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Report of the Southern Nevada Infrastructure Development Group

Prepared for:

Nevada Governor's Office of
ECONOMIC DEVELOPMENT
Empowering Success

September 2021

Prepared By:

RCG economics

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September 27, 2021

Mr. Michael Brown
Executive Director
Governor's Office of Economic Development
State of Nevada
808 W. Nye Lane
Carson City, Nevada 89703

Re: Report of the Southern Nevada Infrastructure Working Group ("the Report")

Dear Mr. Brown:

RCG Economics LLC ("RCG") is pleased to submit the referenced report to the Governor's Office of Economic Development ("GOED") regarding the subject report.

The Report focuses on documenting the results of six monthly Zoom meetings of the Southern Nevada Infrastructure Working Group ("the WG") established by GOED. The meetings were held between February 25, 2021 and July 29, 2021. The WG was comprised of 31 thought leaders from Nevada's private and public sectors. They represented a broad range of organizations and economic sectors. RCG, with assistance of GOED, also conducted 24 two-on-one individual and confidential Zoom meetings with members of the WG and third-party subject matter experts from around the state and the U.S. The WG meetings also included presentations by some the WG members and the subject matter experts.

The Report is in the form of a narrative document along with any relevant figures (exhibits). There is also a companion slide deck that was produced. It should be noted that RCG is not responsible for the statements or interpretations made by GOED, members of the WG or other third parties regarding the contents of the Report.

Finally, it should be noted that RCG does not necessarily share the views and opinions expressed by GOED staff, WG members and other third parties expressed during the course of the WG meetings and the private interviews with WG members and others as reflected in the Report.

If you have any questions, please do not hesitate to contact us at your convenience by phone at 702-967-3188 ext. 101 or by email.

Regards,

RCG Economics LLC

RCG Economics LLC

ACKNOWLEDGEMENTS

RCG would like to the acknowledge the following staff of the Nevada Governor's Office of Economic ("GOED") for their assistance and help during the course of our work:

- Michael Brown, Executive Director-GOED
- Kris Sanchez, Deputy Director-Southern Nevada-GOED
- Jeanette Holguin, Business Development Coordinator-GOED
- Susan Skaggs, Executive Assistant to Deputy Director-GOED

GOED's Las Vegas office furnished RCG with meeting transcripts, scheduled and conducted meetings with WG members, and provided copies of presenters' slideshows, without which RCG could not have completed this Report.

We would also like to acknowledge all of the members of the Southern Nevada Infrastructure Working Group for the valuable insights, observations, advice and opinions they shared with us during the course of this project, not only in the Infrastructure Working Group meetings, but also in the individual two-on-one interviews. Finally, we would like to acknowledge all of the third-party subject experts we interviewed who provided their valuable insights through presentations and discussions.

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I. PURPOSE & METHODOLOGY

This report ("the Report") conveys the discussions and views expressed during six monthly public Zoom meetings held from February through July 2021. The meetings were coordinated the Governor's Office of Economic Development ("GOED). The meetings were of the Southern Nevada Strategic Infrastructure Development Working Group ("the WG") established by GOED in 2021. As part of this initiative, GOED invited 31 thought leaders from around Nevada to be members of the WG. WG members were from both the private and public sectors and represented a broad range of economic organizations and sectors with a wide range of expertise. RCG Economics ("RCG") was retained by GOED as the technical consultant to GOED to document the proceedings of the WG's meetings in a report and to participate in the WG meetings and individual two-on-one interviews with WG members. The Report herein does not recommend courses of action for GOED to address Southern Nevada's infrastructure needs.[1] As such it is descriptive of the views and opinions of the WG members and invited subject matter experts rather than being prescriptive.

A. Purpose

Following a December 2020 report prepared by SRI International ("Nevada's Plan for Recovery and Resilience"), GOED observed the need to address structural deficiencies and respond to the needs of industry in a post-pandemic economy by emphasizing infrastructure investment/development. The WG was assembled to evaluate Southern Nevada's infrastructure assets and deficiencies, to identify its opportunities in the Southwest macro region (see Figure II-1), and to envision a niche for Southern Nevada that would add significant value to the state's overall economic ecosystem. Other priorities in this mission included:

- Ensuring that infrastructure enhancement will benefit Southern Nevada's most at-risk communities,
- Ensuring that it will benefit small businesses,
- Avoiding incremental and siloed approaches to infrastructure development, and
- Planning beyond and across jurisdictional boundaries.

The overarching goal of GOED in this endeavor, as described by Kristopher Sanchez the Southern Nevada Deputy Director of GOED and Chairman of the WG at the group's first meeting, is to position Southern Nevada as a highly attractive destination for private sector investment focused on 21st-century-relevant growth. GOED sought the advice of the WG in creating an infrastructure "roadmap" for the region that will diversify Southern Nevada's economy while responding to the needs of industry, advancing realistic opportunities with timelines and benchmarks that will put Southern Nevadans back to work. From

[1] Section IV (Next Steps) does include RCG's reflections on the value and structure of a proposed committee that would report to the Board of the State Infrastructure Bank.

February through July 2021, the WG heard from regional and national experts on key infrastructure issues. The members also met privately with the WG's Chairman and RCG Economics' Principal, John Restrepo, to explore the issues in greater depth. Salient comments from those private discussions are reflected, anonymously, in Section III of this Report.

GOED's endeavor was designed to support the goals and missions of a wide variety of stakeholders in Southern Nevada, as demonstrated by the diversity of WG representation[2]:

- Government entities: Las Vegas Valley Water District, Las Vegas Convention and Visitors Authority, McCarran International Airport, Regional Transportation Commission, Nevada Office of Energy, Nevada Department of Transportation, Nevada Commission on Minority Affairs, Nevada Department of Conservation & Natural Resources, Nevada Department of Motor Vehicles.

- Local government offices: City of Las Vegas, City of North Las Vegas, City of Henderson, City of Boulder City, Clark County.

- Utilities and service providers: NV Energy, Southwest Gas, Cox Communications.

- Nonprofits: Las Vegas Global Economic Alliance.

- Institutions of higher education: Nevada System of Higher Education, University of Nevada—Las Vegas, Nevada State College, College of Southern Nevada, Desert Research Institute.

Naturally, the definition of "infrastructure" has been crucial to these conversations since it defines the parameters of the discussion. The WG focused on traditionally core infrastructure topics such as energy, water, road and rail networks, and digital information technology, but members also explored sustainability/conservation, education, health, childcare, and other themes, especially in their private meetings with Chairman Sanchez and RCG. Informal definitions of infrastructure used by WG members in the private interviews ranged from, "the built environment, everything it takes to support that built environment, and the social infrastructure" to "infrastructure connects people—to places, to opportunities, and, most importantly, to a job."

On that note, Nevada was recently ranked 40th by CNBC in a list of the "Top States for Business," receiving poor marks for education, technology/innovation (patents, research grants, technology

[2] The attendance and representation at each of the monthly meetings of the WG can be found at the beginning of each summary of the meetings in Section II.

investments), and a category called "Life, Health, and Inclusion" that includes quality of life but also evaluates health-care resources, pandemic response, and equity/inclusion. Most relevant for the Report, Nevada was ranked 40th despite receiving one of the highest grades for infrastructure, based primarily on the state's solar energy developments, reliability of the power grid, and condition of the roads and highways; it received "mediocre marks for [the] speed and affordability" of its virtual infrastructure (i.e., broadband), however.[3] Notably, CNBC's methodology for evaluating a state's infrastructure considers, "the availability of sites for expansion and development"; while New Mexico was named the 4th worst state for infrastructure due in part to the scarcity of land—"There are not enough sites available for development in a state where nearly half the acreage is public land"—no mention of this scarcity was made for Nevada, which was named 2nd best for infrastructure.

But reviews of the state's infrastructure are not uniformly positive, underscoring the importance of the definition when assigning a grade. In April of this year, the White House released state-by-state fact sheets/report cards as part of the administration's advocacy for the American Jobs Plan. In this assessment, Nevada received a "C" for infrastructure. The report card highlighted public transit commuting, drinking water, affordable housing, broadband, childcare, and veterans' healthcare as areas needing improvement, among others.[4] The CNBC definition does not mention public transit, housing, childcare, or healthcare specifically. CNBC may also have overestimated the "availability of sites for expansion and development" in Nevada. At the first meeting in February, RCG briefed the WG (see Page II-7) on the region's current supply of commercial land as well as the economic impacts of having an insufficient supply of employment land (an analysis RCG recently completed for NAIOP, the Commercial Real Estate Development Association).[5]

This variance in the "grades" given by the two sources underscores the importance of the definition, which—for this Report—was not imposed by GOED but rather emerged organically through the conversations, both as a large group and in the private, 2-on-1 meetings. Rather than making that

[3] www.cnbc.com/2021/07/13/americas-top-states-for-business.html. CNBC defined infrastructure for the rankings (in the methodology section) as follows: "We measure the vitality of each state's transportation system by the value and volume of goods shipped by air, waterways, roads and rail. We look at the condition of highways and bridges, and the availability of air travel. We consider access to markets by measuring the population within 500 miles of each state. With the rise of remote work, we consider the quality, availability, and price of broadband service in each state. We rate each state's utility infrastructure, including the condition of drinking water and wastewater systems, and the reliability of the electrical grid. We measure each state's sustainability in the face of climate change. And we consider the availability of sites for expansion and development."

[4] www.whitehouse.gov/briefing-room/statements-releases/2021/04/12/white-house-releases-state-by-state-fact-sheets-to-highlight-nationwide-need-for-the-american-jobs-plan/

[5] "Southern Nevada Industrial Land Analysis: Inventory & Implications for Economic Growth & Economic Development," RCG Economics, July 2020; the Executive Summary of that study is included on page II-67 of this Report.

definition an objective of the WG, Chairman Sanchez allowed the members and presenters to talk about infrastructure as they understood it and as it related to their unique fields of expertise.

