*Industry Share of Jobs*	*Industry Growth*
Northwest	9.0%	9.0%	-7,200 (-8.8%)	Local Government	10.5%	-2.7%
				Hospitals and Healthcare Services	11.8%	+15.1
				Oil and Gas	6.3%	-7.6%
				Higher Education	3.3%	+14.4%
North Central	11.8%	13.6%	-5,250 (-4.4%)	R&D in Physical and Life Sciences	10.3%	+11.7%
				Hospitals and Health Services	8.8%	-5.5%
				Local Government	7.8%	-0.1%
				State Government	7.4%	-23.2%
				Hotels	2.7%	-24.3%
Mid-Region	39.4%	46.8%	10,000 (2.6%)	R&D in Physical and Life Sciences	3.6%	+41%
				Federal Government, Civilian	3.4%	-5.0%
				Hospitals and Healthcare Services	9.7%	+29.6%
				Higher Education	3.7%	0.0%
				Restaurants	6.6%	+4.2%
Eastern Plains	4.5%	4.3%	550 (1.5%)	Federal Government, Military	32.7%	+32.7%
				Animal Production	6.5%	-1.0%
				Local Government	3.8%	-11.7%
				Higher Education	4.6%	-14.8%
				Hospitals and Health Services	9.8%	+17.0%
Southwest	2.2%	2.3%	-500 (-2.5%)	Local Government	6.8%	-9.3%
				Metal Ore Mining	6.3%	+55.0%
				Federal Government, Civilian	4.9%	-19.9%
				Hospitals and Healthcare Services	11.7%	+45.4%
				Hotels	1.9%	-11.9%
				Fruit and Vegetable Canning	1.7%	-20.1%
Southeastern	25.4%	13.8%	10,400 (9.9%)	Oil and Gas	13.4%	+59.4%
				Federal Government, Military	4.5%	0.0%
				Specialized Freight	1.5%	+171.5%
				Animal Production	1.3%	+4.6%
				Hotels	1.3%	+13.7%
South Central	7.7%	10.2%	500 (0.6%)	Higher Education	8.4%	-23.4%
				Federal Government, Civilian	4.1%	-20.3%
				Hospitals and Health Services	15.1%	+56.1%
				Crop Production	1.8%	-2.7%
				Engineering Services	0.9%	+3.8%

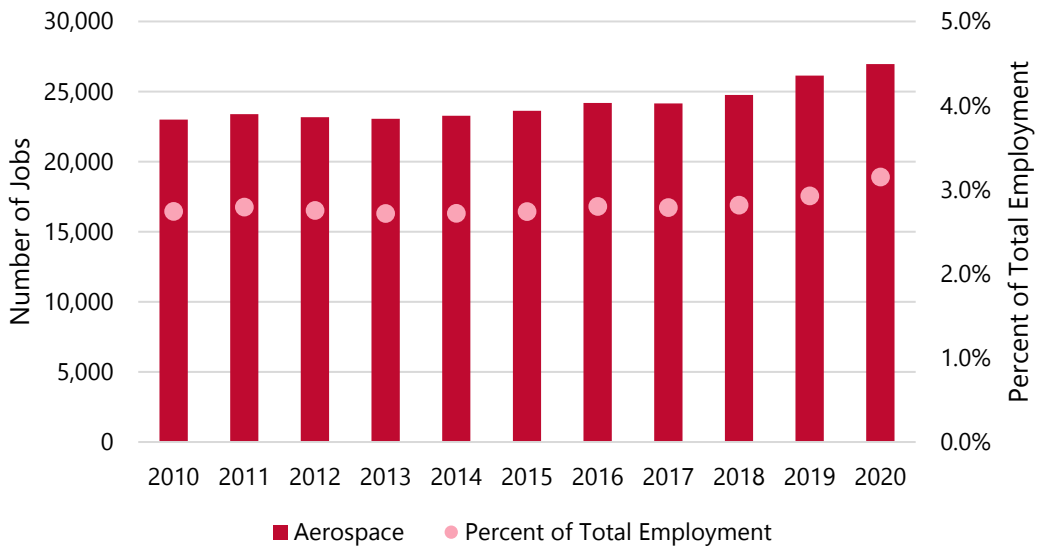
New Mexico's Large and Diverse Network of Community Colleges Produce Thousands of Graduates Annually

Figure 77: Pre-Baccalaureate Degrees in STEM-Related Fields Awarded in New Mexico, by Educational Institution, 2019. Source: Integrated Postsecondary Education Data System, National Center for Education Statistics.



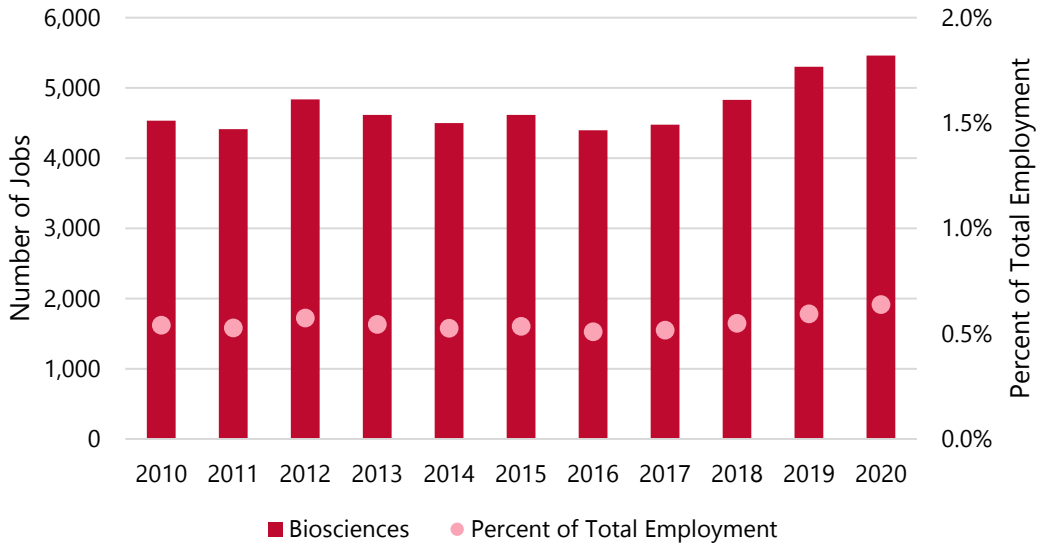
Aerospace Employment Grew by 17.2% from 2010 to 2020, Adding Almost 4,000 Jobs

Figure 78: Employment Change in Aerospace in New Mexico, 2010–2020. Source: Emsi.



