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A COMPREHENSIVE EXAMINATION OF NEVADA'S ADVANCED MANUFACTURING INDUSTRY SECTOR'S VALUE NETWORK AND SUPPLY CHAIN

UNIVERSITY OF NEVADA, RENO

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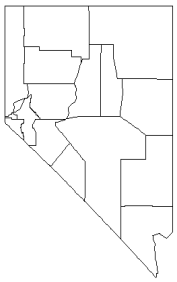

The University Center for Economic Development
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Acknowledgement

The University Center for Economic Development, part of The College of Business at the University of Nevada, Reno, would like to thank the Office of Workforce Innovation, part of the State of Nevada, for the generous award of a ***Nevada P-20 to Workforce Research Data System*** (NPWR) grant in the spring of 2025 to the University Center for Economic Development and to the University of Nevada, Reno. This funding supported the research completed by University Center for Economic Development faculty and staff summarized and presented in this University Center for Economic Development technical report.

Thank you.

The Nevada Office of Workforce Innovation (OWINN), originally created via Executive Order in 2016 and codified into state statute in 2017, helps drive a skilled, diverse, and aligned workforce in the state of Nevada by promoting collaboration and cooperation among all entities focused on workforce development. Under the administrative umbrella of the Nevada Department of Employment, Training and Rehabilitation since July 2021, OWINN works to support Nevada's workforce by providing leadership in assessing workforce policies and developing innovative ideas to strengthen the workforce system, promoting registered apprenticeships and work-based learning, leveraging labor-market and workforce data, validating industry-recognized credentials, and developing career pathways.

https://gowinn.nv.gov/

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Thank you.

https://www.manufacturenevada.com/

https://nnda.org/

1.0 Introduction and Overview

Overview

This University Center for Economic Development technical report presents a comprehensive summary of a value network and supply chain mapping project of Nevada's Advanced Manufacturing industry sector completed by graduate students in the Masters of Business Administration program in the College of Business at the University of Nevada, Reno. Twenty-one total graduate students participated in this semester-long project, completed during the Spring 2025 academic semester. This effort was divided into four separate parts. Part 1 focused on exploring the historical development and evolution of Nevada's advanced manufacturing industry sector, a general overview of the industry sector's regulatory environment, a broad county-by-county description of various advanced manufacturing industry sector activities throughout the state of Nevada including a general economic impact assessment of the sector, and a comprehensive Strengths, Weaknesses, Opportunities, and Threats of Nevada's advanced manufacturing industry sector.

Part 2 involved completing a comprehensive value network and supply chain mapping project of Nevada's advanced manufacturing industry sector using Input-Output (I/O) Analysis to identify critical 'gaps' in the value network and supply chain of Nevada's advanced manufacturing industry sector. Part 3 created a 'workforce development overlay' of the results developed in Part 2 of this comprehensive mapping of the value network and supply chain of Nevada's advanced manufacturing industry sector using data provided by the Office of Workforce Innovation through the Nevada P-20 to Workforce Research Data System. Part 4 of this effort included a comprehensive assessment of Nevada's advanced manufacturing industry sector regarding the overall strength, balance, and resiliency found within the industry's value network and supply chain, evaluating the impacts that the COVID-19 global pandemic has had on the industry's value network and supply chain, and recommendations for closing identifying 'gaps' in the industry's value network and supply chain through targeted community and economic development strategies.

For each of the four individual parts of this comprehensive value network and supply chain mapping project of Nevada's advanced manufacturing industry sector, the 21 participating graduate students, working as one large group, prepared a separate white paper summarizing their analysis and results. For Part 1, Part 2, and Part 3 of the semester-long project, a separate in-class presentation was completed, and, for Part 4, students facilitated a half-day Nevada advanced manufacturing industry sector value network and supply chain symposium held on Monday, May 12, 2025. Section 2.0 of this University Center for Economic Development technical report presents an edited version of the first white paper for Part 1, *Evaluation of the 'State' of the State of Nevada's Advanced Manufacturing Industry Sector*, and Section 3.0

presents an edited version of the second white paper for Part 2, *Development of a Comprehensive Value Network and Supply Chain Map of the Advanced Manufacturing Industry Sector in Nevada*. Section 4.0 of this University Center for Economic Development technical report presents an edited version of the third white paper for Part 3, *Identification of Workforce Development Gaps in the Value Network of the Advanced Manufacturing Industry Sector in Nevada*, and Section 5.0 presents an edited version of the fourth and final white paper for Part 4, *Targeted Economic Development Recommendations for Business Creation, Attraction, Retention, and Expansion Strategies*.

While an analysis of the value network and supply chain for Nevada's advanced manufacturing industry sector is presented for the entire state of Nevada, this analysis was also developed for each of the existing eight regional economic development authorities to support community-level and regional economic development efforts. As of the time of publication of this University Center for Economic Development technical report, the eight existing regional economic development authorities in Nevada are:

- Churchill Fallon Development Authority (Churchill County)
- Economic Development Authority of Western Nevada (Washoe County)
- Las Vegas Global Economic Alliance (Clark County)
- Lincoln County Regional Development Authority (Lincoln County)
- Nevada 95-80 Regional Development Authority (Humboldt County, Pershing County)
- Northeastern Nevada Regional Development Authority (Elko County, Eureka County, Lander County, White Pine County)
- Northern Nevada Development Authority (Carson City, Douglas County, Lyon County, Mineral County, Storey County)
- Southwest Central Regional Economic Development Authority (Esmeralda County, Nye County)

Funding for this comprehensive examination of Nevada's advanced manufacturing industry sector's value network and supply chain was provided as part of a state of Nevada Office of Workforce Innovation Nevada P-20 to Workforce Research Data System (NPWR) research grant awarded to the University Center for Economic Development in 2025. The University Center for Economic Development is a U.S. Economic Development Administration recognized and funded University Center Program. It is the mission of the University Center for Economic Development, part of the College of Business at the University of Nevada, Reno, to foster economic development throughout state by making the extensive resources of the University of Nevada, Reno available to organizations and areas that can benefit from job and income creation and job retention efforts.

2.0 Evaluation of the 'State' of the State of Nevada's Advanced Manufacturing Industry Sector

This section of this University Center for Economic Development technical report presents an edited version of the initial white paper developed for Part 1, *Evaluation of the 'State' of the State of Nevada's Advanced Manufacturing Industry Sector*. Part 1 of this initial analysis of the value network and supply chain of Nevada's advanced manufacturing industry sector included the following elements:

- A comprehensive overview of the 'state' of the state of Nevada's advanced manufacturing industry sector, considering the relationship between production in the advanced manufacturing industry sector statewide and nationally to other key industry sectors, the employment of new technologies and manufacturing processes that have become 'standard' across the industry sector and the impact adoption of these new technologies and manufacturing processes have on workforce demand and workforce training, and the overall competitiveness of advanced manufacturing in Nevada and for the entire United States relative to key competitors and rivals on the global stage.

- A detailed evaluation of the state's advanced manufacturing industry sector's regulatory environment including a discussion on relevant federal, state, and local government laws and regulations and an overview of relevant fiscal and taxation policies that firms within the industry sector are subject to within the state of Nevada.

- Development and presentation of a general overview of county-by-county advanced manufacturing needs and an overall assessment of the economic importance of the advanced manufacturing industry sector to individual counties located throughout the state including estimated total employment throughout and across the sector, and the total number and type of firms operating within the sector.

- A comprehensive Strengths, Weaknesses, Opportunities, and Threats analysis of Nevada's advanced manufacturing industry sector.

Nevada's advanced manufacturing industry sector plays an important role in the overall economic health of the state and the overall health of local communities and counties throughout the state. As part of several other industry sectors, the advanced manufacturing industry sector is a major employment sector paying relatively high wages and serving as a major source of innovation. Understanding the historical evolution of Nevada's advanced manufacturing industry sector, in addition to understanding the current state of this industry sector and the regulatory environment that governs industry operations, is crucial for understanding the changing nature of the state's broader community and economic development landscape. A broad understanding of the industry sector's regulatory environment provides an additional and useful perspective for understanding the opportunities and challenges that individual firms and

entire communities face within the industry and a county-by-county assessment of different advanced manufacturing activities and services, including the emergence of new technologies and processes, provides an essential insight as to how important the industry sector is to general levels of economic output and growth.

The various strengths and weaknesses of the industry sector and the individual opportunities and threats that individual firms and the entire industry sector faces will each serve as important starting points in developing and identifying targeted new business creation and attraction and existing business retention and expansion economic development efforts explored in the following sections of this University Center for Economic Development. These targeted new business creation and attraction and existing business retention and expansion efforts serve the purpose of further diversifying and strengthening the economic base of individual communities and regions across the state and for the state as a whole and in supporting other emerging industry and occupation sectors.

2.1 Historical Overview of Nevada's Advanced Manufacturing Industry Sector

Nevada's advanced manufacturing industry is largely concentrated in Clark County, Storey County, and Washoe County, where manufacturers produce a wide variety of products, including aerospace components, electric vehicle batteries, and precision-machined parts. These manufacturers depend on external suppliers to keep their operations running efficiently. Companies such as Fastenal, Grainger, Cintas, and Uline play an essential role by providing both the materials that become part of the finished products, and the equipment needed to support day-to-day manufacturing processes.

2.1.a Essential Supplies for Manufacturing

Many of the materials sourced from industrial suppliers become integral components in final manufactured products. Fasteners, adhesives, and specialty components provided by companies like Fastenal and Grainger are used in a variety of other industries such as automotive, aerospace, and electronics. These small but critical components ensure product integrity and structural reliability, making them indispensable to manufacturers across these and many other industry sectors. Additionally, metalworking fluids, cutting tools, and welding supplies are necessary for fabrication and precision machining, all of which are provided by these industrial supply companies. Beyond the materials that go into final products, various individual manufacturers also depend on industrial suppliers for the tools and equipment required in their production facilities. Hand tools, power tools, and machining equipment are essential for assembly lines, maintenance teams, and fabrication processes. Again, companies like Grainger and Fastenal ensure that manufacturers have access to these critical tools, allowing them to maintain efficiency and precision in production.

2.1.b Workplace Safety and Compliance Support

Maintaining a safe and compliant work environment is a top priority for manufacturers and this is where companies like Cintas provide crucial support. Personal protective equipment (PPE), such as gloves, safety glasses, hard hats, and respirators, are supplied by individual firms such as Cintas, Grainger, and Fastenal, ensuring workers are protected from hazards in industrial settings. First aid kits, fire safety equipment, and emergency response supplies are also provided by these and various other firms to keep workplaces compliant with federal U.S. Occupational Safety and Health Administration regulations and with other applicable state and local government requirements.

Individual manufacturers across a variety of other industry sectors also rely on industrial suppliers for workwear and uniform programs that enhance worker and workplace safety and standardization in production environments. Firms such as Cintas specialize in outfitting workers with flame-resistant clothing, high-visibility gear, and specialized uniforms suited for use in hazardous manufacturing environments.

2.1.c Vending and Inventory Solutions

Various industrial supply companies do more than just drop-ship products to individual end-user manufacturers. To help businesses manage inventory efficiently, companies like Fastenal and Grainger provide industrial vending machines that allow manufacturers to securely store and track high-use items such as PPE, cutting tools, and fasteners. These vending solutions reduce waste, improve inventory management, and ensure that individual workers have immediate access to critical supplies without unnecessary downtime.

Additionally, many of these individual advanced manufacturing suppliers offer on-site inventory management programs, where they regularly restock essential items, reducing the burden on individual manufacturers to monitor and order supplies manually. This hands-on approach ensures that individual production facilities never run out of crucial materials needed to support additional value-added production and that they can focus on core manufacturing operations needed in the product development process.

2.1.d Why Proximity to Suppliers Matter

The strategic placement of individual firms such as Fastenal, Grainger, Cintas, and Uline near the major manufacturing hubs located throughout the state of Nevada in Clark County, Storey County, and Washoe County ensures that individual manufacturers have quick access to essential supplies without costly delays. In Clark County (which includes cities and major population centers such as the City of Henderson, the City of Las Vegas, and the City of North Las Vegas), manufacturers depend on these suppliers for just-in-time delivery of industrial components and safety equipment. In Washoe County (which includes the City of Reno and the City of Sparks), the presence of distribution centers and supplier locations ensures that manufacturers can maintain steady inventory levels. In Storey County, home of the Tahoe-Reno Industrial Center, major manufacturers like Tesla and Panasonic rely on these suppliers for a continuous flow of production materials and safety equipment.

By supporting Nevada's manufacturing sector with critical materials, tools, safety solutions, and advanced inventory management services, companies like Fastenal, Grainger, Cintas, and Uline are critical to the state's industrial growth. The ability of these and other individual firms to provide manufacturers with innovative supply chain solutions, beyond simple product delivery, ensures seamless operations, reducing downtime and keeping Nevada's manufacturers competitive in the global market.

2.2 An Evaluation of Advanced Manufacturing Across the United States

As part of the analysis in evaluating the current 'state' of advanced manufacturing in Nevada and across the United States, several individual states were selected based on their comparability to the state of Nevada, efforts in those states to support the continued development and growth of advanced manufacturing in those states, and the relative importance of advanced manufacturing to each state's overall economic base. Arizona, California, South Carolina, Texas, and Utah were each selected and examined as part of this evaluation.

2.2.a State of Arizona

Arizona's advanced manufacturing sector has experienced a robust renaissance over the past decade, driven by substantial capital investments and pro-growth policies. In 2022, manufacturing output in Arizona nearly doubled from approximately $23.0 billion in 2011 to over $40.0 billion, contributing approximately 9.0 percent to the state's Gross Domestic Product (Common Sense Institute, 2023). Arizona's manufacturing investments have yielded impressive growth, supporting approximately 193,000 jobs, or about 5.4 percent of the state's total workforce (U.S. Bureau of Labor Statistics, 2025). Mega-projects, such as Taiwan Semiconductor's (TSMC) $65.0 billion semiconductor investment, which is projected to generate nearly 6,000 high-wage jobs, highlight the state of Arizona's commitment to high-technology sectors including semiconductors and aerospace (National Institute of Standards and Technology, 2024; Reuters, 2025). I n contrast, Nevada's advanced manufacturing industry, though smaller in absolute terms, is largely concentrated in Clark County, Storey County, and Washoe County, where manufacturers focus on producing aerospace components, electric vehicle batteries, and precision-machined parts. The advanced manufacturing industry sector in Nevada is less about massive capital projects and more about leveraging a finely tuned supply chain that integrates critical industrial suppliers.

Workforce development efforts between both states is another key differentiator between Arizona and Nevada. Arizona benefits from a strong educational infrastructure, institutions such as Arizona State University and the University of Arizona produce roughly 2,000 graduates annually in semiconductor-related disciplines, fueling its advanced manufacturing growth (National Institute of Standards and Technology, 2024). For instance, over 200 semiconductor companies across the state employed more than 25,800 workers in 2023, reflecting a 22.0 percent expansion in the industry since 2018 (National Institute of Standards and Technology, 2024). Conversely, Nevada's workforce, while robust, is more regionally concentrated, with manufacturers placing a premium on rapid access to essential industrial supplies. This strategic

proximity enables Nevada's manufacturers to minimize downtime and maintain tight production schedules, effectively offsetting their comparatively lower levels of direct capital investment.

Emerging trends in the state of Arizona include significant reshoring initiatives, the adoption of sustainable production practices, and the integration of artificial intelligence and automation into manufacturing processes. Moreover, Arizona's strategic geographic location, with close proximity to major transportation corridors and the United States-Mexican border, enhances the state's overall appeal as a logistics and export hub. These factors have and continue to position Arizona as an increasingly attractive destination for advanced manufacturing investment, with strong potential to boost regional economic competitiveness and drive future innovation.

Looking to the future, both states, Arizona and Nevada, are poised for continued growth in advanced manufacturing, though the strategies being pursued in both states differ markedly. Arizona's approach is characterized by large-scale federal and state incentives that drive high-tech investments while Nevada focuses on supply chain integration and regional clustering to optimize production efficiency. As Arizona continues to build on its 'manufacturing renaissance' with projects in semiconductors and aerospace, Nevada's emphasis on efficient, localized supply networks positions it to close the gap in emerging sustainable and high-tech manufacturing sectors. Together, these complementary strategies contribute to further diversifying the manufacturing landscape across the United States, with each state capitalizing on its own unique strengths to remain competitive in the global market.

2.2.b State of California

California's advanced manufacturing sector is a significant contributor to the state's overall economic base by contributing approximately $411.8 billion to statewide Gross Domestic Product, accounting for approximately 10.6% of the state's total economic output (California Economic Development Department, 2023). Advanced manufacturing in California employs over 1.16 million people across more than 36,000 individual firms and new major investments like Bosch's $1.9 billion expansion of its semiconductor plant in Roseville (Bosch, 2023) are further expanding the sector's overall economic impact. Key industries related to advanced manufacturing in California include semiconductor manufacturing, aerospace, and biotechnology, with leading companies such as Intel and SpaceX based in the state. California's advanced manufacturing industry sector is supported by a highly skilled workforce. Approximately 40.0 percent of California's residents aged 25 years of age and older have at least a Bachelor's degree, supported by institutions like Stanford, the University of Southern California, and various institutions within the University of California system. These institutions further bolster the state's already highly skilled workforce, necessary for sectors such as semiconductor manufacturing and biotechnology (U.S. Census Bureau, 2023). Despite these advantages, the state's advanced manufacturing industry sector must contend with a relatively high cost of living. For example, the median home in California price exceeds $800,000 and utility costs are among the highest in the United States (U.S. Census Bureau, 2023). These factors complicate workforce retention and increase overall operational costs.

Geographically, California benefits from its extensive coastlines and access to the Pacific Ocean that facilitates and supports global shipping and fertile lands in the Central Valley that support a

diverse agricultural and manufacturing base. However, the state's vulnerability to natural disasters like wildfires and earthquakes frequently disrupts production and poses challenges for water-intensive industries (California Department of Water Resources, 2023). Emerging trends in the sector for the state of California include significant reshoring efforts and a push for sustainable manufacturing practices driven by state climate goals and federal policies like the CHIPS and Science Act of 2022. The adoption of Artificial Intelligence (AI) and increased use of automation is transforming manufacturing processes across the state and across the entire United States (U.S. Department of Commerce, 2022). California's fairly progressive regulatory environment, marked by strict environmental and labor policies, heavily impacts the business climate (California Environmental Protection Agency, 2023). Individual firms in the advanced manufacturing industry sector in California also grapples with supply chain vulnerabilities, skilled workforce shortages, and infrastructure needs critical for industries like semiconductor manufacturing, which require substantial energy and water resources (California Department of Water Resources, 2023).

2.2.c State of South Carolina

South Carolina's manufacturing sector is a vital component of the state's economy, contributing significantly to employment, state Gross Domestic Product, and exports. In the third quarter of 2024, South Carolina's real Gross Domestic Product grew at an annual rate of 3.1 percent, aligning with the national growth rate (U.S. Department of Commerce). As of December 2024, the manufacturing sector employed approximately 265,900 individuals. This reflects a growth of over 17.0 percent in manufacturing employment over the past decade (Department of Employment and Workforce). In 2024, the state's export sales reached $38.0 billion representing a 1.9 percent increase from the $37.3 billion reported in 2023 (South Carolina Department of Commerce).

Throughout 2024, the state attracted $8.2 billion in capital investments, with existing industries accounting for $5.4 billion of this total. The leading sectors by investment were Information Technology and Computer Equipment ($4.1 billion), Automotive ($1.3 billion), and Aerospace ($1.0 billion) (South Carolina office of Governor). Domestic companies made up approximately 67.0 percent of 2024 capital investment, while international companies made up approximately 33.0 percent. On December 12, 2024, Boeing announced a $1.0 billion expansion of its 787 Dreamliner production facilities in Charleston County, aiming to increase output to ten aircraft per month by 2026, creating approximately 500 new jobs over the next five years (South Carolina Office of Governor).

South Carolina is a key hub in the U.S. automotive industry, led by BMW's Spartanburg plant and supported by Mercedes-Benz Vans, Michelin, and Bridgestone. The state's life sciences sector, with over 1,000 firms and an annual economic impact of $25.7 billion, is the state's fastest-growing industry with average wages nearly 80.0 percent above the state's average (South Carolina Biomedical Research, 2025). South Carolina leads in industrial machinery and advanced materials production, with the South Carolina Technology & Aviation Center (SCTAC) in Greenville and Clemson University International Center for Automotive Research (CU-ICAR) driving innovation and contributing approximately $6.1 billion annually to the state's economy. (Executive Budget of Fiscal Year 2025-26).

The rapid growth in the state's manufacturing has led to workforce shortages. As of February 2025, South Carolina's manufacturing sector continues to face significant workforce shortages and skills gaps. The state's unemployment rate rose to 4.7 percent in late 2024 from 3.0 percent in January 2024. The South Carolina Manufacturers Alliance (SCMA) has unveiled its 2025 vision. All South Carolina public K through 12 schools will utilize a technology-based learning model with competency progression and focused personalized learning. In January 2025, the South Carolina Department of Commerce announced over $750,000 in grants to 13 projects statewide, supporting innovation and entrepreneurship (South Carolina Department of Commerce).

2.2.d State of Texas

Texas' advanced manufacturing sector contributes significantly to the state's economy including employment and statewide Gross Domestic Product. Manufacturing is an established sector and plays a significant role in the reshoring of semiconductors in the United States as Texas is the number one manufacturer of semiconductors nationwide as well as the "birthplace" of the integrated circuit. Texas has also seen an increase in investments to career and technical education programs, showing commitment to the growth of the sector (Office of the Texas Governor, 2024). Texas is experiencing a 4.2 percent unemployment rate (U.S. Bureau of Labor Statistics, 2025) and is the second largest contributor to the United States' Gross Domestic Product at $2.58 trillion per year (Bureau of Economic Analysis, 2025).

Manufacturing is the seventh largest industry by employment (IBISWorld, 2025) with 983,600 workers employed (U.S. Bureau of Labor Statistics, 2025) and the second largest in terms of financial contributions to the state's economy behind the real estate/rental/leasing industry (IBISWorld, 2025). Texas' manufacturing sector contributed $292.6 billion to the state's Gross Domestic Product, which equates to approximately 11.3 percent overall (National Association of Manufacturers, 2025). Texas' top five manufacturing subdivisions are chemical, petroleum/coal, computer/electronics, food/beverage/tobacco, and machinery (National Association of Manufacturers, 2025). With over 20,000 individual manufacturing companies (National Association of Manufacturers, 2025) there has been an employment growth of approximately 2.2 percent falling behind other industries like construction at approximately 3.8 percent and financial activities at approximately 3.6 percent (U.S. Bureau of Labor Statistics, 2025). Manufacturing has an average annual earning of $123,875 and is significantly higher than the non-farm average of $89,828 (National Association of Manufacturers, 2025).

Finally, Texas's strong geographic advantages supports the supply chain and logistics of the state's advanced manufacturing sector. The state of Texas is located on the Gulf of Mexico, in the middle of the country, and shares a large border with Mexico, who is Texas's largest importer (National Association of Manufacturers, 2025). These advantages have made Texas the number one exporting state in the country for the last 21 years in a row (2022). This is also supported by the existence of 26 commercial airports, 19 seaports, 22 interstate highways, and 58 freight railroads (Texas Economic Development Corporation, 2023).

2.2.e State of Utah

Utah's advanced manufacturing sector plays an important role in the state's economy, contributing significantly to employment, earnings, and statewide Gross Domestic Product and is larger and more established when compared to the advanced manufacturing sector in Nevada. Some emerging trends in Utah's advanced manufacturing industry sector include several reshoring initiatives, sustainable manufacturing policies, and artificial intelligence and automation adoption. Manufacturing ranks as the state of Utah's fifth-largest industry, employing 143,461 workers, with about two-thirds in durable goods production. Utah's top five manufacturing subdivisions are miscellaneous, food and tobacco, computer electronics, petroleum and coal, and primary metal manufacturing (Utah Manufacturing Extension Partnership, 2023). Since 2008, Utah's manufacturing employment has increased by approximately 0.8 percent annually, trailing behind the 2.1 percent growth rate of non-manufacturing industries, (Benway & Downen 2020). In 2018, Utah's manufacturing industry generated an estimated $10.4 billion in wages, making it the third-largest source of earnings, with an average salary of $72,565, which is approximately 38.6 percent higher than the statewide average (Benway & Downen 2020).

Utah's manufacturing sector contributed $19.6 billion to statewide Gross Domestic Product in 2018, ranking third overall and second in the private sector, with an estimated 2.0 percent annual growth rate, double the national average (Benway & Downen 2020). The total economic impact of manufacturing in Utah in 2018 included 427,980 jobs, an estimated $26.4 billion in earnings, and $44.0 billion in Gross Domestic Product contribution, meaning one-fifth of all jobs and one-quarter of Utah's statewide Gross Domestic Product and earnings stem from manufacturing (Benway & Downen 2020). Additionally, Utah generated nearly $605.9 million in state government tax revenue from manufacturing, with much of the industry sector's activity concentrated in Salt Lake County and along the Wasatch Front (Benway & Downen 2020).

2.3 Regulatory Environment of Nevada's Advanced Manufacturing Industry Sector

This sub-section provides a comprehensive overview of the regulatory framework governing Nevada's advanced manufacturing sector which is subject to complex state and federal regulations that impact workplace safety, environmental protection, and national security. Nevada's regulatory landscape is dynamic, demanding continuous adaptation from companies within this sector. Additionally, this sub-section highlights Nevada's low tax policies and available tax abatements.

2.3.a State of Nevada Regulatory Standards and Laws

Environmental and workplace safety regulations in Nevada are particularly significant. The state has environmental and workplace safety rules, covering aspects like air and water quality and waste disposal. These regulations require adherence to or regulations that are in excess of federal regulatory standards. Companies must remain vigilant, as environmental regulations are complex and frequently updated. In addition to state rules, organizations like the U.S. Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration

(OSHA) provide guidance documents and Memorandums of Understanding governing workplace safety. Nevada's growing advanced manufacturing sector, especially in battery technology and electric vehicles, has intensified the focus on these evolving regulations. Regarding workplace safety, Nevada operates an OSHA-approved state plan, ensuring its occupational safety and health program is at least as effective as OSHA's national plan. This is authorized under Section 18 of the Occupational Safety and Health Act 1970. Both federal and Nevada OSHA enforce the "general duty clause", requiring employers to maintain a workplace free from recognized hazards that could cause serious harm.

Federal EPA regulations establish the foundational standards for environmental protection, with Nevada Division of Environmental Protection administering and enforcing these standards within Nevada and across the entire state. Key federal regulations include the Clean Air Act, which regulates air emissions, the Clean Water Act, which governs water pollutant discharges, and the Resource Conservation and Recovery Act, which governs hazardous waste. The United States Code of Federal Regulations, precisely Title 40, provides detailed rules implementing these statutes. In addition to environmental and workplace regulations, the state of Nevada's advanced manufacturing sector faces increasing scrutiny regarding foreign adversary influence. Concerns about espionage, supply chain vulnerabilities, and the potential for technology misuse for military purposes are driving these regulations. The Protecting American Advanced Manufacturing Act (S. 3486) exemplifies this, aiming to prevent companies associated with foreign adversaries from receiving advanced manufacturing production tax credits. This bill demonstrates a clear Congressional intent to safeguard the sector from foreign influence.

Nevada also currently implements several supportive state regulatory and standards development initiatives. Workforce development and training programs, such as the Advanced Manufacturing FastTrack Program and those provided by Manufacture Nevada, focus on developing a skilled workforce that can support the long-term growth of this industry sector. The Nevada Department of Education sets standards for vocational training and education. With its complementary course standards, the Career Technical Education (CTE) Advanced Manufacturing Technologies Program of Study effectively trains high school students and prepares them for technical assessments and encouraging participation in career and technical student organizations.

The Nevada Governor's Office of Economic Development and local economic development organizations like the Economic Development Authority of Western Nevada continue to shape the regulatory environment by offering incentives and support to attract and retain advanced manufacturing companies. The Workforce Innovations for a New Nevada (WINN) program, administered by the Nevada Governor's Office of Economic Development, supports economic development through workforce training. Additionally, the Safety Consultation and Training Service (SCATS) provides free, confidential on-site health and safety consultation services to help employers identify and control hazards, improve safety programs, and train employees, prioritizing small businesses with high hazards.

2.3.b Federal Regulations and Laws

The U.S. Environmental Protection Agency enforces several federal regulations concerning advanced manufacturing operations in Nevada, focusing on environmental protection and public health. It is important to recognize that these regulations provide the foundational standards, while Nevada's Division of Environmental Protection often administers and enforces them within the state. Key federal pieces of legislation and accompanying regulations include the Clean Air Act, an act that regulates air emissions from stationary and mobile sources (42 U.S.C. § 740). Advanced manufacturing facilities must comply with the Clean Air Act and the act's subsequent amendments have aimed to establish stricter emission controls and introduce fence line monitoring to detect ethylene oxide emissions, reducing potential health risks associated with exposure. The Clean Water Act regulates the discharge of pollutants into the waters of the United States (33 U.S.C. § 1251). The Resource Conservation and Recovery Act governs the generation, transportation, treatment, storage, and disposal of hazardous waste (42 U.S.C. § 6901). The Toxic Substance Control Act regulates the manufacturing, importation, and use of chemicals in the industrial process. This act requires pre-market testing and approval for new chemical substances. Manufacturers must report and test chemicals used in production.

The Comprehensive Environmental Response, Compensation, and Liability Act ensures that manufacturers are liable for contamination and hazardous waste cleanup at industrial sites. Manufacturers must properly dispose of chemicals to avoid liability. The Emergency Planning and Community Right-to-Know Act requires manufacturers to report the storage and release of hazardous chemicals, requiring advanced manufacturing facilities to disclose the emissions of toxic chemicals. The Pollution Prevention Act encourages reducing pollution at the source rather than managing waste afterward. Manufacturers can receive incentives for adopting cleaner production technologies. Specific parts of the United States Code of Federal Regulations also provide detailed rules for implementing federal statutes. Title 40 of the Code of Federal Regulations is dedicated to the enforcement of regulations set by the U.S. Environmental Protection Agency (see Federal EPA: EPA.gov). The state of Nevada works with the U.S. Environmental Agency to enforce air quality standards through the state's own implementation plans. U.S. Environmental Protection Agency regulations ensure environmental compliance in advanced manufacturing by controlling air pollution, water discharges, hazardous waste, and toxic substances. Companies must secure permits, report emissions, and adopt cleaner technologies to meet these federal standards.

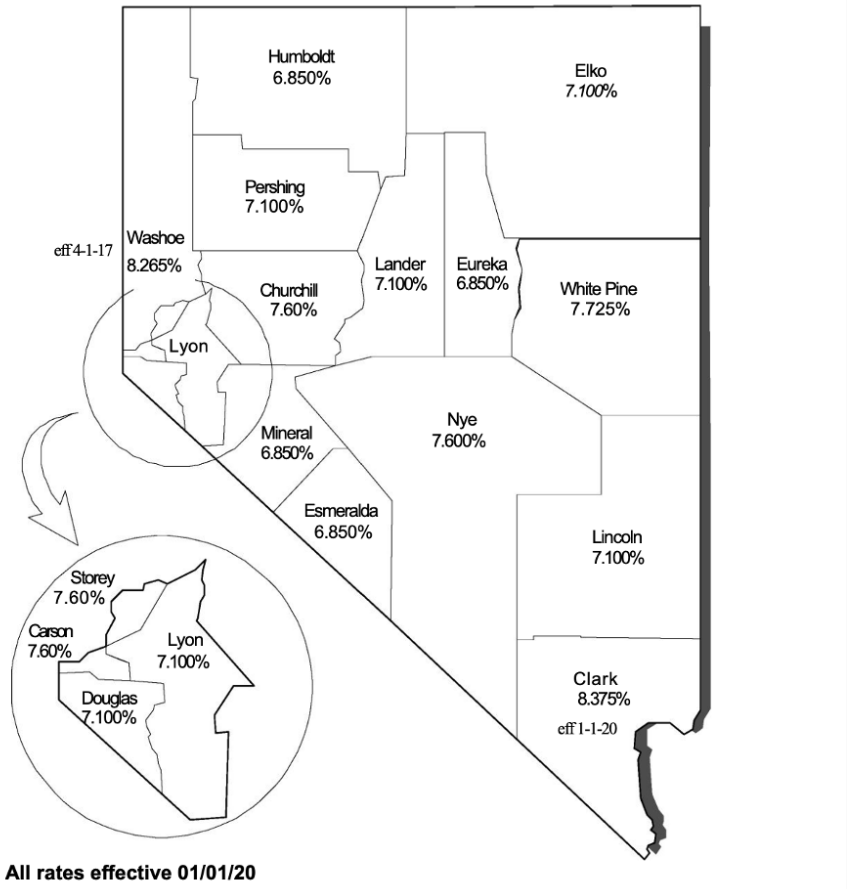
The CHIPS and Science Act, passed in 2022, is designed to strengthen the United States' advanced manufacturing industry. The advanced manufacturing investment credit was established by this act, offering a 25 percent tax credit to semiconductor manufacturers and those individual firms that produce semiconductor manufacturing equipment. Additionally, section 45x of the advanced manufacturing production credit allows a credit for the production and sale of certain advanced manufacturing components. The eligible components are inverter components, battery components, critical minerals, electrode active materials, and solar and wind energy components. The credit varies for each eligible component and is calculated on a per-unit basis.

2.3.c Nevada Taxation Policies

Nevada is considered one of the most tax-friendly states for advanced manufacturing, offering no corporate tax, a low commerce tax rate, and valuable tax incentives. The Nevada Governor's Office of Economic Development has the authority to grant partial tax abatements under Nevada Revised Statute Chapter 231 Section 0695 and can offer multiple state-level tax incentives for businesses in the advanced manufacturing sector. The Governor's Office of Economic Development can either waive some of the taxes or grant advanced manufacturing companies a partial abatement depending on the investment made by the business.

In Nevada, all employers covered by the Nevada Unemployment Compensation Law (Nevada Revised Statutes Chapter 612) must also adhere to the Modified Business Tax. The Modified Business Tax for employers is 1.17 percent. However, advanced manufacturing businesses can receive a Modified Business Tax abatement under Nevada Revised Statute Chapter 364 Section 357. The standard Modified Business Tax abatement grants businesses an exemption of 50 percent of the 1.17 percent for four years. However, some advanced manufacturing businesses may be granted a higher percentage exemption or an extension for several years. Advanced manufacturing businesses are subject to the state's sales tax. The effective sales tax in Nevada varies depending on the county, as evident in Figure 2.1.

Figure 2.1 – Effective Sales Tax Rates by County, State of Nevada



The county with the lowest sales tax is Humboldt County with an estimated effective sales tax rate of 6.850 percent and the highest is Clark County with an estimated effective sales tax rate of 8.375 percent. As part of Nevada Revised Statute Chapter 374 Section 357, advanced manufacturing businesses can qualify for a sales tax abatement on qualified capital equipment purchases with the rate reduced to as low as 2.0 percent.

Nevada also requires businesses to pay a personal property tax. As part of Nevada Revised Statute Chapter 361 Section 0687, companies can receive a personal property tax abatement. However, the abatement cannot exceed 50.0 percent over a ten-year period. Under Nevada Revised Statute Chapter 363C Section 350, any business engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products must pay a commerce tax. The tax is calculated by deducting $4.0 million from the business's gross revenue generated in Nevada for the taxable year and applying a 0.0091 percent tax rate to the remaining amount.

2.4 County-by-County Profile for the State of Nevada

This sub-section presents a general profile for each of Nevada's 17 counties. Each profile for each individual county presented in this sub-section provides a general overview of certain important characteristics of the advanced manufacturing sector for each county. A more detailed examination of the advanced manufacturing industry sector for each individual county and for each of the eight regional economic development authorities organized under the Nevada Governor's Office of Economic Development is presented in other sections of this University Center for Economic Development technical report.

2.4.a Carson City

In Carson City, there are 89 types of manufacturing industries, 19 of which are part of the advanced manufacturing sector. The manufacturing sector makes up a relatively small portion of industries as a whole in Carson City, accounting for approximately 6.76 percent of total employment and approximately 15.25 percent of total economic output. However, advanced manufacturing industries make up a large portion of these manufacturing industries, making up an estimated 33.78 percent of total manufacturing employment and approximately 37.99 percent of total manufacturing output. Advanced manufacturing accounts for nearly 2.29 percent of total employment and for about 6.00 percent of total economic output in Carson City (IMPLAN 2023). Carson City appears to have a motor vehicle manufacturing cluster, an aircraft manufacturing cluster, and is also very active in battery manufacturing.

2.4.b Churchill County

The advanced manufacturing sectors account for four sectors with a total employment of approximately 0.93 percent and total output of approximately 3.14 percent for Churchill County (IMPLAN, 2023). A motor industry cluster exists and totals approximately 0.92 percent of Churchill County's total employment and for approximately 3.13 percent of the county's total economic output. The county's advanced manufacturing sector accounts for about 17.93 percent

of the manufacturing sector's total employment and for about 16.78 percent of manufacturing sector's total economic output (IMPLAN, 2023).

2.4.c Clark County

There are approximately 24 advanced manufacturing sectors in Clark County, with battery manufacturing leading in total employment. These advanced manufacturing sectors contribute approximately 0.18 percent to Clark County's total employment and about 0.58 percent to Clark County's total economic output. Clark County's close proximity to west coast U.S.-domestic markets is a major strategic advantage for the county and the county's broader advanced manufacturing industry sector, especially when aligned with their growing number of skilled manufacturing workers (n.d.). The Las Vegas Global Economic Alliance was the coalition lead finalist for the Build Back Better Regional Challenge and its aim is to "support a general and advanced manufacturing industry cluster to refine strategic economic recovery planning, create jobs, catalyze wage growth, and increase the region's economic output" (U.S. Economic Development Administration, n.d.).