Methodology

Between February 2021 and Jul 2021, RCG participated in the monthly meetings of the WG and received written transcripts of the discussions and copies of presentations from GOED staff. Beginning in May 2021, the Chairman Sanchez recognized the added value of conducting "two-on-one" interviews with WG members as well as with selected presenters and stakeholders; RCG's Principal, John Restrepo, joined Chairman Sanchez in those interviews. Audios from the interviews were transcribed by RCG and have been summarized, anonymously, in Section III. Finally, RCG conducted its own research on the subject of regional infrastructure planning and has documented that research in Section IV. Next Steps.

II. Infrastructure Working Group Monthly Meetings

A. Meeting 1 - February 25, 2021
Positioning Southern Nevada and the Region for the Future

Introduction

The first meeting of WG took place on February 25, 2021. The WG brought a broad range of Nevada regions, organizations, and stakeholders together to identify infrastructure projects and enhance the growth of new industries, support long-term sustainable job growth as well as growth across sectors throughout the region. The WG originated out of the Nevada Governor's Office of Economic Development's ("GOED") state plan for economic development, "Recovery & Resilience: Nevada's Plan for the Future Beyond the Pandemic." The expected duration of the WG was approximately six months with the potential to extend, if necessary.

Kristopher Sanchez, Deputy Director - Governor's Office of Economic Development and Chair of the WG, called the meeting to order and the members introduced themselves.

Kristopher Sanchez, Deputy Director and WG Chair, Governor's Office of Economic Development

Opening Comments

Much has been written about the post-COVID world and the changing nature of industry--from supply chain realignment, to accelerated adoption of remote work, to the increased utilization of e-commerce. As industry adjusts to the post-pandemic operational environment, GOED has observed the need to re-emphasize infrastructure development, to address structural deficiencies, enhance competitiveness and respond to the needs of industry. GOED has worked with SRI international which has produced a report titled *"Nevada's Plan for Recovery & Resilience"* in January 2021. There are a number of recommendations in this report, including one that involved developing new approaches to cluster identification and development and one that involves integrating Nevada into regional and global value chains. With those recommendations in mind, the WG was assembled to address the following questions:

- What are Southern Nevada's infrastructure assets and deficiencies?

- What are the region's opportunities in the Southwest macro region and how does Southern Nevada create a niche that adds value to the ecosystem while benefiting industry?

- Are the traditional approaches to inland ports and intermodal facilities the right methodologies for the region, or does a new methodology need to be develop?

- How does Southern Nevada ensure that sustainability and conservation are part of the solution and not secondary to development, and how can the region lead in these areas?

- How should the region approach the utilization of new technology, testing, adoption and deployment in infrastructure development and planning?

- How can the region spur the growth of industry 4.0 high technology manufacturing, given land constraints and water scarcity?

- How does Southern Nevada ensure that infrastructure enhancement will benefit the most at-risk communities and small businesses?

- How does the region eliminate incremental and siloed approaches to infrastructure development in the region and move beyond jurisdictional boundaries?

The purpose of the WG was to inform GOED as the agency seeks to create an infrastructure roadmap for the region that will diversify the Southern Nevada economy and respond to the needs of industry while advancing realistic opportunities with proposed timelines and benchmarks that will help Southern Nevadans get back to work.

During its monthly meetings, the WG heard from national experts on these issues and provide time for WG members to engage with the experts and their fellow stakeholders. GOED understands that infrastructure can include educational facilities, health facilities and much more; however, the focus has been on core/traditional infrastructure such as energy, roads/bridges, water, rail networks and the electric grid with the addition of broadband infrastructure. GOED's objective is to "position the region as a destination for private sector investment in targeted 21st-century relevant growth."

The WG is supported in its endeavors by John Restrepo and Grant McCandless of RCG Economics—the technical lead.

Norm Anderson, Chairman and CEO of CG/LA Infrastructure

Digital Infrastructure

Not just the Nevada economy, but the economy of the entire country, is now moving into the "fourth industrial revolution"—a decade of disruption similar to what happened in the early 1900s with the advent of the internal combustion engine.

The forces of digitization and 5G technology will dramatically influence the regional economy going forward. They are creating, not only machine-to-machine learning capability (Artificial Intelligence), but also an end-to-end logistics system nationwide, and Southern Nevada sits at an ideal location between the port of Long Beach and the rest of the country. This will create all sorts of opportunity for innovation, for driving equity and for driving opportunity. For example, one of the projects CG/LA Infrastructure is exploring is whether an autonomous speedway could be developed for driverless trucks by placing the 5G posts these trucks require in thousand-yard increments, coast-to-coast.

The firm is also working with a company that is bringing a high voltage line from the wind fields of Wyoming to Las Vegas and building the first ultra-high voltage line in the U.S. For comparison, China is building 12 ultra-high voltage lines this year and putting about $2 trillion over the next four years into this new infrastructure of digitization and electrification. Likewise, Southern Nevada should start thinking about the country "in terms of an end-to-end autonomous vehicle matrix," where, instead of bringing goods from overseas—with pollution from ships, air transport, etc.—goods are produced locally. Distributing those goods from the areas of production will mean many new jobs for local economies.

State infrastructure banks that identify priority projects, conduct feasibility studies and then bring resources to those projects, especially in a state like Nevada, will be key to the fourth industrial revolution—creating a network between states and manufacturing centers across the country. And once the priority projects are identified, the State of Nevada should think through how to make them attractive to the private sector. In 1980, 80 percent of the infrastructure spent in the country came from the federal government through federal government transfers. Last year it was 30 percent, meaning that the weight of responsibility for infrastructure on the states has increased dramatically.

To make Southern Nevada's infrastructure goals happen, individual investors and firms are being asked to make large investments in the future of the state, and "the people who are supposed to make those investments do not necessarily get along with the public sector." We have a "huge disconnect between the public and private sector in the U.S., and a huge disconnect between the public and people building

infrastructure that needs to be addressed" at the beginning of the process; the country needs a rapid way of identifying priority projects and then getting those projects done.

One possibility that is politically practical is to use traditional, public resources to fund traditional infrastructure projects and then attract private investment to do innovative infrastructure projects like those discussed above. There is a huge amount of change ahead, and a lot of positive opportunities. The federal government is going to play a role but they are not going to play the decisive role; it is "local heroic leadership that really matters right now because you have got to move fast"—together.

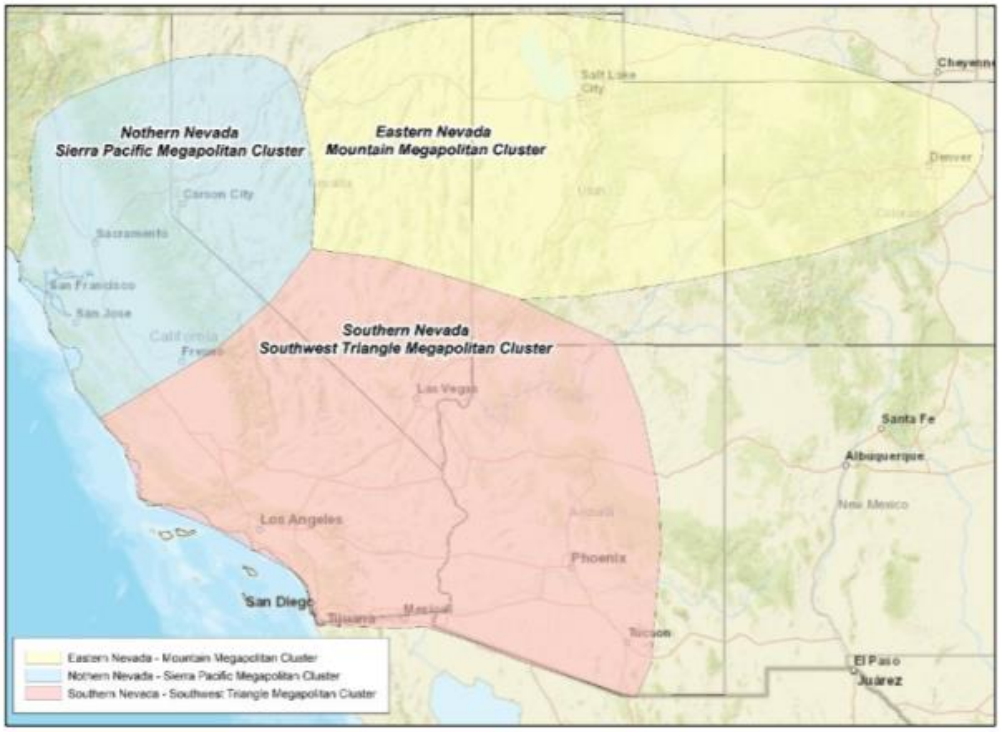
Roland Stephens, Director, SRI Center for Innovation, Strategy and Policy

Nevada's Economic Development Strategy

Nevada is not expected to have recovered fully from the pandemic, in terms of GDP growth, until 2022, but then the recovery should begin accelerating more quickly. In the state's recovery plan prepared by SRI, there are a number of immediate recovery tasks detailed, but Mr. Stephens also asked what are the visionary policies that need to be enacted—not in the next month or two—but in the next year or two to set Nevada up for the future, especially for resilience and diversification? How does the state realize those opportunities?