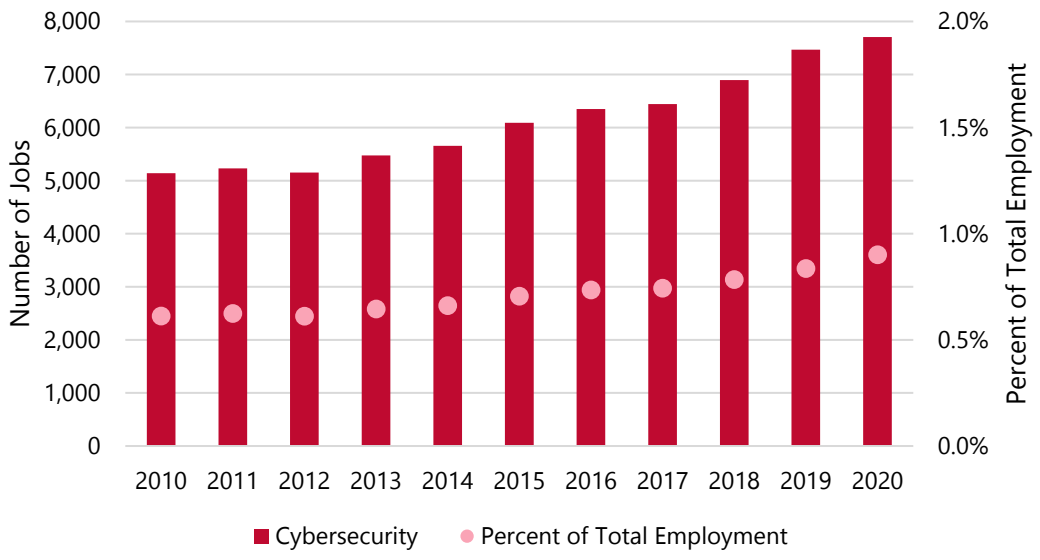
Biosciences Employment Grew by 20.4% from 2010 to 2020, Adding More than 900 Jobs

Figure 79: Employment Change in Biosciences in New Mexico, 2010–2020. Source: Emsi.



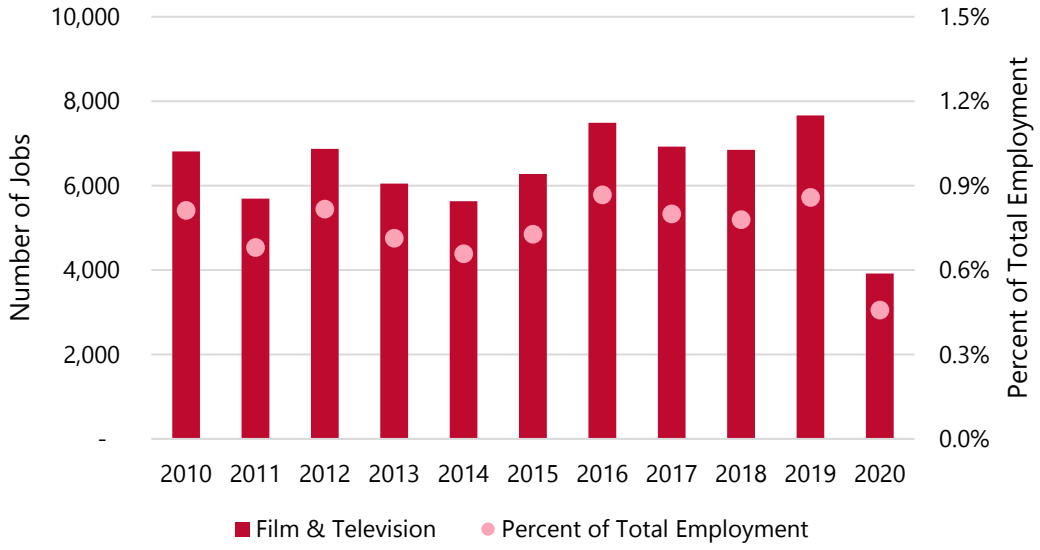
Cybersecurity Employment Grew by 49.9% from 2010 to 2020, Adding More than 2,500 Jobs

Figure 80: Employment Change in Cybersecurity in New Mexico, 2010–2020. Source: Emsi.



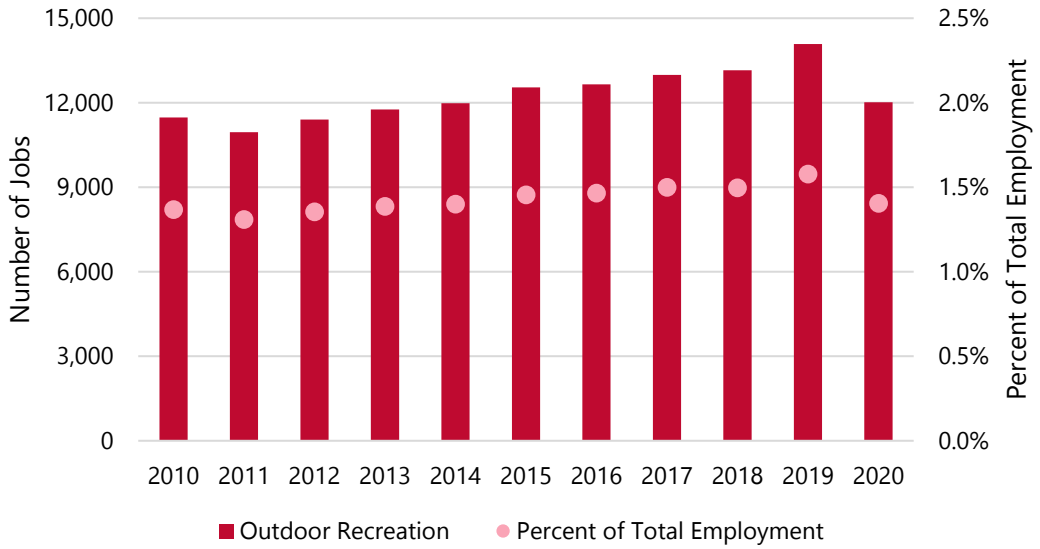
Film & Television Employment Grew by 12.5% from 2010 to 2019 before the COVID-19 Pandemic Led to a Loss of 3,700 Jobs

Figure 81: Employment Change in Film & Television in New Mexico, 2010-2020. Source: Emsi.



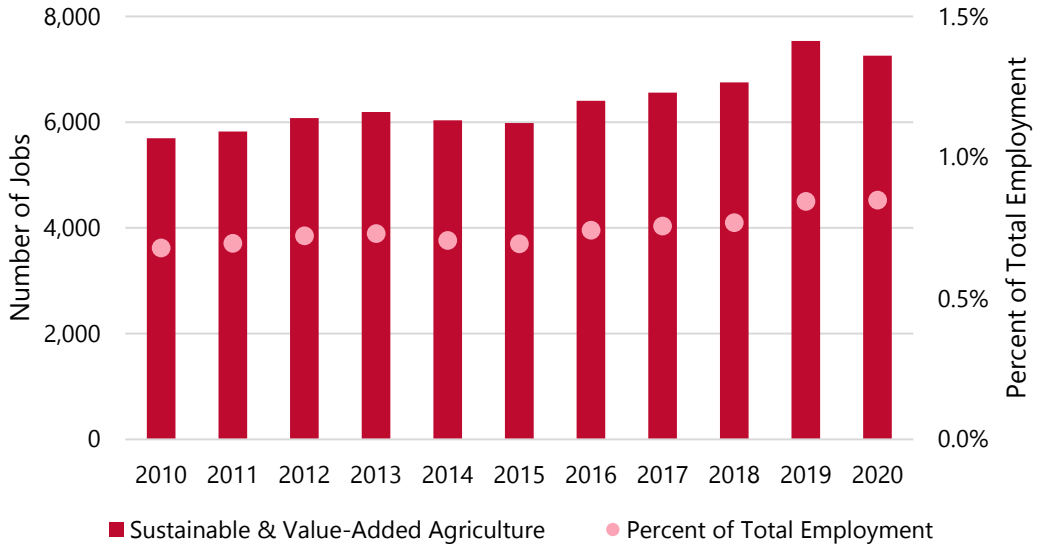
Outdoor Recreation Employment Grew by 22.7% from 2010 to 2019, Adding More than 2,600 Jobs, before Losing 15% of Jobs during the COVID-19 Pandemic

Figure 82: Employment Change in Outdoor Recreation in New Mexico, 2010–2020. Source: Emsi.



