

Comprehensive Economic Development Strategy for Southern Nevada

February 28, 2020

Prepared for:

Las Vegas Global Economic Alliance

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Note

This report was developed by SRI, based on research funded by the Las Vegas Global Economic Alliance. The findings, conclusions, and any errors in the report are the sole responsibility of the authors. SRI International is a registered trademark.

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Acknowledgements

This Comprehensive Economic Development Strategy is the outcome of a collaborative process involving dozens of institutions across Southern Nevada. The project would not have been possible without their participation. We thank the following organizations that contributed to this effort:

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| Airport Concessionaires, LLC | Gordon Law | Omni Limousine |
| Amerityre Corporation | Governor's Office of Economic Development | PENTA Building Group |
| Bank of Nevada | Governor's Office of Workforce Innovation | Raiders |
| Barclays U.S. Operations | Green Valley Grocery | Regional Transportation Commission of Southern Nevada (RTC) |
| Barrick Gold USA | Greenberg Traurig, LLP | Renhead |
| Black Raven Films | Henderson Chamber of Commerce | Silverton Casino and Hotel |
| Boulder City | Hilton Grand Vacations | Southern Nevada Water Authority |
| Boulder City Chamber of Commerce | JPMorgan Chase | Sun Commercial Real Estate |
| Boyd Gaming | Klai Juba Wald Architects | Tango Car |
| Brown & Brown Insurance | Las Vegas Global Economic Alliance | U.S. Bank |
| City of Henderson | Las Vegas HEALS | University of Nevada, Las Vegas |
| City of Las Vegas | Las Vegas Power Professionals | University of Phoenix |
| City of Mesquite | Manpower Las Vegas | Urban Chamber of Commerce |
| City of North Las Vegas | Marnell Properties | Vegas Golden Knights |
| Clark County | Martin-Harris Construction | WaterStart |
| Clark County School District | Mesquite Chamber of Commerce | Wells Fargo Bank |
| College of Southern Nevada | MGM Resorts International | Western Governors University Nevada |
| Cox Communications | Nevada State College | |
| Eastridge Workforce Solutions | | |
| Fingerprinting Express | | |
| Frazier and Deeter, LLC | | |

Highlights of Southern Nevada's Progress

Southern Nevada has accomplished an impressive recovery from the Great Recession over the last decade, realizing substantial improvements in virtually all measures of social and economic well-being. Key institutions in the region have made significant achievements and formed new initiatives and collaborations and continue to reach major milestones. Highlights of Southern Nevada's progress include the following:

- Southern Nevada added over 200,000 jobs since 2011. The unemployment rate has dropped to 4%—a 10 percentage point decline since its peak—and continues to decline. Average annual pay has increased by over 15%.
- The number of business establishments increased nearly every quarter over the last eight years, growing by roughly 7,500 (16%) since 2011.
- Southern Nevada recruited many professional sports teams, including the Raiders, who are expected to kick off their 2020 NFL season in the new Allegiant Stadium in Las Vegas.
- The Clark County School District achieved a graduation rate of over 85% in 2019, surpassing the Nevada state average.
- Nevada State College more than doubled its degree awards since 2011, with especially strong growth in awards to racial and ethnic minorities, and in health professions that support a key regional target industry.
- The College of Southern Nevada was named as a Leader College of Distinction by national non-profit network Achieving the Dream in February 2019 for its work on improving student outcomes and reducing student achievement gaps.
- The University of Nevada, Las Vegas (UNLV) doubled its research and development (R&D) performance over the last decade and reached R1 status in 2018, the highest classification for research universities. The first students of the UNLV School of Medicine started class in 2017. UNLV created Black Fire Innovation, a hospitality and gaming innovation hub supported by collaborations with Intel and Caesars Entertainment.
- Las Vegas designated an Innovation District in 2016 to spur smart city technology infrastructure investment and launched the International Innovation Center @ Vegas (IIC@V) incubator to support development of high priority emerging technologies.
- StartUpNV launched the Southern Nevada Angel Conference Seed Fund with funding from the U.S. Economic Development Administration and held the Southern Nevada Angel Conference in October 2019.

- The Las Vegas-based Nevada Institute for Autonomous Systems was designated in 2013 as one of six official unmanned aircraft systems (UAS) test sites in the nation supporting safe integration of UAS into the national airspace.
- Google broke ground on a \$600 million data center in Henderson in July 2019.
- Switch continues to increase its activity in Southern Nevada, expanding by an additional 1.1 million square feet to reach up to 4.6 million square feet of data center space and increasing total power capacity to 545 MW in its Core Campus in Las Vegas. In October 2019, it announced a partnership with UNLV on a multi-year collaborative initiative on sports science research and technology development.
- The first phase of I-11, which will significantly improve travel between Las Vegas and Phoenix, was completed outside of Boulder City in 2018.
- McCarran International Airport served 50 million passengers in 2019, an all-time record.
- The Las Vegas Convention and Visitors Authority (LVCVA) has partnered with the Boring Company to build a high-speed system of electric autonomous people movers for the Las Vegas Convention Center.
- The Las Vegas Global Economic Alliance (LVGEA) was designated as an Accredited Economic Development Organization by the International Economic Development Council (IEDC) in 2018. LVGEA's Board of Directors, known as the "LVGEA 50," is now the largest business board of its kind in Nevada.

Introduction

This Comprehensive Economic Development Strategy (CEDS) presents a new plan for regional economic development in Southern Nevada. The CEDS will provide essential guidance to regional leaders across industry, government, nonprofits, and educational institutions in framing their deliberations on the activities that have strategic economic value for the region. It was developed with broad community participation, which was essential for developing a shared vision and set of goals for Southern Nevada.

The Las Vegas Global Economic Alliance (LVGEA) plays a critical role in economic development as Southern Nevada's regional development authority. LVGEA has overseen the implementation of the region's previous CEDS, which was approved by the U.S. Economic Development Administration (EDA) in 2013 and revised in 2016. LVGEA will take a leadership role in advancing this new strategy, but its implementation requires a shared, coordinated effort across Southern Nevada's institutions.

This strategy addresses Southern Nevada's unique regional economic context while following EDA guidelines for a CEDS. Major sections of the document include:

- I. Summary Background and Economic Assessment.** The Summary Background and Economic Assessment evaluates Southern Nevada across a broad array of factors that shape the region's competitiveness. This quantitative analysis considers Southern Nevada's performance over time and in comparison to peer regions.
- II. SWOT Analysis.** The SWOT Analysis examines Southern Nevada's regional strengths, weaknesses, opportunities, and threats (SWOT). It is designed to enable Southern Nevada to assess its current capabilities and understand how to work with them in order to navigate future uncertainty.
- III. Strategic Direction and Activities Plan.** The Strategic Direction and Activities Plan¹ lay out an economic vision for Southern Nevada and describes the means by which the region will achieve that vision. The Strategic Direction identifies where stakeholders would like to be in the near- to mid-future, and the Activities Plan sets out how they will work together to get there. This portion of the CEDS considers the regional assets and external factors influencing Southern Nevada's development examined in the Economic Assessment and SWOT Analysis.
- IV. Evaluation Framework.** The Evaluation Framework provides a logic model for assessing progress toward the goals of the CEDS and includes specific performance measures.

Supplementary information and the Detailed SWOT Analysis are provided in the appendices. The Executive Summary, which begins on the following page, highlights key findings of the analyses and briefly describes the vision, goals, and objectives of the strategy.

¹ The term "Activities Plan" is used here instead of the EDA term "Action Plan" to avoid confusion with LVGEA's Action Plan, a separate document.

Executive Summary

Summary Background and Economic Assessment: Key Findings

- Southern Nevada’s population is increasing rapidly, growing twice as fast as the average for U.S. metro areas since 2010. This population growth is driven by high domestic migration from other regions in the country. Population increase is weighted toward young adults and seniors, with lower growth in prime working age adults.
- The region’s economy has recovered from the Great Recession, with large increases in GDP and business establishments and a reduction in measures of economic distress.
- Job growth is strong, and unemployment continues to decline. Unemployment has declined approximately 10 percentage points since its recession peak and is rapidly closing on the national average. Additionally, job growth has been greater in higher wage non-hospitality target industries, and average wages across the workforce have increased.
- Educational attainment in Southern Nevada is significantly lower than peer metro areas in the West. The portion of adults with postsecondary degrees is rising, but at a slow pace.
- University research and development (R&D) is increasing, but overall innovation resources and activity in the region are limited. University technology transfer and the production of science and engineering degree holders are very low. However, new technology-focused collaborations and spaces have been established, and venture capital funding is increasing.

SWOT Analysis: Key Findings

Strengths

Southern Nevada has achieved a globally recognized brand built on its world-class entertainment options. A business-friendly climate, strong infrastructure and data connectivity, and competitive cost of living have enabled the region’s sustained growth.

Weaknesses

Southern Nevada lags in some K-12 educational performance, health, and social indicators. Low educational attainment in the region’s workforce and limited resources for R&D and innovation hinder growth in high-skill, high-wage sectors. A scarcity of high-skill job opportunities poses the “trailing spouse” problem for dual-income families.

Opportunities

Southern Nevada can enhance its global connections and emerge as the leading sports and entertainment destination in the world. It can be a dynamic testbed for smart city and autonomous technology, and a global policy and technology leader in water management. It boasts a low cost of living compared to West Coast regions.

Threats

The region remains vulnerable to external economic shocks, and its “Sin City” reputation can deter families from moving to the area. Its hospitality workforce may face displacement with increased automation and use of artificial intelligence. Climate change may worsen water scarcity and lead to dangerous heatwaves.

Strategic Direction

Extensive engagement with regional stakeholders has guided both the vision and goals of this CEDS. The strategy distills a range of community aspirations that span economic competitiveness and diversification, workforce development, quality of life, transportation and connectivity, and technology. Accordingly, the goals of this CEDS relate to Southern Nevada's economic development understood broadly—supporting durable, long-term gains in the region's economic and social well-being. In short, the goals and objectives of this CEDS aim to make Southern Nevada the best place it can be for businesses and for communities.

Vision

Southern Nevada is a global center for enterprise, imagination, and new experience, driven by innovation in entertainment, industry, and technology.

Goals

Five broad goals guide regional economic development efforts described in this strategy:

Goal 1: Promote a Prosperous, Diverse, and Resilient Economy

Southern Nevada must remain a top business destination to sustain its economic growth and well-being. A “can-do” business-ready environment with streamlined government and light-touch regulations and taxes will preserve its entrepreneurial spirit. Increasing the availability of land and resources for development will help local businesses expand, as will assistance in reaching wider markets. Additionally, Southern Nevada can promote its strong position as a new location for businesses in higher-cost West coast locations, and as a landing pad for overseas firms entering the U.S. market. Recruitment should focus on sectors that enhance the region's economic diversity and build resiliency against external shocks and economic downturns. Policies and programs should prioritize job gains in target industries that build valuable skills and pay higher wages. A more qualified regional workforce (Goal 2) will ensure that a greater share of Nevada residents is able to fill these new jobs, rather than industry relying on labor recruited from outside the region.

Goal 2: Equip Students and Learners for Success in High-Demand Careers

Education and workforce development are paramount concerns for Southern Nevada. Improving K-12 student preparation for higher education, alongside new pathways for getting trained teachers into classrooms, will allow the region to continue its gains in educational achievement. Enhanced delivery of wraparound services for disadvantaged K-12 students will help ensure that they arrive at school ready to learn. Vocational training should increase alignment with regional workforce demands, and careers in the skilled technical workforce should be introduced to students at earlier ages. Critically, postsecondary institutions must reach their students *where they are* through flexible programs that accommodate their career and caregiving schedules. Higher education providers should collaborate in identifying and closing gaps in their offerings to lifelong learners, including the underemployed, who are seeking new skills and careers. Finally, more effective matchmaking services for job seekers and employers will enhance students' capacity to put their new skills to productive use in the labor market.

Goal 3: Attract and Retain Human Capital through Enhanced Quality of Life

Southern Nevada's long-term prosperity depends on the attraction and retention of human capital to power its regional economy. Acquiring the talent to staff high-value jobs and meet employer demands requires that Southern Nevada promote and improve its desirability to workers and their families. The region has a compelling value proposition to market to prospective residents given its high quality of life and affordability. Building out the region's medical infrastructure will unlock opportunities for specialized industry clusters, such as sports medicine, and help fill long-standing gaps in the availability of healthcare services. Encouraging greater utilization of the region's existing amenities and evaluating unmet recreational needs can support stronger community ties. Helping incoming residents to form social connections will increase regional attachment and retention of new workers.

Goal 4: Connect People, Businesses, and Ideas to Boost Commerce and Collaboration

Connections—physical, digital, and social—sustain Southern Nevada's economic dynamism. By swiftly building out 5G networks and closing its remaining digital divides, Las Vegas can claim a leadership position as the Data Capital of the Mountain West. The region has many strengths in physical infrastructure and road networks, but limited commuting options outside of personal auto transport will hamper its growth. New transportation connections between key tourist and business destinations will further expand the region's capacity for commerce and deliver a more attractive experience for visitors. Strengthened business collaborations, including those between startups and larger businesses, will foster new connections and creative partnerships.

Goal 5: Anticipate and Capitalize on Emerging Technology to Improve Economic Vitality and Delivery of Public Services

Southern Nevada must anticipate and capitalize on emerging technology to maintain its economic vitality in the coming years. Rather than simply react to the impacts of artificial intelligence (AI) and autonomous technology, the region must be proactive in steering development and deployment of these innovations to its advantage. Leaders in business, government, and education should coordinate the preparation of students and workers for an evolving and increasingly automated workplace. Southern Nevada can act as a testbed for smart city technology and reap gains from improved government services and visitor experiences. New technology will also lead to exciting new attractions in gaming, entertainment, and esports; collaborations between resorts, technology companies, and researchers can accelerate innovation in this sector. Advances in the region's adept management of its water and energy resources, including energy efficiency in the building sector, will bring economic returns and increase environmental resiliency.

Overview: Southern Nevada CEDS Goals and Objectives

1. Promote a Prosperous, Diverse, and Resilient Economy

- 1.1. Encourage a business-ready environment that enables entrepreneurship
- 1.2. Support the growth of existing Nevada businesses and help them expand within and beyond the region
- 1.3. Recruit businesses that build regional economic diversity with compelling value propositions for Southern Nevada
- 1.4. Accelerate the growth of high-skill, high-wage jobs in target industries

2. Equip Students and Learners for Success in High-Demand Careers

- 2.1. Improve connected pathways for K-12 students entering higher education and for teachers entering Southern Nevada classrooms
- 2.2. Strengthen wraparound services for low-income and disadvantaged K-12 students
- 2.3. Align vocational training with regional workforce demands and offer flexible mechanisms for underserved students to gain new skills and credentials
- 2.4. Coordinate higher education efforts that support seamless delivery of upskilling and lifelong learning
- 2.5. Connect job seekers and employers through innovative approaches and platforms

3. Attract and Retain Human Capital through Enhanced Quality of Life

- 3.1. Attract prospective residents and families by marketing Southern Nevada's quality of life and affordability
- 3.2. Expand the region's medical infrastructure to support new specializations and increase availability of healthcare services
- 3.3. Promote engagement with the region's cultural and natural amenities, and gauge unmet needs for family-friendly attractions
- 3.4. Facilitate social engagement opportunities to increase retention of new residents

4. Connect People, Businesses, and Ideas to Boost Commerce and Collaboration

- 4.1. Become the Data Capital of the Mountain West through expansions in 5G infrastructure, ICT businesses, and broadband access
- 4.2. Improve and diversify transit options for residents and workers, especially for downtown commuters
- 4.3. Pursue new connections between regional transportation hubs and key tourist and business destinations
- 4.4. Encourage effective business collaborations, including partnerships between startups and established, larger businesses

5. Anticipate and Capitalize on Emerging Technology to Improve Economic Vitality and Delivery of Public Services

- 5.1. Prepare for the future of work, and support business and worker collaborations that synchronize new technologies with new skills
- 5.2. Deploy emerging autonomous and smart city technology to support efficient delivery of public services, an enhanced visitor experience, and growth of new industries
- 5.3. Deliver new customer value in gaming, hospitality, and entertainment through innovation
- 5.4. Advance and promote regional expertise in water and energy management

I. Summary Background and Economic Assessment

The Summary Background and Economic Assessment evaluates Southern Nevada across a broad array of factors that shape the region's competitiveness. These factors include demographics, general economic conditions, labor market attributes and educational attainment, trends in target industry sectors, and innovation and entrepreneurship activity. This quantitative analysis considers Southern Nevada's performance over time and in comparison to peer regions; qualitative factors and stakeholder insights are more thoroughly discussed in the subsequent SWOT analysis. The trend analysis primarily uses 2011 as the baseline year given its significance as the period of most intense economic distress in Southern Nevada due to the Great Recession. SRI selected peer regions in consultation with LVGEA on a mix of criteria, including size, rate of growth, geographic proximity, climate similarities, and shared industry sectors.

Methodological Note

Most of the data in the Summary Background and Economic Assessment is analyzed at the level of the metropolitan statistical area (MSA), as defined by the U.S. Office of Management and Budget. The Las Vegas-Henderson-Paradise MSA is coextensive with Clark County, Nevada. Clark County is the only county in the Southern Nevada region as defined by the Nevada Governor's Office of Economic Development (GOED) and supported by LVGEA as the state-appointed regional development authority (RDA).¹ This report uses the terms Southern Nevada, greater Las Vegas, and Las Vegas region/metro area interchangeably, and these should be seen as equivalent.

Additionally, the names of the Las Vegas metro area and its peer regions may appear differently in different tables and figures; this is due to differences in how the metro areas are named by each data source. For example, the Las Vegas metro area may be referred to as Las Vegas-Paradise, NV or Las Vegas-Henderson-Paradise, NV. Peer region names may also differ, such as Phoenix-Mesa-Scottsdale, AZ and Phoenix-Mesa-Glendale, AZ. Regardless of the presented name for the metro areas, the data provided comprehensively represents the various regions examined in this report.

This analysis uses comprehensive datasets from EMSI, a commercial data service that integrates economic and workforce data from a variety of data providers, as well as data gathered directly from federal statistical agencies, such as the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics.

Demographics

The Las Vegas metropolitan area has experienced significant population growth since 2010, adding nearly 280,000 people to the region between 2010 and 2018, an increase of 14%. The region's rate of population growth is double the average for all U.S. metropolitan areas, which collectively grew 7% from 2010 to 2018.² Among the peer regions selected for this analysis, only four metros grew at a quicker

pace, including Austin, Orlando, Phoenix, and Denver. Table 1 provides detail on Las Vegas and its peer metro regions.

The Las Vegas Metro Area Has Grown Rapidly

Table 1. Population Change for Select U.S. Metropolitan Areas, 2010 and 2018. Source: Population Estimates Program, U.S. Census Bureau.

| Metropolitan Area | 2010 Population | 2018 Population | Population Increase | Percent Change 2010–2018 |
|--|------------------------|------------------------|----------------------------|---------------------------------|
| <i>Austin-Round Rock, TX</i> | 1,727,528 | 2,168,316 | 440,788 | 26% |
| <i>Orlando-Kissimmee-Sanford, FL</i> | 2,139,199 | 2,572,962 | 433,763 | 20% |
| <i>Phoenix-Mesa-Scottsdale, AZ</i> | 4,204,738 | 4,857,962 | 653,224 | 16% |
| <i>Denver-Aurora-Lakewood, CO</i> | 2,554,816 | 2,932,415 | 377,599 | 15% |
| <i>Colorado Springs, CO</i> | 650,373 | 738,939 | 88,566 | 14% |
| <i>Las Vegas-Henderson-Paradise, NV</i> | 1,952,644 | 2,231,647 | 279,003 | 14% |
| <i>Salt Lake City, UT</i> | 1,091,480 | 1,222,540 | 131,060 | 12% |
| <i>Portland-Vancouver-Hillsboro, OR</i> | 2,232,205 | 2,478,810 | 246,605 | 11% |
| <i>Sacramento-Roseville-Arden-Arcade, CA</i> | 2,153,656 | 2,345,210 | 191,554 | 9% |
| <i>All U.S. Metros</i> | 263,180,165 | 281,238,219 | 18,058,054 | 7% |
| <i>Albuquerque, NM</i> | 889,574 | 915,927 | 26,353 | 3% |

Within this overall population increase, it is worthwhile to disaggregate trends for different age groups. The growth rate for individuals aged 25–44 is of particular interest given that this group captures early- and mid-career workers who are likely to make significant contributions to the region’s workforce. For the Las Vegas metropolitan area, the population of this age group increased by 6% between 2010 and 2017, above the U.S. metropolitan average of 3%. As can be seen in Table 2, however, Las Vegas’ growth for those aged 25–44 is relatively low among its peer regions, ranking the Las Vegas metropolitan area eighth out of the ten regions examined.

The Las Vegas Metro Area Has Experienced Modest Growth in the Population of Working-Age Adults

Table 2. Cumulative Change in Population Among Peer Regions, Ages 25-44. 2010 and 2017. Source: American Community Survey, U.S. Census Bureau.

| Metropolitan Area | 2010 | 2017 | Cumulative Change in Population |
|--|-------------------|-------------------|--|
| <i>Austin-Round Rock, TX</i> | 532,393 | 656,160 | 23% |
| <i>Denver-Aurora-Lakewood, CO</i> | 754,046 | 861,208 | 14% |
| <i>Orlando-Kissimmee-Sanford, FL</i> | 597,162 | 681,912 | 14% |
| <i>Colorado Springs, CO</i> | 170,897 | 193,052 | 13% |
| <i>Portland-Vancouver-Hillsboro, OR</i> | 532,123 | 584,717 | 10% |
| <i>Salt Lake City, UT</i> | 30,891 | 360,136 | 9% |
| <i>Phoenix-Mesa-Scottsdale, AZ</i> | 1,172,090 | 1,251,431 | 7% |
| <i>Las Vegas-Henderson-Paradise, NV</i> | 577,844 | 610,357 | 6% |
| <i>Sacramento-Roseville-Arden-Arcade, CA</i> | 575,406 | 606,893 | 5% |
| <i>Albuquerque, NM</i> | 233,647 | 41,912 | 4% |
| <i>All U.S. Metros</i> | 82,397,154 | 84,700,592 | 3% |

Note: While the population data in Table 1 examine total population growth from 2010 to 2018, data for different age groups, such as those aged 25-44 in Table 2, are provided by the American Community Survey, which only has data available to 2017.

Southern Nevada has experienced a substantial increase in its population aged 65 and older, a common trend among its peer metro areas, many of which are located in the Southwest (Figure 1). A variety of factors may be driving the increase in this population group, but these likely include Southern Nevada’s favorable cost-of-living, especially as compared to neighboring coastal states, as well as the relative stability and warmth of the region’s climate.

The 65 and Older Population Has Grown Substantially in Las Vegas and Peer Metro Areas

Figure 1: Percent Change in Population among Peer Metropolitan Areas, 65 Years and Older. 2011-2017. Source: American Community Survey, U.S. Census Bureau.