Infrastructure is a critical part of the answer. Southern Nevada, in particular, is tied to Southern California and Phoenix, and then Northern Nevada with the Bay Area, and Eastern Nevada is tied to the Mountain West (see Figure 1). Notably, the Southwest Triangle Cluster—Los Angeles to Phoenix to Las Vegas—has "close to 53 million residents within a reasonable driving and trading distance." But to take advantage of a great location infrastructure has to be built. The following are specific infrastructure components that were in the SRI report along with the capabilities needed to realize the strategies.

Figure II-1: Nevada's Membership in Three Megapolitan Clusters



Map Source: Robert E. Lang and Jaewon Lim, Brookings Mountain West–UNLV, 2020

In the case of advanced manufacturing, Nevada has the potential to become "a world-class, zero carbon economy. Electrification is coming." During one of Meeting #1's presentations, it was noted that, while there will be niche uses for carbon-based resources 10 years from now, most other business operations are going to be electrified. As one participant stated, "Southern Nevada should be home to the renewable energy and battery supply chain. Nevada should be home to electric vehicle technologies. Nevada should have its streets and its roadways and its other infrastructures set up for electrification."

Second, Nevada should become a remote work hub. People already want to live here; people already want to visit the region as tourists and conventioneers but the core attributes that matter for remote work are needed. The must-haves are reliability of power, communications and connectivity to get to McCarran International Airport.

As for logistics, there a number of issues that must be addressed, including but not limited to:

- When trucks leave the gate at the Port of Long Beach, what are they going to do?
- What will these trucks look like in the future?
- Where will they stop?

- How will they be serviced?
- What will be the factories and other kinds of activities that they will be connected to?
- What role can Southern Nevada play in that tremendous opportunity?

Expanded passenger and cargo capabilities and facilities, and employment land uses being considered in the Ivanpah area of Clark County, along the I-15 toward Los Angeles, are absolutely critical. Building I-11 between Southern Nevada and the Phoenix MSA is also important, as is increasing rail and truck connectivity between Southern and Northern Nevada. One of the Meeting #1 presenters also noted that, "Logistics companies want to be at a crossroads. Build the infrastructure that turns Southern Nevada into an authentic crossroads."

Regarding broadband, complete grid interconnectivity needs to be constructed. Greater interconnectivity would "allow Nevada to take advantage of more renewable energy sources, perhaps geothermal in the North, perhaps bring in wind power from elsewhere" (Wyoming, etc.). If West Coast tech companies are going to consider Nevada, "they expect to buy 100 percent renewable energy for their facilities. So, you need the infrastructure to make that possible." Electric vehicle charging infrastructure is one piece of the larger "smart city "puzzle.

As for public policy, first, Nevada should become the place where small businesses experiment with emerging and new technologies. Secondly, it is essential for Southern Nevada's economic and social future that the "Southern Nevada Economic Development and Conservation Act'' ("the Act"), introduced in Congress by Nevada U.S. Senator Catherine Cortez-Masto, be passed because the region does not currently have a sufficient amount of developable employment land, especially in the Las Vegas Valley, to accommodate a more resilient and diversified economy over the medium and long-terms. An adequate supply of such land is needed to accommodate the latest state and local economic development strategies and target industry goals. This is discussed below.

John Restrepo and Hubert Hensen, RCG Economics

The Land Scarcity Issue in Southern Nevada

RCG was commissioned to prepare a hybrid study of two previous studies completed in 2015 and 2016. One was commissioned by NAIOP-Southern Nevada with Dr. Alan Schlottmann of UNLV, a regional economist, that examined the economic impacts of having an insufficient amount of land to accommodate growth, i.e., impact on Southern Nevada's GDP, jobs and earnings. The second study was commissioned by LVGEA which hired RCG to evaluate the current inventory of vacant developable land in the Las Vegas

Valley conducive to commercial (industrial, office and retail) development. The source parcel and acreage data were provided by the Southern Nevada Water Authority.

RCG's latest (2020-21) "employment land" study for NAIOP-Southern Nevada blends the analyses from the two previous studies—examining the region's commercial land supply but also the economic impacts of having an insufficient supply of land.[1] While the scarcity of land is well-known in Southern Nevada, when tourists and business travelers come or pass through the Las Vegas Valley they often presume there is large amount of developable land. And land is oftentimes an overlooked but critical component of the production process, together with labor (especially skilled labor), capital and now technology. These four are key components to having a modern and resilient economy.

Land scarcity started becoming an issue around 2004-2005 when the economy was strong and growing rapidly. With the Great Recession in 2008 through, say 2015, the demand for land was reduced. Given the recent growth, land constraints are top of mind again, here in the Valley, particularly. The Act is being discussed right now in Congress and it is a critical part of this discussion. To have a healthy economy, the state needs a healthy supply of land for development, balanced with a healthy, natural environment.

The results of RCG's recent study, again using Southern Nevada Water Authority parcel and acreage data, indicated a few primary areas where there are clusters of parcels meeting the above criteria. The clusters include the Speedway area, Apex, Aliante, Centennial Hills and West Henderson, just off the I-15 freeway. A scoring methodology was then applied, based on several factors after consulting with developers in the region. Out of 19,000 acres that made the final parcel list, approximately 9,000 acres are better suited to development for the purposes of this study, approximately 45 percent of the total. Since 19,000 acres is not a massive number, RCG wanted to compare that to how much demand there might be over the next 15 years or so (see next page).

As part of the study, RCG focused on parcels 20+ acres that were not federally-owned and near freeways or near rail and that have a slope no greater than seven percent, because those are the conditions necessary to build large-scale logistics, manufacturing and other kinds of warehousing distribution buildings and projects. These parcels comprised about 6,400 acres of local/state government land (1,194 acres) and private sector land (5,222 acres). This a very limited supply of developable to accommodate GOED's economic development goals for Southern Nevada during the next three to five years. In order to

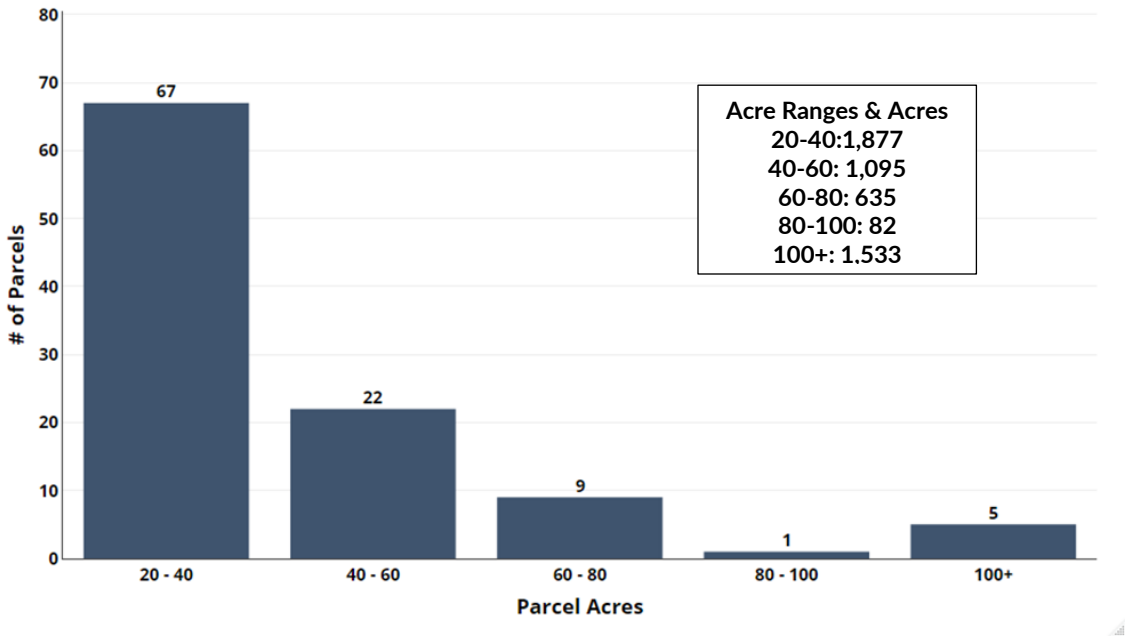
[1] "Southern Nevada Industrial Land Analysis: Inventory & Implications for Economic Growth & Economic Development," RCG Economics, July 2020. The Executive Summary is included on page II-67 of this Study.

get a final list of parcels, RCG limited its search to commercial, industrial and open-space parcels in and around the Valley, mostly within the Bureau of Land Management ("BLM") "disposal boundary", RCG also removed oddly-shaped parcels that are conducive for developing employment centers. We also removed parcels that are owned by residential developers, assuming that those will be developed for housing, as well as parcels that are further than one mile from a road, highway, or freeway.

Woods & Poole, a national prominent forecasting firm was used for the Clark County job projections through 2035. RCG estimates that approximately 14,100 acres would be needed by 2035 to accommodate Woods & Poole's job forecast for the region (see Figure II-19). While that number is less than the 19,000 vacant acres in the Las Vegas Valley that RCG initially identified, only 9,000 acres of those acres are potentially suited for commercial (e.g., industrial, office, retail, lodging/hospitality) development, according to the scoring methodology developed by RCG in its 2020-21 report.

Additionally, not all of the 9,000 acres RCG found to be most conducive to commercial development will accommodate larger-scale projects. Specifically, only six percent of the parcels have 80 acres or more, and larger parcels will be required for certain types of uses, like, logistic centers as well as industrial/business parks. (See Figure 2). This especially true regarding e-commerce and supply-chain operations. These parcels contain approximately 1,600 acres. Generally speaking, having an inadequate supply of larger parcels will detrimentally effect recruiting attract a diverse set of companies and industries to Southern Nevada. This will, in turn, negatively affect the state's and region's economic development efforts and strategies, ultimately, its resilience.