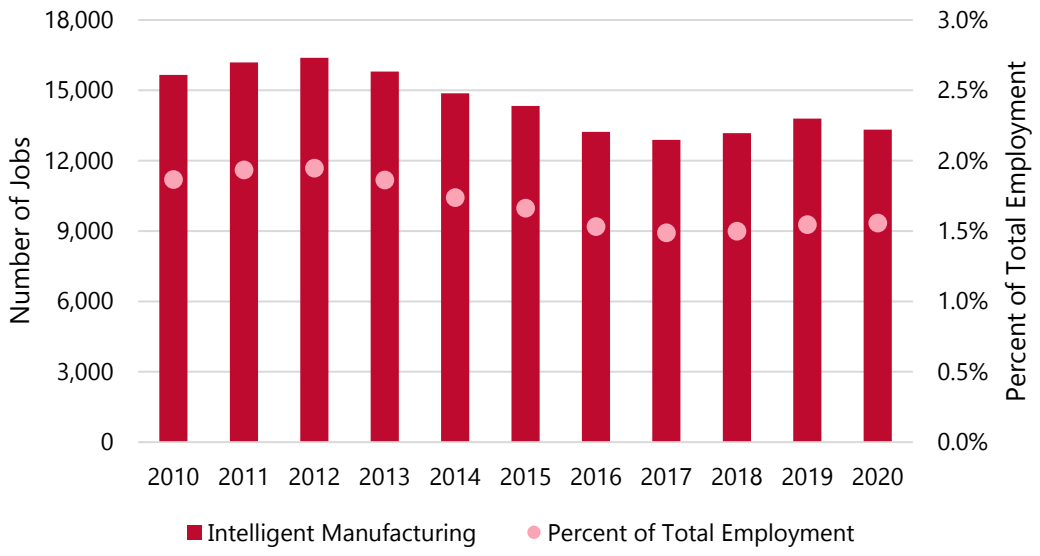
Employment in Sustainable & Value-Added Agriculture Grew by 27.4%, Adding More than 1,600 Jobs from 2010 to 2020

Figure 83: Employment Change in Sustainable & Value-Added Agriculture in New Mexico, 2010–2020. Source: Emsi.



Employment in Intelligent Manufacturing Declined by 14.9% from 2010 to 2020, Losing More than 2,300 Jobs, but Growth Is Expected to Return as the State Attracts New Investments from both Domestic and International Manufacturers

Figure 84: Employment Change in Intelligent Manufacturing in New Mexico, 2010–2020. Source: Emsi.

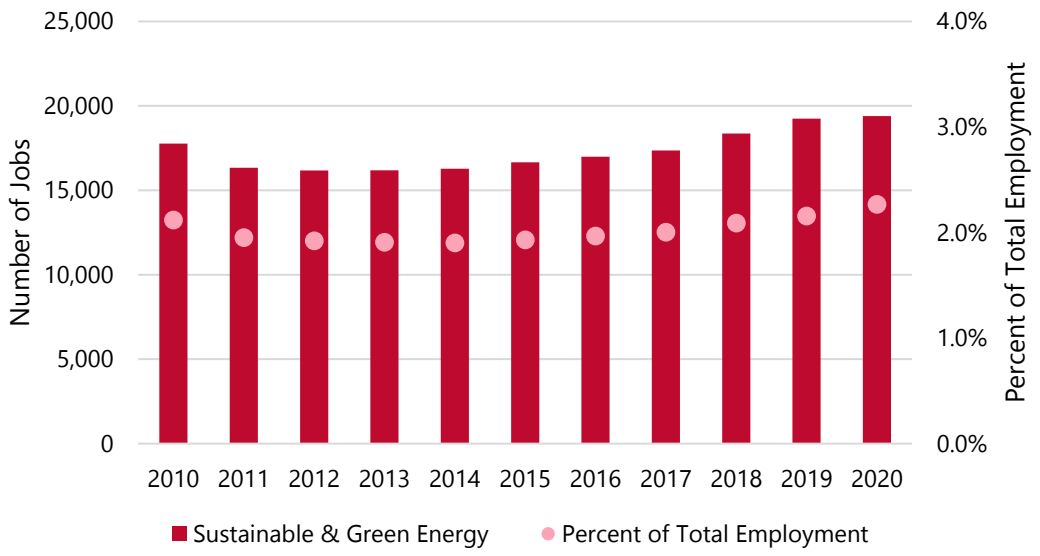


Employment in Global Trade Grew by 38.2% from 2010 to 2020, Adding More than 600 Jobs

Figure 85: Employment Change in Global Trade in New Mexico, 2010–2020. Source: Emsi.

Employment in Sustainable & Green Energy Grew by 9.1% from 2010 to 2020, Adding More than 1,600 Jobs

Figure 86: Employment Change in Sustainable & Green Energy in New Mexico, 2010–2020. Source: Emsi.



Construction Added the Most New Establishments, But the Number of Establishments in the Arts, Entertainment, & Recreation Industry Has Grown the Fastest

Table 29: New Establishment Dynamics, by COG Region. Source: Annual Economic Survey.

COG Region	*Industry with Highest Number of New Establishments*	*Industry with Highest Cumulative Annual Growth Rate (CAGR)*
New Mexico	**Construction**	**Arts, Entertainment, & Recreation**
Northwest	Retail Trade	Real Estate & Rental & Leasing
North Central	Construction	Information
Mid Region	Professional, Scientific, & Technical Services	Arts, Entertainment, & Recreation
Eastern Plains	Construction	Other Services (Except Public Administration)
Southwest	Retail Trade	Real Estate & Rental & Leasing

COG Region	*Industry with Highest Number of New Establishments*	*Industry with Highest Cumulative Annual Growth Rate (CAGR)*
Southeastern	Construction	Transportation & Warehousing
South Central	Construction	Arts, Entertainment, & Recreation