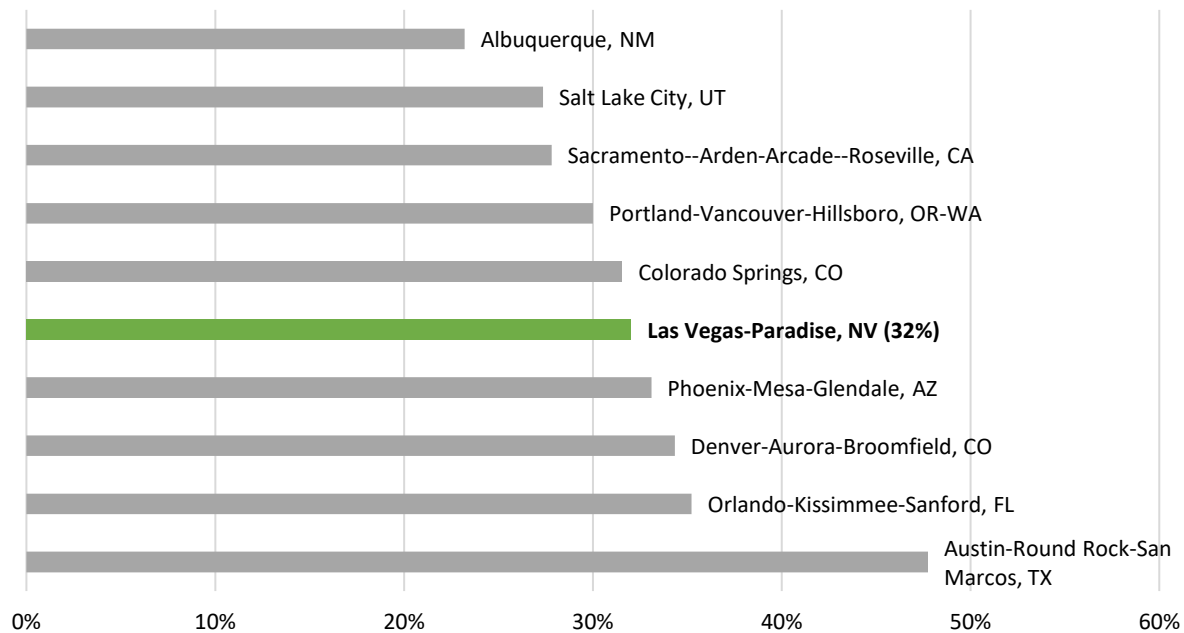
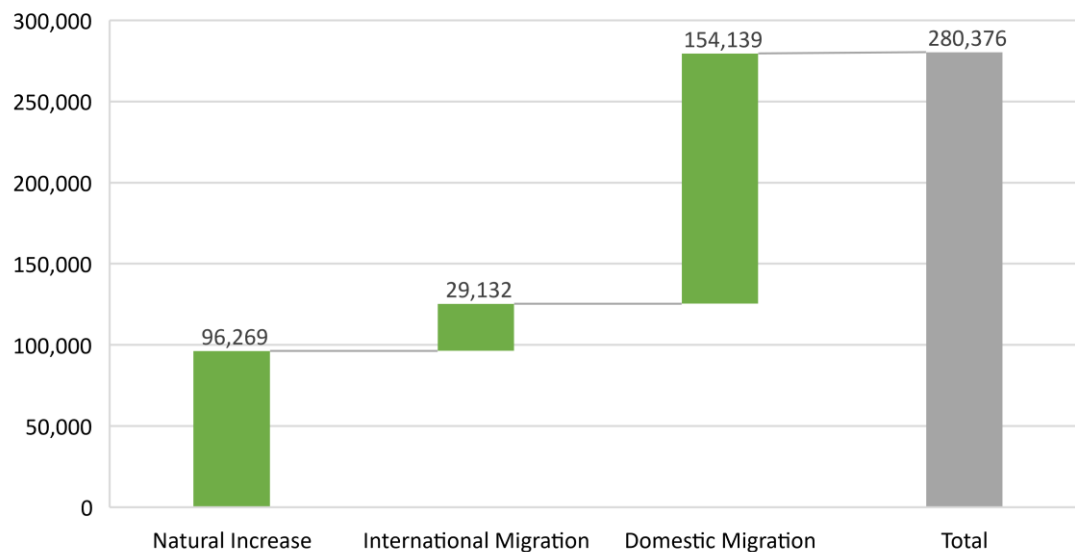


Figure 2 visualizes the components of population change in Southern Nevada. Notably, more than half (nearly 155,000 or 55%) of Southern Nevada’s population growth is attributable to domestic migration, far outpacing the region’s natural increase.¹¹ International migration is also a net contributor to the region’s population, but to a lesser extent than the natural increase and domestic migration.

Migration from Other U.S. Regions Accounts for Most of Southern Nevada’s Population Growth

Figure 2. Cumulative Estimates of the Components of Population Change, April 2010 to July 2018. Source: Population Estimates Program, U.S. Census Bureau.



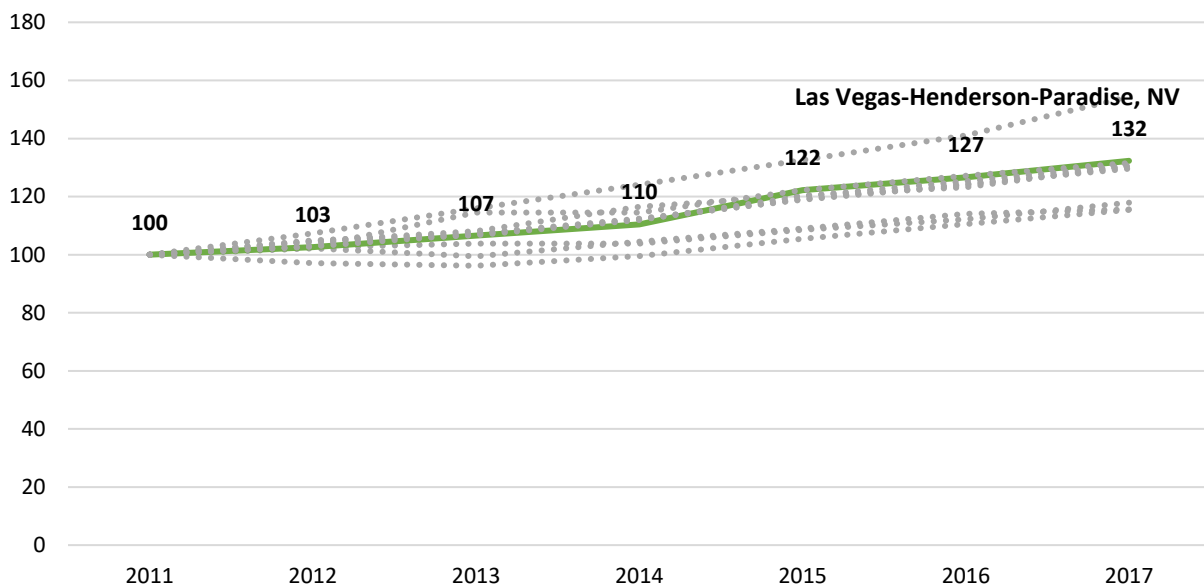
¹¹ As defined by the U.S. Census Bureau, natural increase refers to the difference between the number of births and deaths in a region’s population. “Growth or Decline: Understanding How Populations Change.” U.S. Census Bureau. Accessed September 2019. <https://www.census.gov/newsroom/blogs/random-samplings/2016/03/growth-or-decline-understanding-how-populations-change.html>.

General Economic Measures

Southern Nevada has achieved strong gross domestic product (GDP) growth since the Great Recession, with GDP increasing by 32% since 2011 (Figure 3). The Las Vegas metro outperformed most of its peer regions, surpassed only by Austin and has closely paralleled growth in the Orlando region since 2015.

The Las Vegas Metro Area Has Outperformed Most Peers in GDP Growth

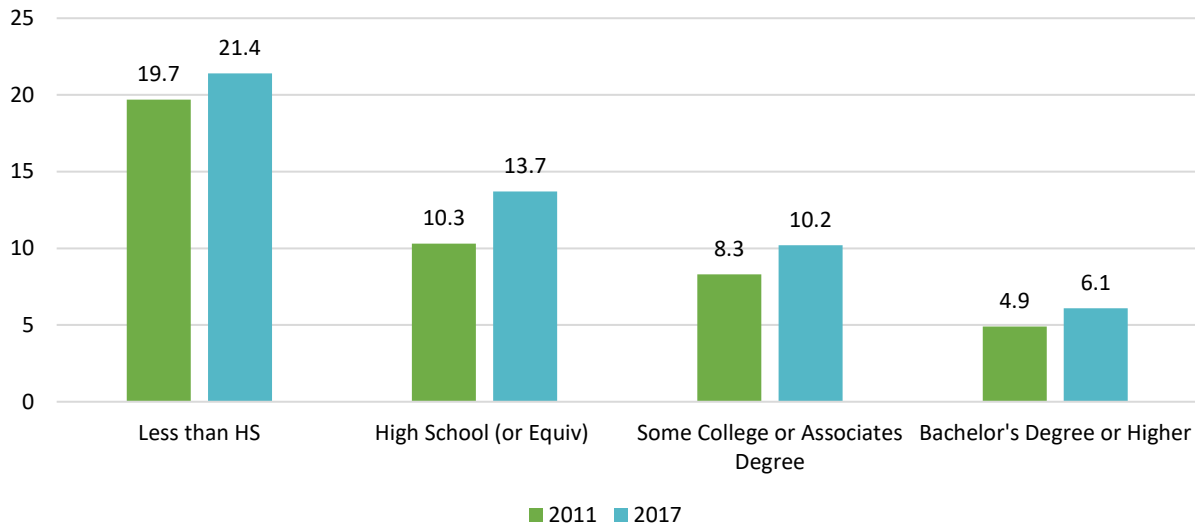
Figure 3. Index of GDP growth for Las Vegas and peer metros (2011=100). Source: Bureau of Economic Analysis.



Despite general economic expansion, poverty rates have increased for adults in Las Vegas across all levels of educational attainment, climbing the highest for those with a high school diploma or equivalent (Figure 4). The increase in poverty rates follows a general trend shared by many of Las Vegas' peer metros, which have significantly expanded their economies and populations. An increasing poverty rate can be a consequence of in-migration of lower income populations rather than regional economic decline. Data from the Economic Innovation Group (EIG) show that even as the poverty rate has increased, the percentage of Clark County's population living in distressed ZIP codes has essentially halved, falling from 31.6% (2007–2011) to 16.1% (2012–2016). Conversely, the share of the population in prosperous zip codes has increased significantly, from 21.2% to 35.1%. This has changed Clark County's overall classification as a "mid-tier" county to a "comfortable" county.³

Poverty Rates Have Increased for All Education Groups in the Las Vegas Metro Area

Figure 4. Poverty Rate by Education Level in Las Vegas Metropolitan Area: 2011 and 2017. Source: American Community Survey, U.S. Census Bureau.



Wages and Educational Attainment

Wages in Southern Nevada have shown moderate growth since the Great Recession. According to the Bureau of Labor Statistics, the average wage in the region increased from \$41,290 in 2011 to \$44,450 in 2017, an increase of almost 8%.⁴ However, data from the U.S. Census Bureau for the same time period indicate that wages are not rising consistently across different education levels in Southern Nevada; instead, the data suggest that wages are actually rising slowest for the highly educated.⁵ This trend counteracts developments in peer regions and much of the rest of the nation, where wages are increasing most quickly for those with higher levels of educational attainment. For example, wages have increased by over 10% for workers with graduate degrees in the Portland and Salt Lake City metros, while remaining static in the Las Vegas metro. Low-wage growth for higher education levels produces disincentives on two fronts: Southern Nevada's workers may not see a need for further education, and highly educated workers located outside the region may fear a pay decrease if they relocate to the area.

The Las Vegas metro still lags far behind peer regions in educational attainment (Table 3). Las Vegas has the lowest concentration of adults with a bachelor's degree and those with a graduate degree or higher. Southern Nevada still struggles to develop and attract highly skilled workers.

Southern Nevada's Labor Force Remains Concentrated in Lower Education Levels

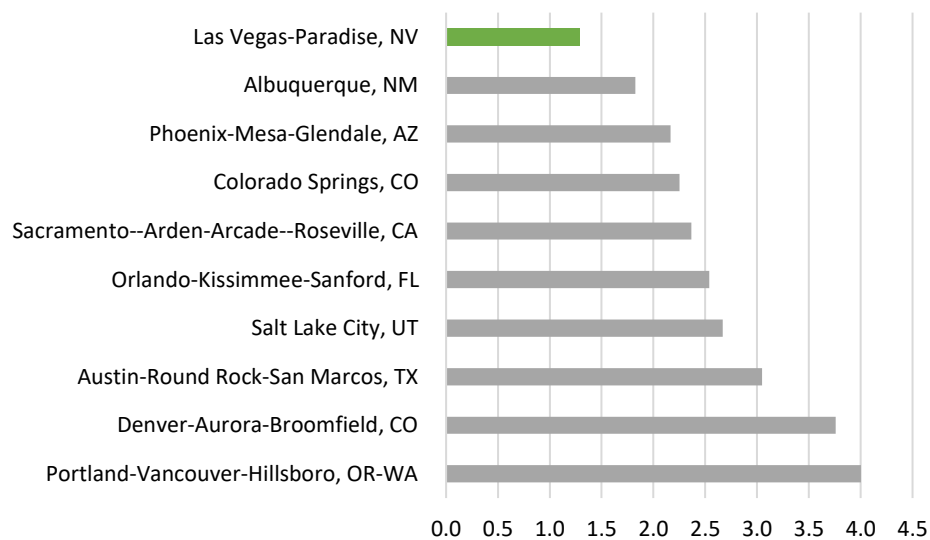
Table 3. Percentage of Adults 25 and Over by Highest Educational Attainment Among Peer Metros, 2017. Source: American Community Survey, U.S. Census Bureau.

| <i>Metropolitan Area</i> | High School Graduate | Some College | Associates Degree | Bachelor's Degree | Graduate Degree or Higher |
|--|-----------------------------|---------------------|--------------------------|--------------------------|----------------------------------|
| <i>Albuquerque, NM</i> | 25% | 24% | 8% | 17% | 14% |
| <i>Austin-Round Rock-San Marcos, TX</i> | 19% | 21% | 6% | 28% | 15% |
| <i>Colorado Springs, CO</i> | 20% | 25% | 11% | 23% | 15% |
| <i>Denver-Aurora-Broomfield, CO</i> | 20% | 21% | 8% | 27% | 15% |
| <i>Las Vegas-Paradise, NV</i> | 29% | 25% | 8% | 16% | 8% |
| <i>Orlando-Kissimmee-Sanford, FL</i> | 27% | 21% | 11% | 20% | 10% |
| <i>Phoenix-Mesa-Glendale, AZ</i> | 23% | 25% | 9% | 19% | 11% |
| <i>Portland-Vancouver-Hillsboro, OR-WA</i> | 20% | 24% | 9% | 24% | 14% |
| <i>Sacramento-Arden-Arcade-Roseville, CA</i> | 22% | 25% | 10% | 21% | 12% |
| <i>Salt Lake City, UT</i> | 23% | 25% | 9% | 21% | 12% |

Southern Nevada has experienced some growth in the percentage of adults with a bachelor’s degree or higher, but not to the same extent as its peer regions (Figure 5). The Las Vegas metro only saw a 1.3 percentage point increase in the share of people 25 years or older with a bachelor’s degree or higher. While Las Vegas is growing rapidly, it is still lagging peer metropolitan areas in expanding its educated workforce.

Las Vegas Lags in Developing and Attracting High-Skilled Workers

Figure 5. Percentage Point Change in Population with a Bachelor’s Degree or Higher among Peer Metropolitan Areas, between 2011 and 2017. Source: American Community Survey, U.S. Census Bureau.

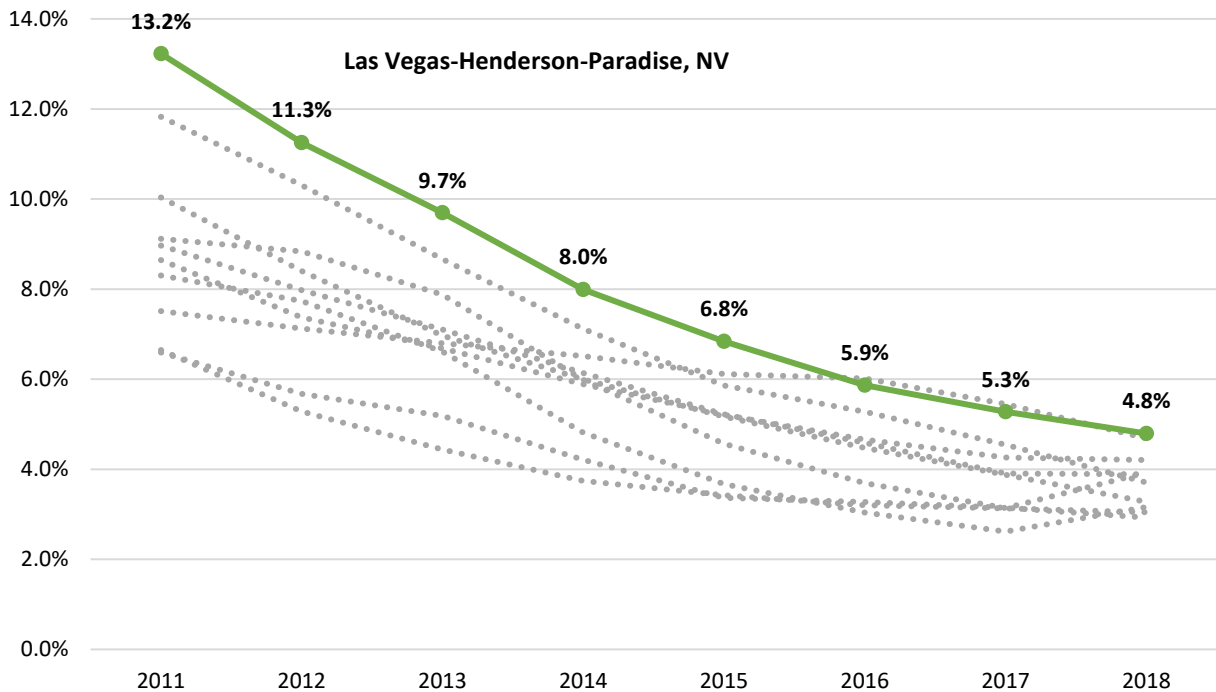


Employment

Southern Nevada has experienced rapid job growth since the Great Recession. Total employment in all sectors increased by roughly 17%, from about 876,000 in 2011 to 1,051,000 in 2017. Concurrently, the unemployment rate in the region has fallen sharply. As Figure 6 shows, the Las Vegas metropolitan area has followed peer metropolitan regions' trends in reducing unemployment, falling from 13.2% in 2011 to under 5% in 2018. However, compared to its peers, Las Vegas' unemployment rate remains high; out of the 10 regions examined, the Las Vegas metropolitan area has the highest unemployment rate (4.8%), only slightly higher than Albuquerque, New Mexico (4.7%) and the Phoenix, Arizona metropolitan area (4.2%).

Southern Nevada Has Rapidly Reduced Unemployment

Figure 6. Unemployment Rate among Peer Metropolitan Areas, by Year, 2011-2018. Source: Bureau of Labor Statistics, Local Area Unemployment Statistics.



Southern Nevada Target Industry Trends

SRI reviewed employment and wage trends within LVGEA’s target industries, as most recently articulated in its 2017 Target Industry Validation Study.⁶ These seven industries, adapted from prior targets in the 2011 SRI-Brookings report,⁷ include the following:

- Autonomous Systems
- Business Headquarters and Services
- Emerging Technology
- Finance, Banking, and Insurance
- Gaming, Tourism, and Conventions
- Health Care Services and Medical Education
- Logistics, Manufacturing, and Supply Chain Management

SRI estimates that Southern Nevada added nearly 100,000 jobs in these industries between 2011 and 2017, reaching a total of about 588,000 jobs in 2017. This rate of job growth (20%) slightly outpaces the region’s overall increase in employment, meaning that the proportion of Southern Nevada workers employed in the target industries stayed nearly flat from 2011 to 2017, at about 56%. Examining industry level trends reveals important developments, namely a small shift away from employment concentration in Gaming, Tourism, and Conventions. Employment in this industry grew only 11%, whereas other target industries grew significantly faster than the statewide average, with Business Headquarters and Services experiencing especially large growth (Table 4).

Southern Nevada’s Target Industries Have Grown at Different Rates since the Recession

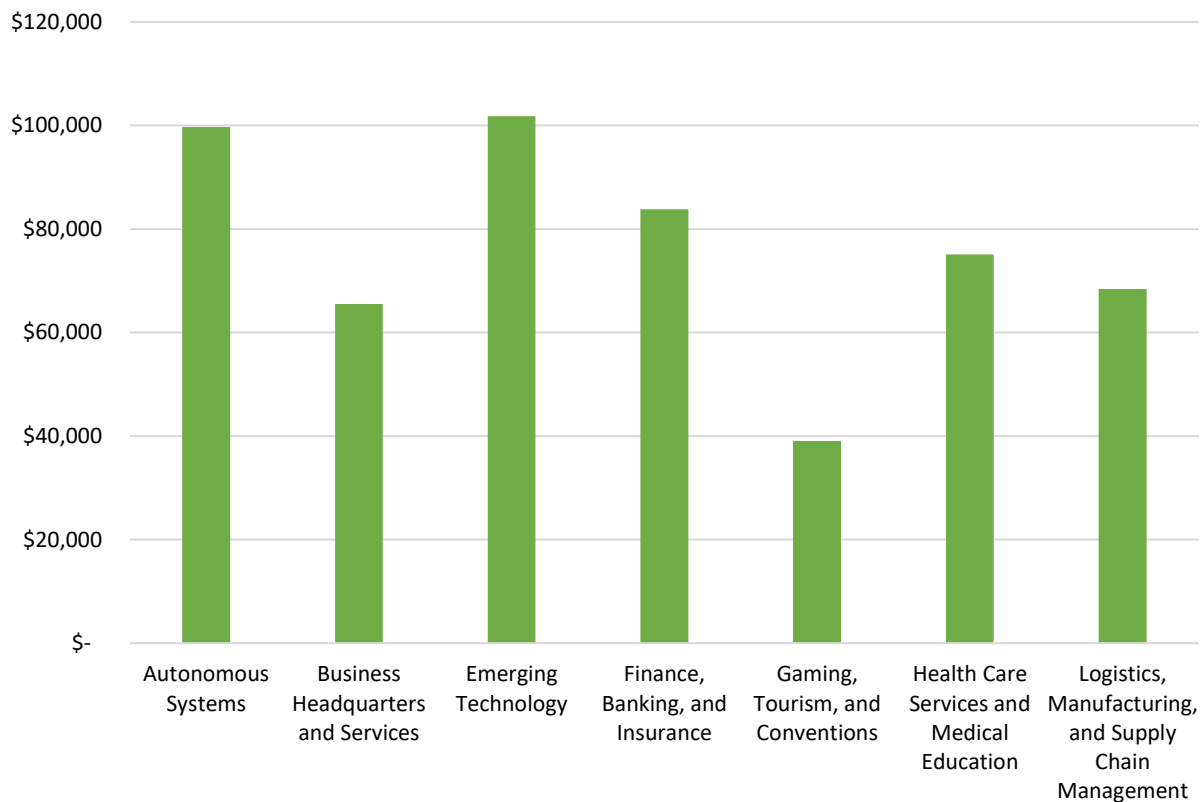
Table 4. Southern Nevada Target Industry Employment: 2011–2017. Source: EMSI.

| <i>Target Industry</i> | 2011 Employment | 2017 Employment | Percent Change | 2011 Employment Share | 2017 Employment Share |
|--|----------------------------|----------------------------|---------------------------|--------------------------------------|--------------------------------------|
| <i>Autonomous Systems</i> | 7,003 | 8,583 | 23% | 1% | 1% |
| <i>Business Headquarters and Services</i> | 112,424 | 149,249 | 33% | 13% | 14% |
| <i>Emerging Technology</i> | 5,257 | 7,663 | 46% | 1% | 1% |
| <i>Finance, Banking, and Insurance</i> | 24,831 | 29,264 | 18% | 3% | 3% |
| <i>Gaming, Tourism, and Conventions</i> | 258,025 | 287,365 | 11% | 29% | 27% |
| <i>Health Care Services and Medical Education</i> | 55,537 | 71,497 | 29% | 6% | 7% |
| <i>Logistics, Manufacturing, and Supply Chain Management</i> | 37,086 | 49,239 | 33% | 4% | 5% |

All of Southern Nevada’s target industries pay wages above the regional average, with the exception of Gaming, Tourism, and Conventions. Wages are especially high in industries with stronger connections to engineering and information technology (IT), including Autonomous Systems and Emerging Technology (Figure 7).

Wages Vary Significantly among Southern Nevada’s Target Industries

Figure 7. Average Earnings in 2017 by Target Industry Sector. Source: EMSI.



Methodological Note

Target industry estimates are based on analysis of employment and wage data as measured at the 6-digit North American Industry Classification System (NAICS) level in the EMSI platform. Data limitations place some qualifications on our conclusions. First, some industry sub-sectors are common across multiple target industries.⁸ Summing employment figures across industries will result in an overestimate of total target industry employment, though we have removed such duplication from our top-level estimate. Second, not all the target industries are captured in NAICS-based data, such as the clean technology and water technology components of Emerging Technology. Finally, data are occasionally

suppressed at the detailed NAICS levels to avoid disclosure of sensitive information. Despite these limitations, it remains feasible to evaluate employment and wage trends in the industries of greatest interest to LVGEA.