Figure II-2: Privately Owned Employment Lands Parcels in the Las Vegas Valley, by Size, 2019



Source: Southern Nevada Water Authority, RCG Economics

The scarcity and suitability of land is a well-documented economic disadvantage for regions. RCG modeled how this disadvantage would affect the Southern Nevada economy under two scenarios verses a scenario without land constraints ("the base-case").

In a three-percent cost disadvantage scenario, RCG projects annual economic growth to decline from 2.8 percent to 1.9 percent by 2035, while in a five-percent cost disadvantage scenario it would expect annual GDP growth to decline to 1.3 percent over the same timeframe (2035). In other words, a mere five percent cost disadvantage results in a more than 50 percent decline in yearly GDP growth over the next 15 years, which translates to a 14 to 22 percent reduction in economic output.

As for employment, RCG's model estimates that the jobs in Southern Nevada would be reduced by 11 to 18 percent, or roughly 200,000 (three-percent cost disadvantage) to 330,000 (five-percent cost disadvantage) fewer jobs in 2035 versus the base-case unconstrained land scenario.

In terms of dollar value, the difference in economic output in a five percent cost disadvantage scenario compared to the base-case equates to a loss of about $70 billion of GDP between 2018 and 2035. In the three-percent case, the loss would amount to a $43 billion reduction in GDP compared to the base-case by 2035. See Figures 3 and 4 below).

The bottom line: For Southern Nevada to create a more resilient economy, developable land is critical piece of the puzzle, just skilled labor, capital and technology. Land supply influences the range of and quality of companies who are considering relocating or expanding in Southern Nevada as well as the future of the "fourth industrial revolution," (i.e., digitalization, automation, AI and robotics). The question of how to marry the region's developable land resources to its economic development strategies, target industries and infrastructure needs is a critical piece of the larger puzzle that must be kept front and center as Southern economy recovers from the Covid-19 pandemic and begins the long process of evolving and becoming more resilient.

Figure II-3: Effects of Cost Disadvantage on Southern Nevada Gross Product: 2018 – 2035

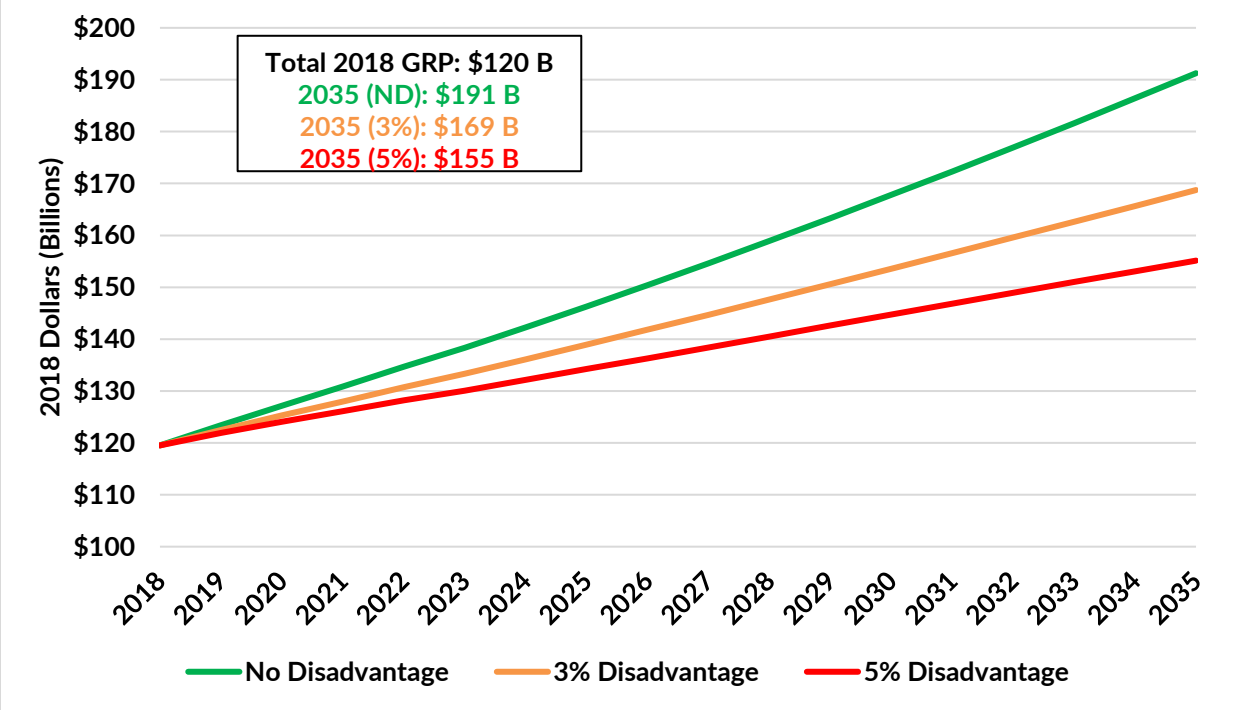
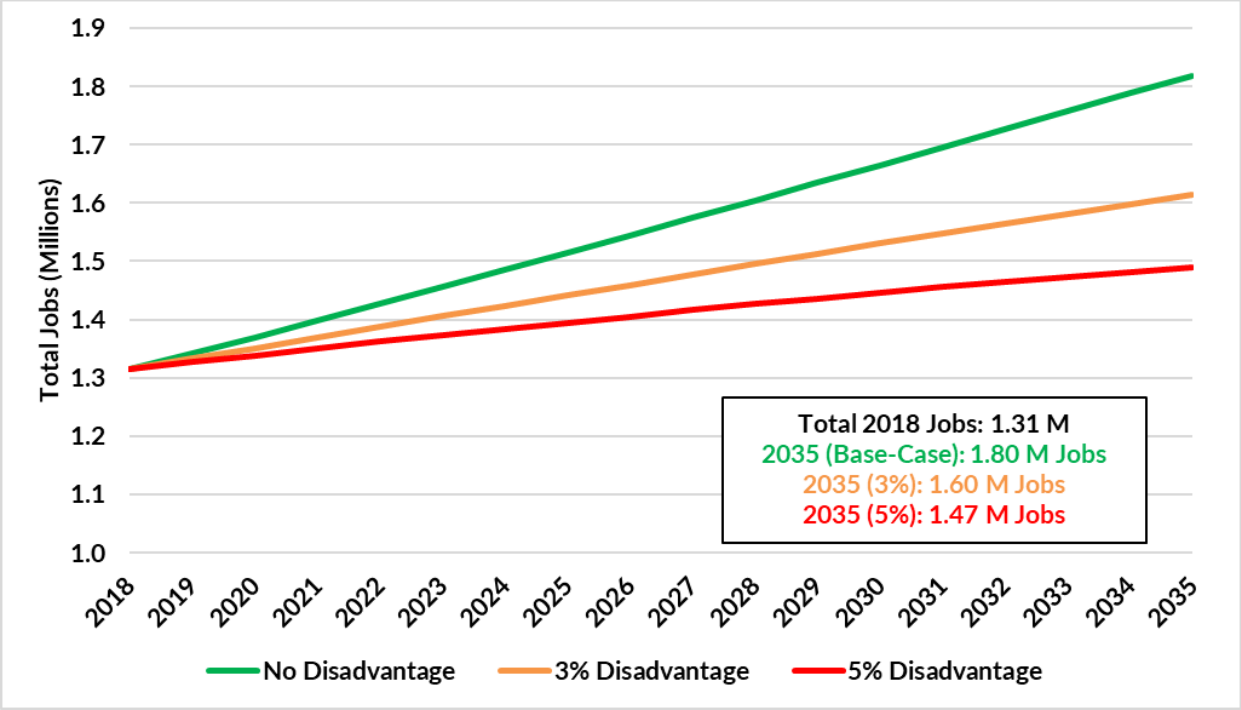


Figure II-4: Effects of Cost Disadvantage on Southern Nevada Employment: 2018 – 2035



Finally, as part of the process of assessing the opportunities and challenges facing Southern Nevada, RCG was in retained in 2020 by the Nevada State Treasurer's Office and GOED to prepare a detailed study focused on the state of supply chains—and where the state of Nevada stands as a component of the West Coast supply chain "infrastructure." This report was reviewed and accepted by the Treasurer's Office and GOED.[2]

[2] https://rcgecon.com/wp-content/uploads/2021/05/2021-1-6-RCG-NV-Supply-Chain-Rpt-w-o-ES-V2.pdf

Voting WG Members in Attendance

1. Dave Johnson, Deputy General Manager of Operations, Las Vegas Valley Water District
2. Doa Ross, Deputy General Manager of Engineering, Las Vegas Valley Water District
3. Jeff Brigger, Director of Business Development, NV Energy
4. Justin Brown, Senior VP/General Counsel, Southwest Gas Corp.
5. Terri Sheridan, Economic Development Specialist, City of North Las Vegas
6. Bill Arent, Deputy Director of Economic and Urban Development, City of Las Vegas
7. Raffi Festekjian, Economic Development Coordinator, City of Boulder City
8. Myisha Williams, President, MYS Project Management
9. Shani Coleman, Directory of Community and Economic Development, Clark County
10. Betsy Fretwell, SVP of Switch, Chairwoman of LVGEA
11. Chrisley, Deputy Director of Operations, McCarran International Airport
12. Dr. Bo Bernhard, Interim Vice President of Economic Development, UNLV
13. Victor Wei, Senior Advisor to the President for Strategy & Partnerships, UNLV
14. Derrick Hill, Vice President, COX Communications
15. MJ Maynard, Chief Executive Officer, Regional Transportation Commission of Southern Nevada
16. David Swallow, Deputy Chief Executive Officer, Regional Transportation Commission of Southern Nevada
17. Dr. Melody Rose, Chancellor, NSHE
18. David Bobzien, Director, Nevada Governor's Office of Energy
19. Jennifer Taylor, Deputy Director of Intergovernmental Relations, Nevada Governor's Office of Energy
20. Dr. Federico Zaragoza, President, College of Southern Nevada
21. Sondra Rosenberg, Assistant Director of Planning, Nevada Department of Transportation
22. Kristina Swallow, Director, Nevada Department of Transportation
23. Bradley Crowell, Director, Nevada Department of Conservation and Natural Resources
24. Jim Lawrence, Deputy Director, Nevada Department of Conservation and Natural Resources

B. Meeting 2 - March 18, 2021
Smart Ports, Inland Ports, Intermodal Facilities and Maximizing Southern Nevada's Geographic Location

Introduction

The topics of inland ports and intermodal facilities have been points of discussion in Nevada for well over a decade. In 2011 the legislature approved a request for a study on the economic impact that an inland port or an intermodal facility would have on Southern Nevada region. RCG Economics released the report in 2012. It examined freight flows across the region and macro region and made recommendations on an inland port intermodal facility. Given that supply chains have changed significantly as a result of the COVID-19 pandemic and the expansion of e-commerce, the time has come to revisit those recommendations.