New Mexico's Innovation Ecosystem

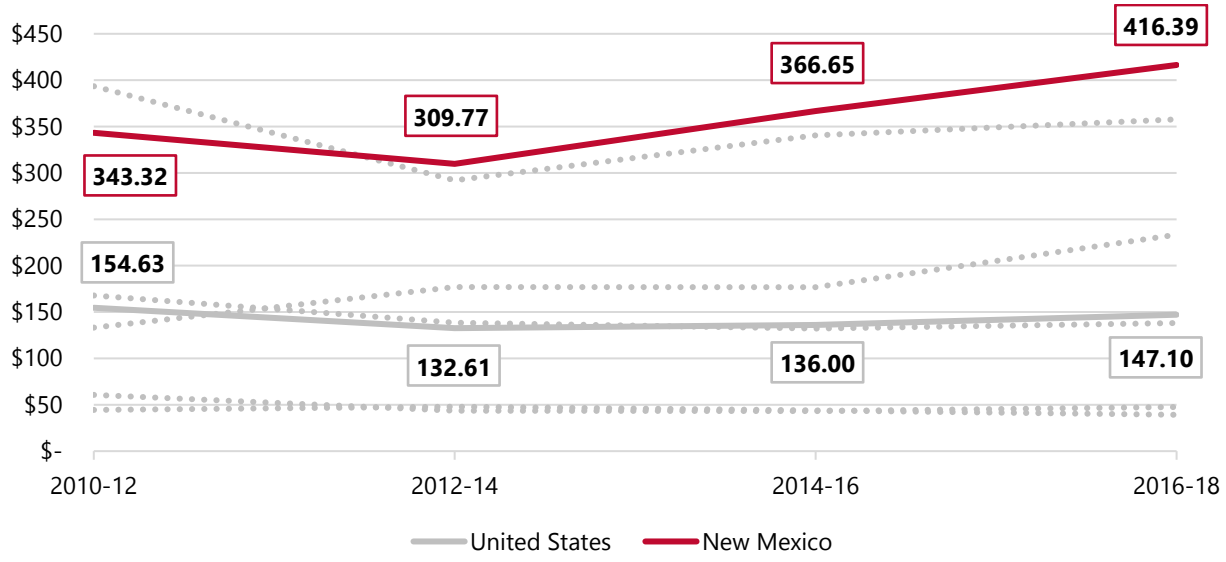
Educational Attainment Remains a Challenge in New Mexico's Labor Force

Table 30: Educational Attainment among New Mexico's Labor Force, 2019. Source: National Center for Science and Engineering Statistics. Note: State rankings are provided in parentheses. States are ranked against all 50 U.S. states and the District of Columbia (Washington, D.C.).

	Percent of Labor Force with Bachelor's Degree	*Percent of Population Aged 25–44 with Bachelor's Degree*	*Percent of Population Aged 25–44 with High School Degree or Equivalent*
United States	**35.0%**	**37.1%**	**90.3%**
New Mexico	28.1% (43)	25.5% (49)	87.4% (48)
Arizona	30.3% (37)	30.0% (40)	87.6% (47)
Utah	31.5% (31)	36.5% (24)	94.1% (9)
Colorado	42.5% (5)	45.1% (5)	92.7% (16)
Nevada	24.9% (50)	25.4% (50)	86.2% (51)
Oklahoma	27.8% (44)	27.3% (46)	88.7% (43)

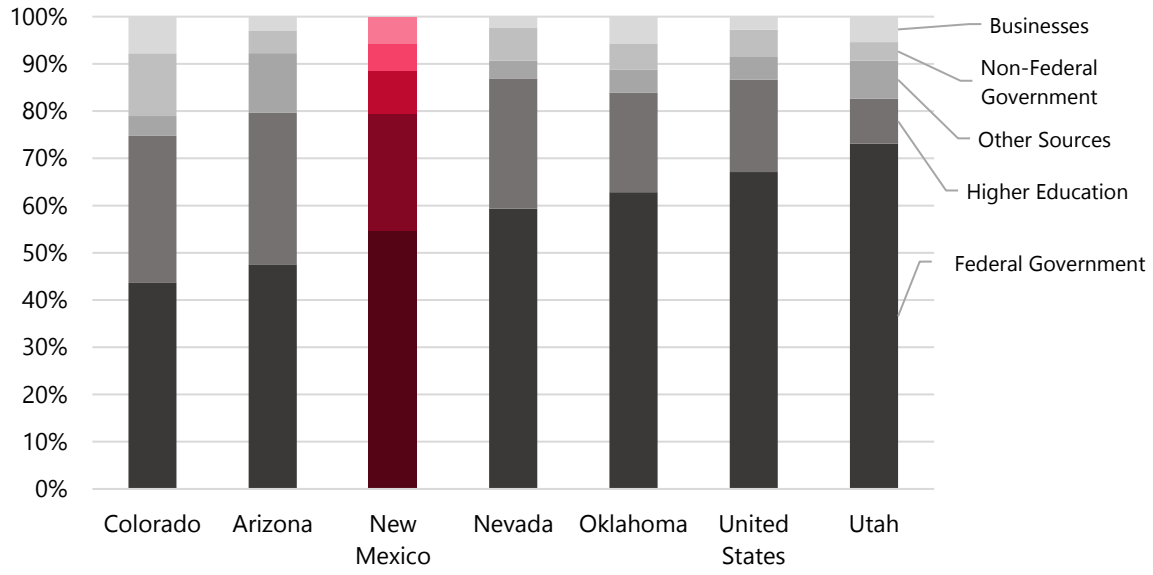
New Mexico's Small Businesses Attract High Levels of SBIR/STTR Funding

Figure 87: Amount of SBIR/STTR Funding Received by In-State Small Businesses in New Mexico and Peer States, per $1M GDP. Source: National Center for Science and Engineering Statistics.



New Mexico's Higher Education Institutions Are Comparatively Less Dependent upon Federal Government R&D Expenditure

Figure 88: Percent of Total Academic R&D Spending Derived from Businesses, Other Government Organizations, the Federal Government, Higher Education, and Other Sources, 2010–2018. Source: National Center for Science and Engineering Statistics.



Innovators in New Mexico Are Issued Comparatively Fewer Patents

Table 31: Patents Issued In-State, 2010–2020. Source: U.S. Patent and Trademark Office.

	2010	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*Total Patents Issued*
Colorado	2,435	2,397	2,744	3,176	3,555	3,472	3,444	3,519	3,259	3,785	3,740	35,526
Arizona	2,169	2,248	2,370	2,427	2,671	2,741	2,963	3,070	2,812	3,215	3,140	29,826
Utah	1,145	1,215	1,327	1,414	1,526	1,595	1,551	1,840	1,795	2,096	2,036	17,540
Nevada	639	674	882	1,003	969	789	892	880	745	968	1,045	9,486
Oklahoma	582	529	521	604	628	597	578	642	614	692	689	6,676
New Mexico	**455**	**412**	**444**	**471**	**445**	**455**	**521**	**552**	**535**	**582**	**509**	**5,381**

New Mexico's State & Regional Assets

Table 32: Indicators of Physician Workforce Development Pipeline in New Mexico, 2010 and 2018. Source: Association of American Medical Colleges.

Metric	*2010*	*2018*
Active Physicians per 100,000 Population	229.8 (31)	244.8 (31)
Active Primary Care Physicians per 100,000 Population	92.1 (23)	91.1 (26)
Active General Surgeons per 100,000 Population	N/A	7.7 (25)
Percentage of Active Physicians Who Are International Medical Graduates (IMGs)	17.2% (28)	19.3% (26)
Percentage of Active Physicians Age 60 or Older	30.8% (1)	38.5% (1)
MD and DO Student Enrollment per 100,000 Population	17.1 (43)	44.2 (16)
Percentage Change in Student Enrollment at MD and DO Schools	11.9% (27) *2000-2010*	187.0% (1) *2008-2019*
Percentage of MD Students Matriculating In-State	82.3% (10)	71.0% (18)
Total Residents/Fellows in Accredited Graduate Medical Education Programs per 100,000 Population	26.3 (25)	29.1 (31)
Percentage of Residents in ACGME Programs Who Are IMGs	24.0% (23)	21.5% (21)

Ratio of Residents and Fellows (GME) to Medical Students (UME)	1.62 (9)	0.7 (36)
Percentage Change in Residents and Fellows in ACGME-Accredited Programs, 2008–2018	21.1% (19)	14.4% (37)
Percentage of Physicians Retained in State from UME	36.9% (26)	38.0% (25)
Percentage of Physicians Retained in State from GME	39.3% (39)	38.4% (41)
Percentage of Physicians Retained in State from UME and GME Combined	64.6% (29)	66.3% (28)

Note: MD refers to Doctors of Medicine. DO refers to Doctors of Osteopathic Medicine. UME refers to Undergraduate Medical Education, commonly known as "medical school." GME refers to Graduate Medical Education, commonly known as "residency." ACGME refers to the Accreditation Council for Graduate Medical Education.