2.4.d Douglas County

In Douglas County, the advanced manufacturing industry contributes an estimated 2,138 jobs and approximately $995.0 million in total economic output. The primary sectors within the county's advanced manufacturing industry sector include aerospace manufacturing and engineered materials manufacturing, both of which rely heavily on automation and precision engineering. The overall advanced manufacturing sector in Douglas County accounts for approximately 0.28 percent of the county's total employment and approximately 0.67 percent of total output in the county. Although advanced manufacturing is a smaller part of Douglas County's overall economy, it has an emerging cluster in the aerospace and high-tech components manufacturing sectors. In 2021, the hospitality industry was the county's largest employer, providing 3,158 jobs (Borden et al., 2022).

2.4.e Elko County

The top 30 advanced manufacturing industries in Elko County made up about 0.28 percent of the county's total employment, while contributing about 0.67 percent to the county's total economic output. As of 2021, Elko County's job market was heavily influenced by the hospitality industry that supplied 3,158 jobs (Borden et al., 2022).

2.4.f Esmeralda County

Esmeralda County's involvement in the advanced manufacturing sector is minimal, if any, with total employment and industrial output accounting for just 0.03 percent of total employment for the entire county. As of 2021, the Nevada Economic Assessment Project concluded that, of the county's total employment of 416 jobs, an estimated 143 of these jobs were produced by local government (Borden et al., 2022).

2.4.g Eureka County

Eureka County's main industry focus is construction and extraction (Borden et al., 2022). Advanced manufacturing in Eureka County has only one sector, contributing a total of just 0.003 percent to the county's total employment and just 0.003 percent to the county's total economic output (IMPLAN, 2023). This one advanced manufacturing industry sector is the search, detection, and navigation instruments manufacturing, with an estimated total economic output of $74,317.76 (IMPLAN, 2023).

2.4.h Humboldt County

In Humboldt County, there are 22 identified types of manufacturing industries, two of which could be considered part of the advanced manufacturing sector. Manufacturing is not very prevalent in Humboldt County, accounting for only 3.34 percent of total countywide employment and for only 5.83 percent of the county's total economic output. The advanced manufacturing sector makes up a very small portion of both manufacturing and total economic output, accounting for just 1.93 percent of total manufacturing employment, 0.06 percent of total countywide employment, 4.12 percent of total manufacturing output, and 0.24 percent of total countywide economic output (IMPLAN, 2023). The only two industries that could be considered part of the advanced manufacturing sector for Humboldt County are petroleum refineries and welding and soldering equipment manufacturing.

2.4.i Lander County

Lander County's advanced manufacturing sector is minimal, generating an estimated 76 jobs and $36.2 million in total economic output. The primary sector in this category is ready-mix concrete manufacturing, which, while utilizing modern production methods, does not heavily rely on the cutting-edge automation and innovation found in other advanced manufacturing sectors. This sector represents just 0.03 percent of the county's total employment and just 0.10 percent of its total output. Advanced manufacturing in Lander County remains a small part of the county's overall economy, with local government being the largest employer, providing 415 jobs in 2021 (Borden et al., 2022).

2.4.j Lincoln County

Lincoln County's advanced manufacturing employment and economic output is well below 0.1 percent. After reviewing the Nevada Economic Assessment Project report for Lincoln County, the county's existing job market is largely supported by the government, where local government supplies 415 jobs (Borden et al., 2022).

2.4.k Lyon County

The top 30 advanced manufacturing sectors make up only about 3.28 percent of Lyon County's total employment and contributes about 7.3 percent to Lyon County's total economic output. Lyon County has developed two major clusters within the county's advanced manufacturing secotr, including involvement in motor vehicle manufacturing and guns. As of 2021, local

government was the county's generator of employment, creating an estimated 1,976 total jobs (Borden et al., 2022).

2.4.l Mineral County

For Mineral County, there are two sectors, including pharmaceutical preparation manufacturing and petroleum refineries, that are categorized as advanced manufacturing. These two sectors combined to produce approximately 0.10 percent of Mineral County's total employment and generated approximately 1.74 percent of the county's total economic output.

2.4.m Nye County

In Nye County, there are 35 different manufacturing industries, seven of which are part of the advanced manufacturing sector. Manufacturing accounts for approximately 1.24 percent of total employment in the county and for approximately 4.66 percent of total countywide economic output. Advanced manufacturing makes up a relatively large portion of the county's manufacturing sector, accounting for an estimated 15.13 percent of manufacturing employment and for approximately 67.46 percent of the county's manufacturing total economic output. However, relative to other major industries, advanced manufacturing is still not as prevalent in Nye County and only makes up just 0.19 percent of total countywide employment and just 3.14 percent of the count's total economic output (IMPLAN, 2023). The two manufacturing industries that have the highest amount of economic output, petroleum refineries and nonferrous metal smelting and refining, are advanced manufacturing industries. These two industries are related to providing advanced manufacturers with the raw materials they need to make their products.

2.4.n Pershing County

In Pershing County, the advanced manufacturing sector remains relatively small, generating just 84 jobs and approximately $399.0 million in total economic output. The advanced manufacturing sector in Pershing County is primarily focused on oil and gas extraction-related equipment manufacturing, which utilizes some advanced technologies but is not as innovation-driven as other advanced manufacturing industry sectors. Advanced manufacturing makes up just 0.10 percent of the county's total employment and just 1.74 percent of its total economic output. The county's mining industry remains the dominant economic driver in Pershing County, generating 1,277 jobs in 2021 (Borden et al., 2022), with advanced manufacturing playing a supportive role to mining-related industries.

2.4.o Storey County

In Storey County, there are 30 types of manufacturing industries, six of which are part of the advanced manufacturing sector. Manufacturing plays a major role in this county, accounting for an estimated 53.01 percent of total employment and for approximately 76.04 percent of total economic output. Advanced manufacturing makes up a large portion of manufacturing in Storey County, accounting for about 81.8 percent of manufacturing employment and for about 79.28 percent of manufacturing total economic output. Overall, advanced manufacturing makes up

approximately 43.36 percent of total countywide employment and approximately 60.29 percent of total countywide economic output. The county's top manufacturing industry is battery manufacturing, accounting for about 43.07 percent of total economic output and for about 40.25 percent of total employment (IMPLAN, 2023).

2.4.p Washoe County

The top advanced manufacturing sectors in Washoe County make up approximately 3.28 percent of the county's total employment and contribute about 7.3 percent to the county's total industrial economic output. The advanced manufacturing industry sector in Washoe County employs 15,845 people and generates $7.45 billion in total economic output. Major sectors include battery manufacturing, semiconductor manufacturing, and aerospace product and parts manufacturing, all of which rely on cutting-edge technologies such as automation, software, and precision engineering. These sectors contribute significantly to Washoe County's economy, and the region has developed an emerging cluster in high-tech and clean energy manufacturing. As of 2021, local government was the largest employer in Washoe County, creating an estimated 1,976 jobs (Borden et al., 2022).

2.4.q White Pine County

White Pine County's advanced manufacturing industry sector employment and economic output contribution in relation to the rest of the county's economic base falls below 0.05 percent. According to the Nevada Economic Assessment Project in 2021, the county's mining industry (without the inclusion of oil and gas) created the most jobs within the county with 1,277 jobs (Borden et al., 2022).

2.5 A Comprehensive Strengths, Weaknesses, Opportunities, and Threats Analysis of Nevada's Advanced Manufacturing Industry Sector

This sub-section presents an initial yet comprehensive strengths, weaknesses, opportunities, and threats analysis of Nevada's advanced manufacturing industry sector. Subsequent sections of this University Center for Economic Development technical report will expand on this strengths, weaknesses, opportunities, and threats analysis, especially in the area of workforce development and targeted business creation, attraction, retention, and expansion efforts designed to close identified 'gaps' in the supply chain and value network of the state's advanced manufacturing industry sector.

2.5.a Assessing Nevada's Workforce

Nevada's economy is growing but the ongoing question facing the state's advanced manufacturing industry sector remains, *can the state adequately supply the labor to support its growth*? By analyzing existing and emerging workforce trends, it is possible to determine whether Nevada's employers have access to enough labor to meet their needs. The solution to this workforce challenge is complex, as the state benefits from both challenges and opportunities on the labor force supply front.

Nevada's largest issue within its labor market is the unemployment rate. The state had an estimated unemployment rate of 5.0 percent as of December 2024, while the country's average sat at 4.0 percent (U.S. Bureau of Labor Statistics, 2024). On the surface, this would indicate that there are available workers. However, the state also has an unemployment rate of job vacancies at 4.5 percent, suggesting that many jobs are going unfilled. This paradox indicates a primary issue that a skills mismatch exists in the state's labor market. While there are jobs available, some of the available job seekers may lack the skills required for the jobs available (U.S. Bureau of Labor Statistics, 2024).

Nevada's overall job growth is strong, with 57,700 jobs added between December 2023 and December 2024, a 3.8 percent increase. This surpasses the 2.4 percent national average job growth rate, demonstrating that Nevada businesses are expanding (Nevada Department of Employment, Training and Rehabilitation, 2024). However, labor shortages persist in several key industries. In the medical field, for example, there is a critical shortage of nurses, medical technicians, and home healthcare aides, particularly with the state's growing aging population (U.S. Census Bureau, 2024). The building industry is also having trouble filling skilled jobs, which is challenging as demand for housing and infrastructure construction continues to expand (U.S. Census Bureau, 2024). Additionally, tourism and hospitality, the cornerstone of Nevada's economy, experiences a high level of turnover with an inability to fill available positions (Nevada Governor's Office of Economic Development, 2024). Even logistics and warehousing, a growth industry because of Nevada's geography and geographic location within the western and intermountain western United States, experiences labor shortages in supply chain managers and truck drivers (Nevada Governor's Office of Economic Development, 2024).

Outside of industry-specific talent deficiencies, the population trends of the state influence overall labor availability. The population growth rate in Nevada is about 1.2 percent annually due mainly to out-of-state migration from California, Arizona, and Texas. A majority of the individuals who migrate to Nevada do so for taxes that are less than many other states and a moderately affordable cost of living compared to bordering states (U.S. Census Bureau, 2024). But housing prices, especially in the Reno-Sparks metropolitan statistical area and in the Las Vegas metropolitan statistical area, have been rising, making it more difficult for lower-income workers to afford homes in the communities and regions where employment opportunities are most concentrated (U.S. Census Bureau, 2024). Another significant issue facing the state is the aging of the workforce in Nevada. Veteran workers, particularly in skilled trades and education, are retiring, creating significant labor gaps that younger employees are not quickly filling (Nevada Department of Employment, Training and Rehabilitation, 2024). Adding to this issue is the educational level of the state. Only 26.7 percent of Nevada's adult population holds a bachelor's degree or higher, compared to 33.7 percent nationally (U.S. Census Bureau, 2024). This disparity makes it harder for Nevada to entice industries that demand highly educated labor, including areas such as technology and engineering.

To address these challenges, Nevada has initiated various workforce development initiatives. Manufacturing and construction apprenticeships prepare the workforce of the future. Local community colleges and universities have partnered to train workers in in-demand fields such as healthcare and information technology (Nevada Department of Employment, Training and

Rehabilitation, 2024). Even individual employers are offering incentives such as training programs and tuition reimbursement to retrain current employees (U.S. Census Bureau, 2024). Despite these efforts, Nevada still has a long way to go towards ensuring its workforce can satisfy its economic demands. Ongoing shortages of workers in vital sectors, population trends, and imbalances in education and training are still existing challenges. Nevada must ensure that it can provide training opportunities to increase them, bring highly skilled workers in, and that businesses are allowed to access the talent that they can use. Focusing on all these workforce-related issues will ensure Nevada's ability to sustain long-term growth as well as ensuring that the state stays competitive at both the national and international level.

2.5.b Building Nevada's Advanced Manufacturing Industry, Opportunities and Challenges

One of the opportunities that have emerged to attract advanced manufacturing companies to Nevada is the use of tax abatement packages. Tax abatements are a reduction of taxes granted by government to a company for a specific period to encourage economic development. According to the Nevada Governor's Office of Economic Development, a partial abatement is considered for the attraction of basic (export) industries to the state, including, but not limited to, manufacturing (GOED, 2024). As a result, companies such as Findlay Machine & Tool, LLC dba Kreate, and Orbinox America Inc. have recently established or are expected to establish new manufacturing facilities in Nevada, creating more than 90 jobs and nearly $9.0 million in new taxes over the next ten years in Clark County and in Douglas County (GOED, 2025).

In general, as reported by the Governor's Office of Economic Development in 2022, there were 18 active Request for Information (RFI) projects from companies exploring Nevada as a potential location. About 72.0 percent of these projects involve manufacturing, while the rest focus on data centers and technology-driven operations. If completed, these projects could create 4,263 new jobs and an estimated $17.4 billion in total investment to the state (GOED, 2022). Moreover, according to a 2023 document, manufacturing, including advanced manufacturing, has contributed $9.45 billion annually to Nevada's economy since 2021 and employs more than 65,000 Nevadans in highly skilled, well-paid positions. This sector significantly contributes to Nevada's high standard of living and economic continuity. It comprises 4.9 percent of total employment in Nevada, with a projected 8.12 percent increase in the manufacturing industry over the next seven years (Nevada Governor's Office, 2023).

On the other hand, there are some emerging challenges in developing advanced manufacturing in Nevada. Water shortages can jeopardize the growth of some target industries because the state is considered to be one of the driest in the United States, with an average annual precipitation rate of 9.5 inches. According to reports, by 2065, the state's water consumption is expected to rise by 85.0 percent. The shortage of skilled workers for advanced manufacturing companies is another significant issue. Nevada has the third-lowest workforce participation rate in STEM-related occupations among all U.S. states, and only 25.0 percent of Nevadans over the age of 25 years of age hold a bachelor's degree (GOED, 2023). Additionally, Nevada has approximately 48.0 million acres of public land, amounting to an estimated 63.0 percent of the state managed by just the U.S. Bureau of Land Management. This is a barrier and creates scarcity for the development of advanced manufacturing industries in Nevada. The rising cost of housing is another growing concern in the state. In recent years, the increase in median home prices has outpaced the rise in

median household income. The median home value statewide increased from $317,800 in 2019 to $373,000 in 2021, a 17.4 percent increase, while the median household income rose from $63,276 to $66,274, an increase of only 4.7 percent over the same period (GOED, 2023).

As Nevada plans to further develop its advanced manufacturing sector, the demand for raw materials is expected to increase drastically. KPMG reports that approximately 71.0 percent of global companies highlight raw material costs as their number one supply chain threat (KPMG, 2025). This issue can arise due to various factors, such as natural disasters, pandemics, geopolitical conflicts, and labor shortages. Utilizing the state's advantageous location and business-friendly regulations, Nevada's advanced manufacturing industry is seeing new growth prospects in the areas of clean technologies and aerospace production (GOED, 2023). Nevada can increase its overall competitiveness in domestic and international markets, generate high-paying jobs, draw in foreign investment, and lessen its dependency on conventional economic sectors by diversifying into these industries.

Past infrastructure investments, tax incentives, and workforce development programs have influenced the development of Nevada's advanced manufacturing industry sector. Although mining and tourism have historically been the main drivers of Nevada's economy, state efforts have actively promoted diversification into high-tech industry in recent decades. One of the most important factors in drawing businesses to the state has been the implementation of tax credits and economic development initiatives. Due to international demand and government incentives like the CHIPS and Science Act, growth throughout the industry is currently being driven by semiconductor production, sustainable energy technology, and aerospace. The advanced manufacturing industry sector is affected by a number of general macroeconomic factors, such as changes in the price of raw materials, labor shortages, supply chain interruptions, and inflation. Growth in the state's advanced manufacturing industry sector is further supported by Nevada's geographic advantages, such as its close proximity to important west coast markets. However, issues including housing costs, water scarcity, and competition for skilled labor could limit growth. Long-term success will depend on sustained investments in infrastructure, sustainable resource management, and workforce training.

2.5.c COVID-19's Impact on Nevada's Advanced Manufacturing Industry Sector

The COVID-19 pandemic severely impacted Nevada's advanced manufacturing industry sector, disrupting its value network and supply chain. Plant closures, travel restrictions, and shortages of raw materials led to production delays and logistical problems. This forced many companies to slow down or even suspend operations. According to a study published in the Journal of Economics and Business, unemployment rose significantly in Nevada because of the pandemic, compounding the difficulties of local manufacturing industries (Montenovo et al., 2020). One of the main problems was the overall dependence on global supply chains, which were severely disrupted during the crisis. According to an analysis by the International Monetary Fund, the pandemic highlighted weaknesses in international supply chains, leading to increased costs and unpredictable lead times. This particularly affected Nevada-based companies that depend on these networks (IMF, 2022). A survey conducted by the Nevada Small Business Development Center (2022) shows that nearly 72.2 percent of the state's small businesses experienced supply problems because of the pandemic. The sectors most affected across the state were hotels,

restaurants, manufacturing and professional services. Faced with these difficulties, many companies have had to review their sourcing strategies and give priority to local solutions to avoid finding themselves in the same situation in the future. This crisis has shown how important it is to diversify suppliers and adopt more robust strategies to be better prepared for crises.

To meet these challenges, many manufacturing companies in Nevada have invested in advanced technologies, such as automation and artificial intelligence, to improve inventory management and optimize their production processes. According to Randstad (2021), supply chain disruptions have prompted companies to review their logistics to gain flexibility and efficiency. At the same time, the Nevada COVID-19 Task Force, made up of business and community leaders, was created to mobilize the private sector and help the state manage the crisis. Its goals included relieving pressure on the healthcare system, providing personal protective equipment to frontline workers and helping the most vulnerable (Nevada COVID-19 Task Force, 2021). This commitment from the manufacturing sector demonstrates the importance of having more responsive and adaptable supply chains in the event of an emergency.

One of the major developments after the pandemic was the strengthening of local partnerships to reduce dependence on foreign suppliers, who faced major logistical problems and price increases. According to the Nevada Department of Business & Industry (2020), many manufacturing companies in the state began to favor regional suppliers, shortening supply chains and making supply chains more resilient. At the same time, digitalization played a key role in streamlining exchanges between suppliers and distributors. The pandemic has accelerated the adoption of new technologies, such as automated order management platforms, which facilitate communication and transparency. A study by the University of Nevada, Las Vegas (2021) shows that many companies have implemented real-time tracking tools to avoid stock-outs and better manage logistics flows. These innovations have helped to improve commercial relations and anticipate more effectively the needs and constraints of each player in the supply chain. The COVID-19 pandemic was a strong catalyst for change in Nevada's advanced manufacturing industry sector as it underlined the importance of innovation and preparedness in securing supply chains. By adopting new strategies and diversifying their suppliers, companies will be better equipped to face future crises and ensure a more stable business over the long term.

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3.0 Development of a Comprehensive Value Network and Supply Chain Map of the Advanced Manufacturing Industry Sector in Nevada, Input/Output Analysis

This section of this University Center for Economic Development technical report presents an edited version of the initial white paper developed for Part 2, *Development of a Comprehensive Value Network and Supply Chain Map of the Advanced Manufacturing Industry Sector in Nevada*. Part 2 of this analysis of the value network and supply chain of Nevada's advanced manufacturing industry sector included the following elements:

- An overview of overall economic performance for the state of Nevada as a whole, for each individual regional economic development authority, and, when possible, at a county-by-county level as it relates to the state's advanced manufacturing industry sector including employment compensation, total employment, and proprietor income.

- Identification and discussion of existing and possible linkages across the value network and supply chain of Nevada's advanced manufacturing industry sector and directly and indirectly related industry and occupation sectors including the identification of existing importing and exporting elements of the industry sector.

- Development of a comprehensive Input-Output (I/O) model for Nevada's advanced manufacturing industry sector and an examination of how the results of this model apply to critical value network and supply chain management functions including critical value network and supply chain management functions, the importance and types of relationships and partnerships across the industry sector, and the role of strategic planning in further growing and developing the industry sector to meet changing and growing needs.

There are many elements of Nevada's advanced manufacturing industry sector that influences the business-to-business relationships that individual firms have with key suppliers upstream across the value network and supply chain. Understanding the direct and indirect relationships across the state's advanced manufacturing industry sector's value network and supply chain is a critical step in developing strategic actions designed to enhance the overall balance, strength, and resiliency of the sector. Identification of key 'gaps' in the existing business-to-business relationships across the state's advanced manufacturing industry sector is also critical in determining targeted community and economic development strategies and specific business creation, attraction, retention, and expansion efforts to close those identified 'gaps'. These strategies and efforts can be implemented as part of the efforts of the state government, namely through the Governor's Office of Economic Development, and as part of the efforts of individual regional economic development authorities to further grow and diversify the overall economic base of the state's economy.

Appendix A through Appendix I of this University Center for Economic Development technical report contains the comprehensive results of the Input-Output analysis completed for each of the individual eight regional economic development authorities operating throughout the state as well as for the state of Nevada as a whole. These appendices further include an evaluation of the top industry sectors, in-terms of total economic output, for each individual regional economic development authority and for the state as a whole and an estimation of total output and total employment for key related sectors to the advanced manufacturing industry sector.

To assist in the mapping of the supply chain and value network of the state's advanced manufacturing industry sector, including both upstream and downstream connections among firms and potential end users, the following definition of advanced manufacturing was developed using an analysis of advanced manufacturing provided by various sources, including https://www.manufacturing.gov/ and Manufacture Nevada:

Use of innovative technologies and processes to improve manufacturing methods and products. These often include advanced materials, AI, automation, data analytics, integration, and software.

From this definition, the following key factors were used in determining which industry sectors qualify as belonging to the advanced manufacturing industry sector:

- ***Advance Materials***: Development/Use of new materials with better properties for improved performance and/or sustainability.
- ***Artificial Intelligence (AI)***: Use of Artificial Intelligence to aid in the design, manufacturing, and/or analytical processes.
- ***Automation***: Use of robotics and computer systems to limit direct human interaction.
- ***Data Analytics***: Use of data to identify patterns, trends, and insights to improve processes and products.
- ***Integration***: Use of sensors to aid in the manufacturing process and/or provide data for analytics.
- ***Software***: Use of CAD, ERP, and/or other systems to improve design, planning, and manufacturing processes as well as tools to analyze and utilize data.

Applying this definition of advanced manufacturing to the IMPLAN manufacturing sectors (code 58 through code 374), it was determined to not eliminate any of the manufacturing sectors from the resulting I/O analysis. Each sector within the IMPLAN manufacturing sector range does (or can) utilize one or more advanced manufacturing processes. Current businesses and industries should also be encouraged to use these segments if they are not already doing so. For the state of Nevada and for each of the eight regional economic development authorities, individual study regions were created to gather the necessary data for the resulting analysis presented throughout this section. In total, there were nine separate study regions in which the top 20 industry sectors

(tables “Total Output, Wage and Salary Employment and Proprietor Employment and Total Employment, Proprietor Income”), the top 20 manufacturing sectors (tables “Total Employment and Total Output by Commodity Produced by Industry Sector”), and commodity summary were used. From these various tables, it was possible to determine which manufacturing industry sectors needed to be analyzed.

3.1 Churchill Fallon Development Authority

Appendix A includes the relevant resulting data tables and analysis for the Churchill Fallon Development Authority. The top five sectors for the Churchill Fallon Development Authority region, which includes only Churchill County, by output are dry, condensed, and evaporated dairy product manufacturing ($174.3 million, 148.47 employees), federal government (military) ($174.1 million, 1,323.28 employees), scenic and sightseeing transportation ($79.8 million, 615.65 employees), other real estate ($78.5 million, 450.01 employees), and hospitals ($73.8 million, 330.84 employees).

Advanced manufacturing sectors for this region include dairy product manufacturing, search, detection, and navigation instruments manufacturing, and fabricated structural metal manufacturing. Dairy product manufacturing led with $174.3 million in output, 148.47 employees, and $272,847 in proprietor income. Search, detection, and navigation instruments manufacturing produced $15.3 million in output, employed 24.94 individuals, and had $888,410 in proprietor income. Fabricated structural metal manufacturing contributed $12.7 million in output, supported 35.71 employees, and reported $1.5 million in proprietor income. These sectors, though not leading in employment, represent high-output, high-value industries with strong economic productivity.

3.1.a Forward and Backward Linkages

The Churchill Fallon Development Authority has several identified significant economic leakages in several key manufacturing sectors, highlighting a heavy reliance on imports. The top industry, dairy product manufacturing, had an output of $174.3 million but faced a total leakage of $12.8 million, with only 8.08 percent of inputs sourced locally. Similarly, the dairy, cattle, and milk products sector experienced an $11.6 million leakage, despite meeting 65.97 percent of local demand through local production. Grocery wholesalers had a leakage of $11.4 million, with just 6.12 percent of inputs locally sourced. The navigation instruments manufacturing sector showed a $5.7 million leakage, with only 9.58 percent of inputs from local sources. Nonferrous metals processing relied entirely on imports, with a $7.2 million leakage and 0.00 percent local input. Lastly, structural metal manufacturing, with an output of $50.3 million, had a $12.6 million leakage and no local input. These leakages present opportunities for local industry expansion to reduce dependency on imports and strengthen the regional economy.

3.1.b Input-Output Analysis

Nevada’s advanced manufacturing sector includes high-value industries like dairy product manufacturing, precision instruments, and structural metal fabrication. Analysis of the Churchill

Fallon Development Authority region highlights both the sector's economic strength and its vulnerability due to significant supply chain leakages. For instance, the dry dairy sector generates $174.0 million in output but imports over 90.0 percent of its inputs, with an RPC of just 8.08 percent. Similar trends exist in fabricated structural metal manufacturing and search and navigation instruments, revealing opportunities to grow local supply capacity. The Input-Output model identified six critical commodities with leakages over $5.0 million, showing the Churchill Fallon Development Authority region's heavy dependence on imports for key materials and services. While some gaps are too costly to close, others like iron and steel inputs (RPC of 0.00 percent) and wholesale services are promising targets for in-region and in-state investment. Building a resilient value network will require strengthening vertical integration, attracting upstream suppliers, and leveraging regional partnerships.

Strategic planning is essential. The Churchill Fallon Development Authority should focus on supplier recruitment, logistics infrastructure, and workforce development aligned with industry needs in materials science, electronics, and advanced manufacturing. Partnerships among manufacturers, education institutions, and logistics providers can reduce dependence on external markets and foster economic resilience. By prioritizing sectors with high output and leakage, the region and the state can optimize its manufacturing ecosystem and build a stronger, self-sufficient value network.

3.2 Economic Development Authority of Western Nevada

Appendix B includes the relevant resulting data tables and analysis for the Economic Development Authority of Western Nevada. The Economic Development Authority of Western Nevada consists of just one county, Washoe County. The Economic Development Authority of Western Nevada region, as of 2023, had an estimated total population of 498,022 individuals and an estimated 199,642 total households. This region's Gross Domestic Product was an estimated $40.5 billion, with around 355 industries operating across the region's existing economic base. Total personal income earned was approximately $40.3 billion.

3.2.a Industry Sectors Identified within the Economic Development Authority of Western Nevada Region

The top five industry sectors, in terms of total economic output, for the Economic Development Authority of Western Nevada were all other miscellaneous manufacturing, search detection, and navigation instruments manufacturing, cheese manufacturing, printing, and battery manufacturing. For miscellaneous manufacturing, the total economic output was an estimated $729,414,991.71, total employment was 1,305.73 total individuals, and proprietor income was $531,004.49 and, for search, detection and navigation instruments, the total economic output was an estimated $653,659,875.36, total employment was 1,338.07 total individuals, and proprietor income was $1,996,380.47. The third largest industry sector, in terms of total economic output, for this region was cheese manufacturing, with an estimated total output of $326,329,390.21, Total employment for cheese manufacturing in the Economic Development Authority of Western Nevada region was 315.63 total individuals and proprietor income was $(391,854.93). For printing, the total economic output was $257,099,207.44, total employment was 1,219.24

total individuals, and proprietor income was $2,331,437.42. The fifth largest advanced manufacturing industry sector for this region in terms of total economic output was battery manufacturing, with an estimated output of $224,434,933.19, total employment was 539.27 total individuals, and proprietor income was $2,096,827.18. Total economic output across each of these five advanced manufacturing sectors for this region combined amounted to an estimated $2,190,938,397.92, employing an estimated 4,174.94 total individuals.

3.2.b Industry Code 374, Narrative of the Critical Value Network

The "All other miscellaneous manufacturing" sector in the Economic Development Authority of Western Nevada exhibits a highly fragmented backward linkage structure, as indicated by the diverse array of input categories and generally smaller gross absorption rate percentages for individual industries. This suggests that this sector likely encompasses a wide range of niche manufacturing activities, each with its own specific input requirements. A significant portion of the gross inputs, despite the low RPC values, is attributed to basic industrial materials. Notably, "Iron and steel and ferroalloy products" (Code 3207) and "Synthetic rubbers" (Code 3157) represent the largest gross inputs. Other notable material inputs, albeit with very low regional absorption, include "Aluminum sheets, plates, and foils" (Code 3213), "Rolled, drawn, extruded, and alloyed copper" (Code 3216), and "Aluminum products" (Code 3211). The near-zero regional Absorption rate and regional inputs rate for these foundational materials highlight a strong reliance on external suppliers.

The network also includes inputs from other manufacturing sectors, such as "Semiconductors and related devices" (Code 3296) and "Printed circuit assemblies (electronic assemblies)" (Code 3294), suggesting some level of integration with the electronics industry. Inputs like "Paperboard containers" (Code 3139), "Other fabricated metals" (Code 3251), "Paints and coatings" (Code 3167), and various plastic and chemical products (Codes 3156, 3178, 3185), further illustrate the diverse material needs of this heterogeneous manufacturing sector. Business and professional services play a crucial role. "Management of companies and enterprises" (Code 3451), "Data processing, hosting, and related services" (Code 3418), "Wholesale services - Other durable goods merchant wholesalers" (Code 3379), "Advertising, public relations, and related services" (Code 3447), "Computer systems design services" (Code 3442), and "Legal services" (Code 3437) all have significant input values. The higher RPC values and regional inputs for many of these service sectors indicate a stronger local supply base compared to the basic material inputs. The substantial "gap", estimated by subtracting gross inputs and regional inputs, across numerous material inputs underscores a significant opportunity to enhance regional value capture by fostering local sourcing.

3.2.c Potential Partnerships for Strengthening the Value-Added Network in Industry Code 374

Given the characteristics of the "All other miscellaneous manufacturing" sector, the following potential partnerships could be beneficial. Recognizing the significant "gap" in basic industrial materials, the Economic Development Authority of Western Nevada could facilitate initiatives to connect local manufacturers with potential domestic or regional suppliers of aluminum, copper, textiles, ferrous metals, and synthetic rubbers using supplier development programs that could help local businesses meet the quality and volume requirements of these miscellaneous

manufacturers. Industry cluster formation and networking can foster connections and knowledge sharing among these manufacturers and could lead to unexpected synergies and opportunities for collective sourcing or the development of shared service providers. Exploring the potential for shared facilities or service providers for common needs, such as warehousing, logistics, or specialized equipment, could help smaller manufacturers in this diverse sector achieve economies of scale.

While general business services appear to be relatively well-supplied regionally, tailoring support services (e.g., consulting, marketing) to the specific needs and challenges of niche manufacturing businesses could enhance their growth and competitiveness. Given the diverse nature of this sector, fostering connections and knowledge sharing among these manufacturers could lead to unexpected synergies and opportunities for collective sourcing or the development of shared service providers. Encouraging collaboration between local manufacturers, research institutions, and material science companies could foster innovation in material usage and potentially lead to the development of new, locally sourced materials. Workforce development efforts should focus on providing a broad range of manufacturing skills training that can be applied across different types of miscellaneous manufacturing. By implementing strategies that encourage local sourcing, foster collaboration, and provide targeted support, the Economic Development Authority of Western Nevada can help strengthen the value-added network for this diverse and important manufacturing sector.

3.2.d Industry Code 301, Narrative of the Critical Value Network

The manufacturing of search, detection, and navigation instruments within the Economic Development Authority of Western Nevada region relies on a diverse network of upstream suppliers and service providers. Examining the gross inputs reveals the significant financial flows into various industries, highlighting the key components and services that underpin this manufacturing sector. A substantial portion of the input value is concentrated in electronic components and related industries. "Other electronic components" (Code 3299), "Semiconductors and related devices" (Code 3296), and "Printed circuit assemblies (electronic assemblies)" (Code 3294) collectively represent a significant portion of the gross inputs, indicating a strong dependence on these foundational electronic building blocks. Similarly, "Electronic connectors" (Code 3298) and "Broadcast and wireless communications equipment" (Code 3291) are also important material inputs.

Beyond core electronic components, the value network includes fabricated metal products such as "Sheet metal work (except stampings)" (Code 3231) and "Other fabricated metals" (Code 3251), suggesting a need for enclosures and structural elements. Various plastic and chemical products like "Synthetic rubbers" (Code 3157), "Paints and coatings" (Code 3167), and "Laminated plastics plates, sheets (except packaging), and shapes" (Code 3181), also play an important role. Crucially, the network extends beyond physical goods to encompass essential business and professional services. "Custom computer programming services" (Code 3441) and "Advertising, public relations, and related services" (Code 3447) represent substantial input values, highlighting the importance of software development and marketing in this sector. Other significant service inputs include "Monetary authorities and depository credit intermediation" (Code 3423) for financial services, "Facilities support services" (Code 3453), "Employment

services" (Code 3454), "Wired telecommunications" (Code 3415), and "Electricity transmission and distribution" (Code 3042). The high regional purchase coefficient (RPC) and significant regional inputs for many of these service sectors, especially computer programming, advertising, financial services, employment services, telecommunications, and utilities, indicate a strong existing regional supply base. A notable observation is the significant "gap" for many of the core electronic component manufacturing inputs. This indicates a substantial difference between the gross inputs and regional inputs, suggesting a high reliance on suppliers located outside of the Economic Development Authority of Western Nevada region for these critical materials.

3.2.e Potential Partnerships for Strengthening the Value-Added Network in Industry Code 301

Based on the analysis, several potential partnership opportunities could strengthen the regional value network and reduce reliance on external suppliers. Given the significant gap in core electronic components (codes 3299, 3296, 3294, 3298, 3291), the Economic Development Authority of Western Nevada could prioritize initiatives to attract manufacturers of these specific components to the region. Targeted attraction of electronic component manufacturers could address the significant gap in core electronic components (codes 3299, 3296, 3294, 3298, 3291). The Economic Development Authority of Western Nevada could also prioritize initiatives to attract manufacturers of these specific components to the region. While some local suppliers exist for fabricated metals and plastics, further development and support for these industries could reduce the gap observed in categories like "Sheet metal work" (3231) and various plastics and chemical products.

While the region appears to have a strong base of service providers (as indicated by high RPC and regional inputs for many service categories), ongoing collaboration and initiatives to enhance the specialization and capabilities of local firms in areas like advanced computer programming for navigation systems, specialized advertising for technology products, and financial services tailored to the manufacturing sector could further solidify the regional ecosystem. Proactive efforts to connect local search, detection, and navigation instrument manufacturers with regional suppliers and service providers could foster stronger relationships, improve communication, and potentially lead to more customized and cost-effective solutions. Again, supporting both existing and potential new industries within the value network, continued investment in workforce training programs focused on electronics manufacturing, advanced machining, software development, and other relevant skills is crucial. By strategically pursuing these types of partnerships and initiatives, the Economic Development Authority of Western Nevada can work towards building a more resilient and regionally integrated value network for the search, detection, and navigation instruments manufacturing sector.

3.3 Las Vegas Global Economic Alliance

Appendix C includes the relevant resulting data tables and analysis for the Las Vegas Global Economic Alliance. The Las Vegas Global Economic Alliance consists of only one county, Clark County in southern Nevada. This region is the most densely populated area in the state, and since Las Vegas is a hotspot for gaming, tourism, and entertainment, these are some of Clark County’s leading industries. In the top five industries in terms of total employment, hotels and

motels, including casino hotels, is the region's top employment sector, generating a total of 100,802 jobs and over $6.0 billion in employee compensation in this industry alone. Other real estate is the next highest employer, with 70,741 employees, full-service restaurants employ 61,722 workers, limited-service restaurants employ 48,685 workers, and all other food and drinking places employ 46,654 people. These top five industries in employment demonstrate how much the region's economy currently relies on hospitality and entertainment. Of the top five industries in terms of total output, hotels and motels, including casino hotels, is still the leading industry, generating over $17.0 billion in total output and about $910.4 million in proprietor income. Owner-occupied housing generates about $14.56 billion in total output, other real estate generates about $13.95 billion in total output and about $1.67 billion in proprietor income, management of companies and enterprises generates about $8.45 billion in total output and about $7.04 million in proprietor income, and full-service restaurants generate about $7.45 billion in total output and about $283.41 million in proprietor income.

When compared to the hospitality related industries, manufacturing industries do not play nearly as big of a role in the Las Vegas Global Economic Alliance region, yet these industries still contribute significantly to the state's overall manufacturing sector as a whole. Some of the top manufacturing industries in this region that could be considered advanced manufacturing are wiring device manufacturing, which generates $1.9 billion in total output, 4,521 jobs, and $468.0 million in employee compensation, miscellaneous manufacturing which accounts for $1.87 billion in total output, 3,259 jobs, and $443.0 million in employee compensation, and battery manufacturing, which accounts for $538.0 million in total output, 1,298 jobs, and $133.0 million in employee compensation. While these three industries show a general pattern of higher output with higher employment, the nonferrous metal smelting and refining industry only has 154 employees, yet it generates $326.0 million in total output, $22.6 million in employee compensation, and $16.8 million in proprietor income, indicating substantial capital returns for private operators.

This region is reflective of a wide array of industries, with the majority of its jobs and output being generated from industries related to hospitality and tourism. The Las Vegas Global Economic Alliance region has many high-performing sectors with high levels of employment and income, this region is likely to keep a firm grasp on its long-term economic competitiveness.

3.3.a Forward and Backward Linkages, Input/Output Analysis

The forward and backward linkages analyses for sector code 321, Wiring Device Manufacturing, in Clark County shows how the investments used may or cannot strengthen the regional value chain. By combining the most strategic commodities their role in local industrial development is evident. Iron and steel alloys (code 3207), which are widely used, have an RPC of 0.0059 and an RSC of 0.0605, indicating a high degree of external dependence. Nonferrous metals (code 3220) are even more dependent on external importation, with RSC and RPC values of 0. Even cabling devices (code 3321), the sector's main product, has a low RSC (0.0173), limiting regional integration. Only the used products (code 3239) show some potential, with an RSC of 0.1237, which is insufficient to create a strong local network. Sector 321 is reliant on commodities produced outside of Clark County, which prevents the formation of strong connections with

other local industries. To improve this, it is necessary to strengthen regional production and encourage intra-regional purchases in order to create a truly integrated industrial network.