Estimates from *The Economist*, McKinsey & Company and others project that the U.S. has experienced roughly 10 years of growth in e-commerce in the span of just a year. In that light, there is a new lens for understanding Southern Nevada's role in the conveyance of freight and how intermodal or inland port facilities could benefit the region. It is also important to note that neighboring states have experienced some challenges in their efforts, meaning that "pressure points" at the Port of Los Angeles and the Port of Oakland should be considered. We should also understand how Nevada and Southern Nevada, specifically, can add value to private industry and these kind of facilities; and be cognizant that Utah has invested in building a multi-modal facility of their own over the past five years. The intent of this WG meeting was to explore these factors and gain an appreciation and understanding from the panel on their specific experience over several decades in working with existing port facilities and establishing inland port facilities within their respective jurisdictions.

Michael Brown, Executive Director, The Governor's Office of Economic Development)

GOED's Role in Nevada's Future Economic Development

Nevada Governor Steve Sisolak convened a leadership meeting with Southern Nevada officials late-2020 as the state was moving from the relief phase of the pandemic to the recovery phase. The research had just been received from SRI International on the state's options going forward. And in meetings on the state's recovery from the pandemic, concerns had been raised that Nevada might not have the infrastructure necessary for the economy to recover as it needs to. Additionally, GOED uses a metric called the Hachman Index, which measures the economic diversification of states and counties. On a scale of 100, Nevada ranked 67, whereas Utah ranked 98 and Arizona ranked 96.

Although many companies are interested in relocating to the Pacific Time zone, Nevada finds itself in competition with Arizona and Utah, both of which have higher levels, as noted above, of economic diversity than Nevada. While Washoe County receives a score of 84 on this scale—an excellent score that puts it above many states in the country—Clark County scores only 45. Hence, the county that is the economic engine of Nevada is as diversified as, say, a natural resource state, a kind of "classic company town suffering from a resource curse," which limits investment of other types. Then when a full pre-pandemic recovery of the gaming industry is considered, it is not difficult to expect that there could be many workers employed in gaming before the pandemic who may not be re-hired.

SRI's recommendations include investments in technology, light manufacturing, renewable energy and health as the four areas to focus, but to compete for light manufacturing and technology Nevada is competing head-to-head against Utah and Arizona. According to a recent report from McKinsey & Company, 2021 will be a year of transition as corporations that find themselves entangled with just-in-time inventory issues. Between 2022 and '2024, noteworthy number of American manufacturers—assisted by Biden administration—could begin to onshore many of their operations to North America, though not necessarily the United States. That is to say, Canada and Mexico will be also competing for the same investments. Over the next four years McKinsey & Company expects there to be billions of dollars' worth of new investment returning to the U.S. as companies attempt to restore and create more resilient supply chains.

Just after President Biden's inauguration in January, the GOED began receiving calls from very serious manufacturers that were trying to sort out their logistics, supply chains and e-commerce delivery chains and they are very interested in Nevada. When these companies contact the GOED, "they want to talk about infrastructure, they want to talk about the line of sight to the Long Beach ports, they want to talk about rail service, they want to talk about trucking, they want to talk about industrial parks." These companies are trying to determine how they are going to survive in an era of superpower challenges because of international rivalries where they need to return their manufacturing and operations to the U.S. These firms also need Nevada to identify and address its strengths and weaknesses so that the state can be a competitor for the billions of dollars of investment that is available now, which will create the jobs that are going to be needed to help diversify the Southern Nevada economy.

Kyle Chapman, Senior Policy Advisor to Senator Cortez Masto

The 2021 Southern Nevada Economic Development and Conservation Act

In her new role as the chairwoman of the Public Lands, Forestry and Mining Subcommittee for the Committee on Energy and Natural Resources, Senator Cortez-Masto introduced the *Southern Nevada Economic Development and Conservation Act*, also known as the Clark County Lands Bill, on March 3rd of 2021. Broadly, the bill contains three pillars. For one, it contains a robust commitment to conservation, providing permanent conservation designations to over 2 million acres in Southern Nevada, including 41,000 acres to be held in trust for the Moapa Band of Paiutes and a 51,000-acre expansion for Red Rock.

At the request of the Clark County, 350,000 acres are specifically set aside for desert species habitat conservation, 120,000 acres for new "off-highway vehicle" recreation areas and almost 340,000 acres of new wilderness in Clark County, plus another 1.3 million acres of wilderness designated specifically within the Desert National Wildlife Refuge. Secondly, "the bill also includes new provisions to allow for greater affordable housing opportunities in the County. And number three, the bill also expands the existing SNPLMA boundary to provide new land over the long term to facilitate future population growth and economic diversification needs."

As Southern Nevada rebuilds its post-pandemic economy and anticipates adding another 820,000 residents (approx.) by 2060, it does so in the midst of threats from climate change. To ensure Southern Nevada's future is healthy, livable and climate-resilient, Clark County had already launched initiatives to develop community-wide sustainability and climate-action plans. At the base of the initiatives for both of those projects is an expansion of the This is the boundary created by the *Southern Nevada Public Land Management Act of 1998* ("SNPLMA") disposal boundary. SNPLMA allows the federal government to release federal land in coordination with Clark County for residential and commercial interests, with the majority of those disposal revenues being returned to the state and the County for conservation and enhancement of the national environment.

As commonly known, Southern Nevada is unique in that its urbanized core is encircled by federal land that imposes restrictions to sustainable growth and development. Accordingly, local conservation efforts and other planning efforts to promote economic diversification and federal legislative action are necessary to achieve the region's economic goals while providing for complimentary wildlife habitat conservation and climate mitigation. Today, SNPLMA's boundary encompasses just over 70,000 acres and it is estimated that over 27,000 acres are left to accommodate a few more years of growth in general. Not every acre of

that land could or should be utilized for development. Therefore, Clark County had proposed an expansion of SNPLMA boundary, which is incorporated into Senator's Cortez-Masto's legislation.

Ultimately, the senator's legislation alters SNPLMA in three ways. The biggest change is that the current SNPLMA boundary is expanded by another 42,000 acres, with the bulk of that expansion on the southern edge of the Valley along and east of I-15 toward Jean. Expanding that disposal boundary provides for orderly and predictable growth through the joint nomination process with those proceeds continuing to be deposited in the SNPLMA special account, allowing the revenues to return to Southern Nevada instead of going into the federal government's general treasury. Secondly, the senator's legislation takes the existing 12 disposal areas elsewhere in the County and includes them within SNPLMA's joint nomination and disposal process. These outlying areas were previously designated by the BLM in its earlier plans as potential disposal areas. However, these areas, which account for about 54,000 acres, are currently administered separate from the SNPLMA program and subject to the Federal Land Policy Management Act of 1976 ("FLPMA"), meaning that they are not subject to the joint BLM-Clark County disposal nomination process and revenues from their sale do not return to the state or the County.

Thus, the change that Senator Cortez-Masto's bill proposes means that the revenues would return to the state if those areas were ever to be utilized for disposal. Functionally, then, that provision consolidates two different land management programs into one, which is better suited for Southern Nevada's land management purposes. It is also better suited to a state with over 85 percent of its land managed by the federal government. "So, the bill makes modifications to some of those boundaries of the outer lying disposal areas to consider existing infrastructure or some sensitive species habitat, resulting in a small reduction of that acreage in some places. Overall, with the larger expansion of the SNPLMA boundary in the Las Vegas Valley and those modifications to the outer areas, the bill would provide a net increase of over 30,000 acres for future potential residential or commercial development in the County."

Third, the bill creates a new funding category to support the changing environmental needs in the region and to help further preserve existing conservation advancements. Specifically, this new category would support local priorities to improve regional sustainability, increase environmental resiliency and support projects that help mitigate future population growth. Accordingly, this category is intended to complement Clark County's sustainability efforts with the master planning and environmental mitigation initiatives. Under SNPLMA's revenue distribution system, 85 percent of revenue is eligible to be put towards regional conservation purposes as nominated and implemented by local, state and federal agencies. The existing federal categories include creation of local parks, trails, natural areas, acquisition of environmentally

sensitive land for habitat conservation and capital improvements to federal land, including the state's national parks and the Desert National Wildlife Refuge.