Table 33: Colleges and Universities in New Mexico, as of 2020. Source: New Mexico Higher Education Department.

Research Universities
New Mexico Institute of Mining & Technology
New Mexico State University
University of New Mexico (incl. med school)
Comprehensive Universities
Western New Mexico University
New Mexico Highlands University
Eastern New Mexico University
Northern New Mexico College
Branch Community Colleges
ENMU Roswell
ENMU Ruidoso
NMSU Alamogordo
NMSU Carlsbad

NMSU Dona Ana
NMSU Grants
UNM Gallup
UNM Los Alamos
UNM Taos
UNM Valencia
Independent Community Colleges
Central New Mexico Community College
Clovis Community College
Luna Community College
Mesalands Community College
New Mexico Junior College
San Juan College
Santa Fe Community College
Tribal Colleges
Dine College
Institute of American Indian Arts
Southwestern Indian Polytechnic Institute
Navajo Technical University

Table 34: Most Common Subject Area at Higher Education Institutions in Micropolitan & Rural New Mexico, by Credential Level, 2019. Source: National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS).

	Certificate	*Associate*	*Bachelor's*	*Master's*	*Doctorate*
Clovis Community College	Health Professions	Liberal Arts & Sciences	N/A	N/A	N/A
ENMU Ruidoso	Health Professions	Liberal Arts & Sciences	N/A	N/A	N/A
Eastern New Mexico University, Portales	N/A	Liberal Arts & Sciences	Health Professions	Education	N/A
ENMU Roswell	Health Professions	Health Professions	N/A	N/A	N/A
Mesalands Community College, Tucumcari	Engineering Technologies & Related Fields	Engineering Technologies & Related Fields	N/A	N/A	N/A
Navajo Technical University, Crownpoint	Health Professions	Engineering Technologies & Related Fields	Education	N/A	N/A

New Mexico Institute of Mining & Technology	N/A	Liberal Arts & Sciences / Business Management & Related Services	Engineering	Engineering	Physical Sciences
New Mexico Junior College	Homeland Security & Related Services	Liberal Arts & Sciences	N/A	N/A	N/A
New Mexico Military Institute	N/A	Liberal Arts & Sciences	N/A	N/A	N/A
NMSU Alamogordo	Liberal Arts & Sciences	Liberal Arts & Sciences	N/A	N/A	N/A
NMSU Carlsbad	Health Professions	Liberal Arts & Sciences	N/A	N/A	N/A
NMSU Grants	Health Professions	Liberal Arts & Sciences	N/A	N/A	N/A
UNM Gallup	Health Professions	Liberal Arts & Sciences	N/A	N/A	N/A
UNM Taos	Health Professions	Liberal Arts & Sciences	N/A	N/A	N/A
Western New Mexico University, Silver City	Precision Production	Business Management & Related Services	Health Professions	Public Administration & Social Service Professions	N/A

Appendix C: Target Industry NAICS Codes Mapping

Aerospace

NAICS Code	*NAICS Title*
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)
335991	Carbon and Graphite Product Manufacturing
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing
423860	Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers
927110	Space research and technology

Biosciences

NAICS Code	*NAICS Title*
541714	Research and Development in Biotechnology (except Nanobiotechnology)
541713	Research and Development in Nanotechnology
621511	Medical Laboratories
562910	Remediation Services
541380	Testing Laboratories
325199	All Other Basic Organic Chemical Manufacturing
325411	Medicinal and Botanical Manufacturing
325413	In-Vitro Diagnostic Substance Manufacturing
325414	Biological Product (except Diagnostic) Manufacturing
325412	Pharmaceutical Preparation Manufacturing

Cybersecurity

NAICS Code	*NAICS Title*
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers
541512	Computer Systems Design Services
541513	Computer Facilities Management Services
541511	Custom Computer Programming Services
334111	Electronic Computer Manufacturing
541519	Other Computer Related Services
511210	Software Publishers
518210	Data Processing, Hosting, and Related Services
541340	Drafting Services

Outdoor Recreation

NAICS Code	*NAICS Title*
713990	All Other Amusement and Recreation Industries
721214	Recreational and Vacation Camps (except Campgrounds)
441210	Recreational Vehicle Dealers
721211	RV (Recreational Vehicle) Parks and Campgrounds
423110	Automobile and Other Motor Vehicle Merchant Wholesalers
336214	Travel Trailer and Camper Manufacturing
712120	Historical Sites
712130	Zoos and botanical gardens
712190	Nature parks and other similar
713910	Golf courses and country clubs
713920	Skiing
713930	Marinas
336213	Motor Home Manufacturing
336612	Boat Building
336991	Motorcycle, Bicycle, and Parts Manufacturing
339920	Sporting and Athletic Goods Manufacturing
423910	Sporting and Recreational Goods and Supplies Merchant Wholesalers
441222	Boat Dealers
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers
451110	Sporting Goods Stores
487110	Scenic and Sightseeing Transportation, Land
487210	Scenic and Sightseeing Transportation, Water
487990	Scenic and Sightseeing Transportation, Other
532120	Truck, Utility Trailer, and RV (Recreational Vehicle) Rental and Leasing
532284	Recreational Goods Rental
561510	Travel Agencies
561520	Tour Operators
561599	All Other Travel Arrangement and Reservation Services
561920	Convention and Trade Show Organizers
611620	Sports and Recreation Instruction
711190	Other Performing Arts Companies
711211	Sports Teams and Clubs
711212	Racetracks
711219	Other Spectator Sports
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities
711320	Promoters of Performing Arts, Sports, and Similar Events without Facilities

711410	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures
713110	Amusement and Theme Parks
713940	Fitness and Recreational Sports Centers
721199	All Other Traveler Accommodation
813312	Environment, Conservation and Wildlife Organizations
924120	Administration of Conservation Programs

Sustainable & Value-Added Agriculture

NAICS Code	*NAICS Title*
311411	Frozen Fruit, Juice, and Vegetable Manufacturing
311412	Frozen Specialty Food Manufacturing
311421	Fruit and Vegetable Canning
311422	Specialty Canning
311423	Dried and Dehydrated Food Manufacturing
311511	Fluid Milk Manufacturing
311512	Creamery Butter Manufacturing
311513	Cheese Manufacturing
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing
311520	Ice Cream and Frozen Dessert Manufacturing
311811	Retail Bakeries
311812	Commercial Bakeries
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing
311821	Cookie and Cracker Manufacturing
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour
311830	Tortilla Manufacturing
311911	Roasted Nuts and Peanut Butter Manufacturing
311919	Other Snack Food Manufacturing
311920	Coffee and Tea Manufacturing
311930	Flavoring Syrup and Concentrate Manufacturing
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing
311942	Spice and Extract Manufacturing
311111	Dog and Cat Food Manufacturing
311119	Other Animal Food Manufacturing
424420	Packaged Frozen Food Merchant Wholesalers
311999	All Other Miscellaneous Food Manufacturing
111419	Other Food Crops Grown Under Cover
424690	Other Chemical and Allied Products Merchant Wholesalers
311612	Meat Processed from Carcasses
311615	Poultry Processing
311211	Flour Milling