The forward and backward linkages analyses of sector 374, Other Miscellaneous Manufacturing, in Clark County provides a better understanding of how the products used in this sector are integrated (or not) into the rest of the regional economy. The results show that some critical commodities are very rarely produced and purchased locally, preventing the formation of an integrated industrial network. For example, steel and iron alloys (code 3207), which are used in a variety of industrial applications, have an RPC of only 0.0059 and an RSC of 0.0604, indicating a strong reliance on imports. Similarly, non-ferrous metals (code 3217) has an RSC of 0.0357, as do paints and coatings (code 3167), which has an RSC of only 0.0528. These products, however, are critical in the production of metal components, structures, packaging, and finishes, and may feed into industries like as construction, automotive, and industrial equipment. Other products, such as cardboard containers (code 3139) and various metals (code 3251), have slightly higher RSCs (respectively 0.188 and 0.126), but their low RPC indicates that they are not integrated into a structured local purchasing system. This means that they are either exported or ignored by regional actors. In conclusion, sector 374 could play a stronger role in the regional value chain if the commodities it uses were produced locally.

3.4 Lincoln County Regional Development Authority

Appendix D includes the relevant resulting data tables and analysis for the Lincoln County Regional Development Authority. The Lincoln County Regional Development Authority consists of just a single county, Lincoln County. Lincoln County's advanced manufacturing sector exhibits a diverse but distinct economic landscape, characterized by prominent industries such as rail transportation, local government utilities, cattle ranching, and crop farming. The most substantial economic contributor is the Owner-Occupied Housing sector, generating nearly $29.9 million in annual output. Although not directly a manufacturing industry, its economic scale significantly influences the region’s financial stability and indirectly supports manufacturing through workforce attraction and retention.

Rail transportation is the most significant manufacturing-related industry, with an annual total economic output of approximately $15.9 million. Employing roughly 21 individuals, this sector provides substantial wages, averaging nearly $137,000 in employee compensation. Rail transportation’s prominence highlights the region’s strategic logistical capabilities, integral for connecting local manufacturing to broader state and national markets. Local government electric utilities closely follow rail transportation, generating an annual total economic output of about $15.3 million and providing steady employment to approximately 22 workers. Despite its lower wage scale compared to rail transportation, this sector plays a vital role in maintaining regional infrastructure and supporting manufacturing operations, offering stable, albeit less lucrative, job opportunities.

Another pivotal industry in Lincoln County is beef cattle ranching and farming, contributing about $15.1 million to the regional economy and providing over 51 local jobs. This industry notably contributes approximately $6.0 million annually in labor income, reflecting its critical

role in the county's broader agricultural-based manufacturing supply chains. From an employment perspective, local government sectors (education, general administration, and healthcare) represent some of the highest employment figures. Though not directly manufacturing, their significant labor force, over 300 total jobs, establishes a stable economic environment conducive to supporting an expanded manufacturing workforce.

3.4.a Forward and Backward Linkages

Despite these strengths, Lincoln County faces notable supply-chain vulnerabilities. Commodity analyses reveal significant gaps, particularly in construction-related materials. Cement exhibits the largest gap, with local production meeting less than 2.0 percent of the region's total demand, leaving an unmet annual demand of approximately $375,000. Similarly, the supply of sand and gravel, a critical construction input, is severely limited, meeting just about 0.26 percent of local demand and resulting in nearly $263,000 in unmet annual demand. Addressing these substantial gaps by developing or expanding local production capabilities could considerably reduce dependency on external sources, thus enhancing economic resilience and efficiency. Wholesale services for durable goods also has critical supply chain shortages, with local supply fulfilling only 2.9 percent of total regional demand. This situation creates an annual shortfall exceeding $150,000, reinforcing the need for enhanced logistics networks or increased local wholesale capabilities. Additionally, while truck transportation services possess relatively strong regional capabilities, meeting over 42.0 percent of local demand, there remains a substantial $81,000 annual deficit that indicates room for further logistical infrastructure improvements.

In terms of commodity production, Lincoln County's grain industry exhibits substantial growth potential. Presently, local grain production fulfills only 27.6 percent of regional demand, revealing opportunities for increased local agricultural output or strengthened inter-county logistics. In stark contrast, industries such as petroleum lubricating oil, cutting tools, and small electrical appliances demonstrate zero domestic supply, implying full dependency on external sources, a strategic vulnerability that warrants immediate attention for long-term manufacturing sustainability. Lincoln County's advanced manufacturing and related sectors exhibit critical strengths in infrastructure and agriculture but also notable vulnerabilities in key supply chain commodities, particularly construction materials and specialized manufactured goods. Strategic investments aimed at closing these critical supply gaps, coupled with leveraging existing logistical strengths in rail transportation and utilities infrastructure, could markedly enhance the county's overall manufacturing efficiency and economic resilience.

3.5 Nevada 95-80 Regional Development Authority

Appendix E includes the relevant resulting data tables and analysis for the Nevada 95-80 Regional Development Authority. The Nevada 95-80 Regional Development Authority consists of two counties, Humboldt County and Pershing County, located in the north-central part of the state. As of 2023, the region had an estimated total population of 23,500 individuals and approximately 9,511 total households. This region's Gross Domestic Product is estimated at $1.9 billion, with around 182 industries making up the region's existing economic base. Total personal income earned was approximately $1.3 billion.

3.5.a Overall Economic Performance of the Nevada 95-80 Regional Development Authority, Top Performing Industry Sectors

The top five industry sectors, in terms of total economic output for the Nevada 95-80 Regional Development region, were soybean and other oilseed processing, plastics pipe and pipe fitting manufacturing, other basic inorganic chemical manufacturing, travel trailer and camper manufacturing, and ornamental and architectural metal work manufacturing. For soybean and other oilseed processing, the total economic output was $392,499,465.63, total employment was 65 total individuals, and proprietor income was $98,899.71. For plastics pipe and pipe fitting manufacturing, the total economic output was $58,730,247.68, total employment was 76 total individuals, and proprietor income was $3,414.81. The third largest industry sector, in terms of total economic output, for the Nevada 95-80 Regional Development Authority region was other basic inorganic chemical manufacturing, with an estimated total output of $42,104,026.46 with total employment of 46 individuals employed, and $114,099.47 in proprietor income. For travel trailer and camper manufacturing, the estimated total economic output was $24,707,007.82, total employment was 61 total individuals, and proprietor income was $4,045.77. Total economic output for ornamental and architectural metal work manufacturing, the region's fifth largest industry sector, was an estimated $11,749,008.31, total employment was 41 total individuals with $832.32 proprietor income.

Soybean and other oilseed processing had an estimated total economic output of $392,499,465.63, employing 65 total individuals. Plastics pipe and pipe fitting manufacturing generated $58,730,247.68 in total economic output and providing employment for an estimated 76 total individuals. Other basic inorganic chemical manufacturing contributed significantly to overall economic activity, with an estimated total economic output of $42,104,026.46 and employing an estimated 46 total individuals. Travel trailer and camper manufacturing had an estimated total economic output of $24,707,007.82 with 61 total individuals employed. Ornamental and architectural metal work manufacturing contributed $11,749,008.31 and employed 41 total individuals. Total economic output across each of these five advanced manufacturing sectors for Humboldt County and Pershing County combined amounted to an estimated $529,789,755.9, employing an estimated 289 total individuals.

3.5.b Forward and Backward Linkages

In the soybean and other oilseed processing industry sector, regional demand is not being met by local suppliers for non-comparable imports. The total economic leakage in this sector was over $1.5 million. Another economic leakage in the soybean and other oilseed processing industry sector was in paperboard containers. The regional inputs for this were only $40.00, leaving a gap of over $966,000. This region is also unable to provide any regional inputs for cotton. The economic leakage of this has an impact of more than $920,000. Regional demand is also not being met for coal. This commodity had a total economic leakage of $624,000. In addition, there is an economic leakage for relay and industrial controls with only $6.56 meeting regional inputs, leaving an economic leakage of approximately $311,000. This commodity also lacks local suppliers for wholesale services-professional and commercial equipment and supplies.

In the plastics pipe and pipe fitting manufacturing industry sector, regional demand is not being met by local suppliers for plastics materials and resins. The total economic leakage in this sector was over $24.0 million. This is the second highest commodity for this region in terms of gross inputs. Another economic leakage in the pipe and pipe fitting manufacturing industry sector was in unlaminated plastics profile shapes. The regional inputs for this commodity was only $6.82, leaving an estimated total gap of over $568,000. The Nevada 95-80 Regional Development Authority region is also unable to produce sufficient other basic organic chemicals to satisfy existing regional demand, leading to an economic leakage of approximately $484,000. Regional demand is not being met for compounded resins, creating a total estimated leakage of approximately $446,000. There is also an economic leakage in petrochemicals, with an estimated total leakage of approximately $414,000. This commodity also lacks local suppliers for semiconductors and related devices.

In the other basic inorganic chemical manufacturing industry sector, regional demand is not being met for petrochemicals, with an estimated total economic leakage of over $1.5 million. Another economic leakage is in compounded resins with only $8.56 in production being met by regional inputs leaving an estimated total economic leakage of $423,000. For other basic organic chemicals, only $13.54 in total regional demand is being met by regional inputs, leaving an estimated gap of nearly $392,000. This industry sector is also in need of paperboard containers which are not being supplied by regional producers, leaving a total economic leakage of $375,000. The industry sector is also in need of industrial process variable instruments that are not being met in the region by regional producing, creating an estimated total economic leakage of approximately $337,000. Regional producers are also unable to provide any copper, nickel, lead, and zinc ore, generating an estimated total economic leakage of nearly $291,000.

When analyzing the backward linkages of these three industry sectors, four commodities influence two of the sectors, highlighting the importance of regional supply chains. For instance, paperboard containers impact both the soybean and other oilseed processing sector and the other basic inorganic chemical manufacturing sector, resulting in a total economic leakage exceeding $1.3 million. Additionally, three commodities, petrochemicals, compounded resins, and other basic organic chemicals, affect both the plastics pipe and pipe fitting manufacturing sector and the other basic inorganic chemical manufacturing sector. This leads to an estimated total economic leakage of over $800,000 for other basic organic chemicals and compounded resins, and more than $1.9 million in a total estimated economic leakage for petrochemicals. The forward linkages in the Nevada 96-80 Regional Development Authority region for advanced manufacturing show that the top commodities that are produced are polystyrene foam products. Another commodity is finished textiles and fabrics. In addition, there is also custom architectural woodwork and millwork, and concrete pipes.

3.6 Northeastern Nevada Regional Development Authority

Appendix F includes the relevant resulting data tables and analysis for the Northeastern Nevada Regional Development Authority. The Northeastern Nevada Regional Development Authority region consists of five counties located in the northeastern part of the state, including Elko County, Eureka County, Lander County, and White Pine County. This region's economic base is

powered by a robust mining economy, with gold and silver ore mining dominating as the leading sector. This industry alone accounts for a total economic output of approximately $4.34 billion and employs over 6,897 individuals. The average compensation in this sector is notably high, estimated at $149,000 per worker, indicating the capital-intensive nature of the industry. Metal mining services also represent a major contributor to the region's overall economic base, with an estimated $445.0 million in total economic output and 1,476 jobs, highlighting the region's strong upstream production base.

Electric power transmission and distribution supports both industrial and residential development, with nearly $430.0 million in annual economic output and more than 260 employees. The average labor income in this utility sector is equally impressive. Other top contributors include copper, nickel, lead, and zinc mining, $419.0 million in labor income, wholesale petroleum, $420.0 million in labor income, and hotel and motel services, $336 million in labor income, the latter reflecting the service economy's continued importance despite the region's extractive industry focus. In terms of employment, beyond mining, the hospitality industry, especially hotels and motels, provides substantial jobs, over 2,500, with meaningful compensation. The local government sector also serves as a large employer, providing stability to the region's workforce. However, the advanced manufacturing sector is minimally represented among the top 50 industries, with ready-mix concrete manufacturing ranking 48th in total economic output.

From an employment perspective, the region is strongly supported by the hospitality sector, particularly hotels and motels, providing about 2,547 jobs and contributing around $336 million annually to the economy in total economic output. Local government sectors, including education and general administrative services, are also critical employment sources, collectively supporting over 3,400 jobs. Although these sectors are not directly manufacturing-related, their employment levels and economic contributions provide essential indirect support, enhancing the overall socio-economic fabric conducive to manufacturing industry development.

3.6.a Forward and Backward Linkages

The Northeastern Nevada Regional Development Authority region faces pronounced challenges within its supply chains, most dramatically evident in construction materials such as cement. Regional cement production meets only 1.7 percent of regional demand, resulting in an extraordinary annual gap exceeding $6.9 million. This deficit highlights an acute reliance on external sources, representing a substantial vulnerability that could disrupt critical regional infrastructure projects or industrial activities if not addressed proactively. Additionally, while sand and gravel resources are relatively abundant, satisfying about 46.6 percent of regional demand, there remains an annual shortfall close to $2.6 million. Other significant supply deficits include durable goods wholesale services, meeting only about 36.4 percent of regional demand, resulting in a gap of around $1.8 million. Similarly, truck transportation services fulfill just 38.2 percent of regional needs, leaving approximately $1.6 million annually in unmet demand. These gaps highlight strategic opportunities for development, particularly in logistics infrastructure and wholesale distribution networks, to bolster the region's supply chain resilience.

This region also exhibits a striking dependency on external supply for advanced manufactured goods and specialized commodities, such as totalizing fluid meters, ophthalmic goods, semiconductor machinery, and automobiles. Notably, commodities such as semiconductor machinery alone experience total external dependency, with an unmet regional demand valued at approximately $9.6 million annually. Such commodities are vital for supporting high-tech and advanced manufacturing industries, suggesting an immediate strategic imperative to either develop local production capabilities or strengthen external logistical arrangements to ensure uninterrupted supply. The Northeastern Nevada Regional Development Authority region showcases powerful economic strengths driven by its resource extraction and supportive infrastructure, yet faces pronounced vulnerabilities in critical supply chains, notably in construction materials and specialized industrial commodities. Addressing these gaps through targeted investments in local production capacities, infrastructure enhancement, and logistics improvements will be essential to further solidify the region's economic sustainability and manufacturing sector growth.

3.7 Northern Nevada Development Authority

Appendix G includes the relevant resulting data tables and analysis for the Northern Nevada Development Authority. Located in northwestern Nevada, the Northern Nevada Development Authority region consists of five counties, including Carson City, Douglas County, Lyon County, Mineral County, and Storey County. The five leading sectors by employment reflect broad economic diversity across the region. Battery manufacturing is the region’s largest sector in terms of total employment with 5,965 total jobs, generating over $635 million in employee compensation, emphasizing its importance as both a workforce anchor and an engine for clean energy innovation. State government (other services) follows closely with 5,881 employees, while other real estate activities employ 5,416 people, driven by ongoing growth in development and investment. When ranked by total output, battery manufacturing again leads with a substantial $2.48 billion in regional economic output. Other real estate generates $924.9 million, followed by petroleum refineries, which produce $786.9 million in regional economic output despite employing fewer than 100 workers, indicating a high level of capital intensity. State government (other services) adds $708.7 million in total economic output, and warehousing and storage contributes $398.5 million, rounding out the top five.

Advanced manufacturing is a key growth area for the region. Battery manufacturing not only leads in employment and economic output but also supports high wages and modest proprietor income, reflecting its corporate industrial structure. Petroleum refineries offer a sharp contrast. With just 89 total employees, the sector generates $21.8 million in employee compensation and an impressive $54.1 million in proprietor income, reflecting substantial capital returns for private operators. Meanwhile, asphalt shingle and coating materials manufacturing employs 168 individuals, contributes $226.7 million in output, and delivers over $21.3 million in compensation and $47.7 million in proprietor income, balancing labor intensity with entrepreneurial opportunity. The Northern Nevada Development Authority region demonstrates a robust mix of public service stability, real estate development, logistics capacity, and innovation-driven manufacturing. With high-performing sectors supporting strong wages and

private income, the region is well-positioned for continued economic growth, workforce development, and long-term competitiveness.

3.7.a Forward and Backward Linkages

For the Northern Nevada Regional Development Authority region, within the battery manufacturing sector, the first ranked sector by total employment and output, the nonferrous metal (excluding aluminum) smelting and refining commodity has an estimated total leakage of $402,293,774.62 (IMPLAN, 2023) with an estimated RPC of 0.18 percent. Iron and steel and ferroalloy products commodity have the second largest leakage of $154,394,127.05 and an RPC of 0.03 percent (IMPLAN, 2023). Paperboard containers commodity have a total estimated leakage of $56,326,585.43 and an RPC of 0.07 percent (IMPLAN, 2023). These results for these commodities, having a low RPC and high leakages, suggests that the region imports a significant amount of them to meet regional demand.

In the petroleum refineries sector, ranked third in all sectors and second in advanced manufacturing by total output, is where the largest leakage within the region is identified. This commodity is natural gas and crude petroleum with an estimated total gap of $442,949,126.19 and an RPC of 7.45 percent (IMPLAN, 2023). The petrochemicals commodity is found to have a total estimated gap of around $38,014,789.60 an RPC of 4.82 percent. The pipeline transportation services commodity has the third largest gap within this sector, with an estimated $35,653,195.58 and a 5.20 percent RPC (IMPLAN, 2023). Although the RPC for the commodities listed here range from between 4.82 percent and 7.45 percent, this shows that only a small amount of regional demand is being met by producers operating within the region, with a notable amount of regional production being supported by importation of key commodities. The third ranked advanced manufacturing sector by total output, asphalt shingle and coating materials manufacturing, has a commodity, miscellaneous nonmetallic mineral products, with a gap of $14,937.118.09 and an RPC 1.31 percent (IMPLAN, 2023).

3.7.b Input-Output Analysis

The Northern Nevada Development Authority region has emerged as a hub in the national advanced manufacturing economy, featuring prominent sectors including battery manufacturing, petroleum refineries, and asphalt shingle and coating materials manufacturing. The region continues to benefit from considerable investments and developments that are reshaping its economy and further growing the region’s economic base. While its proposed location will be in neighboring Washoe County within the Economic Development Authority of Western Nevada’s region, Lyten recently announced the world’s first lithium-sulfur battery Gigafactory, designed to use 100.0 percent domestically sourced materials and projected to create over 1,000 jobs at full capacity (Lyten Inc., 2024). This initiative adds more momentum to the energy storage sector in both the Northern Nevada Development Authority and Economic Development Authority of Western Nevada’s territory, located near Tesla's existing Gigafactory in Storey County, a major producer of lithium-ion batteries and electric vehicle components. Additionally, American Battery Technology Company has been awarded a $40.5 million federal tax credit for its new next-generation lithium-ion battery recycling plant, further solidifying the region’s

leadership in clean, closed-loop battery supply chains (American Battery Technology Company, 2024).

Although the state of Nevada produces only a small amount of oil and natural gas compared to other states that produce oil, petroleum refineries are one of the top sectors by total economic output within this region (U.S. Department of Energy Fossil Energy and Carbon Management, 2022). Additionally, all the oil produced in the state is directed to the only refinery located in the state in Nye County, there are no notable crude oil and natural gas reserves in Nevada. These factors can be linked to the large economic gap leakage found within the petroleum refineries and asphalt shingle and coating materials manufacturing sectors operating throughout the Northern Nevada Development Authority region. Strategic collaborations also drive additional expansion and economic diversification in this region. A case in point is the Nevada-based Ioneer and Dragonfly Energy's Memorandum of Understanding aimed at procuring a local supply of lithium carbonate for lithium iron phosphate battery manufacturing (Ioneer Ltd., 2023). This collaboration will improve the localized supply chain that the Northern Nevada Development Authority region is a major part of and help to reduce dependency on imports, a narrative in the broader national push for energy independence. The concentration of these projects and services within the Northern Nevada Development Authority region highlights the continued creation of a strong and integrated value network. Input-Output analysis of the industry demonstrates high regional economic multipliers through job creation, supply chain demand, and downstream manufacturing activity. Driven by strategic planning and public-private partnership, the Northern Nevada Development Authority region is becoming a national leader in battery innovation, metal refining, and advanced manufacturing supply chain development.

Additionally, one of the Northern Nevada Development Authority's ongoing strategic aims can be used to help new and existing advanced manufacturing businesses and opportunities around this region (NNDA, 2021). Furthermore, there are many institutions within and adjacent to the region that continue to assist in supporting this focus like the University of Nevada, Reno and the University's recently established Nevada Regional Technology and Innovation Hub. The Nevada Regional Technology and Innovation Hub is currently administered several component projects designed to strengthen the value network of Nevada's emerging lithium batteries, critical elements, and other electric vehicle materials industry sector (University of Nevada, Reno, n.d.). Moreover, Truckee Meadows Community College and Panasonic Energy of North America partnered by using the Governor's Office of Economic Development WINN Fund to develop a workforce development program that provides various types of training including advanced manufacturing to increase more opportunities for future skilled workers in northern Nevada (GOED, 2023). The partnership between Truckee Meadows Community College and Panasonic Energy of North America, while located in Washoe County, is creating a workforce to continue to support growth of the Tesla Gigafactory in Storey County within the Northern Nevada Development Authority region. These and several other efforts across the Northern Nevada Development Authority region and in neighboring regions including the Economic Development Authority of Western Nevada region located to the west, the Nevada 95-80 Regional Development Authority region located to the east, and the Southwest Central Regional Economic development Authority located to the south, continue to build a robust supply chain

aimed at eliminating gaps across the entire supply chain of advanced manufacturing across the entire state.

3.8 Southwest Central Regional Economic Development Authority

Appendix H includes the relevant resulting data tables and analysis for the Southwest Central Regional Economic Development Authority, a region that consists of two counties including Esmeralda County and Nye County. This region is sparsely populated, which makes overall employment levels and total output relatively low, but also makes this a great area for mining and scientific research. The top five industries in this region, in terms of total economic output, are gold ore and silver ore mining, with a total output of about $665 million and about $93,000 in proprietor income, scientific research and development services, with a total economic output of about $632.0 million and about $8.94 million in proprietor income, owner-occupied housing, with a total economic output of about $356.0 million, electric power transmission/distribution, with a total output of about $221.0 million and about $1.09 million in proprietor income, and other real estate, with a total economic output of about $167.0 million and about $16.64 million in proprietor income.

Also in the top ten industry sectors in this region are petroleum refineries and copper, nickel, lead, and zinc mining. These industries are reflective of the key role that mining and natural resource extraction plays in this region's economy. In terms of total employment, the top five industries for the Southwest Central Regional Economic Development Authority region are scientific research and development services, with 2,192 employees, gold ore and silver ore mining, with 1,078 employees, other real estate, with 968 employees, local government (education), with 955 employees, and local government (other services), with 672 employees. Although the region is sparsely populated, its mining industries generate a significant number of jobs and a significant amount of total economic output.

When compared to the jobs and output generated by the region's mining and natural resource extraction related industries, manufacturing industries generate much less in terms of total economic output and provide significantly less jobs. The top five advanced manufacturing industries in the region in terms of total economic output are petroleum refineries, with a total output of about $117.0 million, nonferrous metal smelting and refining, with a total output of about $21.0 million, miscellaneous manufacturing, with a total output of about $9.0 million, paint and coating manufacturing, with a total output of about $8.0 million, and other animal food manufacturing, with a total output of about $6.0 million. Aside from petroleum refineries, these industries account for a small fraction of what the overall top industries produce.

The top five manufacturing industries in terms of total employment demonstrate an even more stark difference between the manufacturing and mining and natural resource extraction related industries in this region. Miscellaneous manufacturing generates 24 jobs and about $1.4 million in employee compensation, bread/bakery product manufacturing generates 18 jobs and about $654,000 in employee compensation, sign manufacturing generates 16 jobs and about $760,000 in employee compensation, other concrete product manufacturing generates 15 jobs and about $1.3 million in employee compensation, and printing generates 15 jobs and about $116,000 in

employee compensation. Petroleum refineries, which is one of the top manufacturing sectors in terms of total economic output, only generates 14 jobs and about $591,000 in employee compensation. These results demonstrate that the manufacturing sector in the Southwest Central Regional Economic Development Authority region is not a very robust one, it does not employ very many people, and, in many cases, the people who are working in manufacturing are relatively lower wages relative to other regions in other parts of the state, demonstrating either a lack of expertise or a lack of resources.

The Southwest Central Regional Economic Development Authority region demonstrates a strong dependence on mining and natural resource extraction related industries, as well as scientific research and government positions for its economy and employment. The manufacturing sector for this region is very limited, and while there are certainly opportunities to build new advanced manufacturing facilities and expand the area's existing manufacturing and advanced manufacturing industry sectors, the region's current infrastructure existing population levels would likely not support an influx in population from more workers.

3.8.a Forward and Backward Linkages

The forward linkages analysis of the sector 146, petroleum refineries, in the Southwest Central Regional Economic Development Authority region reveals some key products that, while essential to the sector's activity, are not fully exploited in a regional value network. For example, natural gas (code 3020) has a high RSC of 0.688, indicating significant local production, but a low RPC of 0.298, indicating that it is rarely used by other local sectors, lowering economic returns in the region. Petrochemical (code 3151) has an RSC of 0.74 and an RPC of 0.34, indicating low local production and consumption. Similarly, refined petroleum products (code 3146) show a strong regional integration, with an RPC of 87.0 percent and an RSC of 79.0 percent, indicating that they are both widely produced and consumed regionally. This indicates a solid component of the regional value chain, capable of supporting other local sectors such as chemistry, transportation, and logistics.

When it comes to pipeline transportation services (code 3401), the RPC is 0.119 and the RSC is relatively high, 83.9 percent, indicating that the regional supply is significant, but the RPC remains low, indicating that very few regionally based firms use this service. This suggests that there is underutilized regional capacity in this area, which could help strengthen local logistics. The inventory and storage services (code 3404) follow the same trend, with an RPC of 0.312 and an RSC of 0.985, indicating underutilization of regional logistics capacity. Finally, sector 146 already has solid foundations for building an integrated regional value chain, particularly due to the strong local production and consumption of refined petroleum products and available but underutilized logistical capabilities, such as pipeline and storage. However, the necessary infrastructure exists, but it is not yet fully connected to regional industrial needs.

The forward linkages analysis in sector 215, corresponding to nonferrous metals (excluding aluminum) smelting and refining in the region the Southwest Central Regional Economic Development Authority, reveals significant disparities in regional integration. Some essential commodities are present in this sector's purchases, but only a few of them are truly integrated into the regional economy. For example, the own activity (code 3215) has a very low RSC,

0.0057, and a limited RPC, 0.0157, indicating that it is almost completely absent regionally, even though it plays an important role in the processing of the various minerals, metals, and elements that are already extracted in the region. Semiconductors (code 3296) is another interesting example as they are heavily produced locally, with an RSC of 0.8825, but are very rarely consumed in the region, with an RPC of 0.002, indicating a net economic loss because these components are exported without transformation or integration into the region's broader manufacturing and advanced manufacturing supply chains. While copper, nickel, and zinc ores (code 3022) are heavily used by the sector, with an RPC of 99.48 percent, their local production remains minimal, with an RSC of 3.19 percent, suggesting a strong dependency on externally imported sources. While sector 215 relies on critical resources, its lack of regional integration for certain key commodities limits the creation and realization of possible regional economic benefits. The development of local transformation capabilities, particularly in metals, as well as the strengthening of industrial and logistical connections, would be effective channels for establishing a true regional value chain that is both sustainable and competitive.

3.8.b Input-Output Analysis

In Nevada's advanced manufacturing landscape, code 32, metal mining services, serves as a foundational upstream operation with a total economic output of $20.9 million and employment of nearly 70 individuals in just the Southwest Central Regional Economic Development Authority region. Despite its critical role in supporting downstream manufacturing and processing activities, this sector demonstrates significant backward linkages, areas where regional inputs fall far short of regional demand, leading to substantial economic leakages. The most striking gap is found in gold ore and silver ore mining, which shows gross input needs of more than $665.0 million, while regional suppliers only fulfill $129.0 million of that demand. This results in a significant economic leakage of over $536.0 million, underscoring the region's dependence on out-of-state or vertically integrated mining operations. Another key shortfall appears in commercial and industrial machinery and equipment repair services, where approximately $22.6 million in inputs are required but only about $9.3 million is fulfilled by regional suppliers, creating a gap of more than $13.0 million. This points to a strong reliance on out-of-region maintenance and servicing partners, a clear vulnerability in sustaining equipment uptime within the mining field.

Additionally, sectors like building material and garden equipment retail and transit and ground transportation services also show backward gaps of $21.0 million and nearly $9.3.0 million, respectively. These sectors are essential for both infrastructure support and labor mobility in parts of the region's broader mining and natural resource extraction sector. The widespread nature of these backward linkages suggests that the state's and the region's metal mining services operate in a relatively fragmented input network, lacking sufficient regional providers for crucial goods and services. By investing in regional machine servicing hubs, expanding local equipment parts suppliers, and bolstering logistics capacity, the state and especially this region has an opportunity to reduce existing levels of overall economic leakage, improve operational resilience, and further integrate its mining and natural resource extraction services into the broader value network of advanced manufacturing.

Industry code 497, commercial and industrial machinery and equipment repair and maintenance, represents a key pillar in the state's and this region's advanced manufacturing sector, with a total economic output of over $22.6 million and employing more than 170 people across wage and proprietor roles within the Southwest Central Regional Economic Development Authority region. However, the backward linkage analysis reveals significant economic leakage in critical areas that support this industry's operation. For example, motor vehicle and parts retail services, a potential source of replacement equipment and components, shows a gross input of approximately $39.8 million, with a gap exceeding $193,000 due to low regional availability. Additionally, metal mining services, which provides essential raw materials for fabricated repairs, reflect a backward gap of nearly $70,000. Similarly, nonmetallic mineral mining and quarrying, likely tied to structural or construction machinery, has an unmet regional demand of $53,500. Even nonferrous metal smelting and refining, which supplies processed inputs like alloys and repair-grade metals, shows a regional gap of over $10,000. These figures illustrate how much of the repair and maintenance sector's operational input is currently sourced outside the region, weakening the region's overall supply chain. To address these vulnerabilities, the Southwest Central Regional Economic Development Authority should pursue targeted development in precision component manufacturing, localized mining-to-processing pipelines, and retail distribution channels could significantly reduce these gaps and bolster the industry's overall efficiency and resilience.

3.9 State of Nevada

Appendix I includes the relevant resulting data tables and analysis for the entire state of Nevada. Statewide, the examination of the top industry sectors in Nevada in terms of total economic output had to be expanded to the top 50 industry sectors to include at least two sectors related to advanced manufacturing, with these two advanced manufacturing related sectors including battery manufacturing at number 36 and other miscellaneous manufacturing at number 46. The analysis identified a total economic output for the top 50 industry sectors in Nevada of approximately $405.92 billion with an estimated 2.1 million jobs. These figures highlight the scale of Nevada's economy but, more importantly, they illustrate distinct differences in the structure of economic productivity versus labor absorption across industries throughout and across the entire state. In terms of total output, the leading industries statewide included real estate, hospitality, and essential services. The top-performing sector statewide was owner-occupied housing, contributing over $20.6 billion in total economic output, followed by hotels and motels, including casino hotels at $19.3 billion, and other real estate activities at $18.8 billion. These three sectors alone accounted for a substantial portion of the state's total economic base, indicating Nevada's strong dependence on property and tourism-related revenues. Additional major contributors included corporate management, full-service and limited-service restaurants, hospitals, air transportation, and gold and silver ore mining.

Employment-wise, however, the top sectors that comprise a significant part of the state of Nevada's overall economic base were notably different than those sectors in the top 50 based on total economic output. The sectors with the largest amount of total employment were largely related to agriculture and resource extraction. Vegetable and melon farming emerged as the largest employer, providing over 115,000 jobs statewide. Other significant employment sectors

included fruit farming, greenhouse and floriculture production, and beef cattle ranching. These findings point to a workforce heavily concentrated in labor-intensive industries that do not necessarily correspond with high economic output. This contrast between output and employment underscores the varying levels of economic efficiency and productivity per worker across sectors. Industries such as real estate and corporate management generate high output with relatively small workforces, reflecting their capital-intensive nature. Conversely, agricultural sectors and mining and natural resource extraction operations require a larger labor force to generate relatively lower output, indicating opportunities for modernization and investment in productivity-enhancing technologies.

Several other sectors, such as restaurants and healthcare, offer a more balanced economic profile, contributing both significantly to total economic output and employing large numbers of people. These dual-impact industries play a stabilizing role in Nevada's economy, supporting both revenue generation and employment at scale. From a strategic perspective, these insights suggest a need for a balanced economic development approach. Policymakers and stakeholders may consider continued investment in high-output industries to sustain economic growth, while also supporting labor-intensive sectors with innovation, automation, and workforce development programs. Furthermore, the analysis of the statewide advanced manufacturing sector highlights the importance of economic diversification, including expansion into industries such as technology, logistics, renewable energy, and other areas of advanced manufacturing that could reduce vulnerability to fluctuations in tourism and real estate markets. The analysis further demonstrates that Nevada's statewide economy is powered by high-value industries like real estate and hospitality while employment remains rooted in agriculture and various extractive sectors. Aligning workforce development strategies with output potential, and improving productivity in labor-heavy sectors, will be essential for driving sustainable, inclusive growth across the state.

3.9.a Forward and Backward Linkages

Focusing on the advanced manufacturing sector (code 318), several critical areas of economic leakage become apparent across the state's production network. The most significant gap is observed in the supply of nonferrous metal (except aluminum) smelting and refining, with a gross input of over $527.2 million but only $31.3 million of that demand is fulfilled by in-state suppliers, leaving a substantial gap of approximately $495.9 million. Similarly, iron and steel and ferroalloy products display a severe shortfall with local suppliers meeting only $0.77 million of the nearly $202.0 million demand, translating to an economic leakage of about $201.3 million. Additional major supply chain gaps are evident in other plastics products, paperboard containers, and batteries, each with tens of millions in unmet in-state input supply. Especially striking is the situation with plastics materials and resins, which had a gross input of over $43.3 million, but local suppliers could only produce approximately $677,000 in total output, resulting in a gap of more than $43.2 million. Similarly, carbon and graphite products had $35.9 million in total inputs, with $0.00 of this input fulfilled by suppliers in-state, resulting in a full economic leakage in carbon and graphite products. These patterns highlight systemic underdevelopment in Nevada's upstream supply capacity for raw and processed materials essential to the state's advanced manufacturing industry sector and related sectors.

For the sector manufacturing (code 374), supply chain gaps are similarly substantial. The most notable shortfall occurs in iron and steel and ferroalloy products, with gross inputs of approximately $74.6 million, while in-state suppliers met only $0.28 million of that need, leaving a total estimated gap of over $74.4 million. Nonferrous metal shaping had a total estimated gap of about $69.1 million, with in-state inputs covering just $3.1 million of a $72.2 million statewide demand. Similarly, other fabricated metals have a total estimated statewide demand of $42.8 million, but only $2.6 million of that is sourced locally from in-state suppliers. Significant gaps also persist in the supply of paperboard containers, paints and coatings, machined products, and plastics materials and resins, all critical inputs in manufacturing operations that are predominantly imported from out-of-state sources. Smaller but still meaningful leakages exist for synthetic rubbers, petroleum lubricating oil and grease, plastic packaging materials, and semiconductors, all of which demonstrated millions of dollars in unmet demand within and throughout the state. These various backward linkages underscore substantial opportunities for strategic investment and targeted economic development through business creation, attraction, retention, and expansion efforts to expand Nevada's in-state manufacturing input capabilities, particularly in metals, chemicals, and plastics, to build a more resilient and locally integrated supply network.

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4.0 Development of a Comprehensive Value Network and Supply Chain Map of the Advanced Manufacturing Industry Sector in Nevada, Workforce Overlay

This section of this University Center for Economic Development technical report presents an edited version of the initial white paper developed for Part 3, *Identification of Workforce Development Gaps in the Value Network of the Advanced Manufacturing Industry Sector in Nevada*. Part 3 of this analysis of the value network and supply chain of Nevada's advanced manufacturing industry sector included the following elements:

- Development of a 'workforce' overlay using the results of Part 2 of this project to assess and evaluate the current workforce availability and to identify workforce development 'gaps' needed to support the closing of identified gaps in the broader value network and supply chain of Nevada's advanced manufacturing industry sector utilizing data accessed through the Office of Workforce Innovation's Nevada P-20 to Workforce Research Data System (NPWR).

- Completion of a county-by-county (or regional economic development authority-by-regional economic development authority) assessment of existing workforce characteristics across the state of Nevada to determine current workforce capabilities and identify individuals already in the 'pipeline' in terms of existing enrollment in related education, training, and professional development programs.

- An identification of existing and possible linkages between the value network and supply chain of Nevada's advanced manufacturing industry sector and directly and indirectly related industry and occupations sectors from a workforce availability and development perspective. This identification considers differences between the state's urban metropolitan communities and the state's more rural non-metropolitan communities.

- An identification and assessment of existing importing and exporting elements of Nevada's advanced manufacturing industry sector in terms of workforce availability and development issues in relation to the results of Part 1 and Part 2 of this comprehensive examination of the value network and supply chain of Nevada's advanced manufacturing industry sector.

Utilizing the Office of Workforce Innovation's Nevada P-20 to Workforce Research Data System (NPWR), education, employment, and existing workforce data from the Nevada Department of Employment, Training, and Rehabilitation, the Nevada Department of Education, and from the Nevada System of Higher Education were used to complete the various elements of Part 3 of this project. This effort generally included Career Technical Education graduation data, Nevada System of Higher Education enrollment and degree/program completion data, and data

combining Career Technical Education and Nevada System of Higher Education enrollment, completion, and graduation data for certificate and degree programs with a relatively strong tie to the state's advanced manufacturing industry sector and to directly and indirectly related industry sectors and commodity areas.