The new proposed funding category continues the conservation spirit of SNPLMA. The eligible entities that could utilize this new category would be similar to eligible entities of the existing funding categories—local municipalities and agencies like counties, cities and other local agencies. The senator envisions this new funding category to be used to deploy different sustainable community and environmental mitigation projects that will complement the local initiatives. Examples could include deployment of electric vehicle charging infrastructure, building energy retrofit projects, conversion of transit and bus fleets, ornamental turf conversions, infill incentives and urban heat island mitigation projects, just to name a few.

Panel Discussion:

- **Chris Gutierrez - President, Kansas City SpartPort**
- **Michael Sussman - CEO, Strategic Rail Finance**
- **Pierce Homer - SVP of Transportation, Moffatt & Nichol**

Building Regional Networks

Chris Gutierrez: The job of the Kansas City SmartPort, the number-one rail center in the country by tonnage and second in terms of the number of rail cars passing through, is to bring freight-based economic development to the greater Kansas City region, including manufacturing, distribution, warehousing logistics and operations. As a pure economic development group, it does not control the incentives, the sites, or the land, but collaborates with both states—Kansas and Missouri—across 18 counties and 50 communities.

Since the beginning of the pandemic, one industry where Kansas City has seen significant growth is "food manufacturing, food distribution and something I would suggest you keep an eye on: a national shortage of cold storage and temperature control space." There is "a real opportunity for any economic development group to jump into that area" and build such facilities or attract the companies that build and operate them. As for infrastructure generally, you must ensure that you have freight's voice at the table—whether that's railroad companies, trucking companies, or shippers—because they are the experts and know where the bottlenecks are. It is a far more difficult problem to solve after you already have congestion and bottlenecks. "We [at Kansas City SmartPort] have stayed ahead of that and dealt with congestion and growth before bottlenecks hit so infrastructure is critically important to us."

Kansas City's regional chamber of commerce is looking at two specific areas: one is job access— "how are employees getting to job sites, whether that's public transportation, rideshare programs, bike, [pedestrian], you name it, to look at how to resolve or assist that movement of people to jobs; the other is freight mobility"—paying attention to the intermodals and "the ability to get freight in and out of those intermodals." Kansas City has five intermodal facilities, including operating rail infrastructure and attached industrial parks, most notably the BNSF facility. Finally, technology of distribution and manufacturing is critical at the moment as tight labor and workforce markets are faced. Automation and new technologies are growing to offset labor needs driving capital investments are increasing, and smart cities and smart infrastructure—like roads that "talk" to vehicles—is moving so fast that it has to be a focus of infrastructure growth conversations.

Michael Sussman: "Seventy percent of every truck moving anywhere in the state [of Nevada] is in the process of driving to and from California, which means that all of the industrial development that has occurred and that is about to occur without us interceding is going to continue as truck-centric growth. In fact, of all the freight moving in Nevada by truck or by rail, only four percent of it moves by rail to or from a Nevada business. Of 188 warehouses that have been built in Nevada alongside rail lines, only part of one uses rail." Therefore, with a location adjacent to California, the fifth largest economy in the world, with ports providing access to Asia and South America, Nevada has a tremendous opportunity if it takes the right steps to create the rail service to California that is missing.

At present, Nevada has relatively few trains in transit and Southern Nevada does not have intermodal service to and from California— only to Chicago. "The nature of supply chain and freight-based economic development should call all of us to let go of the idea of competing with our neighboring states. Those states are where our supply chains originate and terminate," as a result Southern Nevada has to focus on collaboration. For example, in order to pinpoint where opportunity lies for the Northern Nevada Development Authority, Strategic Rail Finance analyzed freight from 14 states east of Nevada and pinpointed 1.4 million truckloads of agricultural and food commodities moving from those states to ports in California that could be diverted to Fernley, loaded onto trains and moved to the port of Oakland. "That type of analysis needs to be done for Southern Nevada" as well and "the idea of competing really should be let go [of]. You don't want to compete with Utah's inland port. You want to be sitting down with them and your potential port partners and working out what freight would be best intercepted or facilitated in Southern Nevada versus freight that is better facilitated in Salt Lake City. Same with the entire region."

According to Mr. Sussman, there is "a tremendous opportunity to focus industrial development efforts to reuse BMIC [Black Mountain Industrial Center]." BMIC has ample rail infrastructure but only the buildings

in black (in Figure 1, for example) are using rail. North Las Vegas has pockets of rail activity here and there and Apex Industrial Park has two shippers using rail. The rest is "getting built as a truck-only activity, which again means that the volume of trucks going through I-15 through Las Vegas [and] Henderson is steadily increasing. … [And] trains move freight on one-half to one-quarter the amount of diesel fuel [as trucks]. It also takes—to move the same amount of goods on a one-mile train—it takes a 27-mile convoy of trucks on the road. That's because every rail car requires three to four trucks to move the same amount of goods. … Additionally, the train moves through in three minutes, four minutes and it is gone. There might not be another train for two hours. Those 300 to 400 trucks take two hours every 30 seconds with another truck going by so the amount of impact on quality of life is just significant."

Figure II-5: Industrial Facilities Using Rail Lines

Source: Strategic Rail Finance

This sort of complex supply-chain knowledge is very important because it is not enough to be "close" to Long Beach and Los Angeles and the Ports of Los Angeles and Long Beach do not have capacity for more trains right now. "They only have capacity for certain types of trains and certain types of volume. If you are not aware of those kinds of dynamics, you can be spending your time presenting your region as an opportunity and the actual freight opportunity's not been addressed." There is a lot to be gained by getting more information from the private sector, working with advisors and consultants that are interested in the

kind of partnership "that can bring this kind of intelligence to your planning and then to the prospects that you're out to engage with." Strategic Rail Finance has significant relations with California and Utah, who have fully embraced the idea of collaborating with neighbor states to help them solve problems the states have in common.

Pierce Homer: When it comes to freight complexes, there are different types and different paths to arrive at them. "Most people don't think of Dallas as a major freight or trans-loading center," but it is. And "at the heart of that is Alliance, Texas, which did not start out as rail-based economic development; it started as pure development and then industrial and technology and flex and it really grew into its [own] very significant rail contribution over time. A second complex that doesn't always pop up on the radar screen is Atlanta." Atlanta has a huge, thriving freight economy. "It is not based on a single intermodal facility, but it is based on very good access; very strong, robust market growth; very smart public sector investments; and they're now in the process of trying to find out … [how to] further capitalize on this." The point is Southern Nevada should not necessarily lock into what it thinks it needs today—but to look at examples in other locations. Finally, understanding the different interests of a railroad versus a seaport and a seaport versus its owner (which might be a municipal entity) is important. These are very complex relationships and huge congestion challenges to overcome, which can only be solved over time.

Voting WG Members in Attendance

1. Dave Johnson, Deputy General Manager of Operations, Las Vegas Valley Water District
2. Doa Ross, Deputy General Manager of Engineering, Las Vegas Valley Water District
3. Justin Brown, Senior VP/General Counsel, Southwest Gas Corp.
4. Terri Sheridan, Economic Development Specialist, City of North Las Vegas
5. Ryan Smith, City of Las Vegas, proxy for Mr. Bill Arent
6. Raffi Festekjian, Economic Development Coordinator, City of Boulder City
7. Myisha Williams, President, MYS Project Management
8. Shani Coleman, Directory of Community and Economic Development, Clark County
9. Jonas Peterson, LVGEA, proxy for Ms. Betsy Fretwell
10. James Chrisley, Deputy Director of Operations, McCarran International Airport
11. Dr. Bo Bernhard, Interim Vice President of Economic Development, UNLV
12. Victor Wei, Senior Advisor to the President for Strategy & Partnerships, UNLV
13. Derrick Hill, Vice President, COX Communications
14. MJ Maynard, Chief Executive Officer, Regional Transportation Commission of Southern Nevada
15. David Swallow, Deputy Chief Executive Officer, Regional Transportation Commission of Southern Nevada
16. Dr. Melody Rose, Chancellor, NSHE
17. David Bobzien, Director, Nevada Governor's Office of Energy
18. Jennifer Taylor, Deputy Director of Intergovernmental Relations, Nevada Governor's Office of Energy
19. Dr. Federico Zaragoza, President, College of Southern Nevada
20. Sondra Rosenberg, Assistant Director of Planning, Nevada Department of Transportation
21. Bradley Crowell, Director, Nevada Department of Conservation and Natural Resources
22. Jim Lawrence, Deputy Director, Nevada Department of Conservation and Natural Resources
23. Sean Sever, Deputy Administrator, DMV
24. Kristen Averyt, Climate Policy Coordinator, Nevada Department of Conservation and Natural Resources
25. Constance Brooks, Vice President, Las Vegas Convention and Visitors Authority
26. Dr. Kumud Acharya, President, DRI
27. Bart Patterson, President of Nevada State College

C. Meeting 3 - April 29, 2021
Trends in Electrification and Autonomous systems and How Southern Nevada can Lead in the Adoption and Deployment of Such Technologies

Introduction

One of the observations include in the SRI report to GOED was the development of ecosystems that enable entrepreneurialism, support small businesses and entice technology-based firms to invest in Nevada. With an eye toward growth and diversification of the economy, GOED is focused on the supply-chain side of lithium mining and battery production since Nevada has an advantage over other states to advance those industries. The state does have some work to do to ensure it has the infrastructure in place to support 5g, "internet of things" and the ability for devices and vehicles to communicate with one another. On the electrification side, Nevada must make sure that it has the proper infrastructure in place for the adoption and deployment of those vehicles.