311230	Breakfast Cereal Manufacturing
312130	Wineries
312140	Distilleries
312120	Breweries

Intelligent Manufacturing

NAICS Code	*NAICS Title*
313310	Textile and Fabric Finishing Mills
315190	Other Apparel Knitting Mills
321211	Hardwood Veneer and Plywood Manufacturing
321212	Softwood Veneer and Plywood Manufacturing
321213	Engineered Wood Member (except Truss) Manufacturing
321214	Truss Manufacturing
321219	Reconstituted Wood Product Manufacturing
321911	Wood Window and Door Manufacturing
321912	Cut Stock, Resawing Lumber, and Planing
321918	Other Millwork (including Flooring)
321920	Wood Container and Pallet Manufacturing
321991	Manufactured Home (Mobile Home) Manufacturing
321992	Prefabricated Wood Building Manufacturing
321999	All Other Miscellaneous Wood Product Manufacturing
325130	Synthetic Dye and Pigment Manufacturing
325180	Other Basic Inorganic Chemical Manufacturing
325193	Ethyl Alcohol Manufacturing
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing
325211	Plastics Material and Resin Manufacturing
325212	Synthetic Rubber Manufacturing
325220	Artificial and Synthetic Fibers and Filaments Manufacturing
325510	Paint and Coating Manufacturing
325612	Polish and Other Sanitation Good Manufacturing
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing
326111	Plastics Bag and Pouch Manufacturing
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing
326121	Unlaminated Plastics Profile Shape Manufacturing
326122	Plastics Pipe and Pipe Fitting Manufacturing
326130	Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing
326140	Polystyrene Foam Product Manufacturing
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing
326160	Plastics Bottle Manufacturing

326191	Plastics Plumbing Fixture Manufacturing
326199	All Other Plastics Product Manufacturing
326211	Tire Manufacturing (except Retreading)
326212	Tire Retreading
326220	Rubber and Plastics Hoses and Belting Manufacturing
326291	Rubber Product Manufacturing for Mechanical Use
326299	All Other Rubber Product Manufacturing
327211	Flat Glass Manufacturing
327212	Other Pressed and Blown Glass and Glassware Manufacturing
327213	Glass Container Manufacturing
327215	Glass Product Manufacturing Made of Purchased Glass
327993	Mineral Wool Manufacturing
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing
331110	Iron and Steel Mills and Ferroalloy Manufacturing
332111	Iron and Steel Forging
332112	Nonferrous Forging
332114	Custom Roll Forming
332117	Powder Metallurgy Part Manufacturing
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing
332216	Saw Blade and Handtool Manufacturing
332311	Prefabricated Metal Building and Component Manufacturing
332312	Fabricated Structural Metal Manufacturing
332313	Plate Work Manufacturing
332321	Metal Window and Door Manufacturing
332322	Sheet Metal Work Manufacturing
332323	Ornamental and Architectural Metal Work Manufacturing
332410	Power Boiler and Heat Exchanger Manufacturing
332420	Metal Tank (Heavy Gauge) Manufacturing
332431	Metal Can Manufacturing
332439	Other Metal Container Manufacturing
332510	Hardware Manufacturing
332613	Spring Manufacturing
332618	Other Fabricated Wire Product Manufacturing
332710	Machine Shops
332721	Precision Turned Product Manufacturing
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing
332811	Metal Heat Treating
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring
332911	Industrial Valve Manufacturing

332912	Fluid Power Valve and Hose Fitting Manufacturing
332913	Plumbing Fixture Fitting and Trim Manufacturing
332919	Other Metal Valve and Pipe Fitting Manufacturing
332991	Ball and Roller Bearing Manufacturing
332992	Small Arms Ammunition Manufacturing
332993	Ammunition (except Small Arms) Manufacturing
332994	Small Arms, Ordnance, and Ordnance Accessories Manufacturing
332996	Fabricated Pipe and Pipe Fitting Manufacturing
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing
333111	Farm Machinery and Equipment Manufacturing
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing
333120	Construction Machinery Manufacturing
333131	Mining Machinery and Equipment Manufacturing
333132	Oil and Gas Field Machinery and Equipment Manufacturing
333241	Food Product Machinery Manufacturing
333242	Semiconductor Machinery Manufacturing
333243	Sawmill, Woodworking, and Paper Machinery Manufacturing
333244	Printing Machinery and Equipment Manufacturing
333249	Other Industrial Machinery Manufacturing
333314	Optical Instrument and Lens Manufacturing
333316	Photographic and Photocopying Equipment Manufacturing
333318	Other Commercial and Service Industry Machinery Manufacturing
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing
333511	Industrial Mold Manufacturing
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing
333515	Cutting Tool and Machine Tool Accessory Manufacturing
333517	Machine Tool Manufacturing
333519	Rolling Mill and Other Metalworking Machinery Manufacturing
333611	Turbine and Turbine Generator Set Units Manufacturing
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
333613	Mechanical Power Transmission Equipment Manufacturing
333618	Other Engine Equipment Manufacturing
333912	Air and Gas Compressor Manufacturing
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing
333921	Elevator and Moving Stairway Manufacturing
333922	Conveyor and Conveying Equipment Manufacturing
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing

333991	Power-Driven Handtool Manufacturing
333992	Welding and Soldering Equipment Manufacturing
333993	Packaging Machinery Manufacturing
333994	Industrial Process Furnace and Oven Manufacturing
333995	Fluid Power Cylinder and Actuator Manufacturing
333996	Fluid Power Pump and Motor Manufacturing
333997	Scale and Balance Manufacturing
333999	All Other Miscellaneous General Purpose Machinery Manufacturing
334210	Telephone Apparatus Manufacturing
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334290	Other Communications Equipment Manufacturing
334310	Audio and Video Equipment Manufacturing
334412	Bare Printed Circuit Board Manufacturing
334413	Semiconductor and Related Device Manufacturing
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing
334417	Electronic Connector Manufacturing
334419	Other Electronic Component Manufacturing
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables
334514	Totalizing Fluid Meter and Counting Device Manufacturing
334516	Analytical Laboratory Instrument Manufacturing
334517	Irradiation Apparatus Manufacturing
334613	Blank Magnetic and Optical Recording Media Manufacturing
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing
335110	Electric Lamp Bulb and Part Manufacturing
335129	Other Lighting Equipment Manufacturing
335210	Small Electrical Appliance Manufacturing
335220	Major Household Appliance Manufacturing
335311	Power, Distribution, and Specialty Transformer Manufacturing
335312	Motor and Generator Manufacturing
335313	Switchgear and Switchboard Apparatus Manufacturing
335314	Relay and Industrial Control Manufacturing
335911	Storage Battery Manufacturing
335912	Primary Battery Manufacturing
335921	Fiber Optic Cable Manufacturing
335931	Current-Carrying Wiring Device Manufacturing
335932	Noncurrent-Carrying Wiring Device Manufacturing
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing
336111	Automobile Manufacturing