Innovation and Entrepreneurship

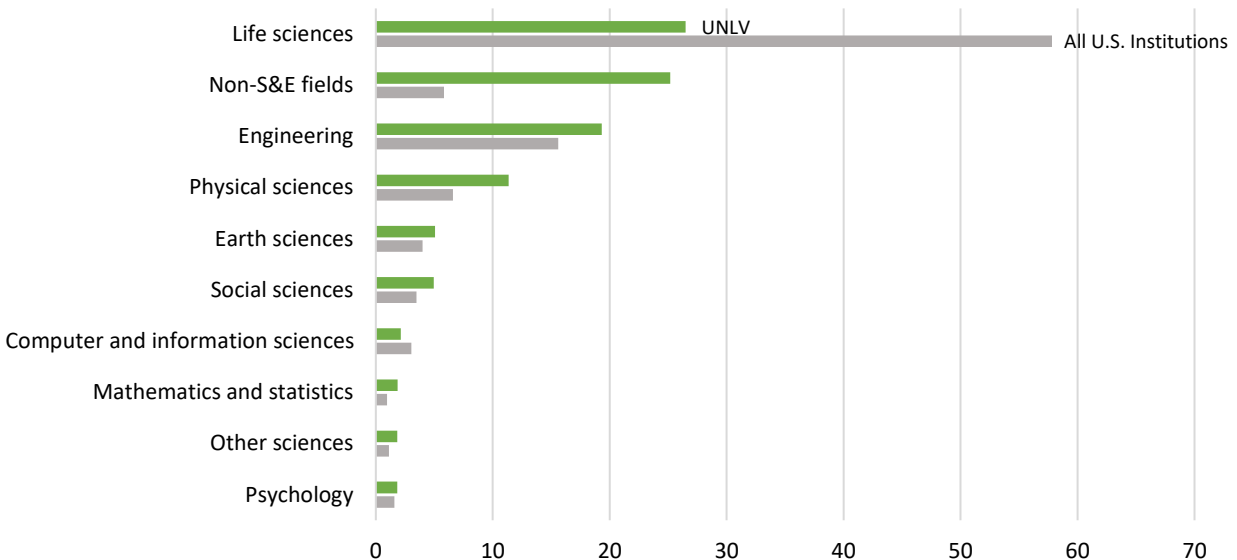
Southern Nevada is known for its creative and entrepreneurial culture, but regional activity related to innovation and high-technology business formation and growth is limited. Stakeholders and policymakers have created new and exciting initiatives and institutions (discussed later in the SWOT Analysis) to bolster the region's innovation ecosystem, yet some indicators suggest that Southern Nevada continues to experience a dearth of innovation resources and activity.

The University of Nevada, Las Vegas (UNLV) is Southern Nevada's leading public research university and, as such, is among the region's most significant innovation assets. UNLV has roughly doubled its level of research and development (R&D) performance over the last decade and has recently achieved an R1 research university classification,⁹ indicative of rising academic research intensity.

The distribution of UNLV's R&D expenditures varies significantly from the average for all U.S. higher educational institutions. Expenditures in life sciences R&D make up 26% of the total at UNLV, considerably lower than the national average of 58%. In contrast, UNLV has a much higher R&D concentration in fields *outside* of science and engineering (S&E): 25% of UNLV's expenditures are in non-S&E fields, over four times more than the average (Figure 8). Within these non-S&E fields, R&D in business management and administration at UNLV is four times higher than the national average, and R&D in visual and performing arts is 16 times higher, indicative of a close alignment with Southern Nevada's unique regional economy.¹⁰

Compared to the Average University, UNLV Concentrates R&D Less in Life Sciences and Far More in Fields Outside of Science and Engineering

Figure 8. Percent Distribution of R&D Spending at UNLV and All U.S. Higher Education Institutions. Source: National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.



Despite UNLV's increase in R&D expenditures, closer examination shows that institution research and technology transfer activity remain comparatively low overall (Table 5). Relative to similarly sized research universities in neighboring states, UNLV has vastly lower R&D expenditures, averaging roughly \$65 million per year in recent years.^{III} In terms of innovation outputs such as licenses, invention disclosures, patents, and startup creation, the university also lags by a significant margin.

^{III} This figure is an annual average of R&D expenditures in the mid-2010s and does not include the data for 2018, for which UNLV reported considerably higher expenditures.

UNLV Has Comparatively Low Annual R&D and Technology Transfer Performance

Table 5. University R&D Activity and Outputs (Annual Averages 2013-17). Source: Association of University Technology Managers (AUTM). AUTM data not available for all years for all institutions. Enrollment figures from U.S. Department of Education, National Center for Education Statistics, College Navigator.

| University | Total Enrollment (Fall 2018) | R&D Expenditures | Licenses Executed | Gross Licensing Income | Invention Disclosures | Patent Applications | Startups Formed |
|---------------------------------|------------------------------|------------------|-------------------|------------------------|-----------------------|---------------------|-----------------|
| University of Colorado Boulder | 36,681 | \$737,357,764 | 40 | \$6,838,894 | 218 | 155 | 9 |
| University of Arizona | 44,097 | \$610,087,400 | 64 | \$2,130,661 | 211 | 225 | 11 |
| University of Utah | 33,023 | \$386,821,613 | 73 | \$45,704,776 | 189 | 241 | 16 |
| Colorado State University | 33,478 | \$321,699,814 | 31 | \$2,559,353 | 107 | 118 | 5 |
| University of New Mexico | 24,319 | \$233,593,778 | 14 | \$1,508,052 | 120 | 236 | 10 |
| University of Nevada, Reno | 21,463 | \$106,459,247 | 3 | \$207,920 | 23 | 36 | 2 |
| University of Oregon | 22,644 | \$77,151,205 | 49 | \$8,106,329 | 35 | 19 | 2 |
| University of Nevada, Las Vegas | 30,457 | \$64,555,000 | 6 | \$272,418 | 57 | 46 | 3 |

Across a range of science and engineering (S&E) metrics, Nevada trails the vast majority of other states, even when adjusting for the state's relatively small population and economy.^{IV} Furthermore, Nevada has not achieved significant progress in many of these indicators since the recession (Table 6). Nevada's workforce has one of the lowest concentrations in S&E occupations, and the state's share of its young population acquiring S&E bachelor's degrees, an indication of its workforce pipeline for high-technology industry sectors, remains at 49th in the nation (lower than all states except Alaska). The R&D intensity of the state's economy—R&D expenditures as a share of GDP—is also one of the country's lowest. Nevada's small businesses attract comparatively little federal support through the Small Business

^{IV} R&D and other innovation data have very limited availability at the metro level. As the vast majority of Nevada's population resides in the greater Las Vegas area, state-level metrics are used to approximate Southern Nevada's performance.

Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. The region has experienced recent growth in venture capital investment—an important funding source for technology startups with high growth potential—and performs closer to the national average on this metric.

Nevada Continues to Rank Low in Its Innovation Resources and Activity

Table 6. Nevada values and rankings for selected science and engineering indicators. Source: National Science Board. 2018. Science and Engineering Indicators 2018, State Indicators (NSB-2018-1).

| <i>Indicator</i> | 2011 | Rank | 2018 (or most recent year) | Rank |
|---|-----------------------|-------------|---------------------------------------|-------------|
| <i>S&E Bachelor's Degrees Conferred per 1,000 Individuals 18–24 Years Old</i> | 9.15 | 49 | 12.33 (2017) | 49 |
| <i>S&E Occupations as a Percentage of All Occupations</i> | 2.55% | 46 | 2.43% | 43 |
| <i>R&D as a Percentage of GDP</i> | 0.70% | 45 | 0.52% (2016) | 49 |
| <i>Business R&D as a Percentage of Private Industry Output</i> | 0.57% | 39 | 0.43% (2016) | 42 |
| <i>Average Annual SBIR and STTR Funding per \$1 Million GDP</i> | \$44 (2010–12 avg) | 44 | \$35 (2014–16 avg) | 42 |
| <i>Venture Capital Disbursed per \$1 Million GDP</i> | \$228 | 39 | \$676 (2017) | 31 |

II. SWOT Analysis

The SWOT analysis examines Southern Nevada’s regional strengths, weaknesses, opportunities, and threats (SWOT). The SWOT reviews the following elements:

- **Strengths** are regional competitive advantages. They refer to what is satisfactory in the present and are primarily internal.
- **Weaknesses** are regional competitive disadvantages. They refer to what is currently unsatisfactory and are primarily internal.
- **Opportunities** are chances or occasions for regional improvement or progress. They refer to emerging trends that present openings for growth and resilience and are primarily external.
- **Threats** are chances or occasions for negative impacts on the region or regional decline. They refer to emerging trends that present obstacles to growth and resilience and are primarily external.¹¹

The SWOT analysis is designed to enable Southern Nevada to assess its current capabilities and understand how to work with them in order to navigate future uncertainty. It is a critical part of the CEDS as it illuminates regional vulnerabilities to economic and environmental shocks and helps guide subsequent economic development strategy toward enhanced resiliency. The results of the SWOT guide the subsequent Strategic Direction and Activities Plan of the CEDS.

The SWOT analysis synthesizes stakeholder interview and workshop input with a detailed review of social, economic, education, industry, and environmental data relevant to the region’s economic future. **Key findings of the SWOT** are visualized on the following page. The **Detailed SWOT Analysis**, which provides a comprehensive review of regional attributes and trends, is available in Appendix C.

STRENGTHS



- + Globally recognized Las Vegas brand and tourism destination
- + Business-friendly climate and strong entrepreneurial spirit
- + Attractive outdoor recreational assets
- + World-class international connections through McCarran International Airport
- + Excellent access to Western markets
- + Comparatively high housing affordability
- + Extensive broadband availability
- + Strong solar energy potential and deployment
- + Minimal risks from natural disasters
- + “Small state” advantage in government

WEAKNESSES



- Extensive federal land ownership constrains development
- Limited water resources
- Lack of healthcare options and poor population health indicators
- Lagging overall performance in K-12 education and social support systems
- Trailing spouse problem: lack of abundant professional jobs increases difficulty of recruiting highly educated workers
- Low educational attainment in current workforce
- Weak pipeline for new STEM workers hinders attraction of high-tech companies
- Limited resources and networks supporting R&D performance and innovation

OPPORTUNITIES



- Improved rail and road networks can bolster region’s transportation assets and access to markets
- High tourism and convention traffic create openings to market region as a permanent residence and business location
- Sports and esports build on existing entertainment strengths
- Smart city technology deployment and test bed for new autonomous technology
- Extensive water management technological and policy expertise
- High cost of living in West Coast regions make Southern Nevada more attractive

THREATS



- ▲ Federal land ownership and complex municipality zoning can hamper growth
- ▲ Climate change may worsen water scarcity
- ▲ More frequent and dangerous heatwaves, with urban environments vulnerable to negative health impacts
- ▲ “Sin City” reputation dissuades attraction of families
- ▲ High dependence on gaming and entertainment industry makes region vulnerable to external economic cycles
- ▲ Hospitality workforce may face displacement with increased automation and use of artificial intelligence

III. Strategic Direction and Activities Plan

The **Strategic Direction and Activities Plan** lay out an economic vision for Southern Nevada and describes the means by which the region will achieve that vision. The Strategic Direction identifies where stakeholders would like to be in the near- to mid-future, and the Activities Plan sets out how they will work together to get there. This portion of the CEDS considers the regional assets and external factors influencing Southern Nevada's development examined in the Economic Assessment and SWOT Analysis.

The **Strategic Direction** is composed of a vision, goals, and objectives. The **vision** describes a desired future for Southern Nevada that reflects the collective aspirations of regional stakeholders. A small set of broad **goals** is articulated, which, if achieved, will help Southern Nevada realize this vision. Each goal is then disaggregated into specific, measurable **objectives** to be accomplished.

Community involvement is critical to the formation of a compelling and broadly shared vision. To that end, interviews and stakeholder visioning sessions were held with representatives from dozens of organizations across Southern Nevada. Stakeholder engagement revealed a range of aspirations spanning economic competitiveness and diversification, workforce development, quality of life, regional identity, and social connection. Accordingly, the goals of this CEDS relate to Southern Nevada's economic development understood broadly—supporting durable, long-term gains in the region's economic and social well-being. In short, the goals and objectives of this CEDS aim to make Southern Nevada the best place it can be for businesses and for communities. Additional information on stakeholder engagement and participant comments is available in Appendix B.

The **Activities Plan** translates the content of the Strategic Direction into concrete steps to be taken by Southern Nevada's stakeholders in support of regional development goals. It describes the specific activities to be performed and designates lead and supporting organizations responsible for conducting these activities. Each activity has an approximate time frame for execution over a 5-year period, as well as a rough indication of resources required to conduct the activity. Some activities may require little to no additional resources, whereas others are conditional on new financial commitments. This distinction should be noted when evaluating the implementation of the CEDS.

Resilience

The intense socioeconomic distress and high unemployment that Southern Nevada encountered during the Great Recession demonstrated the region's vulnerability to external shocks in stark terms. Strengthening resilience—the ability to prevent, withstand, and quickly recover from shocks—should be central to Southern Nevada's economic strategy. Two important drivers of potential shocks emerged from the SWOT. First is the loss of gaming- and tourism-derived income and government revenue that can result from greater economic downturns, as consumers cut back on discretionary spending and travel to destinations like Southern Nevada. Second is climate change, which is likely to exacerbate regional water scarcity and fuel increasingly dangerous heatwaves. Many of the goals and objectives presented in the Strategic Direction and Activities Plan are formulated to address these threats.

Crucial drivers of the region's success will be a business-ready environment that fosters entrepreneurship and continued progress toward a diversified economy with high-skill, high-wage jobs. Success also requires that Southern Nevada offer residents quality education and flexible opportunities to acquire new skills so they can meet the needs of the region's industries and adapt to an evolving labor market. Promotion of regional quality of life, increased availability of healthcare services, and greater social engagement will help attract and retain the human capital required to power the region's economy. Enhanced connections in transportation, data, and business networks will boost commerce and collaboration. Finally, a proactive mindset, coupled with bold and creative approaches, will keep Southern Nevada resilient in the face of technological and environmental change in the next decade and beyond.



Goals and Objectives

Goal 1: Promote a Prosperous, Diverse, and Resilient Economy

Southern Nevada must remain a top business destination to sustain its economic growth and well-being. A “can-do” business-ready environment with streamlined government and light-touch regulations and taxes will preserve its entrepreneurial spirit. Increasing the availability of land and resources for development will help local businesses expand, as will assistance in reaching wider markets. Additionally, Southern Nevada can promote its strong position as a new location for businesses in higher-cost West Coast locations, and as a landing pad for overseas firms entering the U.S. market. Recruitment should focus on sectors that enhance the region’s economic diversity and build resiliency against external shocks and economic downturns. Policies and programs should prioritize job gains in target industries that build valuable skills and pay higher wages. A more qualified regional workforce (Goal 2) will ensure that a greater share of Nevada residents is able to fill these new jobs, rather than industry relying on labor recruited from outside the region.

- **Objective 1.1:** Encourage a business-ready environment that enables entrepreneurship
- **Objective 1.2:** Support the growth of existing Nevada businesses and help them expand within and beyond the region
- **Objective 1.3:** Recruit businesses that build regional economic diversity with compelling value propositions for Southern Nevada
- **Objective 1.4:** Accelerate the growth of high-skill, high-wage jobs in target industries

Goal 2: Equip Students and Learners for Success in High-Demand Careers

Education and workforce development are paramount concerns for Southern Nevada. Improving K-12 student preparation for higher education alongside new pathways for getting trained teachers into classrooms will allow the region to continue its gains in educational achievement. Enhanced delivery of wraparound services for disadvantaged K-12 students will help ensure that they arrive at school ready to learn. Vocational training should increase alignment with regional workforce demands, and careers in the skilled technical workforce should be introduced to students at earlier ages. Critically, postsecondary institutions must reach their students *where they are* through flexible programs that accommodate their career and caregiving schedules. Higher education providers should collaborate in identifying and closing gaps in their offerings to lifelong learners, including the underemployed, who are seeking new skills and careers. Finally, more effective matchmaking services for job seekers and employers will enhance students’ capacity to put their new skills to productive use in the labor market.

- **Objective 2.1:** Improve connected pathways for K-12 students entering higher education and for teachers entering Southern Nevada classrooms
- **Objective 2.2:** Strengthen wraparound services for low-income and disadvantaged K-12 students
- **Objective 2.3:** Align vocational training with regional workforce demands and offer flexible mechanisms for underserved students to gain new skills and credentials
- **Objective 2.4:** Coordinate higher education efforts that support seamless delivery of upskilling and lifelong learning
- **Objective 2.5:** Connect job seekers and employers through innovative approaches and platforms

Goal 3: Attract and Retain Human Capital through Enhanced Quality of Life

Southern Nevada's long-term prosperity depends on the attraction and retention of human capital to power its regional economy. Acquiring the talent to staff high-value jobs and meet employer demands requires that Southern Nevada promote and improve its desirability to workers and their families. The region has a compelling value proposition to market to prospective residents given its high quality of life and affordability. Building out the region's medical infrastructure will unlock opportunities for specialized industry clusters, such as sports medicine, and help fill long-standing gaps in the availability of healthcare services. Encouraging greater utilization of the region's existing amenities, and evaluating unmet recreational needs, can support stronger community ties. Helping incoming residents form social connections will increase regional attachment and retention of new workers.

- **Objective 3.1:** Attract prospective residents and families by marketing Southern Nevada's quality of life and affordability
- **Objective 3.2:** Expand the region's medical infrastructure to support new specializations and increase availability of healthcare services
- **Objective 3.3:** Promote engagement with the region's cultural and natural amenities, and gauge unmet needs for family-friendly attractions
- **Objective 3.4:** Facilitate social engagement opportunities to increase retention of new residents

Goal 4: Connect People, Businesses, and Ideas to Boost Commerce and Collaboration

Connections—physical, digital, and social—sustain Southern Nevada’s economic dynamism. By swiftly building out 5G networks and closing its remaining digital divides, Las Vegas can claim a leadership position as the Data Capital of the Mountain West. The region has many strengths in physical infrastructure and road networks, but limited commuting options outside of personal auto transport will hamper its growth. New transportation connections between key tourist and business destinations will further expand the region’s capacity for commerce and deliver a more attractive experience for visitors. Strengthened business collaborations, including those between startups and larger businesses, will foster new connections and creative partnerships.

- **Objective 4.1:** Become the Data Capital of the Mountain West through expansions in 5G infrastructure, ICT businesses, and broadband access
- **Objective 4.2:** Improve and diversify transit options for residents and workers, especially for downtown commuters
- **Objective 4.3:** Pursue new connections between regional transportation hubs and key tourist and business destinations
- **Objective 4.4:** Encourage effective business collaborations, including partnerships between startups and established, larger businesses

Goal 5: Anticipate and Capitalize on Emerging Technology to Improve Economic Vitality and Delivery of Public Services

Southern Nevada must anticipate and capitalize on emerging technology to maintain its economic vitality in the coming years. Rather than simply react to the impacts of artificial intelligence (AI) and autonomous technology, the region must be proactive in steering development and deployment of these innovations to its advantage. Leaders in business, government, and education should coordinate the preparation of students and workers for an evolving and increasingly automated workplace. Southern Nevada can act as a testbed for smart city technology and reap gains from improved government services and visitor experiences. New technology will also lead to exciting new attractions in gaming, entertainment, and esports, and collaborations between resorts, technology companies, and researchers can accelerate innovation in this sector. Advances in the region’s adept management of its water and energy resources, including energy efficiency in the building sector, will bring economic returns and increase environmental resiliency.

- **Objective 5.1:** Prepare for the future of work, and support business and worker collaborations that synchronize new technologies with new skills
- **Objective 5.2:** Deploy emerging autonomous and smart city technology to support efficient delivery of public services, an enhanced visitor experience, and growth of new industries
- **Objective 5.3:** Deliver new customer value in gaming, hospitality, and entertainment through innovation
- **Objective 5.4:** Advance and promote regional expertise in water and energy management

Overview: Southern Nevada CEDS Goals and Objectives

1. Promote a Prosperous, Diverse, and Resilient Economy

- 1.1. Encourage a business-ready environment that enables entrepreneurship
- 1.2. Support the growth of existing Nevada businesses and help them expand within and beyond the region
- 1.3. Recruit businesses that build regional economic diversity with compelling value propositions for Southern Nevada
- 1.4. Accelerate the growth of high-skill, high-wage jobs in target industries

2. Equip Students and Learners for Success in High-Demand Careers

- 2.1. Improve connected pathways for K-12 students entering higher education and for teachers entering Southern Nevada classrooms
- 2.2. Strengthen wraparound services for low-income and disadvantaged K-12 students
- 2.3. Align vocational training with regional workforce demands and offer flexible mechanisms for underserved students to gain new skills and credentials
- 2.4. Coordinate higher education efforts that support seamless delivery of upskilling and lifelong learning
- 2.5. Connect job seekers and employers through innovative approaches and platforms

3. Attract and Retain Human Capital through Enhanced Quality of Life

- 3.1. Attract prospective residents and families by marketing Southern Nevada's quality of life and affordability
- 3.2. Expand the region's medical infrastructure to support new specializations and increase availability of healthcare services
- 3.3. Promote engagement with the region's cultural and natural amenities, and gauge unmet needs for family-friendly attractions
- 3.4. Facilitate social engagement opportunities to increase retention of new residents

4. Connect People, Businesses, and Ideas to Boost Commerce and Collaboration

- 4.1. Become the Data Capital of the Mountain West through expansions in 5G infrastructure, ICT businesses, and broadband access
- 4.2. Improve and diversify transit options for residents and workers, especially for downtown commuters
- 4.3. Pursue new connections between regional transportation hubs and key tourist and business destinations
- 4.4. Encourage effective business collaborations, including partnerships between startups and established, larger businesses

5. Anticipate and Capitalize on Emerging Technology to Improve Economic Vitality and Delivery of Public Services

- 5.1. Prepare for the future of work, and support business and worker collaborations that synchronize new technologies with new skills
- 5.2. Deploy emerging autonomous and smart city technology to support efficient delivery of public services, an enhanced visitor experience, and growth of new industries
- 5.3. Deliver new customer value in gaming, hospitality, and entertainment through innovation
- 5.4. Advance and promote regional expertise in water and energy management

Activities Plan

The Activities Plan translates the content of the Strategic Direction into concrete steps to be taken by Southern Nevada’s stakeholders in support of regional development goals. It describes the specific activities to be performed and designates lead and supporting organizations responsible for conducting these activities. Each activity has an approximate time frame for execution over a 5-year period, as well as a rough indication of the resources required to conduct the activity.

Timelines for activities are classified as short, medium, and long. Activities with a short timeline could be mostly accomplished or completed within 1-2 years. Those in the medium category could plausibly be conducted in 2-4 years. Activities with long timelines may require 5 or more years to carry out but could exhibit meaningful progress in a shorter period with prompt implementation.

Resource Requirements for activities are classified as minor, moderate, and major. An activity with minor requirements may be accomplished with several thousands to tens of thousands of dollars, and most likely below \$100,000. Activities in the moderate category are likely to need more investment, generally in the range of several hundred thousand dollars. Major indicates that the activity requires a large level of investment, probably at least in the hundreds of thousands of dollars and possibly into the millions.

Goal 1 Activities: Promote a Prosperous, Diverse, and Resilient Economy

Objective 1.1: Encourage a business-ready environment that enables entrepreneurship

Activity: Support the preservation of Nevada’s pro-business advantages relative to higher cost regional competitors.

- **Lead:** LVGEA, Area Chambers & Business Groups
- **Support:** Department of Business and Industry, City and County Governments
- **Timeline:** Ongoing
- **Resource Requirements:** Minor

Activity: Facilitate the development of partnership programs that educate Southern Nevadans about the potential of entrepreneurship.

- **Lead:** LVGEA
- **Support:** Area Higher Education, StartUpNV, Area Entrepreneur Programs, Area Chambers & Business Groups
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Activity: Conduct a survey of regional small- and medium-sized enterprises to identify issues that entrepreneurs face when starting, maintaining, and growing their businesses (e.g., permitting, regulatory, tax, infrastructure, zoning, and land use).

- **Lead:** LVGEA
- **Support:** Small Business Development Centers, Area Chambers & Business Groups
- **Timeline:** Medium
- **Resource Requirements:** Minor

Objective 1.2: Support the growth of existing Nevada businesses and help them expand within and beyond the region

Activity: Continue to provide events, resources, and networking opportunities for Southern Nevadan firms to make business connections and form new partnerships.

- **Lead:** LVGEA, Area Chambers & Business Groups
- **Support:** Local Economic Development Agencies
- **Timeline:** Ongoing
- **Resource Requirements:** Minor

Activity: Assist existing Southern Nevadan businesses in reaching new markets by connecting them to resources (e.g., financial, professional, etc.) and decisionmakers.

- **Lead:** LVGEA
- **Support:** Local Economic Development Agencies, City and County Governments, Area Chambers & Business Groups
- **Timeline:** Ongoing
- **Resource Requirements:** Moderate

Activity: Ensure sufficient land, infrastructure, and resources are available for new development in Southern Nevada, working with federal government landowners where relevant.