McKinsey & Company released a mobility study on April 6, 2021, which predicts that electrification mobility and automotive software are going to grow a staggering 250 percent by 2030. The firm also expects that the mobility industry will double in size by 2030. This represents an important opportunity for Southern Nevada—software and electronics firms are going to be growing rapidly, which will greatly benefit the Nevada workforce if the state is mindful of which industries are growing and advancing rapidly. As thought is given about transitioning workers into new fields, with the necessary training and workforce programs, Nevada must begin with the end in mind—the decisions that are being made now will determine where the state arrives at the end of the "pipeline" in 2030.

Panel Discussion:

- **Samuel Wempe - Director of Government Relations and Public Policy, Motional**
- **Noelani Derrickson - Public Policy and Business Development, Tesla**
- **Mike Blank - Regional Policy Lead, Nuro**

WG Panel Discussion: Autonomous Vehicles

Samuel Wempe: When it comes to the road infrastructure, a customer "pain point" that Motional gives a lot of attention to is pickup and drop off, or PUDO; and this is not a pain point unique to autonomous vehicles. Airports and casinos are already leaders when it comes to managing rideshare traffic. This is an area where Motional thinks that investment and updates to infrastructure could make the experience more efficient—larger, more flexible holding areas where vehicles can arrive and people can easily find their ride. As for public roads, the infrastructure is not yet well-suited for on-demand transportation

services; making curbs more flexible during the day—as to how they are used—would be significant progress. For example, in the mornings a curb could be used for commercial delivery, then it shifts to paid parking for a period of time, and then later it shifts to flexible uses like pickup and drop off. This sort of "smart metering" and "smart curb spaces" would greatly facilitate the deployment of autonomous vehicles.

Motional believes the U.S. will begin seeing fleet-owned autonomous vehicles much sooner than personally owned ones. Over the course of the 2020s, it is expected that rideshare networks deploying fleets of autonomous vehicles to transport individuals, beginning in lower speed, higher density demand areas. The Las Vegas Strip is a great example, where thousands of people are moving between the different hotels, casinos and entertainment venues. Later, autonomous vehicles will move further out into the suburbs where there is a lower level of demand but also a requirement for higher speeds.

Noelani Derrickson: For electric vehicles, there are three major types of charging. Level-1 charging is on a 120-volt outlet like those that power household appliances; it can take anywhere from 24 hours to 36 hours to fully charge a vehicle. Level-2 charging is on a 240-volt outlet, like that used by a dryer. This type requires five to eight hours to completely charge your electric vehicle, i.e., closer to overnight. With level-3 charging, also called "direct current fast charging" or "DC fast charging," the vehicle receives 480 volts of power, reducing the charging time to between 30 minutes and one hour. Since it is most helpful to charge where a vehicle is parked, charging stations should be located in parking areas and should be at the level needed for a vehicle parked for many hours at a time. For example, Level-2 is typically ideal for charging at home or at work, since it takes five to eight hours. Level-2 also has the least impact on the electricity grid and is typically cheaper. `

For road trips and for drivers who do not have charging at home (e.g., people who live in multifamily housing), fast charging at Level-3 is really essential. In Tesla's fast-charging network there are 2,000 superchargers, globally, with 1,000 in the U.S. and 21 in Nevada. That said, a significant amount of growth will have to happen to serve the number of Tesla drivers anticipated in future years, including doubling the number of Nevada superchargers before 2022. As for lithium-ion batteries, Tesla is investing heavily in this technology and doubling supplier capacity over the next few years because Elon Musk believes that these batteries can solve the energy storage challenge.

There are four key steps to establishing charging infrastructure, many of which are already happening in Nevada. The first is to establish firm targets for electric vehicles and electric vehicles charging stations, and action plans to meet those targets. The second is to streamline permitting to accelerate implementation timelines; Southern Nevada has much faster permitting timelines than most states and that has been

helpful. The third is determining if there are locations where the city or jurisdiction can either build its own charging infrastructure or partner with third-party developers to build out the infrastructure network. The fourth relates to building codes. Across the country, cities and states have been establishing electric vehicle parking requirements for new buildings, i.e., a certain percentage of parking stalls that are electric-vehicle ready. These codes ensure the electrical panel capacity, the conduit and sometimes the wire to accommodate a charging station.

As for heavy-duty delivery, Tesla's semi-truck is targeted at the Class 8 truck segment, one of the most important but most difficult sectors to electrify, from an emissions perspective, due to the significantly large battery needed to support the truck's weight and range (distance travelled).

Mike Blank: Nuro is different in the autonomous delivery vehicle space from Motional since Nuro does not have occupants in its vehicles. Nuro partners with retail entities--grocery stores, restaurants, etc.—where employees load the vehicle at the retail location; this employee takes the place of a delivery driver. So, the delivery infrastructure questions become, what are some innovative designs that could happen in retail centers that would allow for the loading and unloading of delivery vehicles?

As for charging infrastructure, Nuro's vehicles do not necessarily need to travel long distances. They are last-mile delivery, doing short trips from local stores. Nuro will have a depot in industrial sectors of large cities where the vehicles will be stored overnight—where Nuro will charge them—and then the vehicles will be out with the retail partners during the day. Given that Nuro charges the vehicles at the depot, charging stations are not required infrastructure for Nuro's business model.

Jeff Brigger - Director of Business Development, NV Energy

Greenlink Nevada

The most relevant development of the Greenlink project for Southern Nevada is the Greenlink West segment, a 525 KV transmission line that will span approximately 350 miles between Yerington, Nevada and Las Vegas (Figure II-6 below). The project will provide a transmission loop between these regions.

Figure II-6: Greenlink Nevada

Source: NV Energy

The project has a number of benefits. In total, NV Energy expects the project to generate approximately $690 million in economic activity and create nearly 4,000 jobs, including near-term hiring to enable permitting and project routing. Additionally, the environmental benefits of this project are essential for NV Energy to help Nevada reach its climate action and decarbonization goals and the increased renewable portfolio standard. Greenlink Nevada will allow the state to tap into resource-rich, renewable-energy zones along the transmission lines that previously had limited access. It will also improve reliability, transfer capacity and even broadband access in rural areas.

There are a number of large customers and ventures in Nevada that have ever-increasing sustainability goals and Greenlink will allow the company to supply them with low cost, renewable energy resources and, in many cases, low-carbon resources that will continue the state's energy diversification efforts.

The Public Utilities Commission of Nevada has approved the project to move forward and NV Energy will begin preliminary design and permitting on segments of both Greenlink West and Greenlink North. Construction will start on Greenlink West, likely in 2024, with completion estimated by 2026.

Voting WG Members in Attendance

1. Kris Sanchez, Deputy Director, Governor's Office of Economic Development
2. Dave Johnson, Deputy General Manager of Operations, Las Vegas Valley Water District
3. Doa Ross, Deputy General Manager of Engineering, Las Vegas Valley Water District
4. Jeff Brigger, Director of Business Development, NV Energy
5. Justin Brown, Senior VP/General Counsel, Southwest Gas Corp.
6. Terri Sheridan, Economic Development Specialist, City of North Las Vegas
7. Bill Arent, Deputy Director of Economic and Urban Development, City of Las Vegas
8. Ryan Smith, City of Las Vegas, (for Bill Arent)
9. Raffi Festekjian, Economic Development Coordinator, City of Boulder City
10. Myisha Williams, Vice Chair and Legislative Subcommittee Chair, Commission on Minority Affairs
11. Shani Coleman, Directory of Community and Economic Development, Clark County
12. Betsy Fretwell, Chairwoman of LVGEA
13. Jonas Peterson, LVGEA, proxy for Betsy Fretwell
14. James Chrisley, Deputy Director of Operations, McCarran International Airport
15. Bo Bernhard, Interim Vice President of Economic Development, UNLV
16. Victor Wei, Senior Advisor to the President for Strategy & Partnerships, UNLV
17. MJ Maynard, CEO, Regional Transportation Commission of Southern Nevada
18. David Swallow, Deputy Chief Executive Officer, Regional Transportation Commission of Southern Nevada
19. David Bobzien, Director, Nevada Governor's Office of Energy
20. Jennifer Taylor, Deputy Director of Intergovernmental Relations, Nevada Governor's Office of Energy
21. Dr. Federico Zaragoza, President, College of Southern Nevada
22. Kristina Swallow, Director, Nevada Department of Transportation
23. Sondra Rosenberg, Assistant Director of Planning, Nevada Department of Transportation
24. Jim Lawrence, Deputy Director, Nevada Department of Conservation and Natural Resources
25. Kristen Averyt, Climate Policy Coordinator, Nevada Department of Conservation and Natural Resources
26. Constance Brooks, Vice President, Public Affairs and Diversity, Las Vegas Convention and Visitors Authority
27. Dr. Kumud Acharya, President, DRI
28. Bart Patterson, President of Nevada State College

D. MEETING 4 - MAY 27, 2021

INFRASTRUCTURE FINANCE—NEW APPROACHES AND THE NEVADA STATE INFRASTRUCTURE BANK

Introduction

The fourth meeting of the WG took place on May 27, 2021. Kristopher Sanchez, Deputy Director, Governor's Office of Economic Development and Chair of the WG, called the meeting to order.

Zach Conine-Nevada State Treasurer

Governor Sisolak proposed first-time funding for the State Infrastructure Bank ("SIB") in his State of the State address in January of this year. After taking office in 2019, the State of Nevada began looking at ways to fund the SIB, specifically focusing on outside capital—infrastructure investors from outside the state. One of the opportunities in the fixed-income market in the last few years is what is known as "stranded capital," which cannot be invested in equities because of pension fund requirements as well as capital invested in money market funds.