Following the identification of gaps present across the value network and supply chain of Nevada's advanced manufacturing industry sector performed in Part 2 and summarized in Section 3.0 of this University Center for Economic Development technical report, further investigation was completed for the workforce requirements needed to close those gaps. The main source of data utilized for this analysis was compiled by the Office of Workforce Innovation's Nevada P-20 to Workforce Research Data System. This program provides a view of the existing workforce in Nevada along with the workforce that is currently enrolled across the various institutions of the Nevada System of Higher Education system and the Career Technical Education system. This approach looks at how well-equipped the state of Nevada and each of the eight regional economic development authorities are in terms of their available workforce should action be taken to address the gaps in the value network through targeted business creation, attraction, retention, and expansion efforts. This preparedness was considered for both the short-term and the long-term.

4.1 Identification of Workforce Gaps for the Regional Economic Development Authorities and for the State of Nevada

In addition to the supply chain and value network 'gaps' analysis performed and identified for each of the eight regional economic development authorities and for the state of the Nevada as a whole, Appendix A through Appendix I presents the results of the workforce characteristic analysis completed for each regional economic development authority and for the state of Nevada as a whole. The same definition of 'advanced manufacturing' presented in Section 3.0 of this University Center for Economic Development to frame the supply chain and value network 'gaps' analysis was also used to the frame the assessment of the state's existing workforce relative to advanced manufacturing workforce needs.

4.1.a Churchill Fallon Development Authority

The Churchill Fallon Development Authority region, which includes only Churchill County, is in a unique position as it is within a relatively short distance of both the Carson City metropolitan statistical area and the Reno-Sparks metropolitan statistical area, with both metropolitan statistical areas capable of providing a large available workforce to be utilized in the various manufacturing sectors that operate within the Churchill Fallon Development Authority's territory. The current population of Churchill County is 25,800 residents with a workforce of 13,776 total individual . Forward and backward linkages show that there is a leakage in the dairy product manufacturing sector. Based on a review of Churchill County's current workforce characteristics, there are currently 207 jobs in the diary product manufacturing sector and the average income is $27,000 per year. Churchill County currently has an estimated 5.0 percent unemployment rate. Data from 2023 shows that, throughout the entire state of Nevada, there are currently 435 students in grades K through 12 that are studying agricultural and animal sciences

with an additional 291 students in higher education. This does not indicate that there are enough students and workers being trained in this specific sector to meet the workforce needs in Churchill County as these students are spread across the state. However, parts of the dairy cattle and milk industry do not rely on formal training. Many of the employees in this sector have a high school degree and receive on-the-job training. This is beneficial in filling the workforce gap in the dairy product manufacturing industry if efforts were made to increase production in this region.

4.1.b Economic Development Authority of Western Nevada

The workforce gap analysis for the Economic Development Authority of Western Nevada region's advanced manufacturing sector highlights critical challenges that potentially limit regional economic growth. Storage battery manufacturing leads the region in employment within an advanced manufacturing sector with 1,680 total jobs and an estimated $21.0 million paid in wages. Yet the low average wage of $12,565 signals a workforce concentrated in mid- to low-skill jobs. Without targeted upskilling, this sector risks becoming a low-wage employment base despite its strategic importance. Fabricated structural metal manufacturing offers relatively higher wages, an average of $21,500, but shows limited employment, indicating a shortage of skilled tradespeople essential for precision fabrication and infrastructure projects. Construction growth across the northern Nevada region, including several regional economic development authorities including the Economic Development Authority of Western Nevada, will likely worsen this gap if expanded training pipelines are not created and implemented. Low-technology sectors such as all other miscellaneous manufacturing had average wages slightly above $10,000 on average, making these jobs highly vulnerable to automation and offshoring.

Sectors like other concrete product and reconstituted wood product manufacturing provide stronger wages but are likely to face skilled labor shortages if recruitment efforts are not accelerated. Smaller industries such as distilleries and dry pasta manufacturing remain economically vulnerable and limited in impact. In education, advanced manufacturing shows the largest shortfall in engineering technologies, with only 296 graduates, followed closely by mechanical, civil, and electrical engineering fields with 309 graduates. Precision production programs produced 361 graduates, and science tchnologies led with 571 completions, still insufficient to meet existing and projected future workforce needs. High school Career and Technical Education completions are concentrated in service and creative fields, showing a major misalignment with regional economic priorities. Closing these gaps will require expanding higher education and industry partnerships, developing apprenticeship and certification programs, investing in advanced manufacturing training, and accelerating technology adoption. Strengthening Career and Technical Education offerings and creating clear pathways to postsecondary technical careers are essential to ensuring that the Economic Development Authority of Western Nevada's region, which encompasses Washoe County, can transition to a high-skill, high-wage advanced manufacturing-based economy.

4.1.c Las Vegas Global Economic Alliance

The Las Vegas Global Economic Alliance region includes Clark County, the largest and fastest-growing area in Nevada, anchored by the larger Las Vegas metropolitan statistical area. The

region's economic base has traditionally been tourism and hospitality-focused but advanced manufacturing sectors, such as aerospace, electronics assembly, and automation technology, are growing rapidly. Despite this shift, workforce development remains a major challenge throughout the region. In 2022, Clark County high schools graduated only 286 students from manufacturing-related Career and Technical Education programs, and Nevada System of Higher Education data shows that just 52 students from the College of Southern Nevada and from the University of Nevada, Las Vegas combined completed manufacturing, electronics, or engineering technology degrees in 2023. Given the scale of emerging manufacturing projects tied to logistics and aerospace suppliers, the current output of skilled workers is not enough to sustain future industry expansion.

Electronics assembly and aerospace manufacturing present specific and unique workforce concerns and challenges. Enrollment in electronics-focused Career and Technical Education programs decreased by approximately 12.0 percent between 2020 and 2022 across Clark County, while demand for skilled workers in robotics and aerospace assembly have risen significantly. Wage reporting in 2023 shows significant shortages in mid-skill roles such as electronics technicians and manufacturing assemblers. Companies seeking to supply aviation, defense, and logistics sectors have increasingly faced difficulty filling technical positions, often relying on costly training or external recruitment from other states. While the Las Vegas Global Economic Alliance region holds tremendous potential to further diversify Nevada's economy beyond traditional tourism and hospitality, agricultural production, and even mining and natural resource extraction sectors, the region's current workforce pipeline needs reinforcement. Expanding advanced manufacturing pathways at the College of Southern Nevada and at the University of Nevada, Las Vegas, improving high school engagement in electronics and automation Career and Technical Education programs, and strengthening partnerships between schools and employers will be crucial to ensuring that Clark County can meet the growing labor demands of its growing advanced manufacturing sector.

4.1.d Lincoln County Regional Development Authority

Lincoln County faces distinct workforce challenges despite industry strengths in rail transportation, utilities, and agriculture. Skilled trades are undersupplied in terms of workforce availability, particularly in rail logistics, construction services, and agricultural operations. Local training programs produce too few equipment operators, maintenance technicians, and utility specialists to meet even modest local and regional demand. Healthcare and technical services also show significant gaps. Limited access to medical professionals and technical workers restricts the region's ability to support broader economic activity, forcing employers to rely heavily on external recruitment. Lincoln County's small population size further limits its workforce pool. With a total population of approximately 4,500 total residents, the county does not have the scale needed to support significant advanced manufacturing development. The labor force is heavily oriented toward traditional industries such as agriculture, local government, and transportation, leaving little capacity for new industrial and advanced manufacturing sectors.

4.1.e Nevada 95-80 Regional Development Authority

Humboldt County, the larger of the two counties that comprise the Nevada 95-80 Regional Development Authority region, has a relatively larger employment base with 314 reported employees in advanced manufacturing sectors and a total wage outlay of approximately $2.92 million. The average wage per position is approximately $9,284, indicating a concentration of mid to lower-wage jobs compared to statewide or national benchmarks. Key industries contributing to Humboldt County's workforce include sectors linked to basic services and possibly hospitality or mining support, though the detailed breakdown is provided separately for precise sector insights. Pershing County, on the other hand, exhibits a significantly smaller workforce size with only 43 reported positions in advanced manufacturing sectors but a notably higher average wage of about $18,838. Total wages for the period for just Pershing County totaled approximately $810,040. This suggests that Pershing County's economic base is likely anchored by higher-wage industries such as specialized mining, energy, or niche manufacturing sectors, even though the workforce size is significantly smaller than Humboldt County's overall workforce size.

The broader Nevada 95-80 Regional Development Authority region produced 1,670 completions in advanced manufacturing and science-based fields, with strong representation in computer science, engineering, and biological sciences. This indicates a solid technical talent pool region-wide, although direct local graduation numbers for Humboldt County and Pershing County are limited. Workforce development in these largely rural areas will depend on the ability to connect this talent pool to local and regional opportunities through competitive jobs and incentives. Statewide advanced manufacturing Career and Technical Education programs produced 12,747 student records focused in fields like welding, industrial technologies, and mechanical engineering. While this represents a strong technical education pipeline, it is unlikely to meet the full regional demand for skilled manufacturing workers, particularly as many positions require advanced certifications and experience beyond basic program completion. Rural areas such as Humboldt County and Pershing County within this region may experience even wider workforce gaps as graduates often migrate toward urban centers for employment. Addressing this gap will require stronger connections between training programs and local employers, along with incentives to retain and attract technical talent in rural communities.

4.1.f Northeastern Nevada Regional Development Authority

The Northeastern Nevada Regional Development Authority region, that includes Elko County, Eureka County, Lander County, and White Pine County, faces significant workforce challenges despite several strong economic drivers. Skilled trades are critically undersupplied across and throughout the entire region, with shortages of heavy equipment operators, industrial electricians, and mechanical technicians. The region experiences an estimated annual shortfall of more than 300 workers in these key areas. Healthcare gaps are equally pressing across the entire Northeastern Nevada Regional Development Authority region. Existing numbers of registered nurses, medical technicians, and primary care providers meet only about 68.0 percent of total regional demand, resulting in a deficit of approximately 150 professionals each year. Technical fields such as engineering and information technology also suffer from limited local education pipelines, forcing companies to recruit externally at higher costs. The overall economic dominance of the region's mining and natural resource extraction sector across the region's existing economic base further complicates economic diversification efforts. High wages and

strong demand within the mining and natural resource extraction sector makes it difficult for other firms in other industries to attract and retain talent. Because of this, the Northeastern Nevada Regional Development Authority region is best positioned as a source of raw materials, and efforts to develop a major advanced manufacturing base are unlikely to succeed at scale. A strategic focus should remain on strengthening the region's existing mining and natural resource extraction industry and related support industries rather than pursuing large-scale industrial diversification.

4.1.g Northern Nevada Development Authority

The Northern Nevada Development Authority region includes Carson City, Douglas County, Lyon County, Mineral County, and Storey County, a critical part of northern Nevada's growing advanced manufacturing economy. This region has seen rapid industrial development anchored by Tesla's Gigafactory in Storey County, Panasonic Energy, Redwood Materials, Click Bond in Carson City, and Fulcrum BioEnergy. Advanced manufacturing plays a vital role in diversifying these counties and the entire region beyond traditional industries like government services, mining and natural resource extraction, agricultural production, and tourism and hospitality. However, workforce development data highlights gaps that could slow the region's further growth and diversification. In 2022, high schools across Carson City, Douglas County, and Lyon County produced only 121 graduates from manufacturing-related Career and Technical Education programs. Nevada System of Higher Education graduation data shows that fewer than 45 degrees or certificates were awarded in manufacturing, engineering, or mechatronics fields by local colleges like Western Nevada College.

Battery manufacturing and industrial machinery maintenance are two areas with the most pressing workforce needs. Tesla's continuous Gigafactory expansion, alongside new battery recycling efforts from Redwood Materials, have sharply increased demand for technicians skilled in materials processing, automation, and precision maintenance. Meanwhile, Fulcrum BioEnergy and logistics hubs in Fernley and Dayton, both located in Lyon County, are intensifying demand for robotics and systems maintenance specialists. Despite these opportunities, local training pipelines have not scaled quickly enough. Enrollment in advanced manufacturing Career and Technical Education programs across Carson City and Lyon County has stagnated, and existing workforce data shows that employers are struggling to recruit mid-skill workers, including automation technicians, CNC operators, and maintenance specialists. To sustain the Northern Nevada Development Authority region's current economic momentum, further strengthening and expanding advanced manufacturing education and apprenticeships is needed. Expanded partnerships between employers like Tesla, Panasonic, and Redwood Materials with Western Nevada College and area high schools could accelerate workforce readiness. Without significant investment in manufacturing workforce development, the Northern Nevada Development Authority region risks losing ground to other regions, and potentially other states throughout the western and intermountain United States, competing for advanced manufacturing and industry growth.

4.1.h Southwest Central Regional Economic Development Authority

The Southwest Central Regional Economic Development Authority includes two counties, Esmeralda County and Nye County. This region is sparsely populated, which makes overall employment levels relatively low. The economic base of the Southwest Central Regional Economic Development Authority region is dominated by traditional industries such as gold and silver mining, scientific research, energy production, and government services. Although advanced manufacturing sectors are technically present, such as petroleum refining and nonferrous metal smelting, they remain extremely small in scale and overall workforce contribution. Petroleum refineries, which are the top manufacturing sector in terms of total economic output, only generate 14 jobs and about $591,000 in employee compensation. Another example is semiconductors, which are heavily produced locally but very rarely consumed in the region, indicating a value loss. Since there is no strong electronics manufacturing activity present within and throughout the region, computer assembly, or semiconductor-consuming industries locally, most semiconductors are simply exported out of the region without being turned into higher-value products, such as microchips, devices, solar panels, and computers.

There are currently no recorded jobs in either Esmeralda County or Nye County in the geothermal energy sector. However, according to Chevron.com, Chevron and Baseload Capital announced a joint venture in 2022 to explore potential geothermal development opportunities in Esmeralda County. Should this project come to fruition, it could create a significant surge in local employment opportunities and new workforce demand. Proactive preparation for a project of this size and scale is critical. Promoting education and training in geothermal energy, such as increasing enrollment in programs like the National Geothermal Academy at the University of Nevada, Reno, could help build a capable local workforce ready to meet future industry needs.

Workforce upskilling efforts in the Southwest Central Regional Economic Development Authority region remain constrained by limited educational infrastructure. Great Basin College's Pahrump Campus in Nye County now offers a Manufacturing Machining Technology Certificate of Achievement, supporting foundational skills for industrial manufacturing careers. The program enrolled 55 students and graduated 39 students in 2023, representing an important step toward building a localized technical workforce. Despite this improvement, significant gaps remain. Specialized training pathways in advanced manufacturing fields such as mechatronics, industrial automation, and metallurgy are still absent from regional institutions. Residents seeking more advanced or specialized technical education must continue to depend on institutions and workforce development providers located in the state's more urban population centers, including Clark County or Washoe County, creating ongoing geographic and economic barriers to comprehensive workforce development efforts. Without broader program expansion and additional partnerships with advanced manufacturing employers, the region's ability to organically grow a high-skill manufacturing sector aligned to its strengths in mining, refining, and logistics will remain severely limited.

4.2 Current Workforce and Pipeline by Regional Economic Development Authority

This subsection presents a general analysis of the current workforce and existing pipeline of workers available to support the further development of the advanced manufacturing industry

sector for each of Nevada's eight regional economic development authorities beginning with an examination of unemployment rates by county. Table 4.1 presents the estimated civilian unemployment rate for each county as of February 2025. Each of Nevada's 17 counties are ranked, one through 17, based on their civilian unemployment rates. The civilian unemployment rate for the entire state of Nevada as of February 2025 is also presented for comparison.

Table 4.1 – Civilian Unemployment Rate of All Nevada Counties and for the State of Nevada
February 2025

County	Estimated Civilian Unemployment Rate	Rank (Lowest to Highest)
Humboldt County	4.2%	1
Elko County	4.3%	2
White Pine County	4.4%	3
Carson City	4.7%	4
Douglas County	4.8%	5
Pershing County	4.8%	5
Washoe County	4.8%	5
Churchill County	5.0%	8
Lyon County	5.5%	9
Lander County	5.7%	10
Lincoln County	5.7%	10
Clark County	5.9%	12
Storey County	6.0%	13
Eureka County	7.0%	14
Nye County	7.3%	15
Esmeralda County	9.6%	16
Mineral County	9.9%	17
State of Nevada	**5.4%**	**-**

Source: U.S. Bureau of Labor Statistics

A further analysis of the estimated civilian unemployment rates for each county in Nevada is presented in the following current workforce and pipeline analysis presented for each of the eight regional economic development authorities.

4.2.a Churchill Fallon Development Authority

The Churchill Fallon Development Authority has an estimated total population of 25,803 individuals and a total employment base of 13,776 individuals (IMPLAN). Churchill County's population is largely concentrated in the city of Fallon. According to the U.S. Census Bureau, Churchill County has an unemployment rate of 6.5 percent, with the highest unemployment rate among individuals aged between 25 years of age and 29 years of age, where unemployment is estimated to be 16.2 percent (U.S. Census Bureau, 2023). Churchill County's labor force participation rate is estimated to be around 62.2 percent, which falls below the national average

of 63.8 percent (U.S. Census Bureau, 2023). The largest employers in Churchill County are the federal government and military, with an estimated 1,323 total employees, followed by scenic and sightseeing transportation and supporting activities, with an estimated 616 total employees (IMPLAN).

In terms of the region's workforce pipeline, Churchill County High School and Western Nevada College's Fallon Campus have provided students with the opportunity for training in the advanced manufacturing industry through a variety of programs. Western Nevada College's Fallon Campus enrolled 629 students in the fall of 2024, of which 544 of those students were Churchill County residents (Western Nevada College). Western Nevada College's Fallon Campus's different levels of automation and industrial technology, automotive technology, machining technology, and welding programs have been able to provide growth opportunities for the advanced manufacturing sector (Western Nevada College). These programs build expertise in machining, welding, electronics, manufacturing systems, and automation, equipping students with practical skills for technical industries. In the fall of 2024, 29 students were enrolled in these major programs, where 14 of these students were seeking certificates, and 16 of these students were seeking an associates of applied science degree (Western Nevada College).

Churchill County High School has several Career and Technical Education programs, like automotive technology, agricultural mechanics technology, diesel technology, and a variety of different welding technology classes that relate to advanced manufacturing (Churchill County High School). These courses aim to teach practical repair, fabrication, diagnostics, and machinery skills for careers in automotive, agricultural, diesel, and welding industries. According to Churchill County High School's Nevada Report Card, there were 171 students in the 2023 through 2024 school year that graduated from one of the ten Career and Technical Education programs that Churchill County High School offers (Nevada Department of Education, 2024). Research was limited, given a lack of access to resources that could identify certain information, like specific certification graduation rates, that was attributed directly to Churchill County-based educational institutions. While research was limited, Churchill County's high agricultural production activity levels provides great potential for advanced manufacturing programs, like Churchill County High School's agricultural mechanics technology certification, to progress in the future.

4.2.b Economic Development Authority of Western Nevada

With a population of 498,022 (IMPLAN), the Economic Development Authority of Western Nevada Region, including just Washoe County, it is the second most populous county in Nevada. Its total workforce is estimated to be 330,188 total individuals (IMPLAN). Washoe County has one major urban population center, the Reno-Sparks metropolitan statistical area that consists of the city of Reno and the city of Sparks, with workforce populations of 221,435 total individuals in Reno and 86,955 total individuals in Sparks (U.S. Census Bureau), equating to a total metropolitan statistical area total workforce of 308,390 individuals aged 16 years of age or older. According to the U.S. Bureau of Labor Statistics, Washoe County's unemployment rate is 4.8 percent as of February 2025, which is tied for the fifth lowest of all Nevada counties and lower than state of Nevada's statewide rate of 5.4 percent.

The workforce 'pipeline' consists of secondary, post-secondary, and non-traditional schools. Washoe County School District has 20,196 secondary students enrolled for the 2024 through 2025 school year with a graduation rate of 82.0 percent. The Washoe County School District also has Signature Academies at various high schools as well as Career and Technical Education program dedicated schools to promote various career clusters. These clusters are defined as Information Technology & Media and Skilled & Technical Sciences. These include programs such as Advanced Computer Science, Cybersecurity, Advanced Manufacturing Technologies, Energy Technologies, Engineering Foundations, Metalworking, and Welding Technology. The Washoe County School District also is currently building a new school focused on Career and Technical Education programming, the Debbie Smith CTE Academy, which is due to open for the 2025 through 2026 school year (washoeschools.net).

The Economic Development Authority of Western Nevada region is home to two post-secondary schools, the University of Nevada, Reno and Truckee Meadows Community College, which each had an enrollment in fall 2024 of 22,331 students and 11,190 students respectively (ir.nevada.edu). Truckee Meadows Community College has multiple applied technology programs including Advanced Manufacturing, Machining, and Welding. Truckee Meadows Community College has also partnered with Panasonic Energy of North America to create the Advanced Manufacturing FastTrack program which, in five weeks, gives students a basic understanding of advanced manufacturing (tmcc.edu). This region also has a non-traditional school, Sierra Nevada Job Corps, whose goal is to give free career training and education to low income individuals aged 16 years of age to 24 years of age. Sierra Nevada Job Corps offer programs in Electrical, Maintenance, Material Handling, and Welding (sierranevada.jobcorps.gov). Washoe County does not have directly sponsored programs for workforce attraction for advanced manufacturing companies. The Economic Development Authority of Western Nevada, Manufacture Nevada (Nevada's only Manufacturing Extension Partner or MEP), and Nevadaworks each, however, help individual companies connect with the resources they need. Nevadaworks is northern Nevada's workforce development hub, funded by Good Jobs Northern Nevada and provides individual workers across a variety of industry and occupation sectors with training and job placement (nevadaworks.com). The region also benefits from the state's Workforce Innovations for the New Nevada program, started by the Nevada Governor's Office of Economic Development. Since its inception, the Workforce Innovations for the New Nevada program has contributed more than $17.0 million in support of accelerated training for high-skill and high-wage jobs (goed.nv.gov).

Washoe County does have the required education infrastructure and overall workforce to support expansion of advanced manufacturing in the county and throughout other parts of northern Nevada, including parts of the Northern Nevada Development Authority region which includes Carson City, Douglas County, Lyon County, Mineral County, and Storey County. Washoe County's overall residential population is projected to reach approximately 587,000 people, or an increase of 16.0 percent over current population levels, by 2040 (washoecounty.gov), further enhancing the county's ability to meet future workforce needs throughout northern Nevada. The county's geography and geographic location is appealing to both companies and residents with the Reno-Sparks metropolitan statistical area's existing population center at the base of the Sierra Nevada Mountains and less than a day's drive to other major population centers in neighboring California and to other population centers located throughout northern Nevada. Washoe County

is already home to many advanced manufacturing companies and has a continued focus on improving workforce availability through secondary, post-secondary, and non-traditional school programs.

4.2.c Las Vegas Global Economic Alliance

Clark County, covered by the Las Vegas Global Economic Alliance, is the most populous county in Nevada, consisting of five incorporated cities, which include Boulder City, the city of Henderson, the city of Mesquite, the city of Las Vegas, and the city of North Las Vegas. The Las Vegas Global Economic Alliance region has a total population of 2,336,573 and has an employment base of 1,566,508 total individuals (IMPLAN, 2023). There are currently 381 employing industries in Clark County, and the industry that has the largest workforce is hotels and motels (including casino hotels) with an estimated 100,802 employees, making up about 6.4 percent of the county's total employment. Clark County has a total unemployment rate of 7.4 percent and the highest labor force participation rate is seen in employees between the ages of 30 years of age and 34 years of age, with a participation rate of 82.9 percent. (U.S. Census Bureau, 2023). The Las Vegas Global Economic Alliance has been engaged in diversifying its economy beyond the hospitality, gaming, and tourism industries that have historically dominated this region. The COVID-19 pandemic was detrimental to Clark County, since so much of its economy relied on industries that were temporarily shuttered. As a result, the Las Vegas Global Economic Alliance has been pushing for advanced manufacturing as well as the manufacturing of dry foods, since the area's warm, dry climate is perfect for manufacturing such goods. However, growing advanced manufacturing industries in the area require a labor force that can support such an expansion. There are an estimated 39,023 individuals that make up the manufacturing workforce, which is about 2.5 percent of the total employment base in Clark County (IMPLAN, 2023).

Although the current manufacturing workforce of the Las Vegas Global Economic Alliance region is still relatively small as a percentage of the total existing workforce, there are a variety of programs in Nevada and operating throughout the region that teach the skills necessary for advanced manufacturing jobs. Career and Technical Education programs are offered to students in middle school, high school, and postsecondary institutions, and they provide students with a blend of academic and technical skills to prepare them for college and careers. Career and Technical Education programs are organized into 16 clusters, one of which is manufacturing. The main program that is currently being offered in this cluster is the Advanced Manufacturing Technologies Program of Study, teaching students the fundamental skills of advanced manufacturing. In the 2022 and 2023 school year, there were 55,993 Clark County students enrolled in various Career and Technical Education programs, and an estimated 3,100 total students, or about 5.6 percent of those students, that were enrolled in the manufacturing program. There are also eight colleges and universities in the state of Nevada, several of them located in Clark County, all offering programs in which students can learn skills that are beneficial to advanced manufacturing.

According to data from the Nevada System of Higher Education, there was an estimated 19,379 students enrolled in Clark County and, of these students, approximately 1,884 total students were enrolled in courses that could provide them with skills in advanced manufacturing. There were,

however, about 19,000 students in the Nevada System of Higher Education that had no associated zip code, so these figures could potentially be much higher. Clark County is also home to the South Career and Technical Academy and the Southeast Career and Technical Academy, magnet schools where high school students can major in a career field, with advanced manufacturing being one of their most prominent programs. Another advanced manufacturing education program that is offered in Clark County is the Advanced Manufacturing Collaborative at the Central Technical Training Academy. In collaboration with Clark County School District, the College of Southern Nevada and Nevada Gold Mines, this program provides students the opportunity to earn a Certificate of Achievement in advanced manufacturing from the College of Southern Nevada while also completing high school graduation requirements. Nevada Gold Mines covers the cost of all tuition, textbooks, fees, and materials for this program. The city of Henderson also partnered with the College of Southern Nevada to develop and open the Debra March Advanced Manufacturing Center of Excellence in 2023. The Center serves as a training center both for people with little to no experience as well as well-seasoned manufacturing employees with many years of experience. The goal of this initiative is to produce and sustain a talent pipeline for the expansion of advanced manufacturing in the area.

While the Las Vegas Global Economic Alliance region and Clark County have historically focused its efforts on the continued growth and diversification of hospitality, gaming, tourism, and entertainment industries, there is hope for change and expansion in the region's advanced manufacturing industry sectors and in developing a robust and talented advanced manufacturing workforce pipeline. The Las Vegas Global Economic Alliance recognizes the potential that the rapidly growing advanced manufacturing sector has to offer, and the region is making considerable efforts to expand the workforce. The region and its various workforce development partners are rapidly developing the workforce development infrastructure and a sustainable workforce pipeline through the multitude of educational opportunities that have been created in Clark County.

4.2.d Lincoln County Regional Development Authority

The Lincoln County Regional Development Authority, which covers Lincoln County and includes the four main population centers of Alamo, Caliente, Panaca, and Pioche, is in the southeastern corner of the state and borders the state of Utah to its east. Lincoln County is sparsely populated with an estimated 4,452 people (U.S. Census Data). The unemployment rate is notably low at 1.7 percent, with a labor force participation rate of just 49.4 percent. Labor participation among younger workers aged 20 years of age to 24 years of age is relatively strong at 80.5 percent, although this group faces a high unemployment rate of 12.7 percent, while older age groups maintain near full employment. Manufacturing accounts for only 2.8 percent of employment, with an estimated 50 workers whom all are estimated to be male, indicating a relatively small but present industrial base.

The educational pipeline for advanced manufacturing is modest. Lincoln County students have access to Career and Technical Education programs such as Manufacturing Technologies and Welding Technology, with two and 19 students respectively enrolled. However, program alignment with job skill demands is only partial, covering about 40.0 percent of critical industry-required skills like CNC operation, blueprint reading, and welding certifications. Educational

attainment data shows that approximately 46.0 percent of residents aged 25 years of age or older have a high school diploma, approximately 22.0 percent have some college, and approximately 11.6 percent hold a bachelor's degree (IMPLAN, 2023). For individuals aged 18 years of age to 24 years of age, no individuals have achieved a bachelor's degree, with the majority holding only a high school diploma or some college experience.

Lincoln County's workforce presents both opportunities and limitations for the expansion of the region's advanced manufacturing sector. The county benefits from low unemployment and stable labor participation among prime working-age groups, but it faces challenges due to its small workforce size, aging population, and limited local technical education infrastructure. Higher education and specialized training options require traveling outside the county, primarily to institutions like Great Basin College or the College of Southern Nevada. While a manufacturing presence exists, substantial growth would require investment in workforce training programs, partnerships with external educational providers, and improved local access to skill development pathways. Although baseline employment and industry data provide a general picture of Lincoln County's overall labor force and education levels, detailed sector-specific workforce data remain limited. Enhancing local reporting on wages, occupation-specific employment, and economic activity would allow for better workforce development planning and strategic development, positioning Lincoln County to more effectively support growth in advanced manufacturing and the sector's broader supply chain.

4.2.e Nevada 95-80 Regional Development Authority

The Nevada 95-80 Regional Development Authority region, which includes Humboldt County and Pershing County, is located in the north-central part of the state of Nevada. With its two major population centers, the city of Lovelock in Pershing County and the city of Winnemucca in Humboldt County, the Nevada 95-80 Regional Development Authority region has an overall total population of 23,500 individuals and an employee base of 13,018 individuals (IMPLAN, 2023). Humboldt County and Pershing County have estimated unemployment rates of 5.4 percent and 6.0 percent respectively. However, overall labor participation is highest in Humboldt County among individuals aged 30 years of age 34 years of age with an estimated 87.9 percent. For Pershing County, the highest overall labor participation rate is among individuals aged 20 years of age to 24 years of age with an estimated 52.9 percent (U.S. Census Bureau, 2023). For the two counties combined and for the entire Nevada 95-80 Regional Development Authority region, gold ore and silver ore mining has the highest total employment with an estimated 2,571 total individuals employed (IMPLAN, 2023).

Despite the efforts to expand the area's various Career and Technical Education programming and the continued growth of Nevada System of Higher Education certificate and degree programming, the region has continued to struggle to produce a pipeline of skilled and trained workers needed to support the continued growth of the area's advanced manufacturing industry sector and the closure of identified gaps in the sector's supply chain and value network through new business creation and attraction and existing business retention and expansion efforts. Great Basin College created the Winnemucca Center to increase accessibility to academic resources, where students can attend online classes that are synchronized with in-person classes at their main campus in Elko. Great Basin College has several degree and certification programs that

focus on the technology industry, like welding technology and manufacturing machining technology, which can be valuable in building a more skillful workforce (Great Basin College). For the entire College at all its various locations across the state, Great Basin College awarded 238 degrees and certificates in the 2023 through 2024 school year for advanced manufacturing related programs (Nevada System of Higher Education). The University of Nevada, Reno has created an extension office in Pershing County to reach potential students, but these programs offered have minimal connection to advanced manufacturing (University of Nevada, Reno Extension). Information about Career and Technical Education Programs within the Pershing County and Humboldt County school districts is limited. According to the Nevada Department of Education's 2023 and 2024 Report Card, Albert M. Lowry High School in Humboldt County had 155 Career and Technical Education program completions, and Pershing County High School (PCHS) had 39 CTE completers (Nevada Department of Education, 2024). Pershing County High School did have a partnership with the Nile Valley Future Farmers of America, which could be an opportunity for growth in expanding advanced manufacturing within the agricultural sector (Pershing County School District).

While data accessibility made surveying the region's workforce capability difficult, it is evident that the Nevada 95-80 Regional Development Authority region has room for opportunity in further developing its advanced manufacturing industry sector through targeted business creation, attraction, retention, and expansion efforts and through expanded workforce development programming and training. Given the region's relatively high levels of total employment in the mining and natural resource extraction sector and related industry and occupation sectors, supporting more advanced manufacturing activity within the region is a major opportunity. Engaging the public K through 12 school districts in both Humboldt County and Pershing County through pursuit of additional and targeted workforce development efforts is a possible starting point for this region.

4.2.f Northeastern Nevada Regional Development Authority

The total population of the Northeastern Nevada Regional Development Authority, which includes Elko County, Eureka County, Lander County, and White Pine County, is 70,501 total individuals and total employment for this region is 44,586.38 individuals (IMPLAN, 2023). The top two employment industries for the Northeastern Nevada Regional Development Authority region are gold ore and silver ore mining, with total employment at 6,887.09 individuals, and hotels and motels, including casino hotels, at 2,546.68 individuals. Between the four counties that comprise this region, Eureka County has the highest unemployment rate of 7.0 percent while Lander County had an unemployment rate of 5.7 percent. White Pine County and Elko County had lower unemployment rates, of 4.3 percent and 4.4 percent respectively (U.S. Bureau of Labor Statistics, 2025). Eureka County's relatively high employment rate can be partially attributed to the fact that the median age of this county is 50.1 years (U.S. Census Bureau, n.d.).

Great Basin College, with its main campus located in the city of Elko in Elko County, offers associate various degrees along with certificates in various technical fields. These fields include diesel technology, electrical systems technology, industrial maintenance, manufacturing machining technology, and more (Great Basin College, 2025). Great Basin College also operates the Ely Center campus in the city of Ely located in White Pine County. Although Great Basin

College had an increase from 35.7 percent to 43.3 percent in graduation rates between 2018 and 2022, the fall headcounts have decreased from 3,451 students to 3,197 students during this time frame. Both the Lander County School District and the White Pine County School District offer various Career and Technical Education programs related to advanced manufacturing like auto technology, computer science, and engineering (Battle Mountain High School, n.d. & White Pine County School District, n.d.). According to Nevada System of Higher Education enrollment and graduation data, there are 746 students with an advanced manufacturing academic plan. Nevadaworks also provides free job training throughout the state of Nevada and has locations in each county located within the Northeastern Nevada Regional Development Authority region (Nevadaworks, n.d.).

General maintenance and repair workers and production workers had the highest estimated demand among advanced manufacturing occupations, with an average annual opening of 50 open positions and 10 open positions respectively (U.S. Bureau of Labor Statistics: Lightcast, 2024). These jobs usually require a high school diploma or equivalent. Some of the other top-demand jobs with hourly wage rates of about $30.00 per hour require a postsecondary or higher education. The fastest growing advanced manufacturing occupations between 2024 and 2029 are projected to be heating, air conditioning, and refrigeration mechanics and installers, power plant operators, and buyers and purchasing agents (U.S. Bureau of Labor Statistics: Lightcast, 2024). The existing Sector Strategy Committee has established a priority focused on enticing more instructors to the region, increasing enrollment and graduation for various degree and certificate programs, and supporting efforts to attract exposure to these programs.

Despite existing educational programs like those currently offered through Great Basin College, programs that provide training in various advanced manufacturing skills, the Northeastern Nevada Regional Development Authority region does not yet have the workforce capacity necessary to fully support the projected regional growth in advanced manufacturing. According to the Northeastern Nevada Regional Development Authority, the region has more open jobs than people to fill those open positions and recent graduates have a success rate of greater than 96.0 percent when looking for employment (NNRDA, n.d.). Although there may be open positions available, there appears to be a lack of skilled workers needed to fill those positions. Additionally, the region's existing skilled workforce may be moving away from this region as the region is specifically geared and oriented around the area's existing mining and natural resource extraction sector. It further appears that the Northeastern Nevada Regional Development Authority region's advanced manufacturing related sectors, employment opportunities, and existing workforce focuses more on traditional manufacturing rather than emerging advanced manufacturing trends.

4.2.g Northern Nevada Development Authority

The combined population of the Northern Nevada Development Authority region, which includes Carson City, Douglas County, Lyon County, Mineral County, and Storey County, is approximately 173,600 individuals, with Carson City, with 58,639 total individuals, and Lyon County, with 59,235 individuals, being the two largest in terms of total population (U.S. Census Bureau, 2023). The region's top employment industry is battery manufacturing. Unemployment rates as of January 2025 vary across the region. The estimated unemployment rate for Mineral

County was 9.6 percent, Lyon County was 5.2 percent, Storey County was 5.6 percent, Douglas County was 4.6 percent, and Carson City was 4.5 percent. Educational attainment also varies by county within and throughout the Northern Nevada Development Authority region, with Douglas County leading at 32.1 percent of adults holding a bachelor's degree or higher, followed by Carson City at 24.5 percent, Storey County at 21.5 percent, Lyon County at 17.2 percent, and Mineral County at 11.5 percent (U.S. Census Bureau, 2023).

Various secondary, post-secondary, and non-traditional educational institutions support the region's workforce pipeline. Carson High School offers various Career and Technical Education programs aligned with high-wage, high-skill, and high-demand jobs. Douglas High School's Career and Technical Education programs emphasize hands-on learning and specialized skills training. Lyon County's Fernley High School provides welding, electronic technology, and engineering foundations courses. Mineral County High School offers a computer science program focusing on computational thinking and programming. Storey County's Virginia City High School has limited Career and Technical Education program offerings beyond basic technology education. Post-secondary education within and throughout the region is anchored by Western Nevada College, which offers certificates and associate degrees in advanced manufacturing, welding, automation, and industrial technology and has over 150 students enrolled in related courses (NSHE 25) with an average enrollment of 3,900 total students. In Mineral County, the University of Nevada, Reno Extension office provides need-based, noncredit education and collaborates with local entities to build community-specific programs.