- **Lead:** City and County Governments
- **Support:** LVGEA, Area Chambers & Business Groups, Greater Las Vegas Real Estate Association, NAIOP Southern Nevada Chapter
- **Timeline:** Ongoing
- **Resource Requirements:** Major

Activity: Market the advantages and cost savings of Southern Nevada’s foreign trade zone (FTZ) to firms with international operations.

- **Lead:** LVGEA
- **Support:** Local Economic Development Agencies
- **Timeline:** Medium
- **Resource Requirements:** Minor

Objective 1.3: Recruit businesses that build regional economic diversity with compelling value propositions for Southern Nevada

Activity: Represent Southern Nevada as the pre-eminent business destination for relocating and expanding out-of-state companies at industry trade shows and other business events throughout the United States.

- **Lead:** LVGEA
- **Support:** Local Economic Development Agencies, City and County Governments
- **Timeline:** Ongoing
- **Resource Requirements:** Minor

Activity: Market Southern Nevada to foreign firms as a high-growth launching pad for opening North American operations, driven by its low cost of doing business and proximity to lucrative markets.

- **Lead:** LVGEA
- **Support:** Local Economic Development Agencies, City and County Governments, Department of Business and Industry
- **Timeline:** Ongoing
- **Resource Requirements:** Minor

Activity: Market Southern Nevada’s strengths as a place of business, focusing on target industry firms that will drive economic diversification in the region.

- **Lead:** LVGEA
- **Support:** Local Economic Development Agencies, City and County Governments, Area Chambers & Business Groups, GOED
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Objective 1.4: Accelerate growth of high-skill, high-wage jobs in target industries

Activity: Monitor trends in Southern Nevada’s target industries and redefine targets as new industry clusters and economic development opportunities emerge.

- **Lead:** LVGEA
- **Support:** Area Higher Education, Local Economic Development Agencies, GOED
- **Timeline:** Medium
- **Resource Requirements:** Minor

Activity: Assess technology trends and adoption in the gaming and hospitality industry and attract high-tech firms in other target sectors that can fill technology demands in this anchor industry.

- **Lead:** LVGEA
- **Support:** GOED, Nevada Resort Industry, Nevada Industry Excellence, Area Higher Education
- **Timeline:** Long
- **Resource Requirements:** Moderate

Goal 2 Activities: Equip Students and Learners for Success in High-Demand Careers

Objective 2.1: Improve connected pathways for K-12 students entering higher education and for teachers entering Southern Nevada classrooms

Activity: Establish advanced science, technology, engineering, art, and mathematics (STEAM) programs at Clark County schools, reinforcing the pipeline of STEAM-trained students prepared for higher education and the workforce.

- **Lead:** Clark County School District
- **Support:** Nevada Department of Education, Area Higher Education, Area Chambers & Business Groups, OWINN, OSIT
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Activity: Expand programs for teacher training and development in Southern Nevada, such as the Accelerated Licensure Teacher Academy (ALTA), and establish new pathways for teacher training and hiring at the region’s higher education institutions.

- **Lead:** Area Higher Education
- **Support:** Clark County School District, Nevada Department of Education, City and County Governments
- **Timeline:** Long
- **Resource Requirements:** Major

Objective 2.2: Strengthen wraparound services for low-income and disadvantaged K-12 students

Activity: Develop new and expanded partnerships with stakeholders, such as the Nevada chapter of Communities in Schools and the ReInvent Schools initiative, to provide extended services to students in need.

- **Lead:** Clark County School District
- **Support:** City and County Governments, Local Nonprofits, Nevada Division of Child and Family Services
- **Timeline:** Long
- **Resource Requirements:** Major

Objective 2.3: Align vocational training with regional workforce demands and offer flexible mechanisms for underserved students to gain new skills and credentials

Activity: Continue the development of partnerships between higher education institutions and employers to ensure graduates are well-prepared to meet regional workforce demands.

- **Lead:** Workforce Connections
- **Support:** Area Higher Education, Area Chambers & Business Groups, Clark County School District, OWINN, LVGEA
- **Timeline:** Ongoing
- **Resource Requirements:** Moderate

Activity: Enable labor market gains for nontraditional students and incumbent workers by increasing opportunities to enroll in short-term, accessible programs at the region's higher education institutions.

- **Lead:** Area Higher Education
- **Support:** Area Chambers & Business Groups, Nevada Department of Education, OWINN
- **Timeline:** Long
- **Resource Requirements:** Major

Activity: Improve student perceptions and interest in high-demand skilled technical workforce occupations through demonstrations and training in elementary and middle school classrooms.

- **Lead:** Clark County School District
- **Support:** LVGEA, Area Chambers & Business Groups, Workforce Connections, DETR, OWINN, OSIT, Department of Education
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Objective 2.4: Coordinate higher education efforts that support seamless delivery of upskilling and lifelong learning

Activity: Map the coverage of Southern Nevada’s higher education programs and identify gaps in skills delivery for the region’s existing workforce.

- **Lead:** Area Higher Education
- **Support:** Nevada Department of Education, DETR, Workforce Connections
- **Timeline:** Short
- **Resource Requirements:** Minor

Activity: Monitor, coordinate, and integrate program revisions and expansions to more efficiently address identified gaps in higher education coverage.

- **Lead:** Area Higher Education
- **Support:** Nevada Department of Education, DETR, Workforce Connections
- **Timeline:** Long
- **Resource Requirements:** Moderate

Objective 2.5: Connect job seekers and employers through innovative approaches and platforms

Activity: Promote state and regional resources, such as Nevada JobConnect, for connecting individuals with jobs, internships, and apprenticeships, and explore tailored platforms for Southern Nevada’s target industries.

- **Lead:** Workforce Connections
- **Support:** LVGEA, Area Chambers & Business Groups, Area Staffing Firms, OWINN, Private Training Providers, Area Higher Education, DETR, Clark County School District, Workforce Connections
- **Timeline:** Long
- **Resource Requirements:** Moderate

Activity: Expand job seeker and employer participation in the ACT WorkKeys National Career Readiness Certificate (NCRC) program for more efficient job placement and matching of employee skills with employer requirements.

- **Lead:** Workforce Connections
- **Support:** LVGEA, Area Chambers & Business Groups
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Goal 3 Activities: Attract and Retain Human Capital through Enhanced Quality of Life

Objective 3.1: Attract prospective residents and families by marketing Southern Nevada’s quality of life and affordability

Activity: Conduct the “Here You Can” initiative and advertise Southern Nevada as a desirable place to live for families at major conventions, conferences, and transportation hubs.

- **Lead:** LVGEA
- **Support:** LVCVA, McCarran International Airport, Local Economic Development Agencies, City and County Governments, GOED, Area Chambers & Business Groups
- **Timeline:** Long
- **Resource Requirements:** Moderate

Activity: Expand Southern Nevada tourism marketing to pitch the region as a permanent residence by including local perspectives on the area’s low cost of living and high quality of life.

- **Lead:** Department of Tourism and Cultural Affairs
- **Support:** LVGEA, LVCVA, GOED, Local Economic Development Agencies, City and County Governments
- **Timeline:** Long
- **Resource Requirements:** Moderate

Objective 3.2: Expand the region’s medical infrastructure to support new specializations and increase availability of healthcare services

Activity: Explore expansion and specialization opportunities for Southern Nevada’s sports medicine community.

- **Lead:** UNLV School of Medicine
- **Support:** Area Higher Education, Las Vegas HEALS, Local Economic Development Agencies, LVGEA, Local Professional Sports
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Activity: Increase opportunities for medical students not only to study in Southern Nevada, but also conduct clinical rotations and residencies in local hospitals and medical centers, growing the region's medical services industry.

- **Lead:** UNLV School of Medicine, Touro University Nevada, Roseman University
- **Support:** Las Vegas HEALS, Area Hospitals and Medical Centers, LVGEA, Workforce Connections
- **Timeline:** Long
- **Resource Requirements:** Moderate

Activity: Increase the capacity and quality of public healthcare programs for local area residents.

- **Lead:** Southern Nevada Health District
- **Support:** Nevada Department of Health and Human Services, City and County Governments, Las Vegas HEALS, UNLV School of Medicine
- **Timeline:** Long
- **Resource Requirements:** Major

Objective 3.3: Promote engagement with the region's cultural and natural amenities, and gauge unmet needs for family-friendly attractions

Activity: Promote engagement with local performing arts venues and museums and use of recreational amenities, such as the Neon to Nature Regional Trail System.

- **Lead:** City and County Governments
- **Support:** Department of Tourism and Cultural Affairs, Department of Conservation and Natural Resources
- **Timeline:** Medium
- **Resource Requirements:** Minor

Activity: Explore methods for encouraging year-round exercise and adapting outdoor recreational assets and facilities to changes in regional climate.

- **Lead:** City and County Governments
- **Support:** Las Vegas HEALS, Nevada Department of Health and Human Services
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Activity: Gauge unmet needs for local family-friendly attractions that would increase attraction and retention of families (for example, through surveys and focus groups).

- **Lead:** City and County Governments
- **Support:** Local Nonprofits, Economic Development Agencies, LVGEA
- **Timeline:** Short
- **Resource Requirements:** Minor

Objective 3.4: Facilitate social engagement opportunities to increase retention of new residents

Activity: Provide community welcome and engagement resources to new residents, especially young professionals.

- **Lead:** LVGEA
- **Support:** Area Chambers & Business Groups, Local Economic Development Agencies, Local Nonprofits
- **Timeline:** Medium
- **Resource Requirements:** Minor

Goal 4 Activities: Connect People, Businesses, and Ideas to Boost Commerce and Collaboration

Objective 4.1: Become the Data Capital of the Mountain West through expansions in 5G infrastructure, ICT businesses, and broadband access

Activity: Build out 5G networks to improve the speed and reliability of regional data connections.

- **Lead:** Internet Service Providers
- **Support:** Area Chambers & Business Groups, OSIT, City and County Governments
- **Timeline:** Long
- **Resource Requirements:** Major (some resources already committed)

Activity: Pursue opportunities to recruit information and communication technology companies to Southern Nevada at major communications and information technology events.

- **Lead:** LVGEA
- **Support:** LVCVA, GOED, Area Chambers & Business Groups, City and County Governments
- **Timeline:** Short
- **Resource Requirements:** Minor

Activity: Showcase high speed wireless technology (including 5G) to tourists and visitors throughout their experiences in Southern Nevada.

- **Lead:** LVCVA
- **Support:** City and County Governments, Nevada Resort Association, McCarran International Airport, Area Chambers & Business Groups
- **Timeline:** Long
- **Resource Requirements:** Moderate

Activity: Integrate advanced data connectivity capabilities into key city and county infrastructure assets that deliver improvements in local public services.

- **Lead:** City and County Governments
- **Support:** Internet Service Providers, Area Chambers & Business Groups
- **Timeline:** Long
- **Resource Requirements:** Major

Activity: Close the remaining digital divides in Southern Nevada: increase internet access for underserved populations to enable broader participation in the region's digital economy.

- **Lead:** City and County Governments
- **Support:** Internet Service Providers, Area Chambers & Business Groups
- **Timeline:** Long
- **Resource Requirements:** Major

Objective 4.2: Improve and diversify transit options for residents and workers, especially for downtown commuters

Activity: Increase the frequency, capacity, and reach of public transportation service in the greater Las Vegas metropolitan area.

- **Lead:** Regional Transportation Commission
- **Support:** City and County Governments, Area Chambers & Business Groups, Local Economic Development Agencies, McCarran International Airport
- **Timeline:** Long
- **Resource Requirements:** Major

Activity: Incentivize and market commuting options that reduce the portion of workers driving alone to their place of work (for example, park and ride lots, Club Ride incentives, employer-sponsored transit subsidies, “car-free diet” resources).

- **Lead:** Regional Transportation Commission
- **Support:** City and County Governments, Area Chambers & Business Groups, Local Economic Development Agencies, Nevada Department of Transportation
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Objective 4.3: Pursue new connections between regional transportation hubs and key tourist and business destinations

Activity: Invest in infrastructure improvements that more seamlessly connect McCarran International Airport to local businesses, The Strip, and other key attractions.

- **Lead:** Regional Transportation Commission
- **Support:** McCarran International Airport, LVCVA, City and County Governments, Nevada Resort Association, Area Chambers & Business Groups
- **Timeline:** Long
- **Resource Requirements:** Major

Activity: Pilot innovative transportation services for convention and conference visitors.

- **Lead:** LVCVA
- **Support:** Regional Transportation Commission, City and County Governments, Department of Tourism and Cultural Affairs, McCarran International Airport, Nevada Resort Association
- **Timeline:** Medium
- **Resource Requirements:** Moderate

**Objective 4.4: Encourage effective business collaborations,
including partnerships between startups and established, larger businesses**

Activity: Explore the establishment of a Technology Association for Southern Nevada that promotes the region’s technology industry and supports technology talent recruitment, development, and networking.

- **Lead:** Technology Companies
- **Support:** LVGEA, Las Vegas Metro Chamber, GOED
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Activity: Develop “buy local” supply chain strategies to connect area small businesses with resorts.

- **Lead:** LVGEA
- **Support:** Nevada Resort Association, Area Chambers & Business Groups, City and County Governments, Small Business Development Centers, StartUpNV, Area Higher Education, Area Entrepreneur Programs
- **Timeline:** Medium
- **Resource Requirements:** Minor

Activity: Form minority-owned small business collaboration groups with larger business partner anchors to share best practices, provide mentoring services, and increase networking opportunities.

- **Lead:** Area Chambers & Business Groups
- **Support:** LVGEA, GOED, City and County Governments, Small Business Development Centers, StartUpNV, Area Higher Education, Area Entrepreneur Programs
- **Timeline:** Long
- **Resource Requirements:** Moderate

Goal 5 Activities: Anticipate and Capitalize on Emerging Technology to Improve Economic Vitality and Delivery of Public Services

Objective 5.1: Prepare for the future of work, and support business and worker collaborations that synchronize new technologies with new skills

Activity: Research potential economy-wide shifts and disruptions driven by new technology and identify vulnerable sectors and occupations.

- **Lead:** Area Higher Education
- **Support:** Local Economic Development Agencies, GOED, OWINN, DETR
- **Timeline:** Short (but recurring)
- **Resource Requirements:** Moderate

Activity: Build mechanisms for adapting education and training curricula as occupational tasks shift, and help develop human capabilities that are useful across jobs and less susceptible to automation.

- **Lead:** Area Higher Education, Clark County School District
- **Support:** LVGEA, OWINN, DETR, OSIT, Workforce Connections, Area Chambers & Business Groups, Nevada Resort Association
- **Timeline:** Medium
- **Resource Requirements:** Major

Activity: Support collaborations between employees and employers that encourage productivity-enhancing innovations while preparing employees to work alongside new technology.

- **Lead:** Labor Groups, Area Chambers & Business Groups
- **Support:** Nevada Resort Association, Technology Companies, LVGEA, OWINN, DETR
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Objective 5.2: Deploy emerging autonomous and smart city technology to support efficient delivery of public services, an enhanced visitor experience, and growth of new industries

Activity: Test and deploy AI, autonomous technology, and information technology that optimize traffic and infrastructure use, assist first responders, and coordinate public services.

- **Lead:** City and County Governments
- **Support:** Regional Transportation Commission, Nevada Department of Transportation, Department of Tourism and Cultural Affairs, Regional Emergency Services, Technology companies
- **Timeline:** Ongoing
- **Resource Requirements:** Major (some resources already committed)

Activity: Share data and insights from technology pilot programs and form collaborations to support Southern Nevada’s progress towards an integrated “Smart Region.”

- **Lead:** City and County Governments
- **Support:** Local Economic Development Agencies, Regional Transportation Commission, Area Utilities, Technology Companies
- **Timeline:** Long
- **Resource Requirements:** Moderate

Activity: Assess opportunities for capturing technology and innovation spillovers from local military facilities and activities to spur innovation in the private sector, including the region’s commercial UAS industry.

- **Lead:** Local Economic Development Agencies
- **Support:** LVGEA, Area Higher Education, Area Military Installations, Area Chambers & Business Groups (Commercial UAS Sector), Nevada Institute for Autonomous Systems
- **Timeline:** Short
- **Resource Requirements:** Minor

Objective 5.3: Deliver new customer value in gaming, hospitality, and entertainment through innovation

Activity: Boost collaboration between resorts, technology companies, and researchers to accelerate development and deployment of innovations in gaming and hospitality.

- **Lead:** UNLV International Gaming Institute, Area Higher Education, Nevada Resort Association
- **Support:** Area Chambers & Business Groups, StartUpNV
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Activity: Diversify entertainment offerings in the gaming and hospitality sector with an expanded set of esports and sports experiences that leverage the region's growing professional sports cluster.

- **Lead:** Area Resorts and Entertainment Companies
- **Support:** LVCVA, Area Chambers & Business Groups, StartUpNV, Local Professional Sports
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Objective 5.4: Advance and promote regional expertise in water and energy management

Activity: Continue to stabilize regional water demand despite continued regional growth through creative and effective policies and incentives.

- **Lead:** Southern Nevada Water Authority, Area Utilities
- **Support:** City and County Governments
- **Timeline:** Ongoing
- **Resource Requirements:** Moderate

Activity: Build a water tech innovation ecosystem through the recruitment, launch, and expansion of water technology companies and deployment of new water management solutions.

- **Lead:** WaterStart
- **Support:** Desert Research Institute, LVGEA, Local Economic Development Agencies, Area Chambers & Business Groups
- **Timeline:** Medium
- **Resource Requirements:** Moderate

Activity: Achieve international recognition as a leading region for water management technology and policy solutions through exchanges, site visits, and promotional efforts.

- **Lead:** WaterStart, SNWA
- **Support:** LVGEA, City and County Governments, Local Economic Development Agencies
- **Timeline:** Long
- **Resource Requirements:** Moderate

Activity: Examine new methods of assessing real-time building energy use and pilot new technologies and practices that reduce the environmental impacts of tourism and business visitors.

- **Lead:** Area Chambers & Business Groups
- **Support:** Nevada Industry Excellence, Area Higher Education, Nevada Resort Association, LVCVA
- **Timeline:** Long
- **Resource Requirements:** Moderate

IV. Evaluation Framework

For most economic development programs, it is challenging to establish direct, causal relationships between program activities and long-term outcomes. Logic models help to address this challenge by establishing theoretical “if-then” relationships across a program’s activities, outputs, and immediate outcomes. As such, they are useful tools for structuring program evaluations, helping to account for immediate, measurable impacts that stem from a program’s activities, while logically relating these outputs to longer-term quantitative outcomes. The illustration below shows a generalized logic model for non-infrastructure economic development programs.¹²

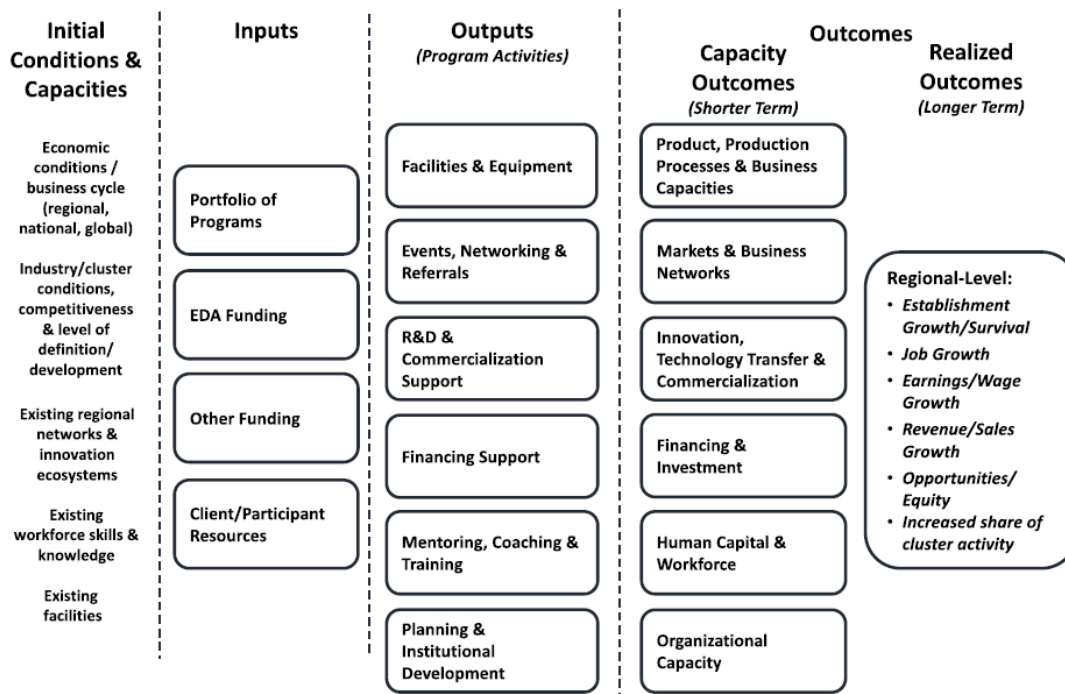


Figure 10. General logic model for non-infrastructure economic development programs. From [12].

The performance measures presented here allow LVGEA and its partners to first measure progress toward its goals and then to adapt and improve its work. Many activities proposed in this CEDS can help the region reach multiple economic development goals and multiple activities can help the region reach one goal. Performance measures include some program activities (largely conducted by LVGEA) in support of business and economic development but are primarily outcomes for the region. These outcomes include a mix of capacity outcomes that enhance the region’s capabilities, and longer-term realized outcomes such as job and wage growth.

Metrics should not be interpreted as evaluations of any single organization or group of organizations.

Performance Measures

Goal 1 Measures: Promote a Prosperous, Diverse, and Resilient Economy

| Metric | Data Source |
|--|--|
| Total employment | Bureau of Labor Statistics, Quarterly Census of Employment and Wages |
| Employment in Southern Nevada target industries | Bureau of Labor Statistics, Quarterly Census of Employment and Wages [employment]; LVGEA [target industry definitions] |
| Hachman Index of economic diversity | Bureau of Labor Statistics, Quarterly Census of Employment and Wages (value must be calculated via location quotients) |
| Studies performed on target industry trends | LVGEA |
| Job gains from businesses attracted or expanded* | LVGEA |
| Unemployment rate | Bureau of Labor Statistics, Local Area Unemployment Statistics |
| Average annual pay | Bureau of Labor Statistics, Quarterly Census of Employment and Wages |
| Number of site visits and business development meetings* | LVGEA |
| Number of businesses attracted* | LVGEA |
| Number of businesses expanded* | LVGEA |
| Total number of business establishments | Bureau of Labor Statistics, Quarterly Census of Employment and Wages |
| New capital investment* | LVGEA |
| Number of activities promoting entrepreneurship and business education | LVGEA |
| Number of graduates from Southern Nevada institutions receiving degrees in business and management | NSHE / NPWR |
| Best place to do business rankings [state-level] | Multiple: Area Development, CNBC, Forbes, U.S. News & World Report, WalletHub |

* Metric also used in LVGEA 2019-2020 Action Plan. Available at <https://www.lvgea.org/wp-content/uploads/2019/03/2019-2020-Action-Plan.pdf>.

Goal 2 Measures: Equip Students and Learners for Success in High-Demand Careers

The LVGEA Workforce Blueprint provides indicators for assessing Southern Nevada’s progress in solving regional workforce supply issues and improving alignment of regional education and training providers. Many of those indicators also allow for evaluation of the education and workforce component of the CEDS and have been imported here, along with several additional performance measures.

| Metric | Data Source |
|--|---|
| AP participation and test passage rates for CCSD students* | CCSD |
| Average ACT score of CCSD high schoolers* | CCSD |
| Number of CCSD high schoolers participating in career technical education (CTE)* | CCSD |
| CCSD high school graduation rate | CCSD |
| Percent of CCSD graduates who do not require remediation coursework* | NSHE |
| Number of postsecondary graduates from Southern Nevada institutions* | NSHE / NPWR |
| Graduation rates for Southern Nevada higher education institutions | NSHE / NPWR |
| Percent of recent NSHE graduates employed in Nevada* | NSHE |
| Number of National Career Readiness Certificate (NCRC) holders* | Nevada Workforce Connections / ACT Work Ready Communities |
| Number of employers participating in NCRC program | Nevada Workforce Connections / ACT Work Ready Communities |
| Number of registered apprenticeships completed* | OWINN RAPIDS |
| Percent of population 25 years or older holding an associate degree or higher* | U.S. Census Bureau, American Community Survey |
| Percent of population 25 years or older holding a bachelor's degree or higher* | U.S. Census Bureau, American Community Survey |
| Employment status by educational attainment for population 25 years or older | U.S. Census Bureau, American Community Survey |

* Metric also used in LVGEA Workforce Blueprint. Available at <https://www.lvgea.org/data-and-research/workforce-blueprint/>.