336112	Light Truck and Utility Vehicle Manufacturing
336120	Heavy Duty Truck Manufacturing
336211	Motor Vehicle Body Manufacturing
336212	Truck Trailer Manufacturing
336213	Motor Home Manufacturing
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing
336340	Motor Vehicle Brake System Manufacturing
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing
336360	Motor Vehicle Seating and Interior Trim Manufacturing
336370	Motor Vehicle Metal Stamping
336390	Other Motor Vehicle Parts Manufacturing
336411	Aircraft Manufacturing
336412	Aircraft Engine and Engine Parts Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
336414	Guided Missile and Space Vehicle Manufacturing
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing
336991	Motorcycle, Bicycle, and Parts Manufacturing
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing
336999	All Other Transportation Equipment Manufacturing
337110	Wood Kitchen Cabinet and Countertop Manufacturing
337121	Upholstered Household Furniture Manufacturing
337124	Metal Household Furniture Manufacturing
337125	Household Furniture (except Wood and Metal) Manufacturing
337127	Institutional Furniture Manufacturing
337211	Wood Office Furniture Manufacturing
337212	Custom Architectural Woodwork and Millwork Manufacturing
337214	Office Furniture (except Wood) Manufacturing
337215	Showcase, Partition, Shelving, and Locker Manufacturing
337910	Mattress Manufacturing
337920	Blind and Shade Manufacturing
339112	Surgical and Medical Instrument Manufacturing
339113	Surgical Appliance and Supplies Manufacturing
339114	Dental Equipment and Supplies Manufacturing
339115	Ophthalmic Goods Manufacturing
339116	Dental Laboratories
339910	Jewelry and Silverware Manufacturing
339920	Sporting and Athletic Goods Manufacturing

339930	Doll, Toy, and Game Manufacturing
339940	Office Supplies (except Paper) Manufacturing
339950	Sign Manufacturing
339991	Gasket, Packing, and Sealing Device Manufacturing
339993	Fastener, Button, Needle, and Pin Manufacturing
339994	Broom, Brush, and Mop Manufacturing
339999	All Other Miscellaneous Manufacturing

Global Trade

NAICS Code	*NAICS Title*
493110	General Warehousing and Storage
493120	Refrigerated Warehousing and Storage
493130	Farm Product Warehousing and Storage
493190	Other Warehousing and Storage
488210	Support activities for rail transportation
336510	Railroad rolling stock manufacturing
541614	Process and logistics consulting services

Sustainable & Green Energy

NAICS Code	*NAICS Title*
221111	Hydroelectric Power Generation
221114	Solar Electric Power Generation
221115	Wind Electric Power Generation
221116	Geothermal Electric Power Generation
221117	Biomass Electric Power Generation
237130	Power and Communication Line and Related Structures Construction
238160	Roofing Contractors
238210	Electrical Contractors and Other Wiring Installation Contractors
238220	Plumbing, Heating, and Air-Conditioning Contractors
331318	Other Aluminum Rolling, Drawing, and Extruding
331420	Copper Rolling, Drawing, Extruding, and Alloying
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals
334519	Other Measuring and Controlling Device Manufacturing
335121	Residential Electric Lighting Fixture Manufacturing
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing
335929	Other Communication and Energy Wire Manufacturing
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers

423690	Other Electronic Parts and Equipment Merchant Wholesalers
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers
541350	Building Inspection Services
541690	Other Scientific and Technical Consulting Services
624229	Other Community Housing Services

Appendix D: Target Industry / COG SWOT Analysis

Northwest New Mexico Council of Governments[220]

Strengths

- **Unique natural assets** feature a high-desert environment, punctuated by remarkable buttes, mesas, and red-rock cliffs and host world-class fly fishing, mountain biking, and other recreational areas.
- **Workforce and residents**, the majority of which are Native American, possess unique cultural assets and skill sets.
- **Creative industries** in indigenous arts and crafts present significant opportunities for economic development.

Weaknesses

- **Lack of infrastructure** and shovel-ready sites prevent communities from capitalizing on opportunities while many residents lack the broadband services to pursue education and workforce opportunities.
- **Dependence on oil, gas, and mining** has been unstable due to widespread job losses in the region.
- **Poverty and unemployment**, both higher than the state and national averages, have been chronic challenges with deep structural roots.

Opportunities

- **Growing healthcare sector** provides an avenue to reskill the workforce and establish a healthcare cluster in the region.
- **Influx of retirees** to New Mexico opens opportunities for the Northwest's economy to leverage retirees' skillsets, education, and wealth to drive economic development.
- **Tourism** based on outdoor recreation and geotourism is an undervalued opportunity that the region can develop into a highly specialized cluster.
- **Manufacturing** is a small and growing sector that, aided by recent investments like the Navajo-Gallup Water Supply Project, can be developed into a sizable cluster that provides STEM-based education and employment opportunities to residents.

Threats

- **Stagnant population growth**, driven in part by outmigration of families, threatens the region's long-term economic development; regional stakeholders must realize the amenities and job opportunities that keep residents in the area while attracting new ones.
- **Inadequate public and private services**, driven by budget challenges at the national, state, and local levels, pose a significant threat to economic development and the well-being of residents.

North Central New Mexico Development District[221]

Strengths

- **Los Alamos National Laboratory** is a key driver of industry and workforce development.
- **Highly educated and skilled workforce** is centered around LANL, hospitals and schools, national corporations, and local government.
- **Well-established network of organizations** supports industry and workforce development.
- **High specialization in key industries** includes R&D, valued-added agriculture, green energy, and film production.

Weaknesses

- **Recruitment of skilled workers** from outside the region limits workforce opportunities for local residents.
- **Lack of workers in supporting industries** (e.g., accountants, lawyers, IT workers) limits support for key industry clusters.
- **Educational institutions** are not well-aligned with industry needs.
- **Disparities between urban and rural areas** are a source of regional inequality and create competition and fragmentation between local governments.

Opportunities

- **Improved coordination among industry-related organizations** can greatly expand development capabilities.
- **Increased involvement of LANL** in local economic and workforce development initiatives can expand the region's economic development capabilities.
- **Healthcare and tourism** are additional diversification opportunities in which the region is well-positioned.
- **Remote worker attraction** is an underutilized tool given the region's high quality of life and existing pool of highly educated residents.
- **Potential for retirees takes a more active role** in economic development and worker training.

Threats

- **Competition for skilled workers from neighboring states** may limit worker attraction efforts in key industries.
- **Decline in the education sector**, exacerbated by an overall lack of investment in continuing education, threatens the development of homegrown talent for key industries.
- **Water supply** may be increasingly threatened both from climate change-induced fluctuations in water levels and from unsustainable land use patterns, thus increasing the risk of drought and fire.
- **Broadband access challenges** may limit education, workforce development, and access to services in rural areas.

Mid-Region New Mexico Council of Governments[222]

Strengths

- **Size and diversity of the population and workforce** makes Mid-Region a competitive hub for all key industries.
- **Established industry clusters** exist in aerospace research, higher education, healthcare, film, and cybersecurity.
- **High quality of life, low cost of living, and wide range of amenities** attract workers and residents to the region.
- **Entrepreneurship and innovation** activity is largely concentrated in the Albuquerque area, thanks to its easy access to capital, talent, and supporting institutions.