While the Northern Nevada Development Authority region has made significant strides in workforce development, the region still lacks enough directly sponsored programs explicitly dedicated to attracting new and supporting existing advanced manufacturing companies. However, the region does benefit from various state-level initiatives such as the Workforce Innovations for the New Nevada program, administered by the Governor's Office of Economic Development. For instance, Western Nevada College received $740,000 through the Workforce Innovations for the New Nevada program to develop and deliver new curriculum and training pathways related to the emerging battery recycling industry, aiming to reach 108 students in two years and provide $260,000 in equipment. Additionally, Western Nevada College has partnered with Redwood Materials, offering students and graduates a training program for new employees assigned to battery disassembly, developed with Western Nevada College’s Mobile Manufacturing Lab. Despite these efforts, challenges still remain in sustaining a growing workforce pipeline for advanced manufacturing. Smaller population level counties like Mineral County and Storey County within the region have limited educational infrastructure, necessitating students to travel to neighboring counties for specialized training. These issues lower educational attainment rates, highlighting the need for targeted interventions to enhance workforce readiness.

4.2.h Southwest Central Regional Economic Development Authority

The Southwest Central Regional Economic Development Authority region, which includes Esmeralda County and Nye County is sparsely populated, with a total population of 56,456 individuals. Nye County is the largest of the two counties, with an estimated total population of 55,720 people. Esmeralda County has an estimated total population of 736 people, the least

populated county in Nevada (U.S. Census Data). Major population centers in Nye County include the towns of Pahrump in the south and Tonopah in the north. The unemployment rate in Nye County was at 9.5 percent and Esmeralda County was at 2.8 percent in 2023 (U.S. Census Data). It is important to note that the labor force participation rates for these counties are relatively low due to the large number of individuals at or above the retirement age. In Esmeralda County, the labor force participation rate is below the national and state average, estimated to be approximately 43.8 percent and Nye County's labor force participation rate, while slightly greater than the rate in Esmeralda County, is estimated to be approximately 40.8 percent.

Developing a well-trained and skilled workforce is crucial for attracting and maintaining the types of manufacturing jobs that support the region's advanced manufacturing sector. For the Southwest Central Regional Economic Development Authority region, the only institution of higher education is an extension campus of Great Basin College, located in Nye County. At the Great Basin College campus located in Pahrump, the only advanced manufacturing related program offered is the Manufacturing Machining Technology Certificate of Achievement. The program had a total of 55 students enrolled in the last academic school year with 39 graduates earning the Certificate of Achievement. The Manufacturing Machining Technology program at Great Basin College equips students with hands-on skills in both manual and CNC machining, preparing them for NIMS certification and entry-level roles in diverse industries like aerospace, mining, and manufacturing. Graduates gain the ability to safely produce precision parts, interpret technical drawings, use machining software, and communicate effectively in industrial settings. For individuals living and working in Esmeralda County or Nye County, other relatively nearby institutions include the University of Nevada, Las Vegas, Nevada State University, and the College of Southern Nevada located in the city of Henderson and the city of Las Vegas in neighboring Clark County. Due to Esmeralda County's relatively small population and the absence of pertinent education and employment data, conducting a deeper analysis of the county's workforce in connection to its own and the region's advanced manufacturing sector was not possible.

The Southwest Central Regional Economic Development Authority region has and continues to struggle with limited data availability, largely due to its low population. Neither the Department of Employment, Training and Rehabilitation nor the Nevada System of Higher Education provided sufficient data, making it difficult to evaluate the region's needs or offer specific recommendations. The scarcity of a local labor force and educational resources further complicates this analysis. Enhancing data reporting on wages and economic activity would support more effective strategic planning and help pinpoint gaps within the advanced manufacturing sector and its wider supply chain.

4.3 Workforce Availability and Value Network and Supply Chain Linkages Across Nevada's Advanced Manufacturing Sector

This section examines various trends and issues that have emerged in the availability of a skilled and trained workforce needed to support the further closure of identified gaps in the value network and supply chain of Nevada's advanced manufacturing industry sector. The creation

and attraction of new business and the retention and expansion of existing businesses that provide critical goods and services to and purchase finished goods and services from advanced manufacturing firms throughout the state have their own unique workforce needs that will need to be addressed to successfully close these identified 'gaps' in this critically important industry sector.

4.3.a Workforce Training, Regional Linkages, and Value Network Development in Nevada's Advanced Manufacturing Sector

Nevada's advanced manufacturing is closely linked with sectors such as logistics, clean energy, and technology. The development of lithium battery production, for instance, has spurred the growth in related industries, including raw material suppliers and transportation services. This interconnectedness enhances the state's economic resilience and positions it as a national and even international hub for innovative technologies and additional advanced manufacturing.

4.3.a.1 Urban Areas

In the state's existing urban centers, such as the Carson City metropolitan statistical area, the Las Vegas metropolitan statistical area, and the Reno-Sparks metropolitan statistical area, institutions such as the College of Southern Nevada, Truckee Meadows Community College, and Western Nevada College are crucial to the training of the state's advanced manufacturing workforce. Programs like Truckee Meadows Community College's partnership with Panasonic Energy of North America focuses on advanced manufacturing skills, including automation and robotics. These initiatives are supported by the Workforce Innovations for a New Nevada fund, which aims to align training programs with industry needs. The Reno-Sparks metropolitan statistical area has seen significant growth in manufacturing and transportation jobs, partly due to diversification efforts undertaken during the Great Recession and again during the COVID-19 global pandemic.

While the Las Vegas metropolitan statistical area has traditionally been reliant on tourism and hospitality, the area has and continues to experience growth in several different manufacturing sectors. Workforce development and economic development partners have developed and implemented efforts to retain the area's workforce by shifting workers from the tourism and hospitality sector to higher paying and higher skill positions in manufacturing and related advanced manufacturing sectors. In southern Nevada, the Las-Vegas metropolitan statistical area anticipates a 3.0 percent growth in general and advanced manufacturing, adding approximately 6,900 new jobs. Workforce Connections' four-year local plan is focused on aligning education and training programs with industry needs to support this anticipated growth.

4.3.a.2 Rural Areas

The rural and non-metropolitan parts of the state of Nevada face unique challenges in regard to supporting increased advanced manufacturing growth and related workforce development efforts, such as limited access to training facilities and issues surrounding broadband connectivity. Programs like Project CEJA focus on expanding recruitment and training in

advanced manufacturing occupations within the clean energy sector. These efforts aim to ensure that rural and historically marginalized communities benefit from economic growth.
The rural parts of the state of Nevada are integral to the state's broader advanced manufacturing industry sector's supply chain, especially in sectors like lithium mining. Efforts are underway to provide these communities with access to training and employment opportunities in advanced manufacturing, ensuring inclusive economic development.

The state of Nevada has supported the development of various strategic partnerships and programs as part of the state's approach to workforce development involves collaboration between government agencies, educational institutions, and industry partners. Programs like the Nevada Manufacturing Recruitment Initiative continue to identify and train individuals for careers in manufacturing, addressing labor shortages, and aligning skills with industry demands. Nevada's advanced manufacturing sector is evolving through the continued development of integrated value networks and supply chains, supported by targeted workforce development strategies. By addressing the unique needs of urban and rural areas, the state is fostering inclusive economic growth and positioning itself as a leader in advanced manufacturing and related industries.

Strengthening existing value networks and supply chains is also a major part of the state's strategy to support the continued growth of the advanced manufacturing industry sector, with specific focus on areas such as clean energy and further development of the emerging lithium batteries, critical elements, and other electric vehicle materials sector. Initiatives like the Supply Chain Optimization and Innovation Network (SCOIN) are fostering connections between original equipment manufacturers (OEMs) and search engine marketing (SEM) firms, enhancing collaboration and synergy across the industry. While urban centers benefit from established infrastructure and educational institutions, the state's rural areas often lack capacity in these critically important resources. Efforts are underway to bridge this gap by investing in broadband infrastructure, mobile training units, and partnerships with local organizations to provide accessible training and employment opportunities in advanced manufacturing. These initiatives aim to ensure inclusive economic development across the state.

Nevada's advanced manufacturing sector is evolving through further integration of existing value networks and supply chains, supported by targeted workforce development strategies. By addressing the unique needs of urban and rural areas, Nevada is fostering inclusive economic growth and positioning itself as a national and global leader in advanced manufacturing and related industries. Non-workforce factors such as housing, childcare, and healthcare play an additional critical role in supporting the further development of workforce linkages in Nevada's advanced manufacturing industry. These factors directly affect the successful attraction, retention, and productivity of individual workers across a number of critical occupation sectors.

4.3.b Housing Availability and Affordability Impacts on Workforce Development Efforts

The availability and affordability of housing was identified as a major limiting factor in the further development of a workforce that is needed to support the closure of identified gaps in the value network and supply chain of Nevada's advanced manufacturing industry sector. A

discussion on housing availability and affordability issues facing both the urban and rural parts of the state is presented here.

4.3.b.1 Urban Areas

The state's major urban centers, especially the Las Vegas metropolitan statistical area in southern Nevada and the Reno-Sparks metropolitan statistical area in northern Nevada, have each seen an increase in the number of new housing developments aimed at accommodating the growth of the workforce needed to support expanding industries, including advanced manufacturing. Access to affordable housing near industrial parks or manufacturing zones in these urban centers improves worker availability and decreases commute-related stress and absenteeism. Continued and significant increases in the price of housing, both owner-occupied and renter-occupied, and the increasing lack of affordability in housing options due to a lack of availability continue to contribute to housing shortages in these fast-growing areas, especially in the Reno-Sparks metropolitan statistical area. The continue rise in housing prices has made it increasingly difficulty for lower-income workers or new entrants to relocate or remain in these urban regions.

4.3.b.2 Rural Areas

The primary issue regarding housing affordability and availability in the rural parts of the state of Nevada is namely availability, a particularly disturbing trend given the rapid increase in advanced manufacturing activities throughout the more rural and less metropolitan parts of the state. Several of the state's more rural communities where advanced manufacturing continues to grow and is in desperate need of skilled and trained workers suffer from a near complete lack of workforce-oriented housing. These lack of workforce-oriented housing has contributed to the inability of several of these rural communities to attract and retain a skilled and trained workforce needed to support the business creation, attraction, retention, and expansion efforts focused on closing identified gaps in the state's broader manufacturing and advanced manufacturing sectors.

4.3.c Access and Affordability of Childcare Services

The state of Nevada primarily relies on employer-supported or provided childcare services. The development of state-funded childcare assistance programs can make it easier for working parents, especially women with younger children, to participate in full-time, skilled employment positions in manufacturing and advanced manufacturing. More flexible and affordable childcare services and options are highly likely to support the retention of dual-income households and reduce employee turnover. The lack of reliable childcare services, especially in the more rural and non-metropolitan parts of the state of Nevada, prevents qualified individuals from entering or remaining in the workforce. Irregular shift hours, common in the manufacturing and advanced manufacturing sectors, often do not align with traditional childcare service provider operating hours, limiting access for second-shift and third-shift workers to reliable childcare services and, ultimately, the ability to retain employment opportunities in these higher-skill and higher-pay industry and occupation sectors. Again, this especially true among women working in manufacturing and advanced manufacturing industry and occupation sectors.

4.3.d Access and Affordability of Healthcare Services

The availability of clinics and the provision of employer-sponsored health benefits reduces health-related absenteeism and increases workforce stability. Employers that offer comprehensive health insurance tend to attract more qualified candidates and experience higher retention rates than employers that do not. In Nevada's more rural counties, there is limited access to healthcare facilities, which often dissuade potential workers from relocating to these communities despite opportunities for employment in high-paying and high-skill manufacturing and advanced manufacturing sectors, especially families and older workers. The lack of mental health services and occupational health support also affects workforce sustainability in the types of physically demanding jobs common in manufacturing and even advanced manufacturing. Finally, this specific non-workforce factor interacts directly with overall supply chain and labor market efficiency in manufacturing and advanced manufacturing sectors. Combined with a lack of housing and a lack of childcare services, ongoing limits to the access and affordability of various healthcare services negatively impact the effectiveness of training investments and recruitment strategies in the state's rural and high-growth industrial regions. To maximize Nevada's advanced manufacturing potential, holistic planning is essential, including integrating infrastructure, social services, and economic development policies into broader workforce strategies.

4.4 A Deeper Look at Urban and Rural Areas and their Workforce Development Differences

While the state of Nevada's urban metropolitan areas and rural non-metropolitan areas share several similarities in regard to their workforce development needs, especially as they relate to the creation, attraction, retention, and expansion of new and existing businesses designed and needed to close identified backward and forward gaps and leakages in the state's advanced manufacturing sector, there are important differences. These differences, discussed here, have profound impacts on broader community and economic development efforts, policies, and strategies.

4.4.a Urban Areas

Advanced manufacturing in Nevada's cities, especially the city of Reno and the city of Sparks in northern Nevada and the city of Henderson, the city of Las Vegas, and the city of North las Vegas in southern Nevada, has largely been driven by new and emerging clean energy manufacturing, including batteries and electric vehicle component parts, and various electronic manufacturing. Large firms, like Tesla and Panasonic Energy of North America, have located offices and even manufacturing production activities in and around the Reno-Sparks metropolitan statistical area. These efforts have continued to contribute to both the area's overall economic growth and the continued growth of the sector statewide and nationwide. For example, the Gigafactory that Tesla has built and continues to grow has created thousands of new jobs, and manufacturing employment opportunities in the Reno-Sparks metropolitan statistical area and in surrounding areas are expected to increase by 15.0 percent by 2026. Because of this, there is high and growing demand for manufacturing technicians, automation

specialists, and maintenance electricians. Similarly, within and throughout the Las Vegas metropolitan statistical area in Clark County, manufacturers like Ocean Spray and Timet, a titanium producer, are pushing up the demand for production line workers, CNC machine operators, and quality control inspectors.

According to Truckee Meadows Community College, advanced manufacturing programs focusing on automation, mechatronics, and industrial maintenance are critical for workforce development. Despite these efforts, there will be a projected shortfall of around 8,000 qualified workers in southern Nevada's industrial sectors over the next five years. The most critical urban workforce needs are automation technicians, electrical maintenance technicians, quality control inspectors, CNC machine operators, and logistics and supply chain coordinators. The rapid industrial expansion following the COVID-19 global pandemic, as individual advanced manufacturing firms continue to onshore and re-shore critical elements of their existing value network and supply chain, has increased the ongoing gap between the number of open positions throughout this sector and the number of available skilled individuals, particularly in advanced manufacturing and related industry sectors.

4.4.b Rural Areas

Advanced manufacturing in the state's more rural areas, including communities such as Elko, Fallon, Fernley, Hawthorne, and Pahrump, is primarily focused on mining machinery production, clean energy components, including solar and geothermal energy production, and metal fabrication. The state's rural manufacturing sector is expected to grow by approximately 10.0 percent by 2026, largely owing to increased mining and renewable energy project activity. Companies, like as Polaris Industries, which manufactures off-road vehicles in Fernley in northern Lyon County, and smaller renewable component makers, are growing the overall demand for workers with specific technical skills that differ from the state's more urban areas. Throughout rural Nevada and in parts of rural Nevada that are becoming major manufacturing and advanced manufacturing hubs, the jobs with the most demand for skilled and trained workers include welders, fabricators for heavy industrial equipment, field service technicians, industrial maintenance mechanics, and mechanical assemblers. However, non-workforce factors remain significant challenges in these more rural parts of the state. According to the Nevada Rural Development Council, over 40.0 percent of rural counties in the state suffer from housing shortages, more than 30.0 percent lack adequate childcare options, and access to local healthcare is limited, making it harder to attract and retain skilled workers.

To more fully build out Nevada's advanced manufacturing industry sector through business creation, attraction, retention, and expansion efforts designed to close gaps in the industry sector's existing value network and supply chain, the state's urban areas must further boost the availability of technical programs in automation, robotics, and quality control, while the state's more rural areas must increase access to welding, machining, and industrial maintenance training. At the same time, strengthening the availability and affordability of owner-occupied, renter-occupied, and workforce-focused housing, childcare services, and healthcare services are each critical to promoting workforce growth and retention, particularly outside of the state's urban areas. By addressing these various concerns, Nevada could better ensure its long-term

economic growth, establishing the state as a true national leader in innovative manufacturing and technology.

4.5 Barriers to Workforce Stability in Nevada's Advanced Manufacturing: Housing, Childcare, Healthcare, and Regional Gaps

Nevada's advanced manufacturing sector presents a stark contrast between impressive industrial growth and persistent systemic workforce challenges. Quantitative data highlight critical constraints across the availability of housing, childcare services, and healthcare services that undermine the state's broader economic development ambitions (Nevada Governor's Office of Economic Development 2024; Nevada Manufacturers Association 2024). Housing shortages have emerged as a primary barrier to workforce availability and mobility. Manufacturing employment in Nevada has surged by approximately 80.7 percent between 2015 and 2025, reflecting significant industrial expansion (Nevada Governor's Office of Economic Development 2024). Yet, in Clark County, which accounts for approximately 64.0 percent of Nevada's manufacturing jobs, median housing costs consume nearly 37.0 percent of a production worker's annual earnings of $114,307 per worker (Nevada Housing Coalition 2024). The situation is even more acute within and throughout the Reno-Sparks metropolitan statistical area, where a near 0.0 percent vacancy rate for sub-$1,000 per month rental units forces approximately 34.0 per cent of manufacturers in the Apex Industrial Park forced to recruit labor from beyond a 50-mile radius (Nevada Housing Coalition 2024) of the industrial park. Conversely, Storey County, driven by Tesla's Gigafactory expansion, has recorded a near 5,291.0 percent increase in manufacturing employment, increasing from 256 total positions to 13,788 total positions, highlighting the potential of housing-aligned economic development. Average manufacturing wages in Storey County now stand at approximately $108,322 per worker, exceeding the state median wage by nearly 14.0 percent (Nevada Governor's Office of Economic Development 2024).

Childcare accessibility remains a significant barrier to labor force participation within Nevada's advanced manufacturing sector. The cost of center-based childcare services accounts for approximately 17.0 percent of household income among manufacturing families, more than double the federal affordability benchmark of 7.0 percent (Child Care Aware of America 2023). This financial strain has been exacerbated by the expiration of pandemic-era childcare subsidies, which previously supported the care of approximately 5,500 children across the state (Nevada Department of Health and Human Services 2024). The loss of these subsidies has disproportionately impacted women, who represent an estimated 47.0 per cent of Nevada's manufacturing workforce, further constraining participation rates within this demographic (Nevada Manufacturers Association 2024). The intersection between childcare shortages and workforce retention is evident in Clark County's labor market performance. Despite experiencing a 9.5 percent increase in manufacturing job growth since 2019, the county's labor force participation rate has remained relatively stagnant at 64.0 per cent (Nevada Department of Employment, Training and Rehabilitation 2024). This disconnect highlights the structural challenges advanced manufacturers face in attracting and retaining talent, with turnover in skilled manufacturing roles averaging 18.0 percent annually (Nevada Manufacturers Association 2024). Inadequate childcare infrastructure is not merely a social issue but an economic constraint that directly undermines workforce stability and productivity within the sector.

Healthcare access also remains a critical vulnerability within Nevada's advanced manufacturing labor ecosystem, directly impacting workforce productivity and retention. All 17 of Nevada's counties are officially designated as health professional shortage areas, a factor that significantly limits timely access to essential healthcare services for manufacturing workers (Health Resources and Services Administration 2024). In Churchill County, for example, the mental health provider-to-population ratio stands at one provider per 1,200 residents, in stark contrast to the national average of one per 550 residents (Health Resources and Services Administration 2024). This shortage correlates with increased absenteeism rates, with absenteeism among workers in physically demanding manufacturing roles reported to be about 22.0 percent higher due to untreated mental health conditions and other chronic illnesses (Nevada Manufacturers Association 2024). Healthcare accessibility issues are particularly severe in rural Nevada, where workers often face average commute times of 2.7 hours of travel time to receive specialized medical care (Nevada Office of Rural Health 2023). Such logistical barriers to healthcare contribute to elevated rates of absenteeism and presenteeism, with urban manufacturers additionally reporting productivity losses of up to 15.0 percent due to unmanaged chronic conditions among their workforce (Nevada Manufacturers Association 2024). These healthcare gaps not only reduce operational efficiency but also threaten the long-term sustainability of Nevada's manufacturing growth, especially in high-demand sectors such as battery production and aerospace components where consistent labor availability is essential.

Despite substantial job creation within Nevada's advanced manufacturing sector, significant workforce and skills gaps persist, presenting structural barriers to sustained economic growth. Between 2015 and 2025, regions such as the Reno-Sparks metropolitan statistical area have achieved a 206.2 per cent increase in manufacturing employment, underpinned by strategic partnerships like the Truckee Meadows Community College-Panasonic robotics program, funded through nearly $2.4 million in Workforce Innovations for a New Nevada grants (Nevada Governor's Office of Workforce Innovation 2024). However, this growth has not been uniformly distributed across the state. The state's more rural and non-metropolitan counties, while accounting for approximately 23.0 percent of Nevada's population, capture just 8.0 percent of advanced manufacturing positions (Nevada Manufacturers Association 2024). This geographic imbalance reflects a divided ecosystem where urban centers benefit from robust training pipelines, while rural areas remain underserved.

4.6 Workforce Development and Infrastructure in Texas: A Model for Supporting Advanced Manufacturing

When assessing Nevada's advanced manufacturing sector in relation to that of the United States, particularly in comparison to Texas as one of the nation's most prominent manufacturing states, it becomes evident that Texas has cultivated considerable strengths. These strengths include the presence of a highly skilled and diverse workforce, comprehensive workforce development programs, extensive childcare services and initiatives, as well as affordable housing options. Texas serves as a national model and as a model for Nevada for fostering growth and support in the advanced manufacturing sector.

Texas has made significant investments at every level of education to support its advanced manufacturing sector, particularly in the semiconductor industry. Currently, approximately 43,000 residents work in the chip manufacturing industry throughout the state of Texas, and tens of thousands more jobs are being created in this sector (Texas Economic Development 2025). Austin Community College and University of Texas' Texas Institute of Electronics are each dedicated to training technicians in chip fabrication. Texas received a $7.5 million grant from the Defense Advanced Research Projects Agency, which has been used to expand Austin Community College's semiconductor education programs. Another initiative launched is the Semiconductor Technician Advanced Rapid Start program, a four-week full-time course that prepares workers for the semiconductor manufacturing technician roles. Additionally, Texas has a new master's degree program in semiconductor engineering with four different emphases, including semiconductor manufacturing, circuits and systems, heterogeneous integration, and semiconductor devices. A new certification was also launched for those continuing their education in semiconductors. Similar to the Workforce Innovations for a New Nevada program, Texas has workforce training programs such as the Texas Workforce Commission's Skills Development Fund. Texas has 28 local workforce development boards, each of which operate more than 170 local workforce solution offices, while Nevada only has three workforce development boards.

In addition to workforce development, access to healthcare is another critical area where Texas outperforms Nevada. The Texas Medical Center, in Houston, Texas, is one of the largest medical centers in the world. Throughout the state, the state of Texas has strong healthcare availability, which makes the state more attractive to workers who demand reliable medical services. Nevada struggles with providing healthcare access outside urban areas, which limits Nevada's ability to attract and retain the workforce. Texas has invested heavily in expanding childcare resources to meet the needs of working families. Although they are facing some challenges, such as childcare deserts in the southern San Antonio area. However, Texas is actively addressing the issue. For example, an 'Educare' facility is scheduled to open in 2026. This childcare facility will be able to serve 200 children. The Texas House approved $100 million in childcare scholarships. Dallas and San Antonio invest more in early education and Head Start programs. Additionally, the Texas subsidy program through Workforce Solutions helps families with children under the age of 13 receive financial aid for childcare. Nevada has similar childcare programs, but the overall amount of total investment in childcare remains limited. In January 2024, Nevada announced a $1.4 million investment to address the state's own childcare shortage. In contrast to the investment that Texas made in childcare, there is a continued large gap in the childcare resources available throughout Nevada. Furthermore, recent federal cuts and budgets have affected Nevada families. Roughly 5,500 Nevada children have already lost access to childcare programs through the loss of certain federal grants, highlighting a critical vulnerability and a need to have more funding for childcare.

Affordable housing is another critical factor in attracting and retaining the manufacturing workforce. In Texas, median home values are comparatively lower to median home values in Nevada and in Nevada's more urban metropolitan areas. For example, the median home value in Dallas County was $325,980 according to the National Association of Relators (Q3 2024). In contrast, the median home value in Washoe County was $574,100 and was an estimated $461,980 in Clark County. Texas can serve as a model for Nevada as Nevada seeks to expand its

advanced manufacturing sector. Texas heavily invests in workforce development, health care, childcare, and affordable housing to attract and retain a skilled and diverse workforce for its advanced manufacturing sector. Nevada must significantly increase its investments in these critical areas to build a stronger advanced manufacturing sector.

4.7 Workforce Import and Export Dynamics in Nevada's Advanced Manufacturing Sector

Nevada's manufacturing sector has been steadily growing in terms of total employment. The U.S. Bureau of Labor Statistics reports that the number of manufacturing employees employed statewide increased from approximately 56,300 total individuals in 2020 to 67,000 total individuals in 2024, reflecting an average annual growth of about 2,675 jobs (U.S. Bureau of Labor Statistics, 2025). Based on data from the Nevada Governor's Office of Economic Development, the total number of advanced manufacturing jobs in Nevada statewide increased from around 40,000 total jobs in 2020 to 50,548 total jobs by 2024, a significant growth of 3,351 jobs between 2023 and 2024 (GOED, 2025).

While Nevada offers a variety of workforce training programs (at institutions such as the College of Southern Nevada, Truckee Meadows Community College, and the University of Nevada, Reno), many skilled workers trained in the state still leave for larger markets offering higher salaries and more job opportunities, such as California. Despite growth in both employment and educational initiatives, Nevada continues to face a shortage of qualified local workers for advanced manufacturing jobs. According to the Las Vegas Global Economic Alliance's 2022 Workforce Blueprint, approximately 55.0 percent of science, technology, engineering, and mathematics and engineering students remain in Nevada after graduation, indicating that nearly 45.0 percent of these students relocate to other states for employment. Even the Nevada Governor's Office of Economic Development has acknowledged that science and engineering graduates experience a lower retention rate within a year after graduation compared to graduates in other fields. This trend is partially driven by the pursuit of better job prospects and higher salaries in neighboring states like California and Texas (State-To-State Migration in Nevada, 2024).

Another contributing factor may be the underutilization of skills, many graduates find that their expertise does not align with the available opportunities in Nevada's local manufacturing sector and instead join national or global companies headquartered and located elsewhere. These challenges have contributed to Nevada having the third-lowest workforce participation rate in STEM-related occupations among all U.S. states. Additionally, only 25.0 percent of Nevadans over the age of 25 hold a bachelor's degree (GOED, 2023). In response to this continued 'brain drain', the Governor's Office of Economic Development has implemented the Talent Retention Program, which aims to pair STEM students with local tech companies through paid internships, encouraging graduates to remain and contribute to Nevada's economy (GOED, 2022 and 2023). On the positive side, Nevada continues to attract skilled workers, particularly from states like California, driven by factors such as lower taxes, a somewhat lower cost of living, and a more business-friendly environment. Nevada's lack of a state income tax and competitive business tax rates each serve as significant incentives. In terms of workforce import, approximately 91,000

people moved to Nevada from other U.S. states between 2021 and 2022. California, Texas, and Arizona contributed the highest number of new residents, with 48,836 migrants originating from California alone. Furthermore, in 2022, about 38.7 percent of domestic in-migrants to Nevada aged 21 years of age to 64 years of age held a bachelor's degree or higher, a 9.1 percentage increase compared to 2019.

However, challenges for the state of Nevada remain in terms of attracting and retaining a qualified advanced manufacturing workforce. According to the Nevada Labor Force Participation Rate Extension Report (2024), about 38.4 percent of college-educated residents moved out of Nevada in 2022, up from 32.1 percent in 2019. Additionally, based on data from the National Center for Education Statistics (NCES, 2024), only about 22.0 percent of bachelor's degrees awarded nationally between 2021 and 2022 were in STEM fields, indicating the overall limited pool of STEM graduates available. It is important to highlight that in 2022, Nevada achieved a total net migration of 16,905 for persons aged 25 years of age and older (Arizona Economy, 2022). Nevada ranked among the top 11 states for net positive migration of educated individuals. The state gained about 4,266 bachelor's degree holders, 2,867 graduate or professional degree holders, and approximately 3,308 individuals with some college or associate degrees, reinforcing its growing workforce. In comparison, Texas attracted over 33,183 bachelor's degree holders, 15,364 graduate/professional degree holders, and about 27,036 individuals with some college or associate degrees, while Florida led all states with even higher totals.

Although Nevada's gains are encouraging, the scale remains much smaller compared to the massive inflows seen in Texas and Florida. Bachelor's degree holders make up approximately between 25.0 percent to 33.0 percent of the total net migration for each of these three states. Based on this proportional relationship, an important question arises: if Nevada successfully increases its total net migration, would that automatically expand the skilled workforce available for its advanced manufacturing sector? If it did, it becomes critical to simultaneously develop health services, childcare centers, affordable housing, and other infrastructure to accommodate the ambitions and needs of incoming skilled workers, individuals who seek to improve their quality of life, pursue better economic opportunities, and secure a brighter future for their families.

4.8 Continuing the Strengths, Weaknesses, Opportunities, and Threats Analysis of Nevada's Advanced Manufacturing Industry Sector

Nevada's advanced manufacturing sector is on a steady upward path, fueled by economic diversification efforts and the state's growing appeal as a center for skilled industries. Investments in workforce training and migration trends have laid a strong foundation. Yet critical challenges remain in fully developing a sustainable local workforce. The mismatch between graduate skills and employer needs has created a reliance on importing talent from outside the state. Improving the alignment between training programs and the real-time demands of employers will be essential to strengthening in-state retention and reducing workforce gaps. Although the state's more urban and metropolitan areas are expanding rapidly, the state's more rural and non-metropolitan areas still lag in terms of overall access to technical education

programs and services, childcare services, availability and affordability of housing, and access to broad healthcare services, further widening the state's growing workforce divide. Without addressing these structural weaknesses, Nevada risks losing ground to competing states that have more holistic and comprehensive workforce strategies. Opportunities lie in expanding mobile learning, enhancing local service infrastructure, and forging deeper public-private partnerships. Still, rising living costs and intensifying competition for skilled workers nationally present ongoing threats. A focused, inclusive approach to workforce development will be critical to securing Nevada's leadership role in the next generation of advanced manufacturing.

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5.0 Targeted Economic Development Recommendations for Business Creation, Attraction, Retention, and Expansion Strategies

This section of this University Center for Economic Development technical report presents an edited version of the initial white paper developed for Part 4, *Targeted Economic Development Recommendations for Business Creation, Attraction, Retention, and Expansion Strategies*. The fourth and final part of this analysis of the value network and supply chain of Nevada's advanced manufacturing industry sector included the following elements:

- Development of a set of criteria to determine the level of balance, strengths, and resiliency present in Nevada's advanced manufacturing industry sector.

- An evaluation of how balanced, strong, and resilient Nevada's advanced manufacturing industry sector is. This evaluation also includes an assessment of how the advanced manufacturing industry sector in Nevada has been either positively or negatively affected by the COVID-19 global pandemic.

- A series of regional and statewide community and economic development actions that the state of Nevada, each of the eight regional economic development authorities, and local government and industry and occupation sector representatives could potentially develop and implement to capitalize on identified 'gaps' in the value network and supply chain of Nevada's advanced manufacturing industry sector.

This section also provides a detailed discussion regarding three critical terms with respect to value network and supply chain management, including balance, strength, and resiliency. These three terms are often used as a measure of how an individual firm and an entire industry sector deals with uncertainties. Additional analysis on how balanced, strong, and resilient the value network and supply chain of Nevada's advanced manufacturing industry sector is, considering the COVID-19 global pandemic and related global supply chain disruptions, is also presented. Balance, strength, and resiliency are essential characteristics for sustainability and competitiveness in the broader advanced manufacturing industry sector.

Balance, strength, and resiliency serve as pivotal indicators of organizational and industry performance as well as their capacity to navigate disruption effectively. Definitions were developed to be stress tested against the recent COVID-19 disruption event to ascertain Nevada's comparative standing with other states. Balance, strength, and resilience were defined using various metrics derived from the findings presented in Part 1, Part 2, and Part 3 of the semester project presented in Section 2.0, Section 3.0, and Section 4.0 of this University Center for Economic Development technical report respectively. Recommendations were provided, highlighting gaps and leakages, along with measurable recommendations and metrics.

Throughout Nevada's broader advanced manufacturing industry sector, achieving balance, strength, and resiliency requires individual firms across the sector's entire value network and supply chain to have a measured approach to defining, aligning, managing, and optimizing cross-functional metrics. This also requires both the public sector and the private sector in the investment of supportive infrastructure needed to facilitate economic flows of activity across the sector's entire value network and supply chain. The continued growth and relative importance of advanced manufacturing across the world as a driver of global economic activity means that Nevada's advanced manufacturing industry continues to face increasingly levels of competitive pressures.

5.1 Definitions of Balance, Strength, and Resiliency

Within the advanced manufacturing industry sector, individual firms can be analyzed using the Supply Chain Index developed by Lora Cecere and the Operations Research Team from Arizona State University. The equations for balance, strength, and resilience as well as an example of the analysis table are presented in Appendix J. For the analysis presented in this section, balance, strength, and resilience are defined below using certain specific metrics that are sometimes more difficult to define when analyzing a state or an industry and not an individual firm.

- ***Balance***: Balance is the deliberate and dynamic coordination of multiple operational priorities, often competing, to achieve optimal performance across a given industry or organization.

- ***Strength***: Strength is the foundational robustness of an industry or organization to maintain its capability, infrastructure, and processes under pressure due to unforeseen external or internal forces.

- ***Resilience***: Resilience is the capacity of an industry or organization to withstand, adapt to, and rapidly recover from disruptions due to unforeseen external or internal forces while maintaining operational continuity.

Using the Supply Chain Index as a starting point, the definitions presented above for balance, strength, and resiliency examine the industry and/or individual firms with a broader metric-less way. Achieving balance requires an overview of the manufacturing process, where decisions about automation, workforce deployment, material sourcing, and energy consumption are made with both immediate outputs and long-term impacts in mind. It involves managing trade-offs between cost efficiency, product quality, production speed, customization, flexibility, innovation, and sustainability. While strength, in this context, also implies the organizational capacity to absorb shocks, enforce standards, and maintain productivity across varying conditions, thereby reinforcing the overall balance between efficiency, innovation, and adaptability. A strong manufacturing foundation empowers balanced decision-making and execution, ensuring stable growth and long-term competitiveness. Finally, resilience encompasses the strategic integration of technologies, processes, and organizational practices designed to minimize disruption and downtime, whether caused by equipment failure, supply chain interruptions, global pandemics, or natural disasters. Resilient advanced manufacturing systems integrate predictive analytics,

real-time monitoring, and redundant systems to detect issues early and respond proactively, thereby reducing the duration and impact of unforeseen events. The ability to recover quickly from a shock is supported by flexible manufacturing setups, agile workforce strategies, and digital infrastructure that enables rapid reconfiguration of production lines and supply networks.

5.2 State of Nevada's Balance, Strength, Resiliency in the Advanced Manufacturing Industry Sector

This subsection applies the definitions developed for balance, strength, and resiliency in the previous subsection of this University Center for Economic Development technical report to the current conditions of Nevada's existing advanced manufacturing industry sector. These definitions and this evaluation serve as part of the basis of the recommendations for closing identified gaps in the supply chain and value network of the state's advanced manufacturing industry sector through targeted business creation, attraction, retention, and expansion efforts and through targeted workforce development strategies.

5.2.a Balance of Nevada's Advanced Manufacturing Industry Sector

In the context of supply chain management, balance is defined as the deliberate and dynamic coordination of multiple operational priorities-often in tension with one another to achieve optimal performance within a system. This concept extends beyond efficiency or profitability and speaks to a system's ability to remain agile, responsive, and adaptable under external pressures. Alternatively, balance is 'the ability to get out of the way of the punch'. This dynamic form of balance has become increasingly vital in the face of global shocks like the COVID-19 pandemic and the ongoing geopolitical and economic uncertainties affecting supply chains worldwide. Nevada's advanced manufacturing industry sector has made deliberate efforts to embody this balance, particularly through diversification across sub-sectors such as aerospace, battery manufacturing, renewable energy, and defense. By not relying on a single product stream or market, Nevada's industry has built a more shock-absorbent value network that can pivot when disruptions occur. This diversification helps create redundancy and reduces systemic risk, a core principle of balance in supply chain management and operations. During the COVID-19 pandemic, while many regions faced supply bottlenecks and labor shortages, Nevada's focus on sectoral diversification and variety allowed it to maintain a level of operational continuity that some neighboring states struggled to achieve.

However, while diversification provides one axis of balance, true supply chain balance in advanced manufacturing also requires strategic coordination of workforce development, supply inputs, and infrastructure investments. Initiatives such as reshoring have been central to enhancing the equilibrium of the state's advanced manufacturing industry sector and the state's broader economic base. Companies like Unimacts represent this reshoring movement, bringing manufacturing activities back from overseas to the United States to mitigate reliance on volatile international supply chains. This shift both repositions Nevada in global production networks and also increases the reliability and transparency of inputs into production, a key concern brought to light during pandemic-related border closures and port delays. Another area reinforcing Nevada's balanced approach is its investment in long-term strategic assets. Redwood

Materials, a leader in battery recycling, has positioned the state as a pioneer and leader in sustainable materials management. This vertical integration and investment in resource circularity not only reduces environmental risk but also secures essential inputs like lithium and rare earth elements, materials that are subject to intense global competition. From a balance perspective, this helps Nevada create a closed-loop system that enhances independence and long-term viability, even as global raw material markets fluctuate.

Despite these strengths, the state's value network and supply chain are not fully balanced. The pandemic exposed critical workforce vulnerabilities, particularly in the state's more rural areas where access to technical training, healthcare, childcare, and affordable housing lags behind urban counterparts within the state. Sector partnerships and programs like the Workforce Innovation for the New Nevada program have sought to address this imbalance by aligning educational institutions with industry demand. The Workforce Innovation for the New Nevada program plays a crucial role in helping the state respond dynamically to labor market shifts and technology transitions, fostering workforce balance. However, workforce gaps, especially in automation, robotics, and clean tech, still pose a risk to long-term sector stability. Moving forward, Nevada's ability to maintain balance will depend on how well the state and industry partners adapt to emerging national and global threats, such as climate change regulation, international trade volatility, and accelerated digital transformation. Supply chains must now manage both speed and flexibility while embracing sustainability. The industry must continue investing in infrastructure, developing cross-sector workforce pipelines, and building regional capacity to reduce geographic bottlenecks.