Goal 3 Measures: Attract and Retain Human Capital through Enhanced Quality of Life

| Metric | Data Source |
|--|---|
| Marketing activities and social media engagement for "Here You Can" initiative | LVGEA |
| Net migration to Southern Nevada | U.S. Census Bureau, Population Estimates Program, Components of Population Change |
| Employment in healthcare practitioners and technical occupations | Bureau of Labor Statistics, Occupational Employment Statistics |
| Ratio of population to primary care physicians | County Health Rankings & Roadmaps |
| Percent of population 25 years or older holding an associate degree or higher* | U.S. Census Bureau, American Community Survey |
| Percent of population 25 years or older holding a bachelor's degree or higher* | U.S. Census Bureau, American Community Survey |
| Employment status by educational attainment for population 25 years or older* | U.S. Census Bureau, American Community Survey |

* Cross-cutting measure also used in Goal 2.

Goal 4 Measures: Connect People, Businesses, and Ideas to Boost Commerce and Collaboration

| Metric | Data Source |
|---|---|
| Percent of population with 3 or more broadband providers* | Federal Communications Commission, Fixed Broadband Deployment (Form 477) |
| Percent of households with broadband Internet subscription | U.S. Census Bureau, American Community Survey |
| Unlinked passenger trips (UPT) on public transit | U.S. Department of Transportation, Federal Transit Administration, National Transit Database, Annual Database Service |
| Total passenger miles on public transit | U.S. Department of Transportation, Federal Transit Administration, National Transit Database, Annual Database Service |
| Annual hours of peak hour excessive delay (PHED) per capita | Regional Transportation Commission of Southern Nevada, Congestion Mitigation and Air Quality Performance Plan |
| Total enplaned and deplaned passengers | Clark County Department of Aviation Statistics |

* Broadband is typically defined as a connection with a minimum of 25 Mbps download and 3 Mbps upload speeds, but a higher threshold could also be used (e.g., minimum of 100 Mbps download and 10 Mbps upload).

**Goal 5 Measures: Anticipate and Capitalize on Emerging Technology
to Improve Economic Vitality and Delivery of Public Services**

| Metric | Data Source |
|--|--|
| Percent of employment in occupations typically requiring a bachelor's degree or higher | Bureau of Labor Statistics, Employment Projections Program, Education and Training Data [Employment by occupation data available via BLS Occupational Employment Statistics] |
| Percent of employment in occupations with tasks less susceptible to automation* | Occupational Information Network (O*NET)* [Employment by occupation data available via BLS Occupational Employment Statistics] |
| Gallons of water used per capita per day (GPCD) | Southern Nevada Water Authority (SNWA), Water Resource Plan |
| Water technology pilot projects conducted | WaterStart |
| Water technology companies recruited | WaterStart |
| Number of LEED-certified projects | U.S. Green Building Council, LEED Project Directory |
| Total LEED-certified square footage | U.S. Green Building Council, LEED Project Directory |
| Per capita energy consumption | U.S. Energy Information Administration, State Energy Data System |
| Annual visitor volume | LVCVA, Economic Impact Reports |
| Total spending per visitor | LVCVA, Economic Impact Reports |
| Spending per visitor on activities other than gaming | LVCVA, Visitor Profiles |

* O*NET provides extensive data on occupation characteristics (see O*NET Content Model at <https://www.onetcenter.org/content.html>), which have been used to evaluate the automatability of occupations based on their distribution of work activities. Further evaluations with methodologies tailored to Southern Nevada could provide new values for this metric.

Appendix A. Interviewee and Participant List

SRI and LVGEA thank each of the interviewees and participants listed below for graciously providing their time to the project. The inclusion of a participant's name on this list in no way signifies their agreement with this report's findings, conclusions, or recommendations. Individuals are listed alphabetically by last name.

| | |
|--|---|
| Paul Anderson, Boyd Gaming | Rebecca Darling, Barrick Gold USA |
| Bill Arent, City of Las Vegas | Lisa de Marigny, Omni Limousine / Tango Car |
| Derek Armstrong, City of Henderson | Richard Derrick, City of Henderson |
| Jayne Backhouse, Barclays U.S. Operations | Greg Diven, OCM-Lee Hecht Harrison |
| Mark Badain, Raiders | John Entsminger, Southern Nevada Water Authority |
| Carolyn Barbash, NV Energy | Kenneth Evans, Urban Chamber of Commerce |
| Mike Barton, Clark County School District | Brian Formisano, Wells Fargo Bank |
| Breanna Bensoua, Las Vegas Global Economic Alliance | Gina Gavan, City of North Las Vegas |
| Annie Black, City of Mesquite | Doug Geinzer, Las Vegas HEALS |
| Mike Bonner, Greenberg Traurig, LLP | Aviva Gordon, Gordon Law |
| Michael Brown, Governor's Office of Economic Development | Kellie Graham, Silverton Casino and Hotel |
| Jason Bruckman, Eastridge Workforce Solutions | Paul Gully, Regional Transportation Commission of Southern Nevada |
| Kerry Bubolz, Vegas Golden Knights | Jeff Hendrickson, University of Phoenix |
| Irine Bustamante Adams, NV Workforce Connections | Matt Heyerdahl, Frazier and Deeter, LLC |
| John Cannito, PENTA Building Group | Derrick Hill, Cox Communications |
| Nick Clason, Las Vegas Global Economic Alliance | Dave Johnson, WaterStart |
| Rick Crawford, Green Valley Grocery | Cathy Jones, Sun Commercial Real Estate |
| Mary Croughan, University of Nevada, Las Vegas | Justin Jones, Clark County |
| Michael Cunningham, Bank of Nevada | Adam Kilbourn, Black Raven Films |
| Ivana Cvejic, Renhead | Yolanda King, Clark County |
| | John Klai, Klai Juba Wald Architects |

Brian Knudsen, City of Las Vegas

Carol Kolson, Mesquite Chamber of Commerce

Jill Lagan, Boulder City Chamber of Commerce

Michelle Larime, Regional Transportation
Commission of Southern Nevada

Rae Lathrop, Regional Transportation
Commission of Southern Nevada

John Lee, City of North Las Vegas

Clifton Marshall, Airport Concessionaires, LLC

Guy Martin, Martin-Harris Construction

Kiernan McManus, Boulder City

Scott Muelrath, Henderson Chamber of
Commerce

Leslie Mujica, Las Vegas Power Professionals

Monica Pappas, Fingerprinting Express

Bart Patterson, Nevada State College

Bob Potts, Governor's Office of Economic
Development

Flo Rogers, Nevada Public Radio

Brad Schnepf, Marnell Properties

Hena Shakir, JPMorgan Chase

Melanie Sheldon, Governor's Office of
Economic Development

Les Lee Shell, Clark County

Michael Sherwood, City of Las Vegas

Ryan Smith, City of Las Vegas

Spencer Stewart, Western Governors University
Nevada

Michael Sullivan, Amerityre Corporation

Craig von Collenberg, Governor's Office of
Workforce Innovation

Michael Walsh, Las Vegas Global Economic
Alliance

Shannon Weldon, Hilton Grand Vacations

Lori Wilkinson, Brown & Brown Insurance

Brian Wolf, Manpower Las Vegas

Clark Wood, U.S. Bank

Frank Woodbeck, College of Southern Nevada

Steven Zanella, MGM City Center

Chris Zunis, Las Vegas Global Economic Alliance

Appendix B. Stakeholder Engagement Exercises

Community participation is a vital part of the CEDS creation process, especially in the crafting of a vision statement and the generation of goals for the region. In addition to interviews with individual community members, several stakeholder engagement sessions were conducted in November 2019 at LVGEA headquarters. These sessions were designed to collect community input on a vision for Southern Nevada and elicit priorities for the CEDS. Each session included a small but diverse group of participants from key stakeholder organizations in the region. Participants were guided through three exercises:

1. **Visioning Success** – participants were asked to imagine what success looks like for Southern Nevada. Each participant submitted three specific components of this vision that they deemed most important.
2. **Priority Goals** – Each participant submitted three priority goals for making Southern Nevada the best place to live and do business^{VIII} over the next 5 years. Goals were clustered by similarity and participants discussed the most common goals.
3. **Meeting the Needs of a Diverse Population** – Participants divided into small groups, with each group receiving a “persona”—a hypothetical individual or household representative of a different slice of the region’s current or prospective population. Each group considered the potential goals, motivations, and concerns of their persona and determined what Southern Nevada must offer to help meet the needs of the persona.

Vision and Priority Goals

Stakeholder comments from the first two exercises covered a wide range of topics but, nonetheless, broadly shared desires emerged:

- **Education, Training, and Workforce**
 - A high-performing education and training system that prepares students for successful careers and delivers a workforce that meets employers’ needs
 - Improvements in K-12 and higher education
 - Vocational training opportunities
 - Enhanced methods for connecting job seekers and employers
- **Strong Communities**
 - Local and affordable amenities

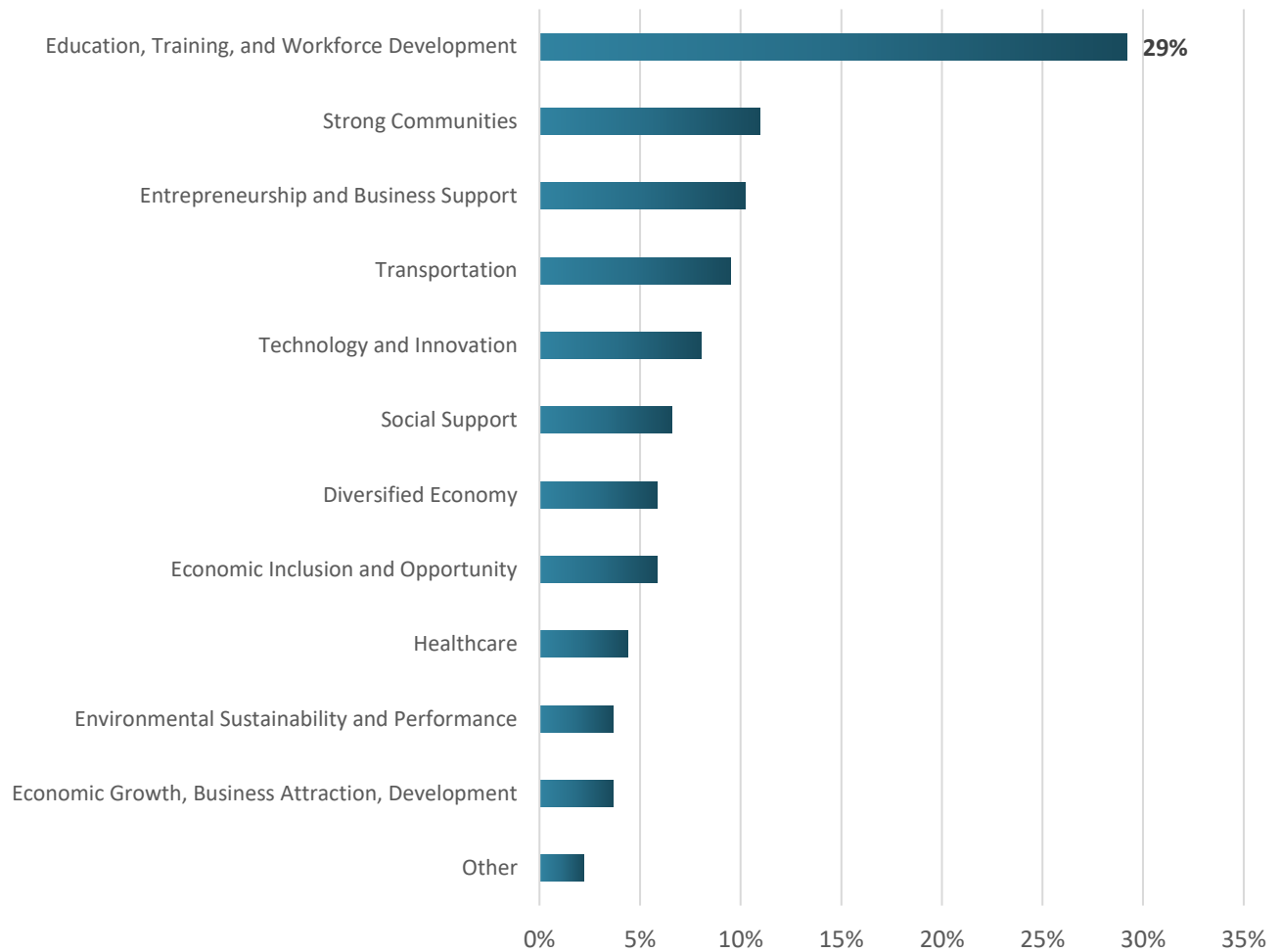
^{VIII} Question focus alternated between sessions.

- Community-building events
- Promotion of regional identity and multi-generational attachment
- Inclusivity of diverse individuals and families
- **Entrepreneurship and Business Support**
 - Pro-business culture and policies
 - Stronger business collaboration
 - Services that support entrepreneurs
- **Transportation**
 - Improved public transit
 - New transportation modes and wider regional connections
 - High-quality infrastructure
- **Technology and Innovation**
 - An expanded innovation ecosystem with more R&D and attraction of high-tech industries
 - A proactive orientation on technology trends such as AI and automation

Individual comments were classified into broad categories and tallied by category. The distribution of stakeholder comments is shown in Figure 11. The relative frequency of these categories provides a useful illustration of community priorities for the Southern Nevada CEDS.

Education and Workforce Development Top Stakeholder Priorities

Figure 11. Stakeholder participant comments by category (percent).



Meeting the Needs of a Diverse Population

Southern Nevada is a rapidly growing, diverse region, and it is crucial that its economic strategy align with the aspirations of its diverse population. The third stakeholder exercise was designed to prime participants to consider the needs of different components of the region's population. Participants divided into small groups, with each group receiving a "persona"—a hypothetical individual or household representative of a different slice of the region's current or prospective population.

Five personas were developed, informed by analysis of regional socioeconomic data and interview findings:

- A **dual-income family** considering moving into the region. One spouse, a lawyer, has received a job offer, but the other, a doctor, is still searching and would like to stay employed in his profession. They have two young children in elementary school.
- A **manufacturing worker** who has some work experience in other sectors and joined the workforce right out of high school. He is looking to gain new skills and advance in his career toward a higher wage but is unable to take substantial time away from work for training or school.
- A **retired couple** thinking of relocating to Southern Nevada. They have significant savings but are careful in how they manage their resources. They seek to remain physically and socially active but recognize their needs and health status may change as they age.
- A **recent UNLV graduate** with a degree in a STEM discipline who wants a rewarding career in his field. A first-generation college student, he funded his own education and needs to be financially independent.
- A **small business owner** that provides consulting services to resorts in Las Vegas. She must recruit workers with different skill sets and education levels to meet her clients' needs and expand.

Each group considered the potential goals, motivations, and concerns of its persona and determined what Southern Nevada must offer to help meet the needs of the persona. Needs that are common across multiple personas provide useful indication for what topics warrant greatest attention in the CEDS. High-quality educational opportunities and a capable, trained workforce were, on average, the needs identified most frequently across the personas. Local amenities were also commonly cited, followed by affordable housing and cost of living, access to quality healthcare, and transportation. Table 7 provides a stylized representation of the intensity of persona needs identified by the participants.

Education Opportunities and Trained Workforce, Local Amenities Are Most Frequently Identified Needs

Table 7. Southern Nevada persona needs identified by participants. Darker shades indicate higher frequency.

| Persona | Education Opportunities and Trained Workforce | Local Amenities | Affordable Housing and Cost of Living | Health Care and Medical Sector | Transportation | Environmental Quality and Renewable Energy | Growing and Diverse Economy | High Wages and Benefits | Low Tax Burden | Smart City and High-Tech Jobs |
|----------------------|---|-----------------|---------------------------------------|--------------------------------|----------------|--|-----------------------------|-------------------------|----------------|-------------------------------|
| Dual-Income Family | | | | | | | | | | |
| Manufacturing Worker | | | | | | | | | | |
| Retired Couple | | | | | | | | | | |
| Recent UNLV Graduate | | | | | | | | | | |
| Small Business Owner | | | | | | | | | | |
| All Personas | | | | | | | | | | |

Appendix C. Detailed SWOT Analysis

The ability to foresee change and analyze current capacity to handle change not only increases the resiliency of an organization during times of economic turmoil, but also assists an organization in capitalizing on opportunities during times of growth. In the 1960s and 1970s, a team of researchers at SRI undertook the monumental effort of creating a blueprint for this process. In order to create this guide, researchers surveyed thousands of organizations and executives to best understand how organizations were managing perceived changes to their industries, and how change management could be improved. Their findings led to what eventually came to be known as the SWOT analysis.

Strength refers to what is satisfactory in the present (internal).

Weakness refers to what is currently unsatisfactory (internal).

Opportunity is an emerging trend that presents a chance for growth (external).

Threat is an emerging trend that presents an obstacle for growth (external).

A SWOT analysis enables organizations and regions to assess their current capabilities and understand how to work with them in order to navigate future uncertainty. This powerful analysis serves as the basis for strategy and highlights sources of strength on which to rely, weakness that may be addressed, opportunities to be realized, and dangers and difficulties to be avoided or addressed.

The SWOT analysis in this section is an in-depth examination of Southern Nevada's regional strengths, weaknesses, opportunities, and threats. The SWOT is a critical part of the CEDS and is required by EDA as a component of the document.¹³ The SWOT analysis illuminates regional vulnerabilities to economic and environmental shocks and helps guide subsequent economic development strategy toward enhanced resiliency. The SWOT analysis synthesizes stakeholder interview and workshop input with a detailed review of social, economic, education, industry, and environmental data relevant to the region's economic future. Our key findings are summarized on the following page.

STRENGTHS



- + Globally recognized Las Vegas brand and tourism destination
- + Business-friendly climate and strong entrepreneurial spirit
- + Attractive outdoor recreational assets
- + World-class international connections through McCarran International Airport
- + Excellent access to Western markets
- + Comparatively high housing affordability
- + Extensive broadband availability
- + Strong solar energy potential and deployment
- + Minimal risks from natural disasters
- + “Small state” advantage in government

WEAKNESSES



- Extensive federal land ownership constrains development
- Limited water resources
- Lack of healthcare options and poor population health indicators
- Lagging overall performance in K-12 education and social support systems
- Trailing spouse problem: lack of abundant professional jobs increases difficulty of recruiting highly educated workers
- Low educational attainment in current workforce
- Weak pipeline for new STEM workers hinders attraction of high-tech companies
- Limited resources and networks supporting R&D performance and innovation

OPPORTUNITIES



- Improved rail and road networks can bolster region’s transportation assets and access to markets
- High tourism and convention traffic create openings to market region as a permanent residence and business location
- Sports and esports build on existing entertainment strengths
- Smart city technology deployment and test bed for new autonomous technology
- Extensive water management technological and policy expertise
- High cost of living in West Coast regions make Southern Nevada more attractive

THREATS



- ▲ Federal land ownership and complex municipality zoning can hamper growth
- ▲ Climate change may worsen water scarcity
- ▲ More frequent and dangerous heatwaves, with urban environments vulnerable to negative health impacts
- ▲ “Sin City” reputation dissuades attraction of families
- ▲ High dependence on gaming and entertainment industry makes region vulnerable to external economic cycles
- ▲ Hospitality workforce may face displacement with increased automation and use of artificial intelligence

Strengths

Physical Infrastructure

Natural Resources and Environment

Southern Nevada possesses a significant amount of undeveloped land with the potential for future development.^{vi} In addition to its potential for growth for an increasing population, the natural environment of Southern Nevada appeals to many outdoor enthusiasts, as well as renewable technology companies that seek to harness the region's abundant sunshine (on average, sunshine occurs for at least 80% of the year in Southern Nevada)¹⁴ to develop new solar power technologies. According to the National Renewable Energy Laboratory (NREL), Southern Nevada has some of the highest solar energy technology potential in the nation. Southern Nevada has already begun to capitalize on this natural advantage, ranking fourth in the nation for cumulative installed solar electricity capacity (3,500 megawatts).^{15,16}

Southern Nevada's desert climate has made water a precious and limited resource in the region, and its conservation has been a top priority for decisionmakers. Strong, coordinated efforts among the region's stakeholders have made Southern Nevada a model for water management and one of the most water-secure metro areas in the Southwest. The Southern Nevada Water Authority (SNWA), created in 1991, has been instrumental in managing the region's water resources, releasing comprehensive water resource plans and budgets that make effective use of the limited resources available. Through its conservation programs, the SNWA has reduced per capita water use by 36% between 2000 and 2017, despite the net addition of nearly 700,000 new residents to the region over that time; SNWA aims to reduce consumption from 127 gallons per capita per day (GPCD) in 2017 to 116 GPCD by 2035.¹⁷ Specific policies that have aided water conservation include the banning of front lawns in new construction, and the payments to existing residents to remove their lawns and replace them with more drought-tolerant landscaping.^{18,19}

Transportation

Geographic connectivity remains a strength for Southern Nevada. The communities of Clark County are well-served by McCarran International Airport, which is the nation's eighth busiest airport in terms of passenger traffic.²⁰ In addition to numerous direct flights to domestic destinations, McCarran has about 30 direct flights to and from international destinations in 13 different countries.²¹ In 2019, McCarran International broke its all-time record, serving over 50 million passengers.²²

^{vi} Extensive federal Bureau of Land Management (BLM) ownership of surrounding territory places some constraints on growth, which is discussed later in the analysis.

The Regional Transportation Commission of Southern Nevada (RTC) has joined the Complete Streets Initiative, which aims to design roads that are safe for all users, including car drivers, transit riders, pedestrians, and bicyclists.²³ Projects within the initiative intend to make alternative forms of transportation other than driving more attractive and feasible for regional residents, all the while increasing residents' physical activity levels and reducing the region's emissions. Complete Streets projects, as well as similar projects, have directly attributed to Las Vegas achieving Silver Bicycle Friendly Community status from the League of American Bicyclists; by 2018, the city had increased the number of bike lanes and trails to more than 465 miles, a significant increase from the 125 miles the city had in 2006.²⁴

Despite the region's population boom, workers in Southern Nevada continue to experience comparatively short commutes. Average travel time to work in the Las Vegas metro area is 24.5 minutes, lower than the national average (26.4) and most peer regions (Table 8). Additionally, the rapid growth seen in Southern Nevada in recent decades has been accompanied by a significant number of infrastructure improvement projects, leaving the region with a relatively modern transportation infrastructure network.²⁵

Workers in Southern Nevada Enjoy Shorter Commutes

Table 8: Average One-Way Commute Times for Peer Metro Regions. Source: 2013–17 American Community Survey 5-year Estimates, U.S. Census Bureau.

| Metropolitan Area | Average One-Way Commute Time (minutes) |
|--|---|
| <i>Salt Lake City, UT</i> | 22.4 |
| <i>Colorado Springs, CO</i> | 23.3 |
| <i>Albuquerque, NM</i> | 23.4 |
| Las Vegas-Henderson-Paradise, NV | 24.5 |
| <i>Phoenix-Mesa-Scottsdale, AZ</i> | 26.2 |
| <i>U.S. Average</i> | 26.4 |
| <i>Portland-Vancouver-Hillsboro, OR-WA</i> | 26.6 |
| <i>Austin-Round Rock, TX</i> | 26.8 |
| <i>Sacramento--Roseville--Arden-Arcade, CA</i> | 26.8 |
| <i>Denver-Aurora-Lakewood, CO</i> | 27.5 |
| <i>Orlando-Kissimmee-Sanford, FL</i> | 28.2 |

Broadband

In addition to its extensive transportation connections, Southern Nevada maintains strong broadband connectivity. According to the Federal Communications Commission (FCC), broadband availability refers to a population's ability to access broadband speeds of at least 25 megabits per second (Mbps) for

downloading and 3 Mbps for uploading.²⁶ Using these metrics, residents of Clark County are well-connected, with 96% of residents having access to these speeds through at least three service providers and 100% of residents having access through at least two service providers. This is above the national average, with 93% of all Americans having access through at least three service providers.²⁷ That said, the presence of multiple broadband providers in Southern Nevada has not translated into universal internet service. According to the U.S. Census Bureau, 14% of households in Clark County—including one-third of households with less than \$20,000 in annual income—reported not having an internet subscription in 2018.²⁸ Recognizing the importance of internet access to economic opportunity, Clark County leaders have launched efforts to address this digital divide.²⁹

Broadband connectivity is important for a region's economic growth and development as it allows communities to participate in local, regional, national, and international value chains. This connectivity is important for the communities of Southern Nevada, which are increasingly the preferred choice for large-scale data centers, such as Switch. Maintaining strong, leading-edge connectivity will continue to be important for the region as its economy further expands into data-heavy sectors and industries.