Weaknesses

- **Reliance on federal government** for employment and business activity hinders economic resilience.
- **Underperforming schools** discourages in-migration of workers and their families while limiting the potential of future workers.
- **Poor transportation infrastructure and lack of broadband in rural areas** constrain economic mobility for lower-income residents.

Opportunities

- **Significant potential to expand in aerospace, manufacturing, biosciences, and cybersecurity** exists via strengths in existing industries.
- **Commercialization opportunities from Sandia** can lead to the development of new high-tech industries and further grow the entrepreneurial ecosystem.
- **Remote worker and retiree attraction strategies** can enhance the region's talent pool.
- **Better alignment of higher education programs to local industry needs**, especially at University of New Mexico, can make the region even more attractive to outside businesses.

Threats

- **Decline in federal government funding and employment** threatens the region's economic competitiveness.
- **Out-migration and loss of skilled workers** may eventually create hiring difficulties for existing target industry employers.
- **Concentration of services and infrastructure in urban areas** may limit rural economic development.
- **Risk of drought, fire, and water shortages** can lead to economic and social disruption.

Eastern Plains Council of Governments[223]

Strengths

- **Large and established agricultural sector** presents a base to expand into organic produce and value-added agriculture.
- **Cannon Air Force Base** is a significant source of economic activity in the Clovis area.
- **Clovis Community College and Eastern New Mexico University** provide many hands-on education and training programs for the local workforce.
- **Abundance of land and natural resources** makes the region ideal for wind energy generation and value-added agriculture.

Weaknesses

- **Lack of adequate infrastructure in rural areas** hinders the agricultural supply chain and ranchers'/farmers' access to markets.
- **Lack of healthcare and public services**, especially in rural areas, impedes economic development and exacerbates poverty.
- **Shortage of essential jobs and workers**, such as teachers, firefighters, and nurses, creates a challenging environment to build a strong workforce and support local industry.

Opportunities

- **Wind energy development** is ideally suited to the region due to land availability, flat terrain, and weather conditions.
- **Growing healthcare sector** presents opportunity to reskill workers and bring new jobs to the region.
- **Federal government's increased focus on infrastructure development** is expected to open various avenues for the region to shore up its rural infrastructure.
- **Potential for growth in valued-added agricultural products and projects** that complement the region's strengths in cattle and dairy production.

Threats

- **Outsized role of the federal government activities** in the Clovis area exposes the region to federal policy changes and uncertainty.
- **Fluctuations in the water supply**, either due to climate change or unsustainable land use practices, pose a threat to the economic viability of the agricultural sector.
- **Continued infrastructure deterioration and potential supply chain disruptions**, such as those caused by COVID-19, pose a significant risk to the livelihoods of ranchers and farmers.

Southwest New Mexico Council of Governments[224]

Strengths

- **Arts, culture, and tourism** are strong in the Southwest, aided by natural assets and quality of life factors.
- **Copper mining and agriculture** are major demand drivers for skilled technical workers.
- **Entrepreneurship and small business environment** are strong thanks to support from local governments and communities throughout the region.
- **Dark skies** offer ideal environment for astronomy research and tourism.

Weaknesses

- **Lack of broadband, cell service, and adequate infrastructure** in rural areas limit access to economic opportunities.
- **Shortage of skilled workers and technical jobs** poses hiring challenges for employers.
- **Poverty** is a chronic issue which, in combination with other factors, limits social and economic mobility.

Opportunities

- **Outdoor recreation sector** has significant potential to become a key regional industry.
- **Two ports of entry** and numerous industrial parks present big opportunities for freight and logistics.
- **Renewable energy and manufacturing** have an established presence in the region and can be further developed into a sizeable cluster of interconnected firms.
- **Hiking and biking trails**, if given the necessary investments, can become major regional assets that attract tourists and businesses.
- **Federal government's increased focus on infrastructure development** is expected to open various avenues for the region to shore up its rural infrastructure.
- **Rapid growth in the healthcare sector** presents workforce and business development opportunities throughout the region.

Threats

- **Long-term uncertainty on federal policies** regarding infrastructure development, border control, and trade can have an outsized impact on the regional economy.
- **Natural and man-made disasters** can disrupt industry supply chains and have a major impact on natural resources.
- **Potential disruption to key businesses** can have significant ripple effects throughout key industries and in the broader regional economy.

Southeastern New Mexico Economic Development District[225]

Strengths

- **Diverse mix of industries** include agriculture, oil and gas, outdoor recreation, and aerospace.
- **Extensive military infrastructure** makes the region well-suited to the development of aerospace and manufacturing clusters.
- **Natural amenities**, including Carlsbad Caverns National Park, drive a prosperous tourism industry.
- **Network of local universities and community colleges** provides a range of education and training opportunities to local residents.
- **Established air and rail service** to nearby cities includes Dallas, Phoenix, and Houston.

Weaknesses

- **Oil and gas industry's outsized share of the economy** exposes the region to recurring boom-bust cycles.
- **Shortage of skilled workers** poses a challenge to existing employers and efforts to attract new businesses.
- **Lack of affordable housing** poses barriers to attracting new workers while forcing existing workers to live further away from their jobs.

Opportunities

- **Renewable energy** is an industry to which the region is well-suited given the abundance in natural resources, existing know-how in energy development, and extensive transportation network.
- **Cross-border trade** is an opportunity area in which to grow the region's freight and logistics sector.
- **Agriculture and food processing**, a key regional industry, has ample room for additional growth to offset the region's dependence on oil and gas.
- **Advanced aerospace manufacturing, research, and testing** is an opportunity industry that fits well with the region's extensive flight-testing infrastructure and know-how.

Threats

- **Aging infrastructure** may hamper economic development if not improved and updated in the near-to-medium-term future.
- **Continued out-migration of younger workers** can seriously impact regional competitiveness and limit the scope of economic diversification.
- **Eventual decline of the oil and gas industry** highlights the need to successfully diversify into more sustainable industries.

South Central Council of Governments[226]

Strengths

- **Aerospace cluster** is centered around White Sands Missile Range, Virgin Galactic, and NASA.
- **Growing healthcare sector** drives demand for health professionals and creates employment opportunities for local residents.
- **Established film & TV industry** supports numerous commercial productions and strong creative media programs at local schools.
- **Strong educational institutions** serve as a backbone in STEM training and education.
- **Vibrant arts and culture**, centered around Las Cruces, makes the region attractive to visitors and prospective residents.

Weaknesses

- **Reliance on government employment** exposes the region to federal spending and policy changes.
- **Shortage of skilled technical workers** to bridge the gap between lower-wage service workers and highly educated professionals limits career mobility.
- **Lack of broadband access and infrastructure**, especially in rural areas, limits economic opportunities for underserved residents.

Opportunities

- **Tourism** has strong growth potential thanks to the region's wide range of natural and cultural assets.
- **Entrepreneurship and innovation** can be further developed by leveraging the region's educational institutions (e.g., Arrowhead Center) and partnerships with established employers in key industries.
- **More film & TV productions** can be captured with additional collaboration with the New Mexico Film Office and regional stakeholders.
- **Cross-border trade** provides opportunities to strengthen the region's logistics and manufacturing sectors.

Threats

- **Uncertainty over future federal spending** poses a risk to economic growth.
- **Strained public services**, due in part to staffing shortages, threaten the region's capacity to pursue its strategic goals.
- **Workforce retention problems** may limit the region's ability to attract industry over the long term.

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