Nevada's advanced manufacturing sector reflects many dimensions of balance, including diversification, strategic investment, workforce alignment, and infrastructure resiliency. Yet its system remains a work in progress, with evident vulnerabilities in labor distribution, rural access, and global dependency. The COVID-19 pandemic served as a wake-up call, exposing areas where Nevada was off-balance, but also spotlighting the state's agility in absorbing the shock. By continuing to embrace proactive investment and system-wide coordination, Nevada can evolve into a model of balanced, resilient manufacturing capable of withstanding future disruptions. Building on this foundation of balance and adaptability, Nevada's advanced manufacturing sector has further reinforced its balance and even resiliency through high-growth diversification, upstream integration, and strategic supply chain investments.

Additionally, Nevada's advanced manufacturing sector is experiencing high growth and diversification, particularly in clean technologies, electric mobility, aerospace, and defense. This expansion positions the state favorably in terms of supply chain strength, as well as balance, defined as the foundation of an industry or organization to maintain its capability, infrastructure, and processes under pressure due to external or internal forces. Key indicators of Nevada's supply chain strength in the advanced manufacturing industry sector include diversification and upstream integration. Historically, Nevada's manufacturing sector was primarily involved in supplying raw materials used elsewhere outside of the state for additional value-added production. However, recent developments have seen the state move further upstream in the manufacturing supply chain, particularly in clean technologies and e-mobility. This shift enhances Nevada's ability to maintain its infrastructure and processes under pressure. The second area is strategic investments in battery recycling, led by firms like Redwood Materials, a

Nevada-based battery recycling company that has secured a $2.0 billion green energy loan from the U.S. Department of Energy. This investment supports the development of a vertically integrated, domestic supply chain for electric vehicle batteries, reducing reliance on foreign sources and bolstering the state's manufacturing capabilities. The third are is reshoring initiatives, including the efforts to bring manufacturing back to the United states that are gaining momentum in Nevada. These initiatives aim to strengthen local economies, enhance supply chain resilience, and boost long-term competitiveness. The integration of upstream manufacturing processes, significant investments in battery recycling, and reshoring efforts collectively contribute to a robust and adaptable manufacturing infrastructure capable of withstanding unforeseen challenges. Nevada's strategic initiatives and investments in advanced manufacturing indicate a strengthening of its supply chain capabilities alongside increased balance, aligning with the principles outlined in the Supply Chain Index.

5.2.b Strength of Nevada's Advanced Manufacturing Industry Sector

Nevada's advanced manufacturing sector has emerged as a key driver of economic growth, leveraging the state's strategic location, skilled workforce, and robust infrastructure to position itself as a critical link in the national and regional supply chain. The state's manufacturing ecosystem is anchored by sectors such as aerospace, semiconductor production, and battery manufacturing, with companies like Tesla, Panasonic, and Redwood Materials serving as major industrial players. These firms generate significant employment and stimulate demand for specialized skills in robotics, automation, and precision machining, creating a ripple effect across the state's economy. One of Nevada's strongest assets is its logistics infrastructure, characterized by well-established industrial parks in regions like Storey County and Lyon County, as well as strategic proximity to key markets in California and the broader western United States. The Tahoe-Reno Industrial Center, located in Storey County and within the Northern Nevada Development Authority region, serves as a prime example of how Nevada has leveraged its geographic location to attract high-profile manufacturers.

Additionally, Nevada's comprehensive transportation network, consisting of major highways and rail lines, enhances the state's distribution capabilities, facilitating seamless access to both national and international markets. Moreover, Nevada's focus on workforce development and training further strengthens its position in advanced manufacturing. Partnerships between industry leaders and educational institutions such as Western Nevada College and the College of Southern Nevada have been instrumental in building a pipeline of skilled workers in mechatronics, CNC machining, and renewable energy systems. This ongoing investment in technical education not only addresses current labor demands but also reinforces Nevada's resilience against supply chain disruptions by creating a robust, locally trained workforce.

5.2.c Resiliency of Nevada's Advanced Manufacturing Industry Sector

The level of resilience in Nevada's advanced manufacturing sector is reflected in its growing capacity to withstand and adapt to external shocks including supply chain disruptions, global market volatility, and workforce instability while continuing to expand production capacity. Resilience, as defined in the context of the Supply Chain Index, relies on both infrastructure and on adaptive workforce systems, digital integration, and internal redundancy. Nevada has made

notable progress in each area, although certain key vulnerabilities remain. A key marker of Nevada's resilience is the state's move toward domestic supply chain redundancy, particularly in critical materials. Redwood Materials, located in Storey County, is one of the nation's leading battery recycling firms. Backed by a $2.0 billion loan from the U.S. Department of Energy, this company will further help to close the loop on battery materials, reducing the state's and nation's overall dependence on foreign lithium and cobalt sources. By converting waste streams into new supplies, Nevada has built a local buffer against global materials shocks.

From a labor resilience perspective, Nevada's workforce adaptability is improving but still uneven. According to IMPLAN data from 2023, the total Nevada workforce consisted of 2,100,300 people, with 71,574 total individuals employed in the manufacturing sector. While Nevada has been making a push to diversify into the advanced manufacturing sector, only 3.4 percent of employed Nevadans work in the manufacturing sector. However, there are also a variety of initiatives operating throughout the state to try and increase the educated workforce available to the advanced manufacturing sector. The Nevada System of Higher Education has eight institutions of higher learning throughout the state, and there is also a wide variety of Career and Technical Education programs offered throughout the state. According to Nevada System of Higher Education data, there was a total of 45,090 students enrolled in a Nevada System of Higher Education institution in 2023, and 10,839 total students, or 24.0 percent, were enrolled in courses that pertain to advanced manufacturing. That same year, there were a total of 83,655 students enrolled in various Career and Technical Education courses, with 3,733 total students, or 4.5 percent, enrolled in courses related to advanced manufacturing.

Although the state has been trying to increase the labor presence in the advanced manufacturing sector, regional leakages remain high. For example, despite over 1,600 annual Career and Technical Education program completions in manufacturing-related pathways, many graduates leave rural regions for better-paying jobs in Clark County or Washoe County. This migration reduces resilience by thinning the workforce in counties already facing labor shortages. The implementation of modular, mobile training programs and regionally anchored housing and childcare models are helping to reverse this trend. Resilience is also reflected in Nevada's ability to maintain industrial output amid disruption. For instance, gold and silver ore mining (NAICS Code 21222), one of the state's most output-intensive industries, generated over $6.8 billion in total output and employed 10,900 total individuals in 2022, even amid global supply chain volatility. Its downstream expansion through modular casting and CNC integration in rural hubs like Elko County is improving localized transformation capacity, reducing the system's exposure to external freight dependencies.

However, resilience gaps persist in physical and digital infrastructure. Broadband access in counties like Esmeralda County, Lincoln County, and Nye County remains incomplete, limiting digital adoption for manufacturing monitoring systems and predictive analytics. Similarly, critical supply inputs such as cement and gravel still experience near-total leakage, with up to $12.0 million annually lost from rural manufacturing due to absent procurement hubs and distribution infrastructure. To counteract this, Nevada has begun investing in real-time logistics and operational monitoring. Pilot programs for freight tracking and centralized procurement platforms in Elko County and Clark County are examples of integrated response mechanisms that allow the state to respond dynamically to supply chain risks. These systems, when scaled

statewide, will enhance Nevada's ability to reroute, reallocate, or reschedule production under disruption. Nevada's resilience in advanced manufacturing is improving due to localized material loops, modular training delivery, and industrial diversification. To sustain and expand this progress, the state must continue investing in workforce inclusion, especially in childcare and housing, digital infrastructure, and decentralized logistics. These strategies will ensure Nevada's manufacturing ecosystem remains strong and balanced, and also resilient, adaptable, self-correcting, and future-ready.

5.3 Recommendations for Targeted Business Creation, Attraction, Retention, and Creation and Workforce Development to Close Identified Supply Chain and Value Network Gaps

This subsection outlines a series of targeted business creation, attraction, retention, and expansion efforts and targeted workforce development strategies designed to close identified gaps in the supply chain and value network of Nevada's advanced manufacturing industry sector. These recommended actions have been developed and are presented for each of Nevada's nine regional economic development authorities and for the state of Nevada as a whole.

5.3.a Churchill Fallon Development Authority

The Churchill Fallon Regional Development Authority can explore building a sustainable, community-driven innovation lab with a focus on advanced manufacturing for the agriculture and defense sectors. To achieve this, the innovation lab would house 3D printers, CNC machines, laser cutter, and CAD workstations in a trailer or a refurbished warehouse. A partnership with Western Nevada College at Fallon, the University of Nevada, Reno Churchill Extension, and the Career and Technical Education program at Churchill County High School should also be considered. With agriculture being the primary industry sector within this region, agriculture technology (Ag-tech) is a strategic focus. Local farmers can be supported by providing specialized tools for prototyping and repairing the essential equipment and 3D printing can be utilized to enable efficient prototyping and fabrication of agricultural technology. This includes custom irrigation parts, precision in farming tools, and 3D-printed sensors for IoT and data analytics integration (Padhiary et al., 2024). In addition, CNC machines can be used for fence repair and tool adaption. The localized ability to print and produce specialized farming tools and equipment can help lower costs and equipment downtime.

The defense sector is another unique element of Churchill County's economy, where prominent airbases, like Naval Air Station Fallon, are home to the United States' Navy-Fighter Weapons School (TOPGUN). With rising concerns about supply chain vulnerabilities within the defense sector as tariffs begin to take effect, Churchill County has an opportunity to fill these looming gaps. One area of existing concern is the lack of domestic castings and forgings suppliers within defense technology manufacturing (DoD, 2018). In 2016, the sole domestic supplier of thin wall castings for a variety of different aircraft had to file for bankruptcy, leaving the domestic market for castings unfulfilled (DoD, 2018). Partnering with the Fallon Naval Air Station in supplying different precision engineered domestic components, like forgings for fighter jet airframes or

using vanadium from Eureka County to create a heat-resistant coating for aircraft, could be a unique way to engage advanced manufacturing in the region (Trenton Forging, 2025).

Workforce development is another key aspect to consider. The Churchill Fallon Development Authority region can begin to offer short-term certification programs in CNC machining, 3D printing, and CAD design to provide advanced manufacturing skills to local youth, farmers, workers, and more. These programs can help develop the workforce needed as advanced manufacturing progresses and further develops. University of Nevada, Reno Extension currently has a 4-H club program in Churchill County where it provides various life skills for people aged 9 years of age to 19 years of age (University of Nevada, Reno, n.d.). A collaboration with this program can be implemented where the children above a certain age can be taught skills to operate the advanced manufacturing machinery located in the innovation lab.

An innovation lab could also support small businesses and entrepreneurs by providing access to affordable, low-volume production equipment, and problem-solving tools, which can entice businesses to develop in the area. Furthermore, this lab can help encourage innovation and partnerships with local manufacturers. Churchill County's location is particularly advantageous for manufacturers, given several different factors. With the region being located only approximately 90 miles away from the Reno-Sparks metropolitan statistical area, nearby businesses could be motivated to utilize an innovation lab located in Churchill County. Nevada is also rich in critical minerals involved in the defense technology industry, like lithium in the northwest, vanadium in Eureka County, and barium in Churchill County, Clark County, and Carson City (King, 2023). The infrastructure in Churchill County already provides connections for access to these minerals, so further investment in developing advanced manufacturing would be beneficial.

These recommendations give the Churchill Fallon Development Authority region a strong potential to capitalize on its unique regional strengths and industry advantages. By developing a community-based innovation lab with 3D printers, CNC machines, and CAD workstations, the region can directly benefit both agriculture and defense which are its two primary economic drivers. For agriculture, this lab enables farmers in the area to prototype and repair essential tools, create custom irrigation systems, and manufacture precision agriculture devices, reducing expenses and lost time. For the military, where there are deficiencies in United States-based manufacturing such as castings and forgings, the lab might provide high-quality, locally-made components that support operations at Naval Air Station Fallon and support the domestic value stream of military technologies. Additionally, this approach promotes sustainable success through entrepreneurship and workforce investments. Short-term certification training for advanced manufacturing, especially when blended with local education institutions like Western Nevada College and the Churchill County High School's Career and Technical Education program, will develop a talent pipeline of skilled workers. Collaboration with initiatives like the University of Nevada, Reno Extension's 4-H program introduces these technologies to young people and helps to develop future innovators early in life. The accessibility of a community-based innovation lab geared toward supporting small businesses also provides openings to greater community involvement, and the region's proximity to the Reno-Sparks metropolitan statistical area and presence of major mineral deposits bring additional value to Churchill County. Cumulatively, all of this can assist in transforming the Churchill Fallon Development

Authority's region into a hub for innovation, resilience, and sustainable development in advanced manufacturing.

5.3.b Economic Development Authority of Western Nevada

Washoe County's advanced manufacturing sector is a vital pillar of the regional economy, demonstrating significant strength through its substantial contribution to both total output, an estimated $7.45 billion, and total employment, an estimated 15,845 total individuals. The advanced manufacturing sector exhibits promising growth, particularly within the burgeoning high-tech and clean energy manufacturing clusters, and benefits from Nevada's favorable location and pro-business regulatory environment. However, achieving sustained and inclusive growth, and fostering long-term resiliency in the post-COVID-19 pandemic landscape, necessitates addressing several key challenges through strategic and coordinated action to create a better balance within the economic ecosystem.

A significant hurdle lies in the region's evident workforce mismatch. The coexistence of a 5.0 percent unemployment rate alongside a 4.5 percent job openings rate underscores a critical disconnect between available jobs and the skills possessed by the workforce. Labor shortages in essential supporting sectors such as healthcare, construction, logistics, and hospitality could impede the expansion of manufacturing activities. Furthermore, the region's educational attainment, with only 26.7 percent of the population holding a bachelor's degree compared to the national average of 37.7 percent, and an aging workforce within skilled trades and STEM fields contribute to a low rate of participation in STEM-related occupations. This skills gap necessitates immediate and long-term strategies for workforce development to restore balance and build future strength. Infrastructure and resource limitations are also considerable regional challenges. The escalating cost of housing disproportionately impacts lower-income workers, restricting their access to employment centers. The persistent issue of water scarcity poses a long-term threat to industrial sustainability, and the extensive public land ownership, constituting approximately 87.0 percent of the state including significant parts of Washoe County, limits the availability of land for industrial expansion, hindering the sector's potential strength. Moreover, vulnerabilities within the global supply chain, particularly concerning the fluctuating costs of raw materials, introduce further instability, challenging the overall resiliency of the advanced manufacturing industry sector in the Economic Development Authority of Western Nevada region.

An analysis of the 'All other miscellaneous manufacturing' for the Economic Development Authority of Western Nevada region sector reveals a fragmented backward linkage structure, indicating a significant reliance on external suppliers for fundamental industrial materials. This dependence limits the region's ability to capture value locally and increases its exposure to disruptions in the global supply chain, weakening its overall resiliency. Strengthening regional supply chain integration is crucial for enhancing economic resiliency. Compounding these issues are the identified workforce skills gaps within the advanced manufacturing sector itself. Significant shortfalls exist in critical areas such as engineering technologies, mechanical, civil, and electrical engineering, and precision production. Moreover, the current alignment of high school Career and Technical Education programs does not adequately address the specific demands of the advanced manufacturing sector.

Addressing the region's educational needs and training deficits is paramount for fostering a high-skill, high-wage manufacturing economy and building long-term strength. To cultivate a robust and resilient advanced manufacturing sector in Washoe County in the post-COVID-19 pandemic era, achieving a better balance across all contributing factors through a multi-faceted approach is essential. Strategic investments in workforce development are critical, encompassing the expansion and alignment of training programs with industry needs, targeted upskilling and reskilling initiatives, and the strengthening of Career and Technical Education pathways in area high schools. Enhancing regional supply chain resiliency through the promotion of local sourcing and the adoption of advanced technologies is equally important. Addressing infrastructure and resource constraints requires proactive solutions in affordable housing and sustainable water management, alongside strategic land use planning. Finally, capitalizing on the region's inherent strengths, such as its advantageous location and tax environment, and actively supporting emerging high-tech and clean energy clusters will be key to attracting investment and fostering long-term growth. A collaborative and coordinated effort involving government, industry, and educational institutions is indispensable to realizing the full potential and ensuring the lasting strength and resiliency of Washoe County's advanced manufacturing sector, creating a more balanced and prosperous economic future.

5.3.c Las Vegas Global Economic Alliance

Clark County, covered by the Las Vegas Global Economic Alliance, stands as Nevada's largest metropolitan region, home to more than 2.3 million residents and nearly 40,000 manufacturing workers. Despite its demographic and economic weight, the Las Vegas Global Economic Alliance's region faces a critical imbalance in workforce alignment. Dominated historically by tourism and service sectors, Clark County's labor force remains under-prepared for the technical demands of high-growth manufacturing segments including automation, aerospace, and clean energy systems. Institutions such as the College of Southern Nevada and the University of Nevada, Las Vegas have taken steps to bridge this divide, yet the current educational offerings in the advanced manufacturing space remain insufficient in both scale and alignment. In 2023, only 52 students graduated with technical degrees aligned with advanced manufacturing needs, even as employer demand surged across fields like robotics, electronics assembly, and aerospace production.

To strategically close this gap, the Las Vegas Global Economic Alliance region should create a formal employer-education alignment council composed of industry leaders, workforce boards, and academic institutions. This body would oversee curriculum design, dual-credit program scaling, and credential standardization across secondary and postsecondary levels. It would also govern industry-led co-op placements, aligning public training dollars with measurable employer outcomes. To reduce talent leakage, the region should implement a 'Stay and Innovate' initiative, offering financial stipends and housing support for local graduates who commit to in-region manufacturing employment for at least two years. Resilience in workforce development requires not only pipelines but adaptability. To that end, curricula must be designed with pivot-ready credentials that allow workers to transition across fields such as mechatronics, industrial HVAC, robotics integration, and digital maintenance. These flexible pathways insulate the workforce from sector-specific volatility and create a more agile labor base.

In terms of infrastructure, the region's industrial resilience is undermined by vulnerability to grid disruptions and escalating energy costs. The region should pilot microgrid and industrial solar backup systems in partnership with NV Energy and the University of Nevada, Las Vegas, targeting high-priority industrial parks and clusters. These investments would not only reduce operating risk but enhance the region's attractiveness to environmental, social, and governance (ESG)-conscious manufacturers in cleantech and electric vehicle supply chains. Parallel to this, clean technology and circular manufacturing should be core attraction targets, with special attention to firms engaged in industrial reuse, water-efficient systems, and modular production. The University of Nevada, Las Vegas and the Southern Nevada Water Authority can jointly serve as research and development and implementation anchors for industrial water conservation technologies.

Housing remains a major constraint on workforce balance throughout the Las Vegas Global Economic Alliance region. The region must deploy zoning incentives and targeted financing tools to drive mixed-income residential development around industrial corridors, with reserved units for technical workers. A 'Regional Housing Cost Buffer Program', offering rent subsidies tied to employment tenure in manufacturing, would support retention while easing cost-of-living barriers for entry-level and mid-skill talent. Childcare also requires targeted interventions. The region should adopt dual-track solutions, including the partnering with large manufacturers to co-develop on-site or adjacent extended-hour childcare campuses, modeled after Toyota's and United Auto Workers-Ford's integrated early learning centers. Additionally, the region could also explore offering seed funding for small-sized and mid-sized firms to subsidize off-site care or join employer-childcare cooperatives. These measures are essential for improving gender balance in manufacturing and supporting shift-based labor models. Lastly, program monitoring is essential. A 'Real-Time Workforce Feedback Dashboard' should be developed, integrating Nevada System of Higher Education, Nevada Department of Employment, Training, and Rehabilitation, and employer data to track enrollment, credentialing, and placement in real-time. This system will allow dynamic resource allocation, identify training-to-employment bottlenecks, and ensure public investments are data-driven and employer-responsive. Through institutional realignment, energy resilience, flexible credentialing, and livability enhancements, the Las Vegas Global Economic Alliance region can transition from an over-reliant service economy to a balanced, future-ready advanced manufacturing hub that is inclusive, adaptive, and regionally self-sustaining.

5.3.d Lincoln County Regional Development Authority

Lincoln County's and the Lincoln County Regional Development Authority region's advanced manufacturing potential is constrained by a small population base, geographic remoteness, and minimal post-secondary education infrastructure. With fewer than 5,000 total residents and a manufacturing workforce of just 50 total individuals, the region lacks the scale to organically develop a robust manufacturing cluster. However, Lincoln County does possess strategic physical assets such as rail proximity and utility-ready land parcels, which could serve as foundational infrastructure for micro-manufacturers or specialty component producers. The region should pursue the establishment of a regionally tailored innovation incubator focusing on precision components and small-batch production using CNC and additive technologies. To

create a sustainable talent pipeline, stakeholders within the Lincoln County Regional Development Authority region should implement modular certification programs in welding, machining, and blueprint reading fields aligned with foreseeable demand in sectors like aerospace and battery components. Crucially, these programs must be stackable to accommodate career mobility and pivot options. However, current Career and Technical Education programs cover only about 40.0 percent of employer-required competencies, and the lack of post-secondary options has driven significant talent leakage. A formal return-to-work strategy is also absent, leaving behind older adults, veterans, and those re-entering from caregiving or incarceration.

To correct these issues, the region should launch a targeted return-to-work initiative that includes flexible training formats, wage subsidies, and wraparound services such as transportation and mental health support. Great Basin College and the University of Nevada, Reno's Extension office in Lincoln County can help deliver this training through a hybrid model, enabling remote instruction with intermittent in-person intensives. Additionally, the region can position itself in value-added processing of locally sourced gypsum, copper, and agricultural commodities. By shifting from raw exports to intermediate or finished goods, the region can capture more economic value while maintaining its environmental sustainability. These forward linkages are critical as, currently, nearly all materials leave the county without any further transformation, limiting long-term economic resilience.

To support modern production capabilities, digital manufacturing labs should be established in partnership with the University of Nevada, Reno and even the University of Nevada, Las Vegas. These labs can integrate CAD, IoT, and AI design tools to modernize the region's technical capacity and prepare workers for digital manufacturing. Parallel to this, a rural continuity and resilience plan should be developed to identify infrastructure vulnerabilities, particularly around water, energy, and communications and simulate disaster scenarios relevant to manufacturing operations. Finally, to address structural imbalances in workforce participation, particularly the underrepresentation of women, Lincoln County should adopt creative childcare solutions. These may include shared services alliances, where small employers co-fund centralized childcare centers, or nonprofit multi-use hubs, modeled on successful rural programs in Canada, that provide early learning, vocational training, and community services in one location. These models expand access and also reduce operational costs for small businesses. When bundled with the Governor's Office of Economic Development's matching grants and regional subsidies, they can serve as powerful enablers of workforce participation and long-term economic stability.

5.3.e Nevada 95-80 Regional Development Authority

The Nevada 95-80 Regional Development Authority region, consisting of Humboldt County and Pershing County, represents a complex blend of industrial promise and logistical constraint. Humboldt County maintains a broader employment base but lower average wages, while Pershing County features a smaller, higher-wage manufacturing footprint tied to specialized production. Despite their distinct profiles, both counties face structural challenges, including acute workforce leakage, insufficient education access, underutilized industrial assets, and a lack of family-supportive infrastructure. To harness the region's latent potential, the Nevada 95-80 Regional Development Authority region should scale both education delivery and workforce re-

integration. The Great Basin College Winnemucca Center should be expanded into a regional technical anchor, deploying mobile credentialing labs to bring high-skill training in machining, electrical systems, and equipment maintenance directly to underserved communities. These labs, outfitted as mobile classrooms, can deliver hybrid instruction in partnership with local high schools and employers. Simultaneously, employer-led apprenticeships should be formalized to guarantee job-aligned experience and real placement opportunities. To address migration and brain drain, a 'Return to Work' bonus program should be introduced, offering financial incentives to residents who complete regional training and commit to employment within the counties for a defined period.

Industrial growth should center on two complementary strategy areas, including value-added agri-manufacturing and logistics-integrated production. Building on existing agricultural strength, the Nevada 95-80 Regional Development Authority region is well-positioned to lead in smart agri-tech, including micro-manufacturing of IoT-enabled irrigation tools, sensor-based environmental monitors, and small-batch food processing equipment. These initiatives should be supported by precision packaging and cold-chain solutions, particularly for Nevada-grown specialty crops. Meanwhile, the region's strategic geography at the crossroads of U.S. Interstate-80 and U.S. Highway 95 presents an opportunity for scalable logistics-integrated manufacturing such as modular fleet assembly, sensor housing fabrication, and container customization for transit hubs.

Yet industrial growth cannot outpace livability. The region faces major barriers in housing, mobility, and care infrastructure. Publicly-owned parcels near industrial sites should be prioritized for modular workforce housing, using expedited permitting and tax-increment financing to attract developers. Concurrently, the region must establish shift-aligned childcare centers co-funded by large employers and county development grants. These facilities should operate extended hours, accommodate rotating schedules, and include subsidized access for low- to moderate-income families. Creative rural models, such as CareShare cooperatives and mobile childcare units, can extend coverage to remote and seasonal workforces, especially critical for female labor force participation. Mobility also poses a barrier to closing the identified gaps in the supply chain and value network of the region's advanced manufacturing industry sector. A Rural Mobility Credit System should be introduced to subsidize commuting for apprentices, students, and shift workers via rideshare, shuttle networks, or vehicle grants. This is essential in a region with minimal public transit and long travel distances between population centers and job sites.

To guide and evaluate these investments, the region should implement a regional Resilience Index. This dashboard would track employment participation, training completions, housing availability, healthcare coverage, and childcare access, metrics essential to adjusting Workforce Innovations for a New Nevada program fund allocation and monitoring economic impact in real time. Investment in broadband expansion, telehealth access, and rural recreational infrastructure will improve quality of life and support long-term retention of skilled labor. Critically, the Nevada 95-80 Regional Development Authority region must also strengthen its industrial supply chain autonomy. Backward linkages remain fragile, with 0.0 percent local absorption for key inputs like compounded resins, petrochemicals, and fabricated materials. Supplier bootcamps and SME readiness programs should be launched to help local businesses qualify as tier-2 or tier-

3 vendors for regional original equipment manufacturers (OEMs). These efforts must be paired with certification assistance and Governor's Office of Economic Development-backed procurement incubators to expand the footprint of regional suppliers. With a coordinated approach that addresses both economic infrastructure and community enablers, the Nevada 95-80 Regional Development Authority region can shift from a resource extraction economy to a diversified, value-adding advanced manufacturing ecosystem. This transformation will not only elevate local incomes but also position the region as a vital node in Nevada's industrial future, becoming resilient, inclusive, and regionally self-reliant.

5.3.f Northeastern Nevada Regional Development Authority

The Northeastern Nevada Regional Development Authority, encompassing Elko County, Eureka County, Lander County, and White Pine County, possesses immense natural resource wealth, particularly in gold, silver, and vanadium, but remains economically tethered to raw material extraction with limited industrial depth. Mining accounts for a disproportionate share of total employment and total output, yet local value addition is minimal. Advanced manufacturing accounts for just 0.28 percent of total employment and 0.67 percent of output across the entire region, and the region experiences significant leakage in inputs like cement, gravel, and components required for equipment maintenance and logistics. With workforce retention lagging, educational pipelines underperforming, and infrastructure underbuilt, the region's long-term economic resilience is at risk.

To reposition the region as a value-generating manufacturing corridor, stakeholders within the Northeastern Nevada Regional Development Authority region should focus on shifting toward high-value mineral integration and modular production. Establishing a Mineral-to-Product Industrial District in Elko County, the region's largest populated county, will enable local transformation of raw ores into refined alloys, high-strength coatings, and industrial components for aerospace, defense, and clean energy. This district should include CNC machining centers, robotic welding lines, modular casting units, and additive manufacturing pods. Co-locating advanced labs and flexible production cells can reduce reliance on imports and help small and mid-sized manufacturers prototype and scale regionally sourced products. This strategy aligns with national reshoring efforts and federal priorities for critical minerals. Vanadium reserves in Eureka County are ideal for battery cathodes and heat-resistant coatings, and should be leveraged through supply agreements with defense and energy technology firms. Partnerships with the U.S. Department of Energy, the U.S. Department of Defense, and with the U.S. Department of Energy's Critical Materials Institute can position the region as a rare earth and transition-metal hub.

However, workforce development must be restructured region-wide to meet these ambitions. Great Basin College's programs in machining and diesel tech are key assets, but enrollment and graduation metrics reveal retention gaps. To close them, regional stakeholders and partners should launch a regionally embedded apprenticeship framework, connecting mining firms, logistics providers, and public agencies. These apprenticeships should tie directly into high school Career and Technical Education program tracks and Great Basin College certifications, with employer-provided incentives such as tuition reimbursement, guaranteed interviews, and transport stipends. The region should also work to adopt inclusive workforce strategies. A

'Manufacturing Reconnect' initiative should be introduced to recruit women, caregivers, and veterans into flexible credential pathways in quality assurance, maintenance, and industrial diagnostics. This population remains underrepresented in manufacturing due to inflexible scheduling, lack of care infrastructure, and limited re-entry programs. Wraparound supports, subsidized childcare, rural housing assistance, and career counseling, will be essential to broaden the talent pool. Housing and mobility also remain persistent obstacles. Regional stakeholders and partners within the Northeastern Nevada Regional Development Authority region should fast-track zoning for modular workforce housing, co-located near industrial hubs and training centers. Additionally, an on-demand transportation credit system should be introduced, offering subsidized shuttle services or gas stipends for apprentices and shift workers commuting to dispersed worksites.

An overlooked but critical opportunity lies in the food and beverage processing sector. The region currently generates over $170.0 million in evaporated dairy but sources just 8.0 percent of its inputs locally, resulting in over $12.0 million in annual economic leakage. The Northeastern Nevada Regional Development Authority region should invest in a value-added dairy and protein manufacturing incubator, focused on powdered milk, protein isolates, and long-shelf-life nutrition products. These operations would create new forward linkages and stabilize agricultural earnings. To future-proof the industrial base, regional stakeholders and partners should pilot a Smart Modular Fab Program in partnership with the University of Nevada, Reno, Great Basin College, and other Nevada System of Higher Education institutional partners. These portable IoT-integrated production cells can be deployed at smaller sites to enable distributed manufacturing in hard-to-reach or seasonally active areas. Used for small-scale machining, packaging, or assembly, these units support flexible deployment and scale-up with demand.

Finally, resilience must be embedded at the systems level. The Northeastern Nevada Regional Development Authority region should develop a Smart Freight and Distribution Network, integrating rail upgrades, digital freight tracking, and consolidated procurement for key industrial materials. This will close existing leakage in gravel, concrete, and repair services while ensuring manufacturers have consistent access to inputs and distribution. Coupled with an Industrial Resilience Index dashboard tracking housing, training, logistics uptime, and labor participation, the region can adapt in real time to shifting demands. With these strategies, the region can evolve from a resource-dependent territory to a resilient, modular, and inclusive industrial ecosystem anchored in its mineral strength but shaped by its capacity to train, retain, and innovate locally.

5.3.g Northern Nevada Development Authority

The Northern Nevada Development Authority should invest in further strengthening the region's already significant battery manufacturing sector, one of the region's leading industries. Currently, the region lacks the capacity to produce a key input, nonferrous metal excluding aluminum. Developing this capability locally and within the region could yield significant economic benefits, as battery manufacturers already operating within the region are currently outsourcing approximately $403.0 million for this commodity. This region should invest in its workforce by expanding skill-focused programs at Western Nevada College. According to educational attainment data, only about 40.0 percent of the population has a high school diploma.

Efforts should be made to help individuals progress toward some college education or achievement of an associate's degree in a related advanced manufacturing field. While Western Nevada College currently offers an associate degree in advanced manufacturing, there is a need to broaden the availability of short-term certificate programs that can be completed in less than two years. These certificates should be developed in partnership with advanced manufacturers in the region to ensure alignment with industry needs and to build a skilled job-ready workforce.

Northern Nevada Development Authority regional stakeholders and partners should intensify their focus on industrial site readiness. Businesses evaluating locations for expansion or relocation prioritize speed and certainty in site development. The Nevada Certified Sites Program helps streamline this by ensuring sites meet minimum development standards but the existing inventory remains limited. Expanding this program and accelerating site certification can make the region more competitive against better-prepared areas in states like Texas or Arizona. A broader base of shovel-ready sites also supports industries requiring fast deployment, such as manufacturing or warehousing tied to just-in-time supply chains. Moreover, pre-certified sites reduce development risks and can be more easily marketed to site selectors and commercial developers, offering a tangible edge in regional attraction strategies.

Equally vital is the need to strengthen regional workforce development initiatives across the Northern Nevada Development Authority region. Labor availability is now as critical as infrastructure in business location decisions. While the Northern Nevada Development Authority already benefits from institutions such as Western Nevada College and even Truckee Meadows Community College in neighboring Washoe County, many industry representatives report misalignment between the skills of graduates and job requirements. Developing targeted, sector-specific training, particularly in logistics, healthcare support, precision manufacturing, and information technologies, will address these gaps. By collaborating with employers to co-develop curriculum and offering accelerated training programs, the Northern Nevada Development Authority region can ensure that the region produces a job-ready workforce. This supports business retention and also positions the region as a destination for companies seeking skilled labor. Building stronger pathways from high schools to technical careers can also reduce youth unemployment rates and strengthen long-term regional economic resilience.

Addressing the region's growing housing affordability and availability crisis is another economic imperative. Businesses routinely choose not to expand or may relocate if their employees cannot find housing within a reasonable distance or at attainable prices. This is especially urgent as industrial growth in areas like Fernley and Silver Springs in Lyon County and in Storey County has outpaced residential construction. Northern Nevada Development Authority regional stakeholders and partners can play a convening role in accelerating housing solutions by working with local governments to streamline permitting, provide density bonuses, support public-private housing investments, and attract developers focused on workforce housing. A robust housing supply ensures labor mobility, reduces commute-related turnover, and supports inclusive growth in the rural and emerging urban parts of the region alike.

A major strategic opportunity lies in diversifying the region's economy through intentional industry targeting. The current industrial mix of the Northern Nevada Development Authority is heavily reliant on logistics, construction, and retail. While these sectors are important, they are

highly cyclical and vulnerable to automation. Diversifying into clean energy such as solar and battery storage, aerospace, life sciences, and advanced electronics can mitigate economic volatility and drive innovation. These industries also typically offer higher wages, more research and development activity, and better long-term growth trajectories. The Northern Nevada Development Authority region should continue to identify clusters where the region has natural advantages, such as lithium supply chains or geothermal energy, and develop incentive packages, workforce pipelines, and infrastructure alignment to attract anchor firms and their suppliers.

Public-private partnerships are very essential tools for solving infrastructure and workforce challenges without overburdening public budgets. The Northern Nevada Development Authority region should proactively identify public-private partnership opportunities for broadband development and deployment, industrial park development, transportation projects, and career technical education facilities. For example, joint investments in electric vehicle charging infrastructure or rail improvements can unlock federal funding and attract large-scale manufacturers. Engaging local chambers of commerce, utilities, developers, and educational institutions located within and throughout the region in coordinated planning ensures projects are aligned with regional needs and investment ready.

Finally, the Northern Nevada Development Authority region must invest in strategic marketing and brand-building for the region as a business destination. Currently, many site selectors and out-of-state investors associate Nevada primarily with Las Vegas, often overlooking this region's unique assets that include low taxes, proximity to California, favorable climate for logistics, and business-friendly regulatory frameworks. The Northern Nevada Development Authority region should deploy digital marketing campaigns, attend industry conferences, and publish thought leadership materials that position the region competitively. Sharing success stories like the growth of advanced manufacturing at the Tahoe-Reno Industrial Center or the expansion of drone testing corridors builds credibility and attracts attention from strategic investors. Improved economic development branding and marketing also helps attract and retain talent, a crucial factor in today's mobile workforce environment and vital to the efforts to close gaps in the supply chain and value network of the region's advanced manufacturing industry sector. With these solutions with strategic planning and execution, the Northern Nevada Development Authority region can build a more competitive, inclusive, and future-ready regional economy driven by the continued growth of advanced manufacturing.

5.3.h Southwest Central Regional Economic Development Authority

The Southwest Central Regional Economic Development Authority region, comprising Esmeralda County and Nye County, reflects untapped industrial potential constrained by limited infrastructure, sparse population, and supply chain leakage. Despite these constraints, the region is rich in energy-related resources including geothermal activity, solar exposure, and mineral deposits like lithium, copper, and nonferrous metals and houses some of the state's most strategic yet underutilized production capacity. At present, this region's economy is driven by traditional sectors such as gold and silver mining, scientific research, and petroleum refining, with minimal contribution from advanced manufacturing. For instance, petroleum refining, the region's leading manufacturing activity, employs just 14 total workers and contributes less than $600,000

in total compensation. Similarly, while semiconductors are produced locally, the absence of downstream electronics or assembly industries results in raw exports and value loss.

To reverse this trend, the Southwest Central Regional Economic Development Authority region should pursue a dual-track strategy consisting of developing a clean energy manufacturing cluster and building regional supply chain autonomy. The Chevron-Baseload Capital joint venture in Esmeralda County provides a rare opportunity to create a regional Energy Technology Manufacturing Cluster. This cluster could focus on the design and fabrication of geothermal hardware, solar panel frames, heat exchangers, and power storage modules. These efforts should be anchored by programmatic expansion at Great Basin College's Pahrump campus, with new credentials in energy systems technology, environmental engineering, industrial automation, and mechatronics. The goal is to create a regionally relevant, future-focused talent base that supports clean tech manufacturing without relying on long-distance workforce imports. Simultaneously, the Southwest Central Regional Economic Development Authority region must address backward integration failures in repair, logistics, and basic fabrication. A Southwest Equipment and Logistics Hub should be established near Tonopah or Pahrump, providing shared-use industrial repair bays, mobile diagnostics labs, warehousing, and vendor incubation space. Paired with investments in digital inventory management and predictive maintenance software, this hub would serve both mining and energy clients while stimulating supplier relocation.