Housing

Since the Great Recession, the Las Vegas housing market has shown strong signs of recovery. Compared to other regions in the state as well as neighboring states, the Las Vegas housing market remains relatively affordable (Table 9). Similar to national trends, however, affordability has gradually declined in recent years, with the housing affordability index (HAI) for Las Vegas falling nearly 15% from 140.6 (2017) to 120.0 (2018).^{vii} Among the selected peer metropolitan areas, housing in Las Vegas remains competitively affordable.

^{vii} The HAI measures if a region's median income is sufficient to purchase a house at the region's median sale price. For instance, if a region's HAI is 100.0, this indicates that households earning the state's median income are exactly able to purchase a home at the state's median sale price. Las Vegas' score of 120.0 for 2018 indicates that households have 120% of the income necessary to purchase a typical home in the metropolitan area.

"Affordability Index of Existing Single-Family Homes for Metropolitan Areas." National Association of Realtors. Accessed September 2019. <https://www.nar.realtor/sites/default/files/documents/metro-affordability-2018-existing-single-family-2019-06-11.pdf>.

Housing Remains Affordable in the Las Vegas Metro Region

Table 9: Housing Affordability Index of Las Vegas and Peer Regions, 2018. Source: National Association of Realtors.

| Metropolitan Area | Housing Affordability Index (HAI) | Percent Change 2017-2018 |
|---|-----------------------------------|--------------------------|
| Albuquerque, NM | 162.4 | -9.3 |
| Austin-Round Rock, TX | 152.6 | -9.2 |
| Phoenix-Mesa-Scottsdale, AZ | 141.2 | -12.1 |
| Salt Lake City, UT | 129.3 | -10.4 |
| Colorado Springs, CO | 128.1 | -13.3 |
| Orlando-Kissimmee-Sanford, FL | 124.1 | -12.4 |
| Las Vegas-Henderson-Paradise, NV | 120.0 | -14.6 |
| Sacramento--Roseville--Arden-Arcade, CA | 116.2 | -10.5 |
| Portland-Vancouver-Hillsboro, OR-WA | 114.0 | -7.3 |
| Denver-Aurora-Lakewood, CO | 109.2 | -11.1 |

Social Infrastructure

Recreation

Las Vegas is a global tourist destination and is often regarded as the entertainment capital of the United States. This status is largely due to the presence of the gaming and tourism industries in Southern Nevada's economy. The city boasts over 150,000 hotel rooms and more than 100 casinos, which offer world-renowned shows, dining, and other entertainment. Additionally, Las Vegas is host to many global conferences and trade shows, such as the Consumer Electronics Show (CES), the Global Gaming Expo (G2E), and the World of Concrete. In 2015, conventions and conferences in Las Vegas brought five million attendees to the city, injecting an estimated \$50 billion into the Southern Nevada economy.³⁰

Southern Nevada has built upon its strengths in the entertainment industry as it pursues the goal of becoming the sports and entertainment capital of the United States. Future venues, such as the Las Vegas Stadium, the MSG Sphere at the Venetian, and the Las Vegas Ballpark, promise to bring additional entertainment options to the region's residents and visitors. The existing and new venues are expected to have seating capacity for over 350,000 spectators.³¹

In addition to indoor entertainment, Southern Nevada boasts many outdoor recreation attractions, such as Lake Mead, Red Rock Canyon, and Mount Charleston, which provide year-round recreation opportunities. Recently, there also has been significant growth in professional sports in Southern Nevada, with new teams being established or relocating to the area, most prominently the Golden Knights (NHL), Raiders (NFL), Aces (WNBA), Lights (USL), and Aviators (MiLB). Regional professional sports teams serve as additional attractions for visitors while also providing long-term residents with an increased sense of community.

Human Capital Development and Retention

Education

With a population of 362,000 students, the Clark County School District (CCSD) is the 5th largest school district in the country. CCSD serves the Las Vegas metropolitan area, which includes cities and suburbs as well as rural sections of Clark County. The school district recently adopted the Focus 2024 strategic plan, which aims to bring K-12 education in Clark County in line with the high-skills needs of Nevada employers.³² The district plans to make data on achievement, access to specialized programs, enrollment, outcomes, and discipline by demographic group readily available to build credibility in the community. By closely following the strategic plan, CCSD hopes to avoid mission creep, meet business and operational goals, and maintain sound fiscal management of limited resources.

The University of Nevada, Las Vegas (UNLV) has recently been ranked as an R1 research university, indicating that it conducts a “very high” degree of academic research, and it aims to be a “top tier” university nationwide by 2025.³³ UNLV joins 129 other U.S. universities ranked as R1, making it one of the nation’s most research-intensive institutions. UNLV has been recognized as having the world’s top hospitality and leisure school; the William F. Harrah College of Hospitality was ranked number one in the world in 2017 by QS World University Rankings.³⁴ This makes Las Vegas one of the world’s preeminent destinations for an education in hospitality management.

Southern Nevada is served by other higher education institutions as well, including the College of Southern Nevada (CSN) and Nevada State College (NSC), which play important roles in developing skilled workers for the region’s industries. For example, CSN has been particularly adept at working with industry to develop a labor pool that meets the needs of new and emerging industries. CSN’s Division of Workforce and Economic Development has created workforce development programs focusing on healthcare, manufacturing, and coding/app development. This provides students who do not intend to pursue a four-year degree with critical training in the region’s growing industries.

Attraction and Retention of a Skilled Workforce

Southern Nevada’s entertainment and recreation assets have broad appeal, providing the region with a significant “pull” factor to attract workers. Likewise, the many conferences and conventions held in Las Vegas every year bring in many skilled workers, exposing them to the region’s offerings. The region’s ample business and recreation opportunities have fueled a high level of in-migration in Southern Nevada, as seen in Figure 2, as well as a notable increase in working-age population (Table 2). Migration brings to the region individuals with diverse backgrounds, skills, and entrepreneurial pursuits, adding to the region’s overall ability to meet the needs of nascent and growing industries.

Workforce Development Programs

Southern Nevada's workforce development programs are found predominantly at the region's higher education institutions, though the Clark County School District (CCSD) has also developed career and technical education (CTE) pathways. CCSD offers seven vocational pathways: agriculture and natural resources, business and marketing, education, hospitality and human services, health science and public safety, information and media technologies, and skilled and technical sciences. Over 65,000 CCSD students participate in CTE courses, and the average CCSD high school offers over 9 CTE program offerings. In addition to vocational training, CCSD has seen a remarkable increase in the number of students enrolling in dual-enrollment courses, in which they receive high school and college-level credit; over the past three years, enrollment in dual-enrollment courses has increased over 420%.³⁵

Education institutions in Southern Nevada have connected with industries in the region to develop programs and curricula that align with their workforce needs. For example, CSN has partnered with Apple to teach coding and app development to CSN students, increasing the marketability of students who complete the program to technology firms in Southern Nevada. Alongside its traditional degree programs, CSN offers non-credentialed, industry-aligned continuing education programs for in-demand occupations that fall in target industries. NSC has also begun the process of re-aligning curricula with target industries and has launched several new programs, with plans to create a data informatics program.³⁶

UNLV's College of Hospitality offers non-degree-based courses for professional development through the Sands Center for Professional Development, and its "How Vegas Does Vegas" program connects students with behind-the-scenes tours of major hospitality players in the Las Vegas market and provides training in topically-relevant areas such as esports and gaming. Additionally, the new Black Fire Innovation incubator, a partnership between UNLV and Caesars Entertainment, promises to give students valuable work experience while enhancing university-industry collaboration and testing of new technologies.^{37,38}

Other education institutions, including the University of Phoenix, Roseman University, and Touro University Nevada, have begun offering workforce development opportunities aligned with the region's targets and needs, such as healthcare. Likewise, non-academic institutions, such as the United Way of Southern Nevada (UWSN) and the Vegas Broadcasting Service, now offer non-degree training programs to secure workforce pipelines for needed occupations.³⁹

Through this expanding set of education and training opportunities, Southern Nevada has bolstered its capacity to train a workforce equipped for in-demand careers in strategically valuable industries. The ACT WorkKeys assessment measures the hard and soft skills, such as critical thinking and problem solving, of a region's workforce and certifies the region's ability to meet the needs of industry. Clark County is not only the first county in Nevada to gain the ACT Work Ready Community distinction, but it is also the largest county-based certified community in the United States.^{40,41}

Business and Industrial Development

Southern Nevada's economic strengths have historically been in the tourism, gaming, and entertainment industry. While the importance of this industry to the region remains high, the shock of the Great Recession, accompanied by Southern Nevada's slow recovery, encouraged many local governments and LVGEA to pursue relationships with businesses in sectors less susceptible to boom-bust economic cycles. As a result, Southern Nevada has observed growth in many higher skill, higher wage industries, such as autonomous systems and logistics, manufacturing, and supply chain management. Growth in non-boom-bust industries increases the resiliency of Southern Nevada's economy in the face of future recessions.

Local governments have been able to attract these firms due to the region's reputation for ease of doing business. Low taxes and accessibility to public officials have made Southern Nevada an attractive destination for many companies and industries.

The regional development authority model, as managed by LVGEA in Southern Nevada, has been successful in boosting business expansion and community engagement. In 2018, LVGEA and its regional partners facilitated business expansions and relocations projected to lead to nearly 4,400 jobs over the next five years.⁴² LVGEA's Board of Directors, known as the "LVGEA 50," is the largest business board of its kind in Nevada, signaling a high degree of community commitment and cooperation in economic development. LVGEA has achieved designation as an Accredited Economic Development Organization by the International Economic Development Council (IEDC), placing it among an elite group of high-performing and trusted economic development organizations.⁴³

Innovation

Southern Nevada's strong entrepreneurial spirit and overall business-friendly environment provide a robust foundation for regional innovation efforts. UNLV's recent attainment of Carnegie R1 (very high research activity) status and its ongoing Top Tier Initiative signify progress in and ongoing commitment to expanding local university research capabilities.⁴⁴

Overall levels of R&D funding and early-stage investment in technology companies in the region remain low, but there are a variety of institutions supporting innovation and entrepreneurship in the greater Las Vegas area. For example, UNLV hosts the Troesh Center for Entrepreneurship and Innovation and the Rebel Venture Fund, a student-led venture capital fund. Battle Borne Venture, Nevada's state venture capital program, has made numerous investments in Las Vegas area companies. The International Innovation Center @ Vegas (IIC@V) assists companies with developing and testing technologies that are specifically aligned with the City of Las Vegas' innovation and smart city priorities. The Innevation Center, created by Switch Founder and CEO Rob Roy, is a 65,000 square foot collaborative workspace and community event venue designed to support Nevada's emerging innovation-based economy.

StartUpNV, a business incubator and accelerator program located at the Innevation Center, is launching the Southern Nevada Angel Conference Seed Fund with funding from the U.S. Economic Development Administration (EDA). StartUpNV's upcoming Southern Nevada Angel Conference aims to educate local investors, help founders with pitch techniques, and assist in matchmaking between investors and startups.⁴⁵

Two regional innovation strengths to emerge in recent years are unmanned aerial systems (UAS) and data centers. Southern Nevada is home to significant military installations, including Nellis Air Force Base, and has seen early successes in the commercial UAS sector.⁴⁶ The Las Vegas-based Nevada Institute for Autonomous Systems, a non-profit entity supported by the Governor's Office of Economic Development (GOED), is one of six official UAS test sites in the nation supporting safe integration of UAS into the national airspace.

Extensive broadband connectivity and a climate with minimal natural disasters make Southern Nevada an ideal location for data centers. The development of the Switch campus in Las Vegas has been a visible sign of the local growth of this sector. The recent groundbreaking of a \$600 million Google data center in Henderson is another high-profile example of Southern Nevada's emerging innovation economy.⁴⁷

Weaknesses

Physical Infrastructure

Natural Resources and Environment

While Southern Nevada is abundant in undeveloped land, the Federal Bureau of Land Management (BLM) oversees 57% of the land surrounding Las Vegas and its suburbs. Though the BLM has historically cooperated with communities in developing federal land to accommodate regional growth, federal ownership adds a degree of uncertainty for many developments while inflating the cost for future development.⁴⁸ Extensive federal land ownership also results in a limited supply of industrial parcels that are ready-to-build for companies moving to the region. For many relocating companies, the available land lacks the infrastructure that their operations require, which can significantly inflate the costs of industrial development, especially when compared to other industrial areas in Nevada, such as the Tahoe-Reno Industrial Center.

Additionally, as Southern Nevada is a desert region, water is a scarce natural resource. Southern Nevada is heavily dependent upon the Colorado River and Lake Mead for its water; these sources provide 90% of the region's overall water supply.⁴⁹ These resources are shared with many western states, as well as areas of Mexico, which makes Southern Nevada dependent upon the conservation efforts of many other actors to achieve sustained water security.

Transportation

Southern Nevada has made significant improvements in much of its infrastructure and roadways, but deployment of public transportation in the region has been limited. The development of a light rail system through central Las Vegas has received public support but has not been pursued. Instead, public officials opted to increase the number of buses, citing the inflexibility of light rail systems to accommodate changing routes and traffic patterns, as well as the much higher cost of light rail systems as opposed to additional buses.⁵⁰ This has resulted in Las Vegas being one of the largest cities in the western United States to lack rail-based options; after the opening of new subway stations in Los Angeles, downtown Las Vegas will be the densest urban space in the nation that lacks rail-based transit.⁵¹ Additionally, excluding the four-mile monorail located on the Strip, Las Vegas is one of the only cities among its peers that lacks a light rail option for regional commuters, in addition to Albuquerque, NM and Colorado Springs, CO. The lack of an extensive intermodal transportation system with plentiful rail and bus routes for commuters will likely hinder Southern Nevada's capacity to meet the needs of a rapidly expanding population.

Social Infrastructure

Health

Southern Nevada has struggled to attract medical professionals to the region. UNLV has established a medical school to serve Southern Nevada, but without plentiful residency options for medical students, it is likely the region will continue to suffer a shortage of trained medical professionals.⁵² Similarly, a disproportionately high number of uninsured individuals in Clark County (22%), compared to state (19%) and national (15%) levels, incentivizes medical professionals to enter other markets where individuals are better able to afford medical services (Table 10).⁵³

Southern Nevada's Population Struggles with Healthcare Access

Table 10: Healthcare Indicators for Clark County, Nevada, and the United States. Sources: Southern Nevada Health District, ImpactNV

| | Percent of Adult Population Uninsured (%) (2017) | Percent of Population without a Personal Healthcare Provider (%) (2017) | Number of Medical Professionals per 100,000 Population (2016) |
|----------------------|---|--|--|
| Clark County | 21.55 | 36.20 | 237 |
| Nevada | 19.42 | 33.75 | 246 |
| United States | 14.73 | 22.45 | 288 |

In a community health needs assessment, the Southern Nevada Health District (SNHD) identified three primary barriers to healthcare for residents of Southern Nevada: cost of care; lack of insurance; and lack of available medical providers, resulting in long wait times at the office and when scheduling future appointments.⁵⁴ While a little more than three quarters of Clark County's adult population is insured, SNHD's assessment found that both those with and without insurance find the relatively high cost of healthcare and the lack of available medical providers to be significant hindrances to accessing medical services. Likewise, the geographic dispersion of providers throughout the region makes it difficult for those without personal transportation to access general practitioners as well as specialists. Some participants of SNHD's assessment suggested the development of healthcare clinics that house general practitioners, specialists, mental health professionals, dentists, and social services all at one location. Doing so would greatly increase the accessibility of the region's medical providers.⁵⁵

Safety

According to the Federal Bureau of Investigation (FBI), between 2011 and 2018 the Las Vegas metro area experienced a decrease in the rate of both violent crime (6%) and property crime (2%). Despite this improvement, the Las Vegas metro area maintains the second highest violent crime rate among peer

regions, behind only Albuquerque, NM (Figure 12). Additionally, analysis of more recent years indicates a slight increase in the violent crime rate in the Las Vegas area, rising over 2.5% between 2017 and 2018.⁵⁶

Southern Nevada has also experienced a decrease in the property crime rate, but most peer regions have witnessed greater declines. Las Vegas had the lowest property crime rate among peer regions in 2011, but had risen to the fifth lowest by 2018 (Figure 13). In summary, although crime rates have fallen over the last decade in Las Vegas, the region's relative standing among peer metros has not improved.

Crime in Las Vegas Has Fallen but Performance is Mixed Compared to Peer Metros

Figure 12. Violent Crime Rates for Las Vegas and Peer Metropolitan Areas. Source: Federal Bureau of Investigation.

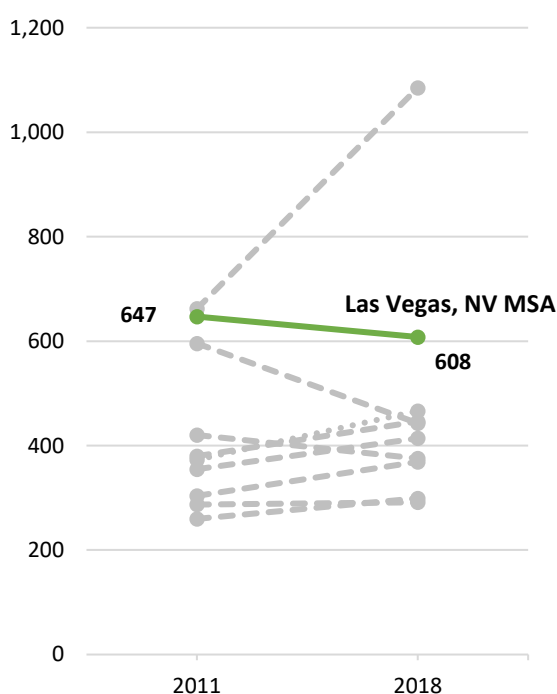
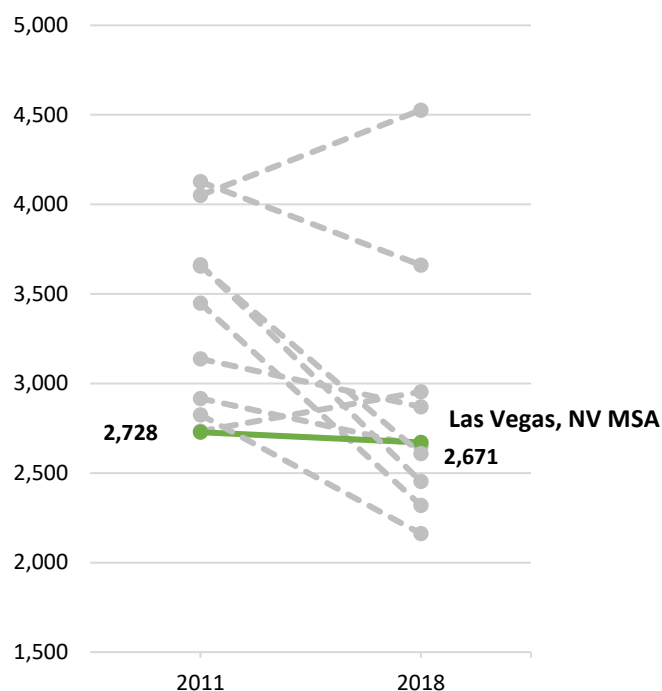


Figure 13. Property Crime Rates for Las Vegas and Peer Metropolitan Areas. Source: Federal Bureau of Investigation.



Note: These graphics were constructed using data from the Federal Bureau of Investigation's Uniform Crime Reporting (UCR) statistics database. The data used represent violent and property crime data for metropolitan statistical areas (MSAs). For Southern Nevada, this includes the city of Las Vegas, Henderson, and the remaining residents of Clark County. The rates are calculated based upon the total population of the MSA, which for Las Vegas was roughly 2.1 million in 2011 and 2.2 million in 2018. The property crime rate for Las Vegas, NV MSA for 2018 was not available, so the 2017 statistic has been used.

Southern Nevada, however, has been proactive in addressing the crime in the region, evidenced by the recent removal of the 2025 sunset of the "More Cops" sales tax, which funds increased officer hiring.⁵⁷ In addition to more hiring, partnerships between community members and law enforcement, as well as between the region's many law enforcement jurisdictions, will aid in creating a safer community.⁵⁸

Human Capital Development and Retention

Education

Southern Nevada's residents are served by the nation's fifth largest school district, Clark County School District (CCSD). CCSD is responsible for 75% of the state's K-12 school-going population, and nearly 77% of the district's student body is from a minority background, making CCSD a minority-majority district. The move toward a minority-majority district follows national trends; in 2014, for the first time, the U.S. public K-12 education system became minority-majority, with minorities accounting for just over 50% of total public school enrollment.⁵⁹ It is important as minority enrollment increases in public school districts that curricula and programs reflect the needs and capabilities of the majority of students. According to the Annie E. Casey Foundation, adopting certain initiatives, such as expanded English literacy programs in elementary school, and working harder to account for social factors that are outside the educators' control, can boost student achievement in minority-majority districts like CCSD.⁶⁰

Some stakeholders indicated that CCSD has increased the number of services offered to minority and disadvantaged students; for example, 67% of CCSD students are now on free or reduced lunch plans. However, the level of support required to serve disadvantaged students continues to increase throughout the district and may put strains on CCSD and social services organizations. Moreover, funding remains constrained for CCSD, a concern frequently expressed by education and workforce professionals in the region. CCSD spends comparatively less on a per pupil basis than other major school systems: out of the 100 largest elementary and secondary school systems in the United States, Clark County is 75th, reporting \$8,973 in spending per pupil.⁶¹

CCSD has managed to improve student achievement on many fronts, including increasing graduation rates, standardized test scores, and CTE enrollment. For example, the high school graduation rate surpassed 85% for the first time in 2019 and remains higher than the state's rate (83%). However, despite increases in recent years, CCSD has continued to struggle with student performance on standardized tests. Average ACT scores for CCSD students reached 17.54 in 2019, slightly below the state average (17.66) and notably below the national average (20.8).^{62,63} Additionally, slightly less than half of CCSD's K-12 students scored as proficient on the national English language arts standards, and even fewer (42% of elementary, 31% of middle, and 25% of high school students) ranked as proficient in mathematics.⁶⁴

Ultimately, these factors have led to a slightly-below-average level of high school degree attainment in Southern Nevada (Table 11). Below average achievement in K-12 education can also affect the region's higher education attainment levels, especially given that at UNLV, the region's premier university, nearly 85% of the student body comes from within the state.⁶⁵ This below-average achievement is reflected in the large number of local students that are required to take remedial classes before enrolling in university-level courses.

Education Achievement in Clark County Remains Below State and National Averages

Table 11: Education Achievement Comparison of Clark County, Nevada, and the United States, 2017. Source: American Community Survey, U.S. Census Bureau.

| | High school or higher (%) | High School Graduate Average Earnings | Bachelor's or higher (%) | Bachelor's Graduate Average Earnings |
|----------------------|---------------------------|---------------------------------------|--------------------------|--------------------------------------|
| Clark County | 85.3 | \$30,672 | 23.3 | \$46,398 |
| Nevada | 85.8 | \$30,748 | 23.7 | \$47,109 |
| United States | 87.3 | \$29,815 | 30.9 | \$52,019 |

The wage premium for postsecondary education in Southern Nevada is comparatively small relative to the rest of the nation, which can discourage students from pursuing education beyond high school. Although individuals can still succeed in the labor force without a 4-year degree, Southern Nevada's lack of highly educated workers, especially STEM workers essential to the region's high-tech target industries, may hamper its economic development. Nevada has the lowest portion of bachelor's degree holders in the labor force of any state in the country, and also ranks near the bottom in the share of individuals in science and engineering (S&E) occupations.⁶⁶ Furthermore, regional stakeholders consistently pointed to a limited workforce pipeline for high-tech sectors, which is borne out in the data. Nevada's development of new high-skill workers, as measured by bachelor's degree awards in science and engineering relative to the state's 18–24-year-old population, continues to fall far short of the national average.⁶⁷

Attraction and Retention of a Skilled Workforce

The historical dominance of tourism, gaming, and entertainment in the local economy of Southern Nevada has limited the extent to which the region's workforce has diversified. According to a study by the Las Vegas Convention and Visitors Authority (LVCVA), in 2017 30% of Southern Nevada's workforce was employed by the tourism industry, ranking it as the most tourism-dependent workforce in the United States. Additionally, 22% of wages earned in the region are sourced from the tourism sector, the largest share for a metropolitan area in the United States.⁶⁸ These numbers have not changed significantly since the beginning of the decade, at which time 29% (2009) of the region's workforce was employed in the tourism sector and 22% (2007) of wages were sourced from the sector.⁶⁹

In October 2019, LVGEA released its Workforce Blueprint 2.0 report, which identified the top in-demand occupations throughout Southern Nevada. For all but twelve of the top 50, Southern Nevada recorded a deficit in supply; the region did not record a surplus for any of the top ten, and only for two of the top 50. This indicates a significant unmet need for both home-grown talent and the attraction of workers from other regions.⁷⁰

Highly-educated couples considering relocation to Southern Nevada have encountered difficulty in finding jobs for both individuals. The relative lack of jobs requiring advanced degrees and in high-technology fields means that it can be challenging for certain couples to simultaneously find work in their fields of training. This “trailing spouse” problem, in which the inability of both spouses to find employment in their desired industries prevents the entire household from relocating to the region, can undermine Southern Nevada’s attempts to diversify its workforce.

Workforce Development Programs

Southern Nevada has had difficulties in developing a workforce tightly aligned with the needs of new and emerging industries. UNLV, the region’s largest 4-year higher education institution, has continued to play to its strengths in hospitality and gaming; while this has resulted in one of the world’s highest ranked hospitality schools, it has also led to the underdevelopment of other subject areas that could attract firms in industries other than hospitality and gaming. For example, rather than going to the region’s education institutions for skilled workers, stakeholders report that many manufacturing firms have taken to training employees in-house. Low confidence in the region’s labor pool and the education institutions that train them prevents many firms and industries from successfully establishing in Southern Nevada.

Business and Industrial Development

Southern Nevada has made significant progress in diversifying its economy since the Great Recession. The region’s Hachman Index, a measure of economic diversity, has continued to increase since 2012. Employment in Southern Nevada has surpassed pre-recession levels, driven by job growth in education and health services (32,600) and trade, transportation, and utilities (19,100).⁷¹ While this represents solid growth in emerging industries, Southern Nevada’s Hachman Index score remains far below nearly all major metro areas in the western United States. Cities including Phoenix, Denver, Portland, Sacramento, Salt Lake City, and Albuquerque each scored above 0.91, while Las Vegas scored 0.68 in 2016.⁷²

Even with higher job creation in non-tourism industries, Southern Nevada’s economy remains uniquely dependent on tourism. According to a 2017 LVCVA study comparing Southern Nevada with other major tourist destinations in the United States, roughly 20% of Southern Nevada’s GDP comes from the tourism industry, ranking it the most tourism-dependent city in the United States; the average for all major U.S. tourist destinations is 6% of GDP.⁷³ Comparison to a similar study in 2010 indicates that Southern Nevada’s economic reliance on tourism has not changed meaningfully over the last decade.⁷⁴ Dependence upon industries that are driven by consumer spending and disposable income, such as tourism and gaming, limited Southern Nevada’s economic resilience in the event of future recessions.

Governance

Nevada’s reputation for “small state” government and greater accessibility of decisionmakers has been advantageous in driving businesses to relocate to the state. This accessibility is seen at both the state and local level; however, in Southern Nevada, the diversity of communities, ranging from a large urban core in Las Vegas to smaller suburban and rural communities, has led to a coordination challenge when recruiting and retaining companies and talent to the region. For local economic development to be successful and sustainable into the future, coordination needs to happen at two levels: coordination between the local governments within a region, and coordination between local governments and state-wide development authorities. LVGEA has played a role in both levels of coordination.

Within Southern Nevada, local governments have had success in recruiting firms and industries to their respective jurisdictions; however, it has been a challenge to steer the focus of the local governments toward a regional perspective. A result of this dynamic is the perceived competition between local governments within the region to attract high-value firms to their specific jurisdiction, rather than using the collective assets of Southern Nevada, spread throughout the various jurisdictions, as a reason to relocate to the region. LVGEA has provided a forum for the discussion of regional challenges and the development of regional perspectives, but some stakeholders have indicated that there is a need for improved coordination between the individual local governments and LVGEA.

Innovation

Southern Nevada’s innovation ecosystem is in many respects still in an early stage of development. As discussed in the Economic Assessment, resources for science, technology, and innovation are limited, as is technology transfer activity at UNLV, the region’s largest research university. Preliminary conversations with stakeholders suggest that investor and mentorship networks for technology-focused startups are relatively undeveloped compared to other metro areas in the country.

Opportunities

Physical Infrastructure

Natural Resources and Environment

Southern Nevada's arid climate has pushed the region to take creative approaches to water conservation and resource management. The technological and policy expertise that Southern Nevadans have acquired in this domain can help support regional economic development and resiliency in the face of a changing climate and prolonged water shortages. WaterStart, a nonprofit organization formed by state and local authorities in conjunction with the University of Nevada and private firms, helps articulate shared challenges among the region's water consumers and utilities, and connects them to innovative companies with novel solutions.⁷⁵ Many of these new technologies have been implemented at the major resorts and casinos located throughout the region and brought new firms to Southern Nevada, such as the Australian firms RedEye and STAR Water Solutions.⁷⁶ WaterStart thus plays a role in optimizing Southern Nevada's water resources, but also broadly contributing to the region's emerging reputation as a global leader in water management.

In its recent land proposal, known as the Southern Nevada Economic Development and Conservation Act, Clark County identified over 56,000 acres of BLM land that, upon congressional approval, would be opened for further development in the Las Vegas Valley. The proposal also includes the designation of over 130,000 acres as off-highway vehicle recreation areas and bars any further development in areas adjacent to Red Rock Canyon National Conservation Area. This proposal represents a significant opportunity to meet the demands of a rapidly growing population; however, conservationists have warned of possible negative effects of further expansion, particularly threats to native plant species.^{77,78}

Transportation

Opportunities remain for Southern Nevada to further develop its inter- and intra-regional transportation networks, with the region supporting innovative transportation projects in various stages of development. The development of a high-speed rail (HSR) line between Southern Nevada and the greater Los Angeles metropolitan area has reached the financing and design stages, with the potential to connect more than 22 million people through a 1.5-hour train ride, and generate more than \$2 billion for the local economy.⁷⁹ To accompany the expansion of the Las Vegas Convention Center, LVCVA awarded a \$48.6M contract to the Boring Company for the construction of a 0.83-mile, three station transit system. Upon completion, the system is expected to move 4,400 passengers per hour between the various sections of the center at speeds up to 150 miles per hour.⁸⁰ If successful, there is an opportunity to expand this system to other areas of Las Vegas, improving connections between major attractions and transportation hubs, such as McCarran International Airport and the Strip.

Significant developments in air and road transportation infrastructure bring even more opportunities for economic growth and tourism. The expansion of I-11 from Southern Nevada to I-80 in Reno promises to forge stronger ties between Northern and Southern Nevada. Within Southern Nevada, the continued expansion of I-15 will reduce travel times in some of the region’s most congested areas and increase the region’s ability to handle additional commercial traffic. In addition, the continued growth of passenger travel at McCarran International Airport—which served a record 50 million passengers in 2019—further exposes the Southern Nevada market to domestic and international audiences. For instance, the Federal Aviation Administration (FAA) is currently reviewing the addition of a non-stop flight from Las Vegas to Tokyo which, if conducted daily, could amount to an economic impact of over \$140 million for the region.⁸¹

Housing

As the cost of living continues to climb in neighboring regions, particularly in California and other coastal states, Southern Nevada’s attractiveness to businesses, individuals, and households grows. Though affordability in Southern Nevada has declined in recent years, in line with national trends, the supply of new housing has generally adjusted to reflect the needs of lower- and middle-income buyers. The number of detached single-family homes being built in Las Vegas has fallen by 6% between 2018 and 2019, while the number of new attached units increased by 77% during the same time period. Attached units now account for 14% of all new residential buildings in the Las Vegas area, which is a significant increase over historical trends; in 2017, attached units accounted for less than 2% of the market.⁸²

The shift to lower-cost, higher-density housing represents an opportunity for Southern Nevada to market its relative affordability compared to its peer regions and coastal neighbors. More affordable housing better enables Southern Nevada to lure people and businesses to the region, increasing the pool of skilled young workers in the region’s workforce.

Social Infrastructure

Recreation

Southern Nevada has plentiful outdoor recreational opportunities and a strong, dynamic tourism and entertainment industry that continues to innovate and diversify its many attractions. It has made major advances in developing a cluster of professional sports teams and building out its spectator sports venues. Finally, Las Vegas’ existing strengths make it poised to capitalize on the emerging phenomenon of esports. Collectively, these trends mean that Las Vegas has the potential to achieve international recognition as the sports and entertainment capital of the world.

LVGEA’s “Vegas: Here, You Can” initiative aims to address negative perceptions about life in Las Vegas (for example, lack of cultural assets and family-friendly communities), by soliciting residents to share their positive experiences as residents and business owners in Southern Nevada. The initiative helps to

showcase the recreational opportunities available to locals outside of the entertainment industry, such as the vast amounts of outdoor activities within a short drive of the city center.⁸³ Some stakeholders indicated the initiative would have greater buy-in from regional participants if a series of clear metrics were developed.

Professional sports and esports are a promising economic opportunity for Southern Nevada. New professional sports teams have been established in or relocated to the area, like the Las Vegas Raiders and the Vegas Golden Knights, while Las Vegas has also capitalized on the rapid growth and momentum of esports. The Luxor Casino recently opened the HyperX Esports Arena, a 30,000 square foot multi-level arena for esports competitions.⁸⁴ Esports stands out as an industry of opportunity for Southern Nevada, with global revenue reaching nearly \$1 billion in 2018 and forecasted to reach \$3 billion by 2022. Nearly 400 million people viewed esports in 2018, a number that is expected to grow to 560 million by 2022.⁸⁵

Business and Industrial Development

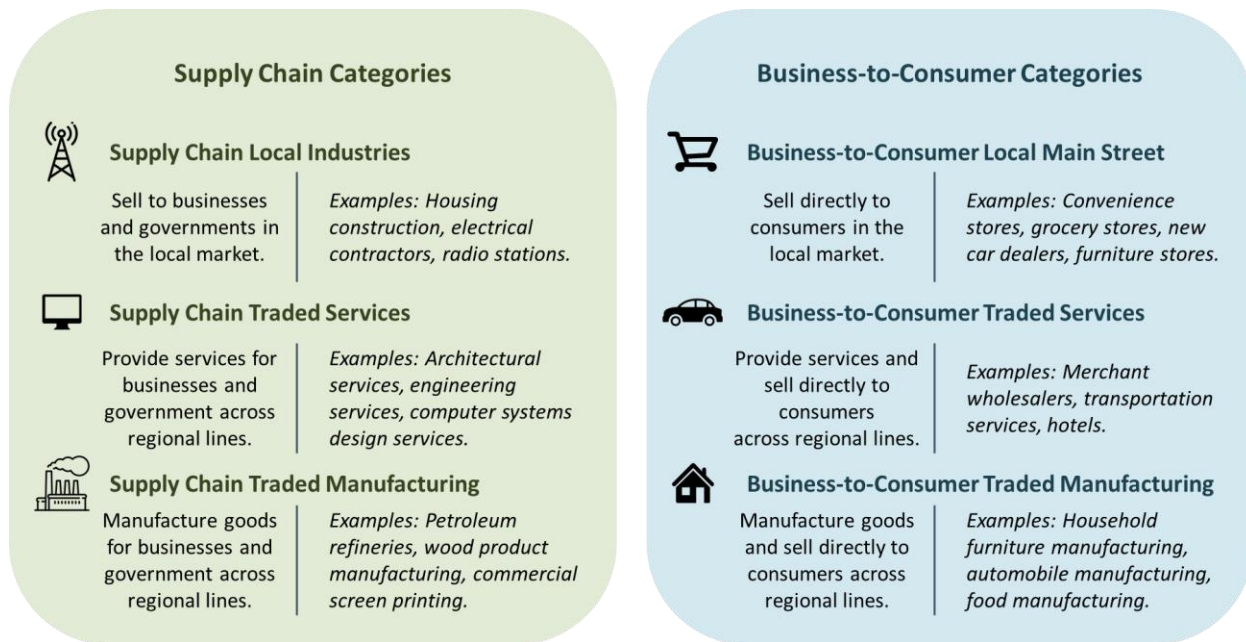
Southern Nevada continues to build on its pre-eminent strength as a tourism destination while growing its economy across diverse industry sectors. LVGEA has helped create 18,000 jobs in the region between 2012-2016, with a total economic impact of more than \$11B.⁸⁶ Expanding upon this diversified growth is a significant opportunity for Southern Nevada to increase the resiliency of the region's economy in the event of future economic shocks.

Employment in Southern Nevada's target industries has increased significantly over the last decade (Table 4). Job growth has been especially high in Emerging Technology (46%), Business Headquarters and Services (33%), and Logistics, Manufacturing, and Supply Chain Management (33%). Other target industries, such as Autonomous Systems; Financing, Banking, and Insurance; Gaming, Tourism, and Conventions; and Healthcare Services and Medical Education, saw notable increases as well. Further breaking down these industries into their various sub-industries can identify areas of interest for guiding regional business development efforts.

Industries are often classified as either manufacturing or services but can also be distinguished between "supply chain" industries that primarily sell to other businesses, and "business-to-consumer" (B2C) industries that focus on consumer sales. Industries that are part of the supply chain economy are generally more innovative and pay higher wages. Supply chain industries also produce specialized inputs and are desirable because they are associated with positive externalities to learning and regional innovation capacity. These industries have both downstream and upstream linkages with multiple industries, allowing for diffusion, and often benefit from co-location with geographically concentrated consumers. Conversely, B2C industries tend to be more cyclical and pay lower wages.⁸⁷

Supply chain and B2C industries can be further divided into local and traded services and traded manufacturing, leaving a total of six categories in this classification system.

Figure 14. Supply Chain and Business-to-Consumer Categories Summary.



Each of LVGEA's target industries is made up of multiple sub-industries that are spread across the above categories.^{viii} Within these sub-industries, job growth was significantly greater for supply chain industries. Growth in supply chain categories represents an important shift in the Southern Nevada economy in which economic activity of firms is less concentrated in local markets, instead reaching clients in both local and inter-regional markets.

Autonomous Systems; Business Headquarters and Services; Emerging Technology; Financing, Banking and Insurance; and Logistics, Manufacturing, and Supply Chain Management each witnessed the greatest job growth from 2011 to 2017 in supply chain categories, particularly supply chain traded services. Industries such as Autonomous Systems and Emerging Technology have higher average wages, each around \$100,000 (Figure 7), and further growth in their respective supply chain sub-industries, including engineering services and data processing, is likely to attract higher paying jobs to Southern Nevada.

Job growth in Finance, Banking, and Insurance (FBI) was focused primarily in jobs with wages above the region's average earnings. The supply chain sub-industries driving growth in the FBI industry include real estate credit and claims adjusting, with the former averaging wages above \$113,000 and the latter above \$80,000. Growth in these jobs, however, has largely come at the expense of B2C FBI sub-

^{viii} As in the target industry trend portion of the Summary Background and Economic Assessment, SRI bases its analysis here on 6-digit NAICS industry data as available in the EMSI platform.

industries such as commercial banking. Business Headquarters and Services (BHS) saw significant growth in supply chain sub-industries as well. However, the two supply-chain sub-industries driving growth in BHS were concentrated at either extreme of the income distribution for the industry as a whole; while jobs in the corporate, subsidiary, and regional managing offices sub-industry saw average earnings of nearly \$150,000, jobs in the telemarketing bureaus and other contact centers sub-industry saw average earnings of less than \$37,000, which is below the average wage for all industries in Southern Nevada.

The only target industries that saw job growth greatest in the business to consumer (B2C) category were Gaming, Tourism, and Conventions (GTC) and Health Care Services and Medical Education. Trends in GTC job growth indicate a shift away from casinos and gambling, which witnessed an overall decrease in employment from 2011 to 2017, and toward dining and other types of recreation activities. While this trend represents a falling reliance of local workers on casinos and gambling for employment, wages in the dining and other types of recreation sub-industry are below the casino-related sub-industries, both of which are below the average for all industries in Las Vegas. Growth in Health Care Services and Medical Education B2C sub-industries, though, has been significant, particularly in those occupations with higher-than-average wages. The B2C sub-industries of general medical and surgical hospitals and offices of physicians both pay high wages, at \$90,000 and \$105,000, respectively.

As LVGEA promotes Southern Nevada as a compelling place to live and do business, it should consider how best to build off Las Vegas' existing marketing resources and reputation. LVCVA has been highly effective in promoting Las Vegas as a business and leisure travel destination. The organization has vast resources dedicated to bringing tourists and business visitors from across the country and globe to Southern Nevada, spending roughly \$100 million per year in advertising.⁸⁸ There are opportunities for LVGEA and other regional organizations to build upon LVCVA's work and market their messages to the high volume of visitors brought to Las Vegas. The message of Southern Nevada as a compelling place to live and establish business permanently should be seen as a message that compliments, rather than conflicts with, the region's appeal as a hub for entertainment and conventions.

Innovation

Southern Nevada has an exciting chance to become a regional powerhouse for testing and deploying new technologies. The region's aggregate resources for R&D are limited compared to other major metro areas in the nation—and will be for the foreseeable future—which means that Southern Nevada's leaders must be selective in how they pursue the development of the regional innovation ecosystem.

Southern Nevada should explore how to better utilize the presence of military installations, such as Nellis Air Force Base, for new ideas and technology in the civilian market. Recent research indicates that government defense-related R&D spurs R&D activity in the private sector, leading to significant economic spillovers and productivity gains.⁸⁹ Overall federal defense spending and R&D funding is

unlikely to expand significantly in the near future, which suggests that Southern Nevada seek to maximize benefits from existing federal innovation assets.

Southern Nevada's entrepreneurial culture, pro-business regulatory environment, and geography collectively make it a promising location for developing and testing autonomous, artificial intelligence (AI), and smart city-related technology. The region has existing strengths in UAS, and further development of the commercial UAS sector is a logical course of action. More expansively, if policymakers create an environment amenable to testing and demonstrating technology, Southern Nevada can benefit from integrating new innovations into daily life, even if they are originally developed outside the region.

Significant developments in the deployment of emerging technology are already occurring in the urban core of Las Vegas. The City of Las Vegas established its Innovation District in 2016 for testing emerging technology and is advancing autonomous vehicles, intelligent traffic management, and other IT and AI-related innovations.⁹⁰ Lyft and autonomous vehicle company Aptiv have provided more than 70,000 paid autonomous rides in Las Vegas, one of the largest commercial deployments of autonomous vehicles to date.⁹¹ The newly opened International Innovation Center @ Vegas (IIC@Vegas) provides further possibilities to recruit companies from across the world that can create and apply innovations that are relevant to city priorities.⁹²

New technology may endanger some jobs in the gaming and hospitality industry, but it also creates opportunities to deliver exciting new customer experiences. Las Vegas boasts well-resourced resorts that have a record of creatively pairing art and technology in their attractions. UNLV is well-positioned to support innovation in this sector with its International Gaming Institute and Black Fire Innovation laboratory. Effective collaboration between industry and academia could establish Southern Nevada as a world leader in the use of autonomous technology in the gaming and hospitality sector. Furthermore, thoughtful consideration of how to pair deployment of these new technologies with new worker training can accelerate the region's transition toward higher skilled jobs.

The Las Vegas area is also positioned to make progress as a center for innovation in healthcare, particularly sports science, which logically compliments the region's expansion in professional sports. UNLV's establishment of a medical school in 2017 has filled an important gap in the region's healthcare sector. UNLV has recently announced a partnership with Switch, one of Las Vegas' keystone technology companies, focused on sports science. The multi-year initiative will not only allow for greater support of UNLV student-athletes through data analytics, but also enable collaboration between Switch and faculty researchers in sports science research and technology development.⁹³

Union Village, a 155-acre, \$1.2B development in the Southern Nevada suburb of Henderson, represents a significant innovation in the delivery of healthcare services. Termed as an "integrated healthcare village," Union Village is the first of its kind in the nation as a master-planned community focused on health and wellness.⁹⁴ Union Village will provide healthcare to community residents (including those in

senior-living units) through a variety of healthcare facilities, most notably Henderson Hospital, which opened in 2016. The community is also planning the development of an expansive wellness center with athlete training facilities. The expansion of professional sports in Las Vegas gives projects like Union Village prospects to cultivate productive partnerships in the field of sports medicine, further strengthening the region's emerging network of healthcare innovation.

Threats

Physical Infrastructure

Natural Resources and Environment

The ability of Southern Nevada to develop land to accommodate its growing population is heavily dependent upon the cooperation of the federal government, including the BLM and the Department of Defense (DoD), in selling the land it owns throughout the region. While the BLM has historically cooperated with developers and sold land at reasonable prices, the presence of DoD-owned military installations throughout the region, coupled with the shrinking supply of developable land, has the potential to drastically slow the process of development in Southern Nevada. This could essentially “landlock” Las Vegas and its communities from further development.

Water scarcity will remain a risk factor for Southern Nevada and the region must remain vigilant in its water management to maintain a resilient economy. Southern Nevada is classified as “low risk” by the World Resource Institute’s Water Risk Atlas,⁹⁵ and does not expect to encounter significant water shortages for the foreseeable future. That said, sustained and rapid economic and population growth in the American Southwest may increase shared demands on the Colorado River, the critical water source for the region. Declining snowpack driven by climate change may also reduce the availability of water to draw from the Colorado River.

Southern Nevada is generally safe from major natural disasters such as hurricanes and earthquakes, but the risk posed by rising temperatures and heatwaves has increased over the years.^{96,97} The National Weather Service reports that heat kills more individuals than any other weather event in the United States. This is particularly true for Southern Nevada, where a study by the Desert Research Institute (DRI) found that heat-related deaths have been increasing over the last ten years, making them the deadliest weather event in the region. The average number of severe heat events has increased by nearly 43%, from about three events per year in 2007-2009 to nearly five per year in 2010-2016. This has led to more than 430 heat-related deaths in Las Vegas during the same time period.⁹⁸

Housing

While housing in Southern Nevada remains competitive with peer and surrounding regions, the rate of home price appreciation in Las Vegas remains the highest in the nation at 9.7% since the summer of 2018; the rate of appreciation has decreased since the previous year, at which point it was 14%.⁹⁹ However, if appreciation rates remain above national and peer region averages, Southern Nevada could quickly lose its competitive edge against other regions’ cost of living.

Part of the reason for the increase in housing costs in Southern Nevada, aside from price recovery from the Great Recession, is the increasing costs to acquire and develop land in Southern Nevada. In 2015,

the average price of an acre in the Las Vegas metropolitan area was just under \$320,000, a 10.5% increase over 2014 values and a 50% increase over 2013 values. While this remains below the pre-recession high of over \$950,000 per acre in 2007, the increasing cost to acquire land often results in higher prices for buyers, pricing some households out of the market.¹⁰⁰ Additionally, though the Bureau of Land Management often sells large parcels at lower prices, the land has no transportation or utility infrastructure, which significantly increases the costs to developers.

Social Infrastructure

Health

Sprawling development and limited public transportation in the region can lead residents to adopt less healthy lifestyles. Southern Nevada already experiences high temperatures throughout much of the year, and as these temperatures rise, residents may be further discouraged from walking and exercising outdoors. The National Climate Assessment, released by the U.S. Global Change Research Program, finds that people living in urban areas, such as Las Vegas, are particularly susceptible to negative health impacts as temperatures rise. Increasing temperatures exacerbate the effects of air pollution, for which Las Vegas has historically ranked poorly. In its 2019 annual State of the Air report, the American Lung Association (ALA) ranked Las Vegas as the 13th worst city in the nation for high ozone days, which leads to severe negative health impacts, including aggravated asthma, respiratory-related hospital admissions, and even premature death.^{101,102} While Las Vegas' rankings have improved in recent years, climate change will likely pose serious threats to the health of Southern Nevada's residents.

Recreation

The threat of rising temperatures also potentially impacts the recreation opportunities in Southern Nevada, particularly outdoor natural assets like Lake Mead. An increasing number of days where temperatures exceed 100 degrees has led to locals as well as tourists cancelling outdoor recreation activities in favor of indoor entertainment options.¹⁰³

Human Capital Development and Retention

Education

The performance and reputation of Southern Nevada's K-12 education system may hinder regional economic development. This is a multi-faceted issue: on the one hand, the system's perception as overloaded and underfunded worries prospective residents when deciding whether to relocate to the region. On the other hand, a weak workforce pipeline limits the region's pool of qualified workers available to firms looking to relocate to the region. Additionally, stakeholders expressed concern that limited university-industry partnerships and collaborations in Southern Nevada can result in curricula that are not well-aligned with industry needs.