The Southwest Central Regional Economic Development Authority region should strive to leverage its raw material output more strategically. A Mineral-to-Module Initiative should be launched to redirect local copper, aluminum, and semiconductor substrates into downstream manufacturing applications, such as battery enclosures, aerospace-grade casings, and electronic control units. Regional stakeholders and partners should facilitate pilot projects in lightweight alloy casting and PCB assembly, offering site selection incentives and research and development partnerships with Nevada's various research institutions. This forward linkage strategy would capture significantly more economic value and make the region competitive in national clean energy and electronics supply chains.

To create a more inclusive and durable workforce, stakeholders and partners within the Southwest Central Regional Economic Development Authority region should launch a rural workforce activation plan targeting underemployed populations, particularly veterans, older adults, and caregivers returning to the labor force. This plan would provide stipends, online course access, and guaranteed interview pipelines for program completers. Special emphasis should be placed on recruiting women into manufacturing through supportive services like flexible scheduling, mental health access, and childcare coverage. For childcare, the region should implement mobile care units modeled after Montana's 'Kids on the Go' program, a program that uses retrofitted buses staffed by certified providers that rotate between industrial sites on fixed schedules. Regional care co-ops, similar to rural Oregon's CareShare model, should also be supported to increase licensed care capacity in geographically isolated communities. These strategies are particularly relevant in a region with long commute distances, variable shifts, and limited formal care options.

To sustain resilience across the region, regional stakeholders and partners should develop an Energy-Industrial Continuity Plan. This plan would map out vulnerabilities in utilities, water

systems, and communications across key industrial corridors and propose modular infrastructure upgrades such as water reclamation for processing plants, solar-powered microgrids, and temporary production shelters for supply-disrupted events. Housing is another barrier to attracting additional advanced manufactures and suppliers as part of an effort to close identified gaps in the supply chain and value network of the region's advanced manufacturing sector through targeted business creation, attraction, retention, and expansion efforts and targeted workforce development strategies. Public land and idle parcels publicly owned should be prioritized for modular housing developments with zoning fast-tracks and layered financing tools, ensuring that technical workers, especially new graduates and in-migrants, can live near job sites affordably. Finally, a regional Resilience Index should be deployed to track labor participation, training completions, housing supply, healthcare access, and childcare availability. This tool will help inform allocation of Workforce Innovation for a New Nevada program funds and provide transparency on the region's industrial and advanced manufacturing readiness. Through a high-leverage blend of clean tech manufacturing, localized supply chains, inclusive workforce development, and resilient infrastructure planning, the Southwest Central Regional Economic Development Authority region can transition from a raw material outpost to a scalable, self-sustaining industrial ecosystem, one grounded in its mineral wealth, energy future, and rural ingenuity.

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Appendix A – Churchill Fallon Development Authority

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table A.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Churchill Fallon Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Dry, condensed, and evaporated dairy product manufacturing	$174,297,307.32	127	21	148	$(191,061.08)
* Employment and payroll of federal govt, military	$174,097,688.00	1,323	0	1,323	$0.00
Scenic and sightseeing transportation and support activities for transportation	$79,809,844.53	610	5	616	$155,890.07
Other real estate	$78,489,751.45	46	404	450	$18,710,786.71
Hospitals	$73,827,435.33	329	2	331	$(117,043.15)
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	$66,920,224.24	25	273	298	$12,854,892.70
Dairy cattle and milk production	$63,732,430.02	187	20	207	$3,309,051.53
Facilities support services	$61,517,930.21	256	120	376	$1,996,374.57
* Employment and payroll of federal govt, non-military	$58,864,893.25	444	0	444	$0.00
Limited-service restaurants	$56,759,139.94	448	28	477	$2,578,237.27
Search, detection, and navigation instruments manufacturing	$53,821,633.57	93	8	101	$72,235.94
* Employment and payroll of local govt, other services	$53,501,449.32	554	0	554	$0.00
Secondary processing of other nonferrous metals	$52,131,359.32	53	2	55	$3,779,739.68
Electric power transmission and distribution	$51,543,929.84	27	7	33	$41,106.15
Fabricated structural metal manufacturing	$50,251,569.20	83	8	90	$21,682.61

Table A.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Churchill Fallon Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Gambling industries (except casino hotels)	$44,791,068.95	267	15	282	$2,014,026.45
* Employment and payroll of local govt, education	$43,005,559.39	548	0	548	$0.00
Construction of new single-family residential structures	$42,769,908.94	181	41	223	$3,636,439.94
Scientific research and development services	$42,542,404.35	137	21	159	$355,405.14
Retail - General merchandise stores	$39,926,869.92	395	15	411	$124,316.33
Total (All Industry Sectors)	**$1,362,602,397.10**	**6,136**	**990**	**7,127**	**$49,342,080.87**

Table A.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Churchill Fallon Development Authority			
Industry Code	**Commodity Industry Sector**	**Total Output**	**Wage and Salary Employment**
78	Dry, condensed, and evaporated dairy product manufacturing	$174,297,307.32	127.34
301	Search, detection, and navigation instruments manufacturing	$53,821,633.57	92.82
228	Fabricated structural metal manufacturing	$50,251,569.20	82.53
204	Ground or treated mineral and earth manufacturing	$34,910,324.55	59.97
218	Secondary processing of other nonferrous metals	$52,131,359.32	53.31
196	Ready-mix concrete manufacturing	$18,397,022.02	36.78
232	Ornamental and architectural metal work manufacturing	$10,595,767.04	35.49
134	Prefabricated wood building manufacturing	$12,054,874.65	31.67
149	Petroleum lubricating oil and grease manufacturing	$28,257,753.39	23.08
103	Distilleries	$19,066,650.96	19.59
144	Printing	$3,866,145.62	13.94
368	Sign manufacturing	$4,049,317.81	13.19
365	Sporting and athletic goods manufacturing	$11,594,051.51	11.94
85	Meat processed from carcasses	$5,237,879.58	9.30
88	Bread and bakery product, except frozen, manufacturing	$1,320,537.41	7.35
363	Dental laboratories	$1,317,053.60	5.95
59	Other animal food manufacturing	$6,923,647.45	4.22
119	Cut and sew apparel manufacturing (except contractors)	$266,577.80	0.00
262	Industrial and commercial fan and blower and air purification equipment manufacturing	$362,203.16	0.00
164	Pharmaceutical preparation manufacturing	$1,759,815.38	0.00

Table A.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Churchill Fallon Development Authority			
Industry Code	**Commodity Industry Sector**	**Total Output**	**Wage and Salary Employment**
78	Dry, condensed, and evaporated dairy product manufacturing	$174,297,307.32	127.34
301	Search, detection, and navigation instruments manufacturing	$53,821,633.57	92.82
218	Secondary processing of other nonferrous metals	$52,131,359.32	53.31
228	Fabricated structural metal manufacturing	$50,251,569.20	82.53
204	Ground or treated mineral and earth manufacturing	$34,910,324.55	59.97
149	Petroleum lubricating oil and grease manufacturing	$28,257,753.39	23.08
103	Distilleries	$19,066,650.96	19.59
196	Ready-mix concrete manufacturing	$18,397,022.02	36.78
134	Prefabricated wood building manufacturing	$12,054,874.65	31.67
365	Sporting and athletic goods manufacturing	$11,594,051.51	11.94
232	Ornamental and architectural metal work manufacturing	$10,595,767.04	35.49
59	Other animal food manufacturing	$6,923,647.45	4.22
85	Meat processed from carcasses	$5,237,879.58	9.30
368	Sign manufacturing	$4,049,317.81	13.19
144	Printing	$3,866,145.62	13.94
164	Pharmaceutical preparation manufacturing	$1,759,815.38	0.00
88	Bread and bakery product, except frozen, manufacturing	$1,320,537.41	7.35
363	Dental laboratories	$1,317,053.60	5.95
93	Other snack food manufacturing	$429,691.35	0.63
262	Industrial and commercial fan and blower and air purification equipment manufacturing	$362,203.16	0.00

Table A.4 – Dry, Condensed, and Evaporated Dairy Product Manufacturing Commodity Demands Churchill Fallon Development Authority							
Code	**Description**	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
3078	Dry, condensed, and evaporated dairy products	8.08%	8.00%	$13,941,549.57	0.65%	$1,126,418.39	$12,815,131.18
3012	Dairy cattle and milk products	65.97%	19.62%	$34,200,302.24	12.95%	$22,562,133.55	$11,638,168.69
3381	Wholesale services - Grocery and related product wholesalers	6.12%	7.00%	$12,192,093.36	0.43%	$745,661.37	$11,446,431.99

Table A.5 – Search, Detection, and Navigation Instruments Manufacturing Commodity Demands Churchill Fallon Development Authority							
Code	**Description**	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
3377	Wholesale services - Household appliances and electrical and electronic goods	9.58%	11.66%	$6,275,019.73	1.12%	$601,425.71	$5,673,594.02

Table A.6 – Secondary Processing of Other Nonferrous Metals Commodity Demands Churchill Fallon Development Authority							
Code	**Description**	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
3217	Nonferrous metal, except copper and aluminum, shaping	0.6%	13.84%	$7,213,100.72	0.00%	$0.00	$7,213,100.72

Table A.7 – Fabricated Structure Metal Manufacturing Commodity Demands Churchill Fallon Development Authority							
Code	**Description**	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
3207	Iron and steel and ferroalloy products	0.00%	25.11%	$12,616,902.36	0.00%	$558.07	$12,616,344.29

Table A.8 – Unemployment Rates by Age and Labor Group Churchill Fallon Development Authority	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	10.0%
Ages 20 to 24 years	9.9%
Ages 25 to 29 years	16.2%
Ages 30 to 34 years	10.9%
Ages 35 to 44 years	3.6%
Ages 45 to 54 years	2.0%
Ages 55 to 59 years	3.4%
Ages 60 to 64 years	0.2%
Ages 65 to 74 years	11.8%
Ages 75 years and over	0.0%

Table A.9 – Labor Force Participation Rate by Age and Labor Group Churchill Fallon Development Authority	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	71.8%
Ages 20 to 24	82.9%
Ages 25 to 29	88.0%
Ages 30 to 34	72.8%
Ages 35 to 44	79.4%
Ages 45 to 54	82.1%
Ages 55 to 59	75.2%
Ages 60 to 64	48.6%
Ages 65 to 74	27.9%
Ages Greater than 75	8.2%

Table A.10 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Churchill Fallon Development Authority	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	19.23%
High School Diploma	42.55%
Some College or Associate's degree	33.27%
Bachelor's Degree or Higher	4.95%

Table A.11 – Educational Attainment for Individuals Aged 25 Years of Age or Older Churchill Fallon Development Authority	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	1.96%
Ninth through 12th Grades - No High School Diploma	6.02%
High School Graduate - Includes Equivalency	33.20%
Some College - No Degree	27.38%
Associate’s Degree	12.81%
Bachelor’s Degree	13.42%
Graduate Degree	5.21%

Appendix B – Economic Development Authority of Western Nevada

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table B.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Economic Development Authority of Western Nevada					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Other real estate	$3,410,841,365.53	2,818	15,916	18,734	$392,629,213.54
Management of companies and enterprises	$1,568,181,387.26	4,204	915	5,119	$(446,233.28)
Hospitals	$1,545,290,132.71	7,395	9	7,404	$2,527,311.56
Insurance carriers, except direct life	$1,429,902,218.99	1,170	709	1,878	$9,872,377.60
Hotels and motels, including casino hotels	$1,414,285,377.65	9,059	180	9,239	$134,050,791.44
Construction of new single-family residential structures	$1,222,006,282.86	5,075	779	5,854	$126,914,705.47
Warehousing and storage	$1,098,749,340.99	10,601	157	10,757	$(734,769.26)
Architectural, engineering, and related services	$1,093,596,285.54	3,772	2,333	6,105	$139,642,052.86
Limited-service restaurants	$1,068,055,549.28	8,181	477	8,658	$34,439,211.01
Construction of other new residential structures	$1,046,040,615.77	2,404	315	2,719	$58,635,915.82
Truck transportation	$1,027,815,411.36	3,425	1,026	4,451	$44,036,374.04
Wholesale - Household appliances and electrical and electronic goods	$1,019,747,835.36	1,582	97	1,679	$3,457,883.04
Offices of physicians	$1,002,843,297.19	4,384	1,231	5,615	$75,523,292.70
Tenant-occupied housing	$993,162,009.70	727	3,247	3,974	$91,022,787.30
Full-service restaurants	$929,667,040.25	7,797	453	8,250	$36,143,025.79
* Employment and payroll of local govt, other services	$926,330,407.25	6,543	0	6,543	$0.00
Other financial investment activities	$876,995,787.15	715	4,297	5,011	$13,063,580.42
Scientific research and development services	$855,693,473.55	2,471	848	3,319	$38,199,632.52
Employment services	$806,849,866.05	5,814	1,323	7,137	$71,042,830.05

Table B.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Economic Development Authority of Western Nevada					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Insurance agencies, brokerages, and related activities	$803,042,570.09	1,525	520	2,045	$4,491,095.94
Total (All Industry Sectors)	**$62,833,297,951.01**	**248,841**	**81,348**	**330,189**	**$3,306,578,054.74**

Table B.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Economic Development Authority of Western Nevada			
Industry Code	**Commodity Industry Sector**	**Total Output**	**Wage and Salary Employment**
374	All other miscellaneous manufacturing	$729,414,991.71	1,186.21
301	Search, detection, and navigation instruments manufacturing	$653,659,875.36	1,283.27
77	Cheese manufacturing	$326,329,390.21	275.58
144	Printing	$257,099,207.44	1,087.46
318	Battery manufacturing	$224,434,933.19	520.96
65	Fats and oils refining and blending	$193,906,769.19	72.61
185	Other plastics product manufacturing	$186,388,310.70	510.65
95	Flavoring syrup and concentrate manufacturing	$171,508,487.15	96.79
142	Sanitary paper product manufacturing	$152,756,213.30	182.28
251	Other fabricated metal manufacturing	$142,018,171.14	398.69
180	Plastics pipe and pipe fitting manufacturing	$136,740,752.50	168.01
231	Sheet metal work manufacturing	$123,479,895.14	346.34
97	Spice and extract manufacturing	$123,096,193.00	192.11
96	Mayonnaise, dressing, and sauce manufacturing	$115,215,180.68	171.34
178	Plastics packaging materials and unlaminated film and sheet manufacturing	$109,389,976.48	215.43
196	Ready-mix concrete manufacturing	$99,733,403.14	192.24
224	Nonferrous forging	$97,631,862.65	219.89
365	Sporting and athletic goods manufacturing	$94,641,483.76	137.00
73	Frozen specialties manufacturing	$93,550,140.34	235.34
163	Medicinal and botanical manufacturing	$90,874,118.08	137.63

Table B.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Economic Development Authority of Western Nevada			
Industry Code	**Commodity Industry Sector**	**Total Output**	**Wage and Salary Employment**
301	Search, detection, and navigation instruments manufacturing	$653,659,875.36	1,283.27
374	All other miscellaneous manufacturing	$729,414,991.71	1,186.21
144	Printing	$257,099,207.44	1,087.46
318	Battery manufacturing	$224,434,933.19	520.96
185	Other plastics product manufacturing	$186,388,310.70	510.65
251	Other fabricated metal manufacturing	$142,018,171.14	398.69
231	Sheet metal work manufacturing	$123,479,895.14	346.34
88	Bread and bakery product, except frozen, manufacturing	$60,542,632.21	325.53
77	Cheese manufacturing	$326,329,390.21	275.58
262	Industrial and commercial fan and blower and air purification equipment manufacturing	$88,969,459.82	274.72
73	Frozen specialties manufacturing	$93,550,140.34	235.34
224	Nonferrous forging	$97,631,862.65	219.89
178	Plastics packaging materials and unlaminated film and sheet manufacturing	$109,389,976.48	215.43
127	Engineered wood member and truss manufacturing	$87,463,102.05	195.31
97	Spice and extract manufacturing	$123,096,193.00	192.11
196	Ready-mix concrete manufacturing	$99,733,403.14	192.24
116	Other textile product mills	$34,825,856.30	183.78
239	Machine shops	$36,915,968.29	182.74
96	Mayonnaise, dressing, and sauce manufacturing	$115,215,180.68	171.34
142	Sanitary paper product manufacturing	$152,756,213.30	182.28

Table B.4 – All Other Miscellaneous Manufacturing Commodity Demands Economic Development Authority of Western Nevada						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Aluminum sheets, plates, and foils	0.00%	0.25%	$1,810,308.50	0.00%	$3.05	$1,810,305.45
Narrow fabrics and schiffli machine embroidery	0.00%	0.21%	$1,553,038.59	0.00%	$23.40	$1,553,015.19
Rolled, drawn, extruded, and alloyed copper	0.00%	0.19%	$1,413,323.92	0.00%	$12.97	$1,413,310.95
Aluminum products	0.00%	0.19%	$1,359,209.77	0.00%	$5.14	$1,359,204.63
Artificial and synthetic fibers and filaments	0.00%	0.09%	$620,718.95	0.00%	$18.40	$620,700.55

Table B.5 – Search, Detection, and Navigation Instruments Manufacturing Commodity Demands Economic Development Authority of Western Nevada						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Electronic connectors	0.00%	2.13%	$13,949,101.58	0.00%	$66.43	$13,949,035.15
Noncomparable imports	0.00%	1.60%	$10,451,990.08	0.00%	$0.00	$10,451,990.08
Bare printed circuit boards	0.00%	0.61%	$4,011,186.46	0.00%	$22.34	$4,011,164.12
Magnetic and optical media	0.00%	0.50%	$3,237,596.72	0.00%	$10.89	$3,237,585.83
Rolled, drawn, extruded, and alloyed copper	0.00%	0.48%	$3,131,979.09	0.00%	$28.74	$3,131,950.35

Table B.6 – Unemployment Rates by Age and Labor Group Economic Development Authority of Western Nevada	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	17.19%
Ages 20 to 24 years	6.73%
Ages 25 to 29 years	5.16%
Ages 30 to 34 years	3.95%
Ages 35 to 44 years	3.64%
Ages 45 to 54 years	3.56%
Ages 55 to 59 years	5.59%
Ages 60 to 64 years	3.63%
Ages 65 to 74 years	4.88%
Ages 75 years and over	4.93%

Table B.7 – Labor Force Participation Rate by Age and Labor Group Economic Development Authority of Western Nevada	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	47.80%
Ages 20 to 24	84.17%
Ages 25 to 29	87.57%
Ages 30 to 34	87.63%
Ages 35 to 44	83.47%
Ages 45 to 54	83.51%
Ages 55 to 59	70.93%
Ages 60 to 64	61.13%
Ages 65 to 74	27.12%
Ages Greater than 75	6.86%

Table B.8 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Economic Development Authority of Western Nevada	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	10.91%
High School Diploma	33.48%
Some College or Associate's degree	43.39%
Bachelor's Degree or Higher	12.22%

Table B.9 – Educational Attainment for Individuals Aged 25 Years of Age or Older Economic Development Authority of Western Nevada	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	5.04%
Ninth through 12th Grades - No High School Diploma	6.27%
High School Graduate - Includes Equivalency	23.46%
Some College - No Degree	23.42%
Associate’s Degree	8.60%
Bachelor’s Degree	20.11%
Graduate Degree	13.10%

Appendix C – Las Vegas Global Economic Alliance

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table C.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Las Vegas Global Economic Alliance					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Hotels and motels, including casino hotels	$17,078,846,847.43	99,282	1,520	100,802	$910,397,808.37
Other real estate	$13,947,088,728.80	13,458	57,283	70,741	$1,696,680,905.61
Management of companies and enterprises	$8,445,844,626.94	26,283	5,580	31,864	$(7,044,996.49)
Full-service restaurants	$7,452,663,909.84	57,337	4,385	61,722	$283,409,613.02
Air transportation	$6,664,041,250.51	10,653	395	11,048	$165,413,890.96
Limited-service restaurants	$6,046,508,766.41	45,562	3,124	48,685	$183,830,506.53
All other food and drinking places	$5,554,159,472.71	44,760	1,893	46,654	$299,779,408.91
Hospitals	$5,135,666,005.49	23,881	51	23,932	$12,200,148.90
Tenant-occupied housing	$4,668,736,103.08	2,772	12,543	15,315	$422,360,966.69
Gambling industries (except casino hotels)	$4,609,582,109.25	21,365	2,054	23,418	$162,604,769.54
Construction of new single-family residential structures	$4,603,013,982.30	19,202	3,954	23,156	$270,870,977.97
Nondepository credit intermediation and related activities	$4,556,472,184.90	11,514	2,199	13,712	$11,869,208.86
Insurance agencies, brokerages, and related activities	$4,420,985,148.97	9,325	3,318	12,643	$1,844,463.89
Insurance carriers, except direct life	$4,385,124,788.55	5,048	2,192	7,240	$1,999,566.52
Other local government enterprises	$4,202,979,957.96	10,088	0	10,088	$0.00
Offices of physicians	$4,087,251,896.89	20,263	6,187	26,450	$332,928,948.81
Construction of other new residential structures	$4,023,502,552.61	9,089	1,666	10,755	$121,387,402.77
Scientific research and development services	$3,792,548,204.95	10,715	4,628	15,343	$154,516,382.51
* Employment and payroll of local govt, education	$3,742,930,701.63	39,073	0	39,073	$0.00

Table C.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Las Vegas Global Economic Alliance					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
* Employment and payroll of local govt, other services	$3,535,824,114.39	25,203	0	25,203	$0.00
Total (All Industry Sectors)	**$275,885,429,323.55**	**1,163,730**	**402,778**	**1,566,508**	**$11,327,225,612.01**

Table C.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Las Vegas Global Economic Alliance		
Commodity Industry Sector	**Total Output**	**Total Employment**
Wiring device manufacturing	$1,910,447,956.40	4,521
All other miscellaneous manufacturing	$1,868,713,549.88	3,259
Printing	$748,408,415.05	3,691
Bottled and canned soft drinks and water	$675,225,888.83	1,012
Pharmaceutical preparation manufacturing	$625,166,258.37	718
Battery manufacturing	$537,913,449.11	1,298
Bread and bakery product, except frozen, manufacturing	$493,035,358.13	2,766
Ready-mix concrete manufacturing	$460,877,391.85	962
Plastics packaging materials and unlaminated film and sheet manufacturing	$454,717,789.00	928
Gypsum product manufacturing	$393,214,336.63	468
Nonferrous metal (exc aluminum) smelting and refining	$326,289,313.67	154
Mayonnaise, dressing, and sauce manufacturing	$267,296,557.00	432
Ornamental and architectural metal work manufacturing	$259,873,333.47	939
Other plastics product manufacturing	$255,368,122.94	731
Sanitary paper product manufacturing	$225,639,432.99	272
Sign manufacturing	$218,607,774.40	1,019
Engineered wood member and truss manufacturing	$210,414,241.79	565
Sheet metal work manufacturing	$207,885,995.42	639
Jewelry and silverware manufacturing	$193,726,627.71	456
Fabricated structural metal manufacturing	$193,544,057.04	376

Table C.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Las Vegas Global Economic Alliance		
Commodity Industry Sector	**Total Output**	**Total Employment**
Wiring device manufacturing	$1,910,447,956.40	4,521
Printing	$748,408,415.05	3,691
All other miscellaneous manufacturing	$1,868,713,549.88	3,295
Bread and bakery product, except frozen, manufacturing	$493,035,358.13	2,766
Battery manufacturing	$537,913,449.11	1,298
Sign manufacturing	$218,607,774.40	1,019
Bottled and canned soft drinks and water	$675,225,888.83	1,012
Ready-mix concrete manufacturing	$460,877,391.85	962
Ornamental and architectural metal work manufacturing	$259,873,333.47	939
Plastics packaging materials and unlaminated film and sheet manufacturing	$454,717,789.00	928
Other plastics product manufacturing	$255,368,122.94	731
Pharmaceutical preparation manufacturing	$625,166,258.37	718
Sheet metal work manufacturing	$207,885,995.42	639
Wood kitchen cabinet and countertop manufacturing	$126,582,904.04	630
Other concrete product manufacturing	$178,634,669.90	568
Engineered wood member and truss manufacturing	$210,414,241.79	565
Cut stone and stone product manufacturing	$108,325,850.52	489
Gypsum product manufacturing	$393,214,336.63	468
Jewelry and silverware manufacturing	$193,726,627.71	456
All other food manufacturing	$187,657,255.85	445

Table C.4 – Wiring Device Manufacturing Commodity Demands Las Vegas Global Economic Alliance						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Iron and steel and ferroalloy products	0.59%	6.55%	$125,043,259.72	0.04%	$734,692.53	$124,308,567.19
Nonferrous metals	0.00%	5.34%	$102,056,424.22	0.00%	$0.00	$102,056,424.22
Wiring devices	13.58%	5.05%	$96,530,886.63	0.69%	$13,112,856.39	$83,418,030.24
Machined products	3.37%	3.57%	$68,146,571.92	0.12%	$2,297,560.54	$65,849,011.38
Semi-conductors and related devices	0.01%	2.87%	$54,798,739.35	0.00%	$3,281.37	$54,795,457.98

Table C.5 – All Other Miscellaneous Manufacturing Commodity Demands Economic Development Authority of Western Nevada						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Iron and steel and ferroalloy products	0.59%	2.83%	$52,786,627.71	0.02%	$310,148.19	$52,476,479.52
Nonferrous metal, except copper and aluminum, shaping	1.21%	2.73%	$51,046,554.19	0.03%	$617,605.34	$50,428,948.85
Other fabricated metals	1.54%	1.62%	$30,269,256.58	0.03%	$466,307.61	$29,802,948.97
Paperboard containers	2.12%	1.55%	$28,929,691.56	0.03%	$614,040.20	$28,315,651.36
Paints and coatings	2.68%	0.93%	$17,414,496.88	0.03%	$467,216.31	$16,947,280.57

Table C.6 – Unemployment Rates by Age and Labor Group Las Vegas Global Economic Alliance	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	17.5%
Ages 20 to 24 years	11.2%
Ages 25 to 29 years	7.8%
Ages 30 to 34 years	6.9%
Ages 35 to 44 years	6.4%
Ages 45 to 54 years	6.0%
Ages 55 to 59 years	6.5%
Ages 60 to 64 years	5.8%
Ages 65 to 74 years	8.4%
Ages 75 years and over	10.1%

Table C.7 – Labor Force Participation Rate by Age and Labor Group Las Vegas Global Economic Alliance	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	37.0%
Ages 20 to 24	77.4%
Ages 25 to 29	81.1%
Ages 30 to 34	82.9%
Ages 35 to 44	81.7%
Ages 45 to 54	80.9%
Ages 55 to 59	70.7%
Ages 60 to 64	57.9%
Ages 65 to 74	24.9%
Ages Greater than 75	7.2%

Table C.8 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Las Vegas Global Economic Alliance	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	15.5%
High School Diploma	44.3%
Some College or Associate's degree	31.6%
Bachelor's Degree or Higher	8.7%

Table C.9 – Educational Attainment for Individuals Aged 25 Years of Age or Older Las Vegas Global Economic Alliance	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	6.1%
Ninth through 12th Grades - No High School Diploma	7.0%
High School Graduate - Includes Equivalency	27.1%
Some College - No Degree	22.5%
Associate’s Degree	8.6%
Bachelor’s Degree	18.8%
Graduate Degree	9.9%

Appendix D – Lincoln County Regional Development Authority

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table D.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Lincoln County Regional Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Rail transportation	$15,895,912.25	21	0	21	$0.00
Local government electric utilities	$15,306,217.74	22	0	22	$0.00
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	$15,146,188.54	13	38	51	$5,633,271.56
All other crop farming	$13,484,472.61	33	95	128	$1,937,368.67
* Employment and payroll of local govt, education	$13,306,095.67	167	0	167	$0.00
Wholesale - Petroleum and petroleum products	$12,202,545.23	2	5	6	$10,854.59
Other real estate	$12,072,832.18	4	87	91	$1,501,596.17
Monetary authorities and depository credit intermediation	$12,055,804.05	29	2	32	$42,231.58
Hotels and motels, including casino hotels	$10,574,012.36	81	0	81	$0.00
* Employment and payroll of local govt, other services	$8,681,197.33	133	0	133	$0.00
Wired telecommunications carriers	$7,700,959.76	9	10	20	$162,533.75
* Employment and payroll of local govt, hospitals and health services	$7,181,551.90	79	0	79	$0.00
Retail - Food and beverage stores	$6,727,310.63	78	4	82	$9,686.75
* Employment and payroll of state govt, hospitals and health services	$6,683,432.76	57	0	57	$0.00
Retail - Gasoline stores	$6,471,642.86	45	2	47	$1,669,853.65
* Employment and payroll of state govt, other services	$6,464,148.60	57	0	57	$0.00
* Employment and payroll of federal govt, non-military	$6,243,093.86	40	0	40	$0.00
Other nonmetallic mineral mining and quarrying	$6,152,352.69	18	0	18	$(27,025.70)
Vegetable and melon farming	$5,161,570.70	37	2	39	$3,199,084.62

Table D.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Lincoln County Regional Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Waste management and remediation services	$4,691,569.49	15	1	16	$32,169.03
Total (All Industry Sectors)	**$312,749,309.41**	**18,806,606**	**18,805,261**	**18,804,632**	**$18,802,656.86**

Table D.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Lincoln County Regional Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Ready-mix concrete manufacturing	$2,445,366.53	5.23
Dental laboratories	$961,020.34	3.94
Bread and bakery product, except frozen, manufacturing	$454,173.46	3.02
Pharmaceutical preparation manufacturing	$308,532.24	0.00
Animal, except poultry, slaughtering	$184,491.62	0.24
Engineered wood member and truss manufacturing	$120,547.42	0.00
Other snack food manufacturing	$114,214.25	0.17
Search, detection, and navigation instruments manufacturing	$106,741.96	0.00
Bottled and canned soft drinks and water	$93,296.89	0.00
Printing	$91,248.07	0.00
Industrial and commercial fan and blower and air purification equipment manufacturing	$56,774.48	0.00
Cut and sew apparel manufacturing (except contractors)	$54,429.52	0.00
Other aircraft parts and auxiliary equipment manufacturing	$43,798.03	0.00
Frozen cakes and other pastries manufacturing	$38,250.35	0.20
Other plastics product manufacturing	$36,320.84	0.00
Dog and cat food manufacturing	$0.00	0.00
Other animal food manufacturing	$0.00	0.00
Flour milling	$0.00	0.00
Rice milling	$0.00	0.00
Malt manufacturing	$0.00	0.00

Table D.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Lincoln County Regional Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Ready-mix concrete manufacturing	$2,445,366.53	5.23
Dental laboratories	$961,020.34	3.94
Bread and bakery product, except frozen, manufacturing	$454,173.46	3.02
Printing	$91,248.07	0.00
Cut and sew apparel manufacturing (except contractors)	$54,429.52	0.00
Pharmaceutical preparation manufacturing	$308,532.24	0.00
Engineered wood member and truss manufacturing	$120,547.42	0.00
Industrial and commercial fan and blower and air purification equipment manufacturing	$56,774.48	0.00
Search, detection, and navigation instruments manufacturing	$106,741.96	0.00
Other aircraft parts and auxiliary equipment manufacturing	$43,798.03	0.00
Animal, except poultry, slaughtering	$184,491.62	0.24
Frozen cakes and other pastries manufacturing	$38,250.35	0.20
Other snack food manufacturing	$114,214.25	0.17
Bottled and canned soft drinks and water	$93,296.89	0.00
Other plastics product manufacturing	$36,320.84	0.00
Dog and cat food manufacturing	$0.00	0.00
Other animal food manufacturing	$0.00	0.00
Flour milling	$0.00	0.00
Rice milling	$0.00	0.00
Malt manufacturing	$0.00	0.00

Table D.4 – Unemployment Rates by Age and Labor Group Lincoln County Regional Development Authority	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	0.0%
Ages 20 to 24 years	12.7%
Ages 25 to 29 years	0.0%
Ages 30 to 34 years	0.0%
Ages 35 to 44 years	3.6%
Ages 45 to 54 years	0.0%
Ages 55 to 59 years	0.0%
Ages 60 to 64 years	0.0%
Ages 65 to 74 years	0.0%
Ages 75 years and over	0.0%

Table D.5 – Labor Force Participation Rate by Age and Labor Group Lincoln County Regional Development Authority	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	33.1%
Ages 20 to 24	80.5%
Ages 25 to 29	34.5%
Ages 30 to 34	46.1%
Ages 35 to 44	64.7%
Ages 45 to 54	72.4%
Ages 55 to 59	61.6%
Ages 60 to 64	45.4%
Ages 65 to 74	22.7%
Ages Greater than 75	23.1%

Table D.6 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Lincoln County Regional Development Authority	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	20.7%
High School Diploma	45.8%
Some College or Associate's degree	33.5%
Bachelor's Degree or Higher	0.0%

Table D.7 – Educational Attainment for Individuals Aged 25 Years of Age or Older Lincoln County Regional Development Authority	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	1.5%
Ninth through 12th Grades - No High School Diploma	4.4%
High School Graduate - Includes Equivalency	46.0%
Some College - No Degree	22.3%
Associate’s Degree	6.7%
Bachelor’s Degree	11.6%
Graduate Degree	7.4%

Appendix E – Nevada 95-80 Regional Development Authority

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table E.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Nevada 95-80 Regional Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Gold ore and silver ore mining	$1,625,291,259.94	2,321	251	2,572	$153,247.62
Soybean and other oilseed processing	$392,499,465.63	53	12	65	$(98,899.71)
Metal mining services	$120,682,501.93	390	18	409	$342,705.37
Electric power transmission and distribution	$102,387,832.10	60	0	60	$0.00
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	$89,671,351.72	88	91	180	$(3,745,913.81)
All other crop farming	$89,495,602.47	252	256	508	$(3,468,801.25)
Construction of new power and communication structures	$76,938,211.01	239	30	269	$532,498.00
* Employment and payroll of local govt, hospitals and health services	$60,412,178.37	471	0	471	$0.00
Plastics pipe and pipe fitting manufacturing	$58,730,247.68	73	2	76	$3,414.81
* Employment and payroll of local govt, education	$54,101,757.00	621	0	621	$0.00
Electric power generation - Fossil fuel	$46,493,872.08	23	0	23	$0.00
Other real estate	$44,452,094.52	43	244	287	$5,174,950.23
* Employment and payroll of local govt, other services	$43,305,397.40	491	0	491	$0.00
Other basic inorganic chemical manufacturing	$42,104,026.46	39	7	46	$114,099.47
Hotels and motels, including casino hotels	$41,198,974.69	309	8	317	$5,301,841.79
Limited-service restaurants	$40,667,213.19	318	23	340	$1,463,821.45
Truck transportation	$40,497,166.44	115	56	171	$2,307,969.65
* Employment and payroll of state govt, other services	$39,185,638.98	288	0	288	$0.00
Wholesale - Machinery, equipment, and supplies	$37,853,988.57	112	29	141	$40,465.42

Table E.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Nevada 95-80 Regional Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Wireless telecommunications carriers (except satellite)	$34,729,218.59	10	4	14	$99,139.39
Total (All Industry Sectors)	**$4,002,081,920.58**	**10,430**	**2,588**	**13,018**	**$49,327,720.71**

Table E.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Nevada 95-80 Regional Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Soybean and other oilseed processing	$392,499,465.63	53.04
Plastics pipe and pipe fitting manufacturing	$58,730,247.68	73.41
Other basic inorganic chemical manufacturing	$42,104,026.46	38.92
Travel trailer and camper manufacturing	$24,707,007.82	60.72
Ornamental and architectural metal work manufacturing	$11,749,008.31	39.13
Printing	$9,479,310.36	39.67
Machine shops	$8,075,510.82	35.98
Engineered wood member and truss manufacturing	$4,332,888.79	7.64
Petroleum refineries	$3,687,219.49	0.00
Welding and soldering equipment manufacturing	$3,247,005.59	5.60
Ready-mix concrete manufacturing	$3,130,597.62	6.47
Bread and bakery product, except frozen, manufacturing	$1,560,084.05	8.68
Cut stone and stone product manufacturing	$975,918.59	4.60
All other miscellaneous manufacturing	$665,516.42	0.00
Other snack food manufacturing	$501,943.70	0.72
Search, detection, and navigation instruments manufacturing	$340,439.25	0.00
Pharmaceutical preparation manufacturing	$310,749.26	0.00
Bottled and canned soft drinks and water	$279,775.77	0.00
Jewelry and silverware manufacturing	$265,107.77	0.73
Roasted nuts and peanut butter manufacturing	$205,188.09	0.27

Table E.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Nevada 95-80 Regional Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Plastics pipe and pipe fitting manufacturing	$58,730,247.68	76
Soybean and other oilseed processing	$392,499,465.63	65
Travel trailer and camper manufacturing	$24,707,007.82	61
Printing	$9,479,310.36	48
Other basic inorganic chemical manufacturing	$42,104,026.46	46
Ornamental and architectural metal work manufacturing	$11,749,008.31	41
Machine shops	$8,075,510.82	39
Engineered wood member and truss manufacturing	$4,332,888.79	12
Bread and bakery product, except frozen, manufacturing	$1,560,084.05	11
Ready-mix concrete manufacturing	$3,130,597.62	7
Welding and soldering equipment manufacturing	$3,247,005.59	6
Cut stone and stone product manufacturing	$975,918.59	5
All other miscellaneous manufacturing	$665,516.42	3
Cut and sew apparel manufacturing (except contractors)	$156,729.07	1
Search, detection, and navigation instruments manufacturing	$340,439.25	1
Other aircraft parts and auxiliary equipment manufacturing	$150,771.94	1
Jewelry and silverware manufacturing	$265,107.77	1
Other snack food manufacturing	$501,943.70	1
Frozen cakes and other pastries manufacturing	$106,742.34	1
Bottled and canned soft drinks and water	$279,775.77	0