Attraction and Retention of a Skilled Workforce

Perceptions of Southern Nevada are highly influenced by Las Vegas' "Sin City" reputation. While this image has helped bolster the region's status as a global entertainment powerhouse, it has also instilled attitudes that the region is not family-friendly. This perception has been difficult for Las Vegas to move past and is an oft-cited reason for families' apprehension about moving to the area. A continued reliance upon the region's adult entertainment offerings can counteract efforts made by development authorities and local governments to attract a greater diversity of individuals and workers to further diversify the region's workforce.

Additionally, the shortcomings of the region's education system identified in the preceding section have been known to deter families from moving to the region. This is an additional factor that prevents skilled workers, especially those that have children in school, from relocating to the area. Though there are neighborhoods throughout the region that are known to have high-performing schools, an overall uncertainty toward the K-12 system threatens the region's ability to attract and retain highly skilled workers.

Increased automation in the gaming and hospitality industry may jeopardize the employment security of the many workers employed in Las Vegas area resorts. Although projections vary considerably by study, the Las Vegas metro area is frequently cited as one of the nation's regional economies most vulnerable to job losses through automation. For example, one study by researchers at the Institute for Spatial Economic Analysis concluded that roughly 65% of jobs in Las Vegas are susceptible to automation by 2035.¹⁰⁴ A Brookings Institution analysis calculated that nearly half of tasks across all occupations in the Las Vegas metro area were susceptible to automation, a proportion considerably higher than the national average.¹⁰⁵ It is increasingly plausible that a significant portion of jobs in Southern Nevada's largest industry will be radically changed, if not made obsolete, by current technological trends.

Business and Industrial Development

Southern Nevada's continued reliance on the tourism industry to drive economic growth and employment (discussed in more detail in the weaknesses section) indicates that the region is still highly susceptible to national and international economic boom-bust cycles. With 20% of the region's GDP coming from the tourism industry, Southern Nevada remains vulnerable and could experience significant economic distress in the event of a recession, as it did in the late-2000s and early 2010s.

References

- ¹ “Regions.” Nevada Governor’s Office of Economic Development. Accessed September 2019.
<http://www.diversifynevada.com/why-nevada/regions/#southern>.
- ² “Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2018.” U.S. Census Bureau. Accessed September 2019. <https://factfinder.census.gov/>.
- ³ “Distressed Communities Index: U.S. Counties.” Economic Innovation Group. Accessed September 2019.
<https://eig.org/dci/2018-dci-map-national-counties-map>.
- ⁴ “Occupational Employment Statistics.” Bureau of Labor Statistics. Accessed September 2019.
<https://www.bls.gov/oes/tables.htm>.
- ⁵ American Community Survey, 2011 and 2017. U.S. Census Bureau.
- ⁶ “Southern Nevada Target Industry Validation Study.” Las Vegas Global Economic Alliance. March 2017.
https://www.lvgea.org/wp-content/uploads/2017/03/LVGEA_1122BBA.pdf.
- ⁷ “Unify, Regionalize, Diversify: An Economic Development Agenda for Nevada.” Brookings Institution, Brookings Mountain West, SRI International. 2011.
https://www.brookings.edu/wpcontent/uploads/2016/06/1114_nevada_economy.pdf.
- ⁸ For example, transportation equipment manufacturing (NAICS 336) falls under both the Autonomous Systems and Logistics, Manufacturing, and Supply Chain Management industries.
- ⁹ “Top Tier Initiative.” University of Nevada Las Vegas. Accessed September 2019.
<https://www.unlv.edu/toptier/initiative>.
- ¹⁰ National Science Foundation, National Center for Science and Engineering Statistics, Higher Education Research and Development Survey 2018.
- ¹¹ “SWOT Analysis: An in-depth analysis of regional strengths, weaknesses, opportunities and threats.” U.S. Economic Development Administration. Accessed November 2019. <https://www.eda.gov/ceds/content/swot-analysis.htm>.
- ¹² “Innovative Metrics for Economic Development: Final Report.” SRI International. November 17, 2017.
<https://www.eda.gov/files/performance/Innovative-Metrics-ED-Report.pdf>
- ¹³ “Overview.” U.S. Economic Development Administration. Accessed September 2019.
<https://www.eda.gov/ceds/>.
- ¹⁴ “Climate of Nevada.” Western Regional Climate Center. Accessed September 2019.
<https://wrcc.dri.edu/narratives/NEVADA.htm>.
- ¹⁵ “Top 10 Solar States.” Solar Energy Industries Association. Accessed September 2019.
<https://www.seia.org/research-resources/top-10-solar-states-0>.
- ¹⁶ “Renewable Energy Technical Potential.” The National Renewable Energy Laboratory. Accessed September 2019.
<https://www.nrel.gov/gis/re-potential.html>.
- ¹⁷ “2018 Water Resource Plan & Water Budget.” Southern Nevada Water Authority. 2018.
<https://www.snwa.com/assets/pdf/water-resource-plan.pdf>.

- ¹⁸ Elizabeth Daigneau. "Las Vegas Bets on Becoming a Hub for Water Innovation." Governing. July 2016. <https://www.governing.com/topics/transportation-infrastructure/gov-las-vegas-water-innovation.html>.
- ¹⁹ "Water Smart Landscapes Rebate." Southern Nevada Water Authority. Accessed September 2019. <https://www.snwa.com/rebates/wsl/index.html>.
- ²⁰ "Las Vegas - McCarran International Airport." Federal Aviation Administration. September 10, 2018. <https://www.faa.gov/nextgen/snapshots/airport/?locationId=35>.
- ²¹ "Destinations from Las Vegas." Flightsfrom.com. Accessed September 2019. <https://www.flightsfrom.com/LAS/destinations>.
- ²² "McCarran Celebrates 50 Million Passengers." Clark County. Accessed January 2019. <https://www.clarkcountynv.gov/public-communications/news/Pages/McCarran-Celebrates-50-Million-Passengers.aspx>.
- ²³ "Complete Streets." Regional Transportation Commission of Southern Nevada. Accessed September 2019. <https://www.rtcnv.com/projects-initiatives/initiatives/complete-streets/>.
- ²⁴ "Transportation & Infrastructure." City of Las Vegas. Accessed September 2019. <https://www.lasvegasnevada.gov/Business/Planning-Zoning/Master-Plan/Transportation-Infrastructure>.
- ²⁵ "Nevada 2018 Infrastructure Report Card." Infrastructure Report Card. Accessed October 2019. <https://www.infrastructurereportcard.org/wp-content/uploads/2018/12/ASCE-Report-Card-2018-Final.pdf>
- ²⁶ Jameson Zimmer. "FCC Broadband Definition Has Changed Before and Will Change Again." BroadbandNOW. February 10, 2018. <https://broadbandnow.com/report/fcc-broadband-definition/>.
- ²⁷ "Percentage of population with broadband providers." Federal Communications Commission. Accessed September 2019. https://broadbandmap.fcc.gov/#/area-comparison?version=jun2018&tech=acfosw&speed=25_3&searchtype=county&geoid=32&searched=y.
- ²⁸ American Community Survey, 2018. U.S. Census Bureau.
- ²⁹ Trey Arline. "Initiatives seek to grant internet access to low-income families." The Nevada Independent. July 19, 2019. <https://thenevadaindependent.com/article/city-of-las-vegas-initiative-seeks-to-grant-internet-access-to-low-income-families>.
- ³⁰ "The 7 Largest Conventions Held in Las Vegas." The International School of Hospitality. Accessed September 2019. <https://tisoh.edu/the-7-largest-conventions-held-in-las-vegas/>.
- ³¹ "Southern Nevada Sports and Entertainment Outlook 2019." Las Vegas Global Economic Alliance. November 2018. <https://www.lvgea.org/wp-content/uploads/2018/12/LVGEA-SportsOutlook-FINAL-72dpi.pdf>.
- ³² "Focus 24: Clark County School District's Five-Year Strategic Plan." Clark County School District. 2019. <https://newsroom.ccsd.net/wp-content/uploads/2019/02/Focus-2024.pdf>.
- ³³ "Top Tier Initiative." University of Nevada, Las Vegas. Accessed September 2019. <https://www.unlv.edu/toptier/initiative>.
- ³⁴ "UNLV Harrah Hotel College Ranked World's Best for Hospitality and Leisure Management." University of Nevada, Las Vegas. Accessed September 2019. <https://www.unlv.edu/news/release/unlv-harrah-hotel-college-ranked-worlds-best-hospitality-and-leisure-management>.

- ³⁵ Workforce Blueprint 2.0. Las Vegas Global Economic Alliance. 2019. https://www.lvgea.org/wp-content/uploads/2019/10/LVGEA_Workforce-Blueprint-2.0-Report_FINAL_10_1_19.pdf.
- ³⁶ Ibid.
- ³⁷ Black Fire Innovation. Accessed October 2019. <http://www.blackfireinnovation.com>.
- ³⁸ Sands Center for Professional Development. University of Nevada, Las Vegas. Accessed September 2019. <https://www.unlv.edu/sandscenter>.
- ³⁹ Workforce Blueprint 2.0. Las Vegas Global Economic Alliance. 2019. https://www.lvgea.org/wp-content/uploads/2019/10/LVGEA_Workforce-Blueprint-2.0-Report_FINAL_10_1_19.pdf.
- ⁴⁰ Ibid.
- ⁴¹ “WorkKeys Assessments.” ACT. Accessed October 2019. <http://www.act.org/content/act/en/products-and-services/workkeys-for-employers/assessments.html>.
- ⁴² “2018 Annual Report.” Las Vegas Global Economic Alliance. Accessed September 2019. <https://www.lvgea.org/wp-content/uploads/2019/02/2018-Annual-Report-digital.pdf>.
- ⁴³ Nicole Santero. “LVGEA Becomes an Accredited Economic Development Organization.” Las Vegas Global Economic Alliance. January 26, 2018. <https://www.lvgea.org/lvgea-becomes-accredited-economic-development-organization/>.
- ⁴⁴ “Top Tier.” University of Nevada, Las Vegas. Accessed September 2019. <https://www.unlv.edu/toptier>.
- ⁴⁵ Southern Nevada Angel Conference. StartUpNV. Accessed September 2019. <https://startupnv.org/snac/#>.
- ⁴⁶ See for example: “Southern Nevada Target Industry Validation Study.” p.21. Las Vegas Global Economic Alliance. Accessed September 2019. https://www.lvgea.org/wp-content/uploads/2017/03/LVGEA_1122BBA.pdf.
- ⁴⁷ Eli Segall. “Google Holds Ceremonial Groundbreaking for Henderson Data Center.” Las Vegas Review-Journal. July 1, 2019. <https://www.reviewjournal.com/business/google-holds-ceremonial-groundbreaking-for-henderson-data-center-1699324/>.
- ⁴⁸ Daniel Rothberg. “Clark County Seeks Federal Bill as It Looks to Open More Public Lands for Development.” The Nevada Independent. March 5, 2018. <https://thenevadaindependent.com/article/clark-county-seeks-federal-bill-as-it-looks-to-open-more-public-lands-for-development>.
- ⁴⁹ “2018 Water Resource Plan and Water Budget.” Southern Nevada Water Authority. 2018. <https://www.snwa.com/assets/pdf/water-resource-plan.pdf>.
- ⁵⁰ Robert Lang and William Brown, Jr. “The People in Las Vegas Wanted Light Rail, but the Leaders Voted for a Bus.” Las Vegas Sun. April 28, 2019. <https://lasvegassun.com/news/2019/apr/28/the-people-wanted-light-rail-but-the-leaders-voted/>.
- ⁵¹ Ibid.
- ⁵² 2018 Southern Nevada State of Sustainability Report. ImpactNV. 2018. <http://www.clarkcountynv.gov/comprehensive-planning/eco-county/Documents/2018report.pdf>.
- ⁵³ Community Health Needs Assessment. Clark County, Nevada. May 2019. <https://media.southernnevadahealthdistrict.org/download/sothd/2019-community-health-needs-assessment.pdf>.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ “Preliminary Semiannual Crime Statistics for 2018 Released.” Federal Bureau of Investigation. February 25, 2019. <https://www.fbi.gov/news/stories/2018-preliminary-semiannual-uniform-crime-report-released-022519>.

⁵⁷ Doug Puppel. “Metro Poised to Hire 600 Officers As 'More Cops' Sales Tax Kicks In.” Nevada Public Radio. February 21, 2017. <https://knpr.org/knpr/2017-02/metro-poised-hire-600-officers-more-cops-sales-tax-kicks>.

⁵⁸ Community Health Needs Assessment. Clark County, Nevada. May 2019. <https://media.southernnevadahealthdistrict.org/download/sothd/2019-community-health-needs-assessment.pdf>.

⁵⁹ Grace Chen. “White Students are Now the Minority in U.S. Public Schools.” Public School Review. September 4, 2018. <https://www.publicschoolreview.com/blog/white-students-are-now-the-minority-in-u-s-public-schools>.

⁶⁰ “Race for Results: Building a Path to Opportunity for All Children.” The Annie E. Casey Foundation. 2014. <http://www.aecf.org/m/resourcedoc/AECF-RaceforResults-2014.pdf>.

⁶¹ U.S. Census Bureau, *Public Elementary-Secondary Education Finances: Fiscal Year 2017* (Table 18). <https://www.census.gov/data/tables/2017/econ/school-finances/secondary-education-finance.html>

⁶² Nevada Accountability Portal. Nevada Department of Education. Accessed September 2019. <http://nevadareportcard.com/DI/nv/clark/2019>.

⁶³ “2018 State Percent of ACT-Tested High School Graduates, Average Composite Score, and Percent Meeting Benchmarks by Subject.” ACT.org. 2018. <https://www.act.org/content/dam/act/unsecured/documents/cccr2018/Average-Scores-by-State.pdf>.

⁶⁴ Nevada Accountability Portal. Nevada Department of Education. Accessed September 2019. <http://nevadareportcard.com/DI/nv/clark/2019>.

⁶⁵ “University Student Profile - Fall 2018.” University of Nevada, Las Vegas. Accessed September 2019. https://ir.unlv.edu/IAP/Reports/Content/UniversityStudentProfile_Fall2018.aspx.

⁶⁶ “Bachelor's Degree Holders in the Labor Force (Percent).” National Science Board. Science and Engineering Indicators 2018. Accessed September 2019. <https://www.nsf.gov/statistics/state-indicators/indicator/bachelors-degree-holders-in-labor-force/table>;

“Individuals in Science and Engineering Occupations as a Percentage of All Occupations (Percent).” National Science Board. Science and Engineering Indicators 2018. Accessed September 2019. <https://www.nsf.gov/statistics/state-indicators/indicator/se-occupations-to-all-occupations/map/2018>.

⁶⁷ “Bachelor's Degrees in Science and Engineering Conferred per 1,000 Individuals 18–24 Years Old (Degrees).” National Science Board. Science and Engineering Indicators 2018. Accessed September 2019. <https://www.nsf.gov/statistics/state-indicators/indicator/se-bachelors-degrees-per-1000-18-24-year-olds>.

⁶⁸ “The Relative Dependence on Tourism of Major U.S. Economies.” Las Vegas Convention and Visitors Authority. January 2019. https://assets.simpleviewcms.com/simpleview/image/upload/v1/clients/lasvegas/EIS_Tourism_Dependence_Jan_2019_FINAL_e332cdc1-7e25-4179-b4e9-63e1890adefe.pdf.

- ⁶⁹ Economic Impact Series, Volume I, Issue VIII. Las Vegas Convention and Visitors Authority. Accessed September 2019. http://water.nv.gov/hearings/past/Spring%20-%20Cave%20-%20Dry%20Lake%20and%20Delamar%20Valleys%202011/Exhibits/SNWA%20Exhibits/SNWA_Exh_033_Applied%20Analysis,%202010.pdf.
- ⁷⁰ “Workforce Blueprint 2.0.” Las Vegas Global Economic Alliance. Accessed October 2019. <https://www.lvgea.org/data-and-research/workforce-blueprint/>.
- ⁷¹ “The State of Economic Development: Winning the Jobs War.” Las Vegas Global Economic Alliance. February 1, 2019. <https://www.lvgea.org/wp-content/uploads/2017/02/2017-State-of-Economic-Development.pdf>.
- ⁷² John Restrepo. “The Indy Outlook: Las Vegas Economy: A for Growth, D+ for Diversity.” The Nevada Independent. May 7, 2017. <https://thenevadaindependent.com/article/indy-outlook-las-vegas-economy-growth-d-diversity>.
- ⁷³ “The Relative Dependence on Tourism of Major U.S. Economies.” Las Vegas Convention and Visitors Authority. January 2019. https://assets.simpleviewcms.com/simpleview/image/upload/v1/clients/lasvegas/EIS_Tourism_Dependence_Jan_2019_FINAL_e332cdc1-7e25-4179-b4e9-63e1890adefe.pdf.
- ⁷⁴ Economic Impact Series, Volume I, Issue VIII. Las Vegas Convention and Visitors Authority. Accessed September 2019. http://water.nv.gov/hearings/past/Spring%20-%20Cave%20-%20Dry%20Lake%20and%20Delamar%20Valleys%202011/Exhibits/SNWA%20Exhibits/SNWA_Exh_033_Applied%20Analysis,%202010.pdf.
- ⁷⁵ WaterStart. Accessed September 2019. <https://waterstart.com/>.
- ⁷⁶ Matt Weiser. “How Las Vegas Aims to Be the Next Silicon Valley for Water Innovation.” GreenBiz. October 25, 2017. <https://www.greenbiz.com/article/how-las-vegas-aims-be-next-silicon-valley-water-innovation>.
- ⁷⁷ Miranda Willson. “Critics of Clark County Lands Bill Hope it’s not too Late to Rein in Proposal.” Las Vegas Sun. August 15, 2019. <https://lasvegassun.com/news/2019/aug/15/critics-clark-county-lands-bill-hope-rein-proposal/>.
- ⁷⁸ “Southern Nevada Economic Development and Conservation Act.” Clark County, Nevada Government. September 4, 2019. http://www.clarkcountynv.gov/airquality/Documents/ClarkCountyLandsBill/Landsbill_Sept04_2019_final.pdf.
- ⁷⁹ Cinthia Maldonado. “High-Speed Train from Las Vegas to Southern California Back on Track, Construction Set for 2020.” ABC News 10 San Diego. August 28, 2019. <https://www.10news.com/news/high-speed-train-to-ca-back-on-track-construction-set-for-2020>.
- ⁸⁰ Aarian Marshall. “Las Vegas Orders Up a Boring Company Loop.” Wired. May 22, 2019. <https://www.wired.com/story/las-vegas-orders-up-boring-company-loop/>.
- ⁸¹ Steve Wolford. “Non-Stop Air Service from Las Vegas to Tokyo Could Be a Reality Again.” NBC 3 News Las Vegas. March 18, 2019. <https://news3lv.com/news/local/non-stop-air-service-from-las-vegas-to-tokyo-could-be-a-reality-again>.
- ⁸² “LAS VEGAS HOUSING 1Q19: Detached New Home Base Prices Fall for First Time in a Long Time as Builders Pivot to Smaller Product.” MetroStudy. May 10, 2019. <https://www.metrostudy.com/las-vegas-housing-1q19-detached-new-home-base-prices-fall-first-time-long-time-builders-pivot-smaller-product/>.

- ⁸³ Las Vegas Global Economic Alliance. Accessed September 2019. <https://www.lvgea.org/here-you-can/>.
- ⁸⁴ Luxor Las Vegas. Accessed September 2019. <https://luxor.mgmresorts.com/en/entertainment/esports-arena-las-vegas.html>.
- ⁸⁵ Lucy Koch. "Esports Playing in the Big Leagues Now." EMarketer. February 5, 2019. <https://www.emarketer.com/content/esports-disrupts-digital-sports-streaming>.
- ⁸⁶ "The State of Economic Development: Winning the Jobs War." Las Vegas Global Economic Alliance. February 1, 2019. <https://www.lvgea.org/wp-content/uploads/2017/02/2017-State-of-Economic-Development.pdf>
- ⁸⁷ Delgado, M., and K. Mills. 2018. "The Supply Chain Economy: A New Framework for Understanding Innovation and Services." Harvard Business School Working Paper. https://www.hbs.edu/faculty/Publication%20Files/18-071_b7268529-3131-4053-9e4c-5b06c3e86e81.pdf.
- ⁸⁸ "Popular Annual Financial Report." Las Vegas Convention and Visitors Authority. June 30, 2018. https://assets.simpleviewcms.com/simpleview/image/upload/v1/clients/lasvegas/FYE_2018_PAFR_974f3cee-e473-4b80-8d85-76865d40680e.pdf.
- ⁸⁹ Enrico Moretti, Claudia Steinwender, John Van Reenen. "The Intellectual Spoils of War? Defense R&D, Productivity and International Spillovers." The National Bureau of Economic Research. November 2019. <https://www.nber.org/papers/w26483>
- ⁹⁰ "Technology Opportunities." City of Las Vegas. Accessed September 2019. <https://www.lasvegasnevada.gov/Business/Economic-Development/Technology-Opportunities>.
- ⁹¹ Adam Frost. "Aptiv and Hyundai Unite for Autonomous Driving Project." Traffic Technology Today. September 25, 2019. <https://www.trafficechnologytoday.com/news/autonomous-vehicles/aptiv-and-hyundai-unite-for-autonomous-driving-project.html>.
- ⁹² "International Innovation Center @ Vegas Opens Downtown." City of Las Vegas. Accessed September 2019. <https://www.lasvegasnevada.gov/News/Blog/Detail/international-innovation-center-vegas-opens-downtown>.
- ⁹³ "UNLV, Switch Launch Multi-Year Partnership for Sports Technology Innovation." University of Nevada Las Vegas News Center. Accessed October 2019. <https://www.unlv.edu/news/release/unlv-switch-launch-multi-year-partnership-sports-technology-innovation>.
- ⁹⁴ Bryan Horwath. "Union Village Vision in Henderson Becoming a Reality." Las Vegas Sun. July 1, 2019. <https://vegassun.com/business/2019/jul/01/union-village-vision-in-henderson-becoming-a-reality/>
- ⁹⁵ Water Risk Atlas. Aqueduct. Accessed September 2019. <https://www.wri.org/applications/aqueduct/water-risk-atlas/>.
- ⁹⁶ "Weather Fatalities 2018." National Weather Service. Accessed September 2019. https://www.nws.noaa.gov/os/hazstats/resources/weather_fatalities.pdf.
- ⁹⁷ Jeniffer Solis. "Hotter Summers Leading to More Las Vegas Deaths, DRI Study Says." Nevada Current. June 5, 2019. <https://www.nevadacurrent.com/blog/hotter-summers-leading-to-more-las-vegas-deaths-dri-study-says/>.
- ⁹⁸ E.R Bandala, K Kebede, N. Jonsson, et. al. "Extreme Heat and Mortality Rates in Las Vegas, Nevada: Inter-Annual Variations and Thresholds." 2019 <https://link.springer.com/article/10.1007/s13762-019-02357-9>.

- ⁹⁹ “LAS VEGAS HOUSING 1Q19: Detached New Home Base Prices Fall for First Time in a Long Time as Builders Pivot to Smaller Product.” MetroStudy. May 10, 2019. <https://www.metrostudy.com/las-vegas-housing-1q19-detached-new-home-base-prices-fall-first-time-long-time-builders-pivot-smaller-product/>.
- ¹⁰⁰ Eli Segal. “Las Vegas Land Isn’t Dirt Cheap, but Here’s Why It Isn’t Selling Like It Once Was.” Las Vegas Sun. January 15, 2016. <https://lasvegassun.com/news/2016/jan/15/land-isnt-dirt-cheap-las-vegas-heres-why-it-isnt-s/>.
- ¹⁰¹ “State of the Air.” American Lung Association. Clark County, NV. Accessed September 2019. <https://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/nevada/clark.html>.
- ¹⁰² Fourth National Climate Assessment. 2018. <https://nca2018.globalchange.gov/chapter/14/>.
- ¹⁰³ C. Moon Reed. “How This Summer’s Extreme Weather Has Hampered Region’s Outdoor Recreation.” August 14, 2018. <https://lasvegassun.com/news/2018/aug/14/summer-extreme-weather-curb-region-outdoor-activit/>.
- ¹⁰⁴ Jess Chen, Johannes Moenius. “OPINION: Two-thirds of jobs in this city could be automated by 2035.” MarketWatch. August 5, 2017. <https://www.marketwatch.com/story/two-thirds-of-jobs-in-this-city-could-be-automated-by-2035-2017-07-05>.
- ¹⁰⁵ Mark Muro, Robert Maxim, and Jacob Whiton. “Automation and Artificial Intelligence: How machines are affecting people and places.” Brookings Institution. January 24, 2019. <https://www.brookings.edu/research/automation-and-artificial-intelligence-how-machines-affect-people-and-places>.