Table E.4 – Soybean and Other Oilseed Processing Commodity Demands Nevada 95-80 Regional Development Authority						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Noncomparable imports	0.00%	0.38%	$1,503,106.01	0.00%	$0.00	$1,503,106.01
Paperboard containers	0.00%	0.25%	$966,407.07	0.00%	$40.00	$966,367.07
Cotton	0.00%	0.24%	$920,887.24	0.00%	$0.00	$920,887.24
Coal	0.00%	0.16%	$624,211.18	0.00%	$0.00	$624,211.18
Relay and industrial controls	0.00%	0.08%	$311,936.40	0.00%	$6.56	$311,929.84

Table E.5 – Plastic Pipe and Pipe Fitting Manufacturing Commodity Demands Nevada 95-80 Regional Development Authority						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Plastics materials and resins	0.00%	40.92%	$24,029,579.33	0.00%	$298.91	$24,029,280.42
Unlaminated plastics profile shapes	0.00%	0.97%	$568,979.64	0.00%	$6.82	$568,972.82
Other basic organic chemicals	0.00%	0.82%	$484,228.08	0.00%	$16.71	$484,211.37
Compounded resins	0.00%	0.76%	$446,066.23	0.00%	$9.01	$446,057.22
Petrochemicals	0.00%	0.71%	$414,522.29	0.00%	$17.94	$414,504.35

Table E.6 – Other Basic Inorganic Chemical Manufacturing Commodity Demands Nevada 95-80 Regional Development Authority						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Petrochemicals	0.00%	3.76%	$1,584,146.38	0.00%	$68.58	$1,584,077.80
Compounded resins	0.00%	1.01%	$423,736.81	0.00%	$8.56	$423,728.25
Other basic organic chemicals	0.00%	0.93%	$392,469.17	0.00%	$13.54	$392,455.63
Paperboard containers	0.00%	0.89%	$375,251.67	0.00%	$15.53	$375,236.14
Industrial process variable instruments	0.00%	0.80%	$337,011.63	0.00%	$0.47	$337,011.16

Table E.7 – Unemployment Rates by Age and Labor Group Nevada 95-80 Regional Development Authority	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	14.9%
Ages 20 to 24 years	10.9%
Ages 25 to 29 years	9.5%
Ages 30 to 34 years	2.1%
Ages 35 to 44 years	3.7%
Ages 45 to 54 years	4.6%
Ages 55 to 59 years	5.0%
Ages 60 to 64 years	4.0%
Ages 65 to 74 years	0.9%
Ages 75 years and over	6.4%

Table E.8 – Labor Force Participation Rate by Age and Labor Group Nevada 95-80 Regional Development Authority	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	46.2%
Ages 20 to 24	78.4%
Ages 25 to 29	70.0%
Ages 30 to 34	77.9%
Ages 35 to 44	68.1%
Ages 45 to 54	69.8%
Ages 55 to 59	60.0%
Ages 60 to 64	50.1%
Ages 65 to 74	24.8%
Ages Greater than 75	8.0%

Table E.9 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Nevada 95-80 Regional Development Authority	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	20.6%
High School Diploma	39.4%
Some College or Associate's degree	29.3%
Bachelor's Degree or Higher	10.7%

Table E.10 – Educational Attainment for Individuals Aged 25 Years of Age or Older Nevada 95-80 Regional Development Authority	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	4.3%
Ninth through 12th Grades - No High School Diploma	8.9%
High School Graduate - Includes Equivalency	38.1%
Some College - No Degree	23.1%
Associate’s Degree	8.9%
Bachelor’s Degree	11.3%
Graduate Degree	5.4%

Appendix F – Northeastern Nevada Regional Development Authority

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table F.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Northeastern Nevada Regional Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Gold ore and silver ore mining	$4,335,085,083.45	5,878	1,019	6,897	$(6,331,827.13)
Metal mining services	$445,449,498.47	1,428	49	1,476	$6,650,758.16
Electric power transmission and distribution	$429,758,627.00	257	5	263	$4,517,530.20
Wholesale - Petroleum and petroleum products	$419,794,164.16	178	13	191	$218,710.01
Copper, nickel, lead, and zinc mining	$419,203,468.43	447	27	474	$(4,486,444.79)
Hotels and motels, including casino hotels	$335,942,916.77	2,526	21	2,547	$1,788,677.25
Wholesale - Machinery, equipment, and supplies	$282,368,689.92	840	56	896	$1,266,233.43
Construction of new power and communication structures	$249,967,061.44	784	109	893	$1,958,110.32
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	$197,798,578.69	190	415	606	$26,440,504.26
Other real estate	$180,783,875.32	166	971	1,137	$19,346,978.95
* Employment and payroll of local govt, education	$157,068,453.88	1,852	0	1,852	$0.00
Management of companies and enterprises	$150,639,884.55	308	113	421	$(5,614.35)
* Employment and payroll of local govt, other services	$141,402,548.47	1,557	0	1,557	$0.00
Construction of new single-family residential structures	$130,457,798.49	527	92	619	$8,947,158.73
Limited-service restaurants	$118,646,972.91	939	60	998	$1,961,210.56
Gambling industries (except casino hotels)	$117,504,624.29	678	33	711	$695,507.00
Construction of other new residential structures	$113,131,951.12	251	38	289	$3,681,614.93
Retail - Motor vehicle and parts dealers	$96,765,402.46	398	57	455	$5,306,666.05
Monetary authorities and depository credit intermediation	$95,967,560.74	207	20	226	$1,590,336.14

Table F.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Northeastern Nevada Regional Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
All other food and drinking places	$95,752,384.20	972	24	996	$902,130.26
Total (All Industry Sectors)	**$12,153,672,143.42**	**36,123**	**8,463**	**44,586**	**$222,661,774.06**

Table F.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Northeastern Nevada Regional Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Ready-mix concrete manufacturing	$47,520,082.02	97
Petroleum refineries	$24,522,672.71	3
Prefabricated wood building manufacturing	$18,901,629.41	56
Overhead cranes, hoists, and monorail systems manufacturing	$16,423,289.42	25
Motor vehicle transmission and power train parts manufacturing	$10,392,030.38	16
Fertilizer mixing	$9,310,909.16	13
Bottled and canned soft drinks and water	$9,023,401.74	16
Industrial gas manufacturing	$7,984,684.88	5
All other miscellaneous electrical equipment and component manufacturing	$7,493,156.56	22
Bread and bakery product, except frozen, manufacturing	$5,540,586.46	34
Air conditioning, refrigeration, and warm air heating equipment manufacturing	$4,259,783.10	9
Metal tank (heavy gauge) manufacturing	$4,135,095.40	12
Cut stone and stone product manufacturing	$3,499,717.23	16
Printing	$3,459,337.86	20
Engineered wood member and truss manufacturing	$3,166,285.79	8
Other basic inorganic chemical manufacturing	$2,772,097.66	4
Meat processed from carcasses	$2,690,821.72	5
Search, detection, and navigation instruments manufacturing	$2,618,721.23	7
Toilet preparation manufacturing	$2,492,729.35	3
Power-driven handtool manufacturing	$1,505,640.64	2

Table F.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Northeastern Nevada Regional Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Ready-mix concrete manufacturing	$47,520,082.02	97
Prefabricated wood building manufacturing	$18,901,629.41	56
Bread and bakery product, except frozen, manufacturing	$5,540,586.46	34
Overhead cranes, hoists, and monorail systems manufacturing	$16,423,289.42	25
All other miscellaneous electrical equipment and component manufacturing	$7,493,156.56	22
Printing	$3,459,337.86	20
Motor vehicle transmission and power train parts manufacturing	$10,392,030.38	16
Bottled and canned soft drinks and water	$9,023,401.74	16
Cut stone and stone product manufacturing	$3,499,717.23	16
Cut and sew apparel manufacturing (except contractors)	$1,353,821.80	13
Fertilizer mixing	$9,310,909.16	13
Metal tank (heavy gauge) manufacturing	$4,135,095.40	12
Air conditioning, refrigeration, and warm air heating equipment manufacturing	$4,259,783.10	9
Engineered wood member and truss manufacturing	$3,166,285.79	8
Search, detection, and navigation instruments manufacturing	$2,618,721.23	7
Other aircraft parts and auxiliary equipment manufacturing	$1,040,543.33	6
Industrial gas manufacturing	$7,984,684.88	5
Sign manufacturing	$967,399.28	5
Meat processed from carcasses	$2,690,821.72	5
Ornamental and architectural metal work manufacturing	$1,279,154.50	5

Table F.4 – Unemployment Rates by Age and Labor Group Northeastern Nevada Regional Development Authority	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	3.6%
Ages 20 to 24 years	4.5%
Ages 25 to 29 years	2.0%
Ages 30 to 34 years	7.9%
Ages 35 to 44 years	7.3%
Ages 45 to 54 years	2.7%
Ages 55 to 59 years	4.8%
Ages 60 to 64 years	0.4%
Ages 65 to 74 years	4.5%
Ages 75 years and over	0.5%

Table F.5 – Labor Force Participation Rate by Age and Labor Group Northeastern Nevada Regional Development Authority	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	45.7%
Ages 20 to 24	78.2%
Ages 25 to 29	73.7%
Ages 30 to 34	74.8%
Ages 35 to 44	81.9%
Ages 45 to 54	85.8%
Ages 55 to 59	73.0%
Ages 60 to 64	58.2%
Ages 65 to 74	23.4%
Ages Greater than 75	6.0%

Table F.6 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Northeastern Nevada Regional Development Authority	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	20.3%
High School Diploma	41.2%
Some College or Associate's degree	34.4%
Bachelor's Degree or Higher	4.2%

Table F.7 – Educational Attainment for Individuals Aged 25 Years of Age or Older Northeastern Nevada Regional Development Authority	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	4.7%
Ninth through 12th Grades - No High School Diploma	7.5%
High School Graduate - Includes Equivalency	34.2%
Some College - No Degree	25.4%
Associate’s Degree	11.1%
Bachelor’s Degree	10.7%
Graduate Degree	6.3%

Appendix G – Northern Nevada Development Authority

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table G.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Northern Nevada Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Battery manufacturing	$2,475,816,236.20	5,838	128	5,965	$481,458.06
Other real estate	$924,923,009.75	514	4,902	5,416	$185,103,720.19
Petroleum refineries	$786,871,768.58	83	7	89	$54,101,859.32
* Employment and payroll of state govt, other services	$708,651,914.29	5,881	0	5,881	$0.00
Warehousing and storage	$398,533,642.04	3,781	25	3,806	$(470,990.14)
Hospitals	$373,133,652.00	1,856	2	1,858	$699,146.57
Hotels and motels, including casino hotels	$347,543,259.18	2,161	47	2,208	$33,085,740.31
Management of companies and enterprises	$338,474,475.38	998	469	1,468	$(12,777,724.65)
* Employment and payroll of local govt, other services	$307,706,426.85	2,728	0	2,728	$0.00
Scientific research and development services	$307,563,127.14	1,005	224	1,229	$9,890,537.34
Limited-service restaurants	$304,958,684.72	2,301	142	2,444	$9,718,265.38
Construction of new single-family residential structures	$301,194,214.55	1,225	417	1,643	$24,538,154.53
Other local government enterprises	$300,115,846.12	739	0	739	$0.00
Gambling industries (except casino hotels)	$289,763,161.33	1,657	74	1,732	$7,644,322.25
* Employment and payroll of local govt, education	$265,357,402.55	3,191	0	3,191	$0.00
Construction of other new residential structures	$263,645,901.40	582	182	764	$10,915,724.60
Other financial investment activities	$263,223,990.85	83	1,609	1,692	$17,777,120.78
Wholesale - Other durable goods merchant wholesalers	$256,784,597.38	615	110	726	$4,677,175.98
Offices of physicians	$255,935,864.22	1,187	342	1,529	$19,705,851.38
Full-service restaurants	$249,559,044.22	2,122	131	2,253	$9,289,188.04
Total (All Industry Sectors)	**$23,367,056,003.57**	**82,235**	**28,084**	**110,318**	**$1,122,250,150.06**

Table G.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Northern Nevada Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Battery manufacturing	$2,475,816,236.20	5,965
Petroleum refineries	$786,871,768.58	89
Asphalt shingle and coating materials manufacturing	$226,719,449.12	168
Industrial process variable instruments manufacturing	$186,799,707.57	505
Paint and coating manufacturing	$166,348,819.54	198
Other basic organic chemical manufacturing	$153,733,053.99	76
Fabricated structural metal manufacturing	$152,417,454.89	301
Heavy duty truck manufacturing	$144,194,453.58	145
Other motor vehicle parts manufacturing	$140,965,746.12	259
Metal cans manufacturing	$140,739,067.82	132
Turned product and screw, nut, and bolt manufacturing	$140,206,953.71	438
Frozen fruits, juices and vegetables manufacturing	$108,889,999.63	192
Coffee and tea manufacturing	$106,935,795.21	148
Dog and cat food manufacturing	$98,730,553.91	99
Motor vehicle gasoline engine and engine parts manufacturing	$98,612,551.29	142
Small arms, ordnance, and accessories manufacturing	$95,966,032.65	173
Valve and fittings, other than plumbing, manufacturing	$78,501,599.77	187
Audio and video equipment manufacturing	$76,832,031.71	98
Aircraft engine and engine parts manufacturing	$74,487,238.67	139
Reconstituted wood product manufacturing	$66,761,997.57	85

Table G.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Northern Nevada Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Battery manufacturing	$2,475,816,236.20	5,965
Industrial process variable instruments manufacturing	$186,799,707.57	505
Turned product and screw, nut, and bolt manufacturing	$140,206,953.71	438
Fabricated structural metal manufacturing	$152,417,454.89	301
Other motor vehicle parts manufacturing	$140,965,746.12	259
Other aircraft parts and auxiliary equipment manufacturing	$62,617,226.72	217
Bread and bakery product, except frozen, manufacturing	$37,735,869.05	204
Paint and coating manufacturing	$166,348,819.54	198
Frozen fruits, juices and vegetables manufacturing	$108,889,999.63	192
Valve and fittings, other than plumbing, manufacturing	$78,501,599.77	187
Other plastics product manufacturing	$62,749,151.89	181
Other rubber product manufacturing	$56,967,835.32	178
Small arms, ordnance, and accessories manufacturing	$95,966,032.65	173
Machine shops	$36,387,624.93	170
Asphalt shingle and coating materials manufacturing	$226,719,449.12	168
Coffee and tea manufacturing	$106,935,795.21	148
Heavy duty truck manufacturing	$144,194,453.58	145
Motor vehicle gasoline engine and engine parts manufacturing	$98,612,551.29	142
Aircraft engine and engine parts manufacturing	$74,487,238.67	139
Metal cans manufacturing	$140,739,067.82	132

Table G.4 – Battery Manufacturing Commodity Demands Northern Nevada Development Authority						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Natural gas and crude petroleum	7.45%	60.83%	$478,615,556.68	4.53%	$35,666,430.49	$442,949,126.19
Petrochemicals	4.82%	5.08%	$39,941,264.78	0.25%	$1,926,475.18	$38,014,789.60
Pipeline transportation services	5.20%	4.78%	$37,610,417.19	0.25%	$1,957,221.61	$35,653,195.58

Table G.5 – Plastic Pipe and Pipe Fitting Manufacturing Commodity Demands Northern Nevada Development Authority						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Nonferrous metal (exc aluminum) smelting and refining	0.18%	16.28%	$403,018,928.69	0.03%	$725,154.07	$402,293,774.62
Iron and steel and ferroalloy products	0.03%	6.24%	$154,440,947.07	0.00%	$46,820.02	$154,394,127.05
Paperboard containers	0.07%	2.28%	$56,366,543.63	0.00%	$39,958.20	$56,326,585.43

Table G.6 – Unemployment Rates by Age and Labor Group Northern Nevada Development Authority	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	7.3%
Ages 20 to 24 years	9.3%
Ages 25 to 29 years	4.1%
Ages 30 to 34 years	5.7%
Ages 35 to 44 years	4.1%
Ages 45 to 54 years	3.4%
Ages 55 to 59 years	4.9%
Ages 60 to 64 years	3.6%
Ages 65 to 74 years	4.0%
Ages 75 years and over	4.9%

Table G.7 – Labor Force Participation Rate by Age and Labor Group Northern Nevada Development Authority	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	44.1%
Ages 20 to 24	79.0%
Ages 25 to 29	87.1%
Ages 30 to 34	83.9%
Ages 35 to 44	82.6%
Ages 45 to 54	78.6%
Ages 55 to 59	69.1%
Ages 60 to 64	51.2%
Ages 65 to 74	22.3%
Ages Greater than 75	6.7%

Table G.8 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Northern Nevada Development Authority	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	16.7%
High School Diploma	40.1%
Some College or Associate's degree	37.7%
Bachelor's Degree or Higher	5.5%

Table G.9 – Educational Attainment for Individuals Aged 25 Years of Age or Older Northern Nevada Development Authority	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	3.1%
Ninth through 12th Grades - No High School Diploma	6.9%
High School Graduate - Includes Equivalency	28.2%
Some College - No Degree	27.2%
Associate’s Degree	10.5%
Bachelor’s Degree	15.9%
Graduate Degree	8.2%

Appendix H – Southwest Central Regional Economic Development Authority

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table H.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Southwest Central Regional Economic Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Gold ore and silver ore mining	$665,119,187.14	910	168	1,078	$(92,533.95)
Scientific research and development services	$632,226,158.45	1,625	567	2,192	$8,938,712.82
Electric power transmission and distribution	$220,923,322.34	137	6	143	$1,089,559.75
Other real estate	$166,666,396.61	144	824	968	$16,643,684.03
Copper, nickel, lead, and zinc mining	$144,553,597.43	144	27	171	$(1,782,723.78)
Petroleum refineries	$117,172,516.24	4	10	14	$4,141,739.69
Gambling industries (except casino hotels)	$77,904,537.96	483	20	502	$1,329,535.36
* Employment and payroll of local govt, education	$73,969,681.56	955	0	955	$0.00
Limited-service restaurants	$70,559,648.60	545	46	591	$2,287,328.93
Facilities support services	$69,199,055.03	162	143	304	$4,084,662.71
* Employment and payroll of local govt, other services	$66,274,419.56	672	0	672	$0.00
Electric power generation - Solar	$61,732,495.29	104	3	107	$631,015.88
Hotels and motels, including casino hotels	$61,555,730.90	501	10	511	$3,169,477.29
Waste management and remediation services	$57,159,916.79	189	4	193	$38,397.37
Wholesale - Petroleum and petroleum products	$51,858,315.93	17	9	26	$68,264.76
Construction of new power and communication structures	$46,961,690.05	169	37	207	$389,948.45
Hospitals	$45,108,401.78	230	1	230	$64,084.80
Retail - General merchandise stores	$40,329,753.49	399	32	431	$254,083.09
Retail - Motor vehicle and parts dealers	$39,836,204.01	154	39	193	$4,942,277.63

Table H.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – Southwest Central Regional Economic Development Authority					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Specialized design services	$39,302,326.17	113	20	133	$313,212.77
Total (All Industry Sectors)	**$4,310,500,060.38**	**14,406**	**5,523**	**19,929**	**$153,051,765.51**

Table H.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – Southwest Central Regional Economic Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
Petroleum refineries	$117,172,516.24	14
Nonferrous metal (exc aluminum) smelting and refining	$20,572,561.83	10
All other miscellaneous manufacturing	$8,599,534.82	24
Paint and coating manufacturing	$8,334,894.46	11
Other animal food manufacturing	$6,151,873.00	4
Ready-mix concrete manufacturing	$5,075,153.42	11
Other concrete product manufacturing	$4,891,347.23	15
Fluid milk manufacturing	$4,539,480.10	6
Coffee and tea manufacturing	$3,916,978.71	6
Medicinal and botanical manufacturing	$3,688,845.33	7
Chocolate and confectionery manufacturing from cacao beans	$3,671,825.51	7
Bread and bakery product, except frozen, manufacturing	$2,972,245.62	18
Wineries	$2,753,647.96	9
Sign manufacturing	$2,568,458.69	16
Other plastics product manufacturing	$2,280,830.50	7
Other rubber product manufacturing	$2,181,596.94	8
Surgical appliance and supplies manufacturing	$1,884,526.64	4
Prefabricated wood building manufacturing	$1,836,117.16	6
Printing	$1,830,711.26	15
Search, detection, and navigation instruments manufacturing	$1,622,508.45	4

Table H.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – Southwest Central Regional Economic Development Authority		
Commodity Industry Sector	**Total Output**	**Total Employment**
All other miscellaneous manufacturing	$8,599,534.82	24
Bread and bakery product, except frozen, manufacturing	$2,972,245.62	18
Sign manufacturing	$2,568,458.69	16
Other concrete product manufacturing	$4,891,347.23	15
Printing	$1,830,711.26	15
Petroleum refineries	$117,172,516.24	14
Paint and coating manufacturing	$8,334,894.46	11
Ready-mix concrete manufacturing	$5,075,153.42	11
Nonferrous metal (exc aluminum) smelting and refining	$20,572,561.83	10
Cut and sew apparel manufacturing (except contractors)	$860,995.18	9
Wineries	$2,753,647.96	9
Other rubber product manufacturing	$2,181,596.94	8
Chocolate and confectionery manufacturing from cacao beans	$3,671,825.51	7
Other plastics product manufacturing	$2,280,830.50	7
Medicinal and botanical manufacturing	$3,688,845.33	7
Cut stone and stone product manufacturing	$1,368,873.77	6
Fluid milk manufacturing	$4,539,480.10	6
Coffee and tea manufacturing	$3,916,978.71	6
Prefabricated wood building manufacturing	$1,836,117.16	6
Industrial and commercial fan and blower and air purification equipment manufacturing	$782,888.58	4

Table H.4 – Petroleum Refineries Commodity Demands Southwest Central Regional Economic Development Authority						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Natural gas and crude petroleum	29.87%	65.61%	$76,871,552.70	19.60%	$22,964,360.44	$53,907,192.26
Petro-chemicals	0.34%	5.48%	$6,415,059.01	0.02%	$21,765.88	$6,393,293.13
Pipeline transportation services	1.19%	5.16%	$6,040,696.18	0.06%	$72,004.68	$5,968,691.50
Other basic organic chemicals	0.00%	1.97%	$2,304,178.45	0.00%	$37.17	$2,304,141.28
Non-comparable imports	0.00%	1.73%	$2,026,905.74	0.00%	$0.00	$2,026,905.74

Table H.5 – Nonferrous Metals Smelting and Refining Commodity Demands Southwest Central Regional Economic Development Authority						
Description	**RPC**	**Gross Absorption**	**Gross Inputs**	**Regional Absorption**	**Regional Inputs**	**Gap (GI-RI)**
Nonferrous metal (exc aluminum) smelting and refining	1.59%	33.38%	$6,866,367.86	0.53%	$109,343.44	$6,757,024.42
Semiconductors and related devices	0.02%	3.09%	$635,448.71	0.00%	$101.99	$635,346.72
Truck transportation services	42.41%	4.30%	$883,557.71	1.82%	$374,697.27	$508,860.44
Wholesale services - Other durable goods merchant wholesalers	69.51%	7.46%	$1,534,323.84	5.18%	$1,066,559.69	$467,764.15
Noncomparable imports	0.00%	1.93%	$397,649.13	0.00%	$0.00	$397,649.13

Table H.6 – Unemployment Rates by Age and Labor Group Southwest Central Regional Economic Development Authority	
Age and Labor Group	**Unemployment Rate**
Ages 16 to 19 years	17.6%
Ages 20 to 24 years	12.4%
Ages 25 to 29 years	17.3%
Ages 30 to 34 years	12.5%
Ages 35 to 44 years	10.4%
Ages 45 to 54 years	8.0%
Ages 55 to 59 years	7.2%
Ages 60 to 64 years	1.8%
Ages 65 to 74 years	1.9%
Ages 75 years and over	3.1%

Table H.7 – Labor Force Participation Rate by Age and Labor Group Southwest Central Regional Economic Development Authority	
Age and Labor Group	**Participation Rate**
Ages 16 to 19	35.4%
Ages 20 to 24	65.6%
Ages 25 to 29	74.1%
Ages 30 to 34	73.7%
Ages 35 to 44	71.7%
Ages 45 to 54	65.2%
Ages 55 to 59	50.2%
Ages 60 to 64	36.0%
Ages 65 to 74	11.2%
Ages Greater than 75	5.9%

Table H.8 – Educational Attainment for Individuals Aged 18 Years of Age to 24 Years of Age Southwest Central Regional Economic Development Authority	
Age and Labor Group	**Percent of Total**
Less Than High School Graduate	21.8%
High School Diploma	55.3%
Some College or Associate's degree	21.6%
Bachelor's Degree or Higher	1.4%

Table H.9 – Educational Attainment for Individuals Aged 25 Years of Age or Older Southwest Central Regional Economic Development Authority	
Age and Labor Group	**Percent of Total**
Less Than Ninth Grade	4.5%
Ninth through 12th Grades - No High School Diploma	9.0%
High School Graduate - Includes Equivalency	35.3%
Some College - No Degree	30.1%
Associate’s Degree	8.2%
Bachelor’s Degree	8.8%
Graduate Degree	4.1%

Appendix I – State of Nevada

Results of the Backward and Forward Supply Chain and Value Network 'Gap' Analysis and Related Socio-Demographic Regional Profile

Table I.1 – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – State of Nevada					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
Hotels and motels, including casino hotels	$19,306,370,896.09	114,008	1,795	115,804	$1,094,766,174.66
Other real estate	$18,765,318,054.16	17,194	80,631	97,825	$2,335,791,835.43
Management of companies and enterprises	$10,533,040,177.97	31,837	7,190	39,026	$(20,360,043.99)
Full-service restaurants	$8,797,796,149.40	68,761	5,078	73,839	$333,605,916.20
Limited-service restaurants	$7,708,262,159.95	58,309	3,901	62,211	$236,590,301.04
Hospitals	$7,235,316,594.84	34,006	66	34,072	$15,565,079.13
Air transportation	$7,046,892,227.31	11,193	480	11,673	$214,816,819.24
Gold ore and silver ore mining	$6,807,743,763.15	9,254	1,647	10,900	$(6,914,438.79)
All other food and drinking places	$6,499,540,811.17	53,760	2,234	55,995	$360,007,405.02
Construction of new single-family residential structures	$6,357,308,972.82	26,473	5,391	31,864	$438,594,554.64
Tenant-occupied housing	$5,910,326,470.38	3,658	17,071	20,729	$564,064,025.68
Insurance carriers, except direct life	$5,877,621,385.92	6,272	2,958	9,231	$14,518,472.34
Gambling industries (except casino hotels)	$5,842,683,746.29	28,133	2,502	30,635	$226,034,371.98
Scientific research and development services	$5,727,280,695.40	16,283	6,374	22,658	$214,227,402.46
Insurance agencies, brokerages, and related activities	$5,572,790,208.93	11,485	4,285	15,770	$21,660,958.47
Construction of other new residential structures	$5,536,882,859.06	12,537	2,270	14,808	$198,044,736.26
Offices of physicians	$5,439,511,438.91	26,335	7,912	34,247	$432,720,689.01
Nondepository credit intermediation and related activities	$5,283,258,143.65	13,203	2,706	15,909	$48,989,059.40
* Employment and payroll of local govt, other services	$5,083,025,960.57	37,881	0	37,881	$0.00

Table I.1 Cont'd – Total Output, Wage and Salary Employment and Proprietor Income (and Total Employment), Proprietor Income Top 20 Industry Sectors – State of Nevada					
Description	**Total Output**	**Wage and Salary Employment**	**Proprietor or Employment**	**Employment**	**Proprietor Income**
* Employment and payroll of local govt, education	$5,060,546,401.95	54,191	0	54,191	$0.00
Total (All Industry Sectors)	**$405,924,552,999.73**	**1,567,915**	**532,384**	**2,100,300**	**$16,307,699,787.65**

Table I.2 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Output Top 20 Industry Sectors – State of Nevada		
Commodity Industry Sector	**Total Output**	**Total Employment**
Battery manufacturing	$3,238,164,618.50	539
All other miscellaneous manufacturing	$2,614,023,200.08	27
Wiring device manufacturing	$1,910,447,956.40	111
Printing	$1,041,524,742.30	2,224
Petroleum refineries	$932,254,177.02	6,047
Search, detection, and navigation instruments manufacturing	$712,169,919.83	189
Bottled and canned soft drinks and water	$708,358,484.07	11,802
Pharmaceutical preparation manufacturing	$707,198,860.81	369
Ready-mix concrete manufacturing	$701,188,613.35	344
Plastics packaging materials and unlaminated film and sheet manufacturing	$616,472,103.86	665
Bread and bakery product, except frozen, manufacturing	$603,161,486.39	9,585
Other plastics product manufacturing	$507,818,341.93	314
Fabricated structural metal manufacturing	$476,026,530.42	169
Gypsum product manufacturing	$429,863,106.37	307
Soybean and other oilseed processing	$392,499,465.63	5,772
Mayonnaise, dressing, and sauce manufacturing	$382,511,737.68	3,450
Sanitary paper product manufacturing	$378,581,708.23	492
Nonferrous metal (exc aluminum) smelting and refining	$351,635,306.41	203
Sheet metal work manufacturing	$350,887,633.84	198
Engineered wood member and truss manufacturing	$331,790,775.69	1,245

Table I.3 – Total Employment and Total Output by Commodity Produced by Manufacturing Sector by Total Employment Top 20 Industry Sectors – State of Nevada		
Commodity Industry Sector	**Total Output**	**Total Employment**
Bottled and canned soft drinks and water	$708,358,484.07	11,802
Bread and bakery product, except frozen, manufacturing	$603,161,486.39	9,585
Printing	$1,041,524,742.30	2,224
Engineered wood member and truss manufacturing	$331,790,775.69	1,245
Plastics packaging materials and unlaminated film and sheet manufacturing	$616,472,103.86	665
Battery manufacturing	$3,238,164,618.50	539
Pharmaceutical preparation manufacturing	$707,198,860.81	369
Ready-mix concrete manufacturing	$701,188,613.35	344
Other plastics product manufacturing	$507,818,341.93	314
Other concrete product manufacturing	$261,739,199.99	305
Turned product and screw, nut, and bolt manufacturing	$238,334,440.60	272
Sheet metal work manufacturing	$350,887,633.84	198
Search, detection, and navigation instruments manufacturing	$712,169,919.83	189
Ornamental and architectural metal work manufacturing	$313,841,579.30	177
Fabricated structural metal manufacturing	$476,026,530.42	169
Machine shops	$135,214,208.04	117
Wiring device manufacturing	$1,910,447,956.40	111
Wood kitchen cabinet and countertop manufacturing	$165,900,836.36	62
Sign manufacturing	$257,110,815.06	34
All other miscellaneous manufacturing	$2,614,023,200.08	27

Figure I.1 – Unemployment Rates by County for the State of Nevada
February 2025

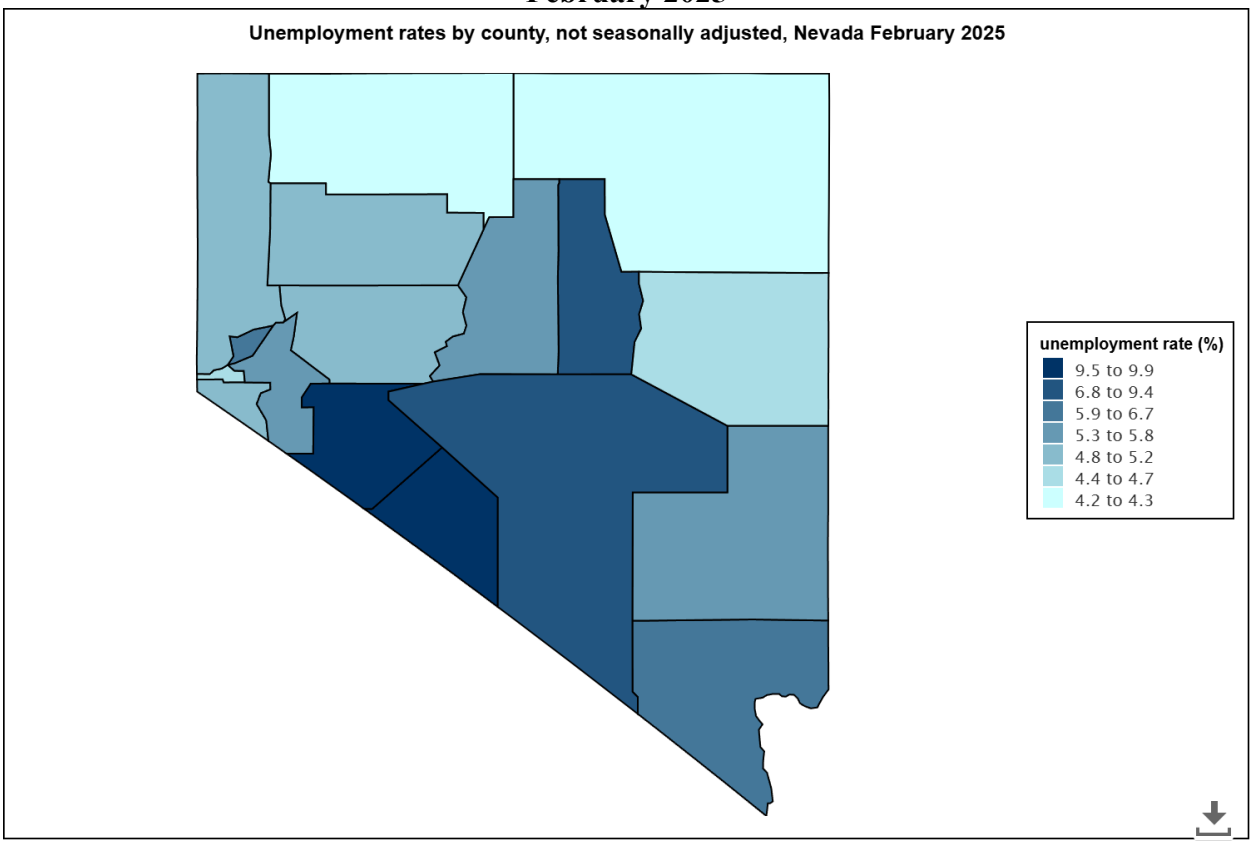
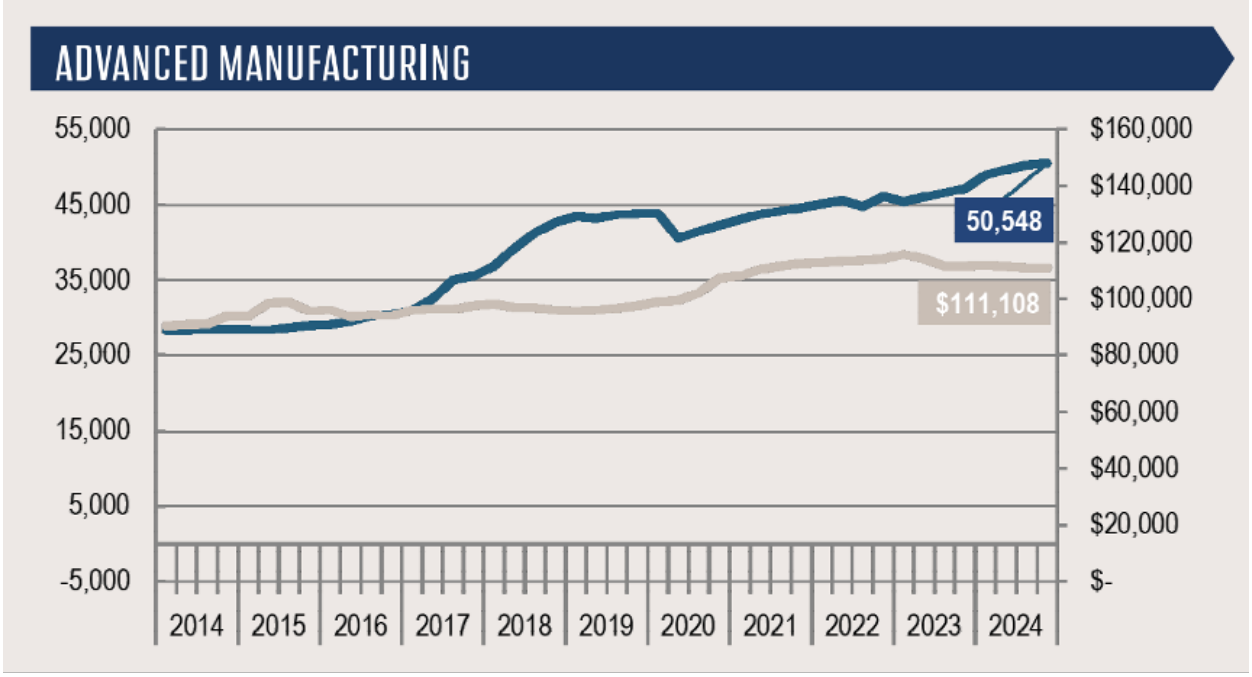


Figure I.2 – Workforce Availability in Advanced Manufacturing for the State of Nevada



Note: Advanced manufacturing job estimates grew by 3,351 positions between 2023 and 2024, with 50,548 jobs in the state of Nevada in 2024. Average annual earnings amounted to $111,108 in the fourth quarter of 2024.

Appendix J – Equations and Example for Balance, Strength, and Resiliency

Balance, Strength, and Resiliency with Example Index

Balance:

$$B = \frac{1}{n-1}\left(\frac{REV_n - REV_1}{REV_1} + \frac{ROIC_n - ROIC_1}{ROIC_1}\right)$$

Strength:

$$S = \frac{1}{n-1}\left(\frac{OM_n - OM_1}{OM_1} + \frac{IT_n - IT_1}{IT_1}\right)$$

Resilience:

$$R = \frac{1}{m}\sum_i \sum_{j>i} d_{ij}$$

Index:

$$\text{Index} = 0.3B + 0.3S + 0.3R$$

Table J.1 – Example Index, Balance, Strength, Resilience with Index

Company	REV	Bal.	Bal. Rank	Str.	Str. Rank	Res.	Res. Rank	Index	Rank
Company X	16.1	0.23	2	0.16	1	0.98	2	2.4	1
Company Y	39.1	-0.06	3	0.08	2	0.47	1	3.0	2
Company Z	17.4	0.28	1	0.08	2	1.72	3	3.3	3