There are two legislative actions related to the Nevada State Infrastructure Bank ("SIB"). The biennial Capital Improvement Projects ("CIP") budget was passed in late-May, 2021, "The CIP bill contains $413 million in projects funded primarily by General Obligation Bonds. It also contains $75 million for the Infrastructure bank along with funding for the Resource Conservation Fund."[3]

Secondly, Governor Steve Sisolak signed Senate Bill 430—the State Infrastructure Bank ("SIB") bill—on June 10, 2021. The bill went in effect on July 1, 2021. This bill modernizes the infrastructure bank conceived of in 2017 to match the current needs and also the White House's expectations of infrastructure investments.

New infrastructure categories added via SB 430 include rural broadband and 5G connectivity; recycling and sustainability; renewable energy projects; and something called social infrastructure, which includes schools, hospitals, and affordable housing. Both the CIP and Senate Bill 430 have been enacted.

The bill also adds a few members to the board of the SIB, specifically the Director of the Governor's Office of Energy as well as two governor appointees. The intention is to ensure that it is a board of experts, including the Director of the Department of Business and Industry, the Director of GOED, the Director of

[3] https://www.recordcourier.com/news/2021/jun/01/81st-session-nevada-legislature-adjourns-after-flu/

NDOT, the State Treasurer and Governor's two appointees. There are also other voices who need to be at the table: the Office of Science and Innovation Technology ("OSIT") to advise on broadband, the state housing division to advise on affordable housing and stakeholders from the community to advise local governments on the services needed.

An infrastructure bank, in its ideal form, does two things: it plans and coordinates between stakeholders (including cities and communities) and it leverages capital. Thus, in addition to the $75 million of general obligation bonds, the bank is going to raise capital from pension funds, etc. to combine with the millions of dollars from the American Rescue Plan ("ARP") and potentially billions of dollars from the American Jobs Plan. The goal is to coordinate at the state level to ensure that capital projects, as they are being paid for, are complimentary and create as many quality jobs as humanly possible.

Now that Senate Bill 430 has passed, the board will be assembled and will draw up the bylaws. Part of that bylaw process is creating a rubric to evaluate projects quantitatively, assigning metrics like number of jobs created per dollar invested, the rate at which those jobs are created, the financial sustainability of the business model and any other secondary or tertiary impacts from the investments. As a bank, it will loan capital and receive money back in the form of principal and interest payments, which are then passed to either investors or the state, depending on the source of capital for a given project.

The Nevada Treasurer's office will be following up with the WG as the bylaws for the SIB are drafted; the group's input is valued as the state endeavors to get the SIB right.

Panel Discussion

- **Roy Lauder - Managing Director, E-Rail International**
- **Andrew Young, Linby Consulting**

Infrastructure Funding Panel Discussion

E-Rail International provides a funding tool for rail projects, particularly passenger rail but freight as well, and has developed an innovative business model called "contributory land value capture" that can be valuable for states, counties and cities who desire to invest in transit but have a funding gap, which often leads to projects getting shelved; this, of course, delays the economic benefit of that transit infrastructure. Because land values near transit stops and stations tend to appreciate, there is an opportunity to raise substantial sums of money by installing new infrastructure, particularly transit infrastructure.

There are three broad types of land value capture: taxation-based, which is used widely in the U.S.; municipal land value capture, where the municipality owns the land to be developed; and contributory land value capture. The taxation-based method requires an upfront payment by the landowners and it occurs at a point in the process where they are fairly certain that the project is going to go ahead. Understandably, landowners are resistant to paying a great deal in taxes, since the tax benefits are usually limited, often constraining development as a result. Municipal land value capture works where the land is publicly owned along the proposed route and can be sold to developers to fund infrastructure projects.

In the third method, contributory land value capture, E-Rail negotiates with the landowners on behalf of its client—always a municipality, city, or state—to contribute a part of the windfall they expect to receive to enable the project to go forward. E-Rail carries out an initial study, on behalf of the client, to identify the potential land appreciation along a proposed route. The trick is to do the study early—while the engineers are preparing the environmental impact studies—because, if the project's completion is a certainty, landowners will naturally wait to receive all the appreciation benefit for free. The completion of the project must be in doubt in order to negotiate the collaboration.

Stage 1 involves calculating the value appreciation to the landowners as well as identifying the route for optimal financial return to the municipality. After that route is determined, the second stage involves negotiating with the landowners near the stops along that route. A contribution agreement—normally with a 20-year duration—stipulates that once the landowners have sold property to the developer, they will contribute a percentage of their gain to the infrastructure fund held by E-Rail in trust for the municipality. Importantly, the landowner is not liable for this contribution if the infrastructure project fails to move forward. It should be noted that many properties along a rail line will not see appreciation and could even see a decline in value due to noise, etc. The appreciation in value occurs around the stops and stations. Consequently, it is the client's role to procure approval from the voters.

Worldwide, E-Rail is seeing large investments in infrastructure across the developed world—from Australia to Canada, the UK, Europe and the U.S. Central governments are investing a great deal of money to kickstart their economies and there is a recognition, in almost all developed nations, that infrastructure has been left to degrade. Of course, there are limited budgets and the wish list of projects is always greater than the budgets will sustain; therefore, the trend is a race to get a client's project ahead of competing projects. As for private funding of transit, it is currently following traditional and conservative transit rather than new technology—i.e., traditional light rail projects and the like are deemed as safe investments.

The risks for contributory land value capture are minimal given the potentially large upside. This method can secure on the order of 30 percent of the capital cost of a project; since light rail projects can range from $300 million to $1.5 billion, 30 percent is a non-trivial amount. With the taxation-based method, municipalities in the U.S. are generally able to fund only five percent of the capital for a project. In terms of other risks, as with any infrastructure project, there is risk as to whether—politically—the project can be funded along the routes needed. With routes heading into undeveloped areas, the risk is dependent on the pace at which new development can be absorbed along the route.

Many municipalities are now recognizing that developing transit infrastructure is a greater economic contributor than they had considered previously. In Dallas/Ft. Worth, for example, the cities and counties have data showing how developing urban transit and stations not only enables park and ride, it also has significantly increased land values and benefitted the local economy. Another phenomenon that E-Rail sees, around the world, is that around newly developed stations economic development happens vertically, i.e., a concentration of economic development per acre.

Dave Johnson - Deputy General Manager of Operations, Las Vegas Valley Water District ("LVVWD") and the Southern Nevada Water Authority ("SNWA")

Water Infrastructure

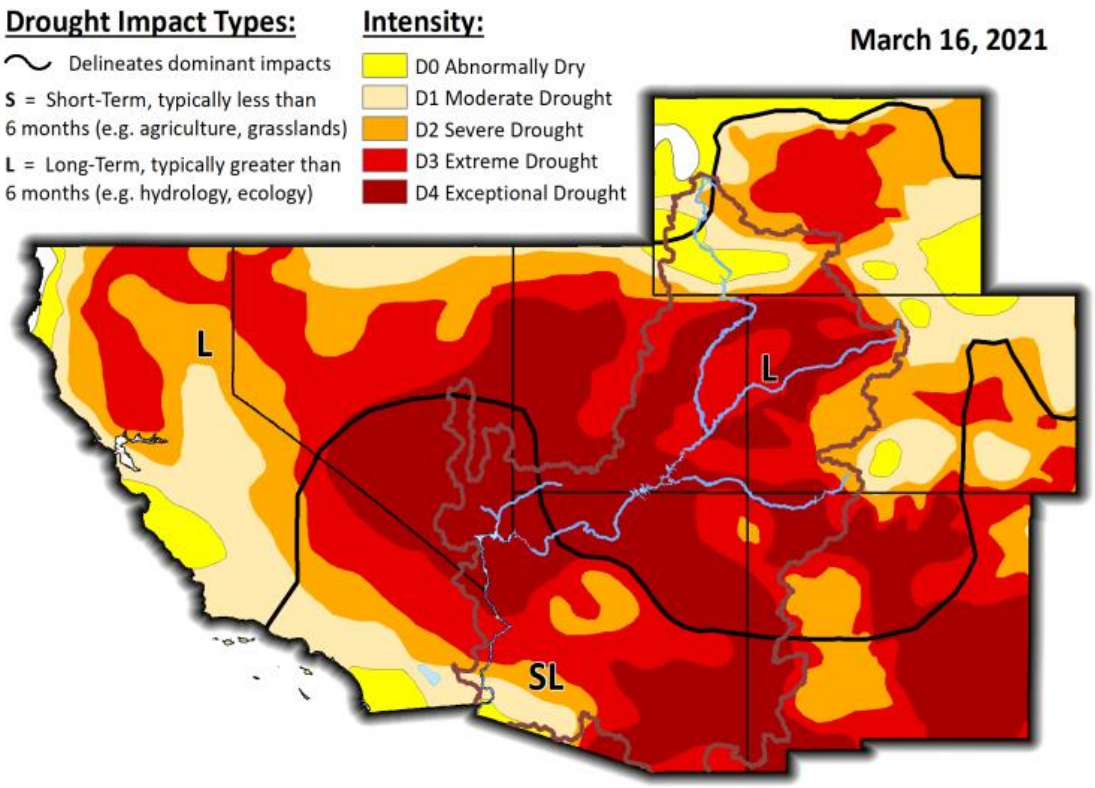
The responsibility of SNWA is conservation, water supply planning, water quality, infrastructure and stewardship. Only 10 percent of the water in the Valley comes from the aquifer beneath the surface; the majority comes from the Colorado River, which Southern Nevada share with six other "basin states." Unfortunately, all of the desert Southwest and, much of the West as well, is either in a persistent drought or a drought that is likely to develop (see Figures II-7 and II-8 below). As a result, the current water year is "the second worst in the last 25 years," as a result Southern Nevada is seeing significant reductions in the water level of Lake Mead. As climate change causes warmer temperatures and lower precipitation, soil conditions are much drier than what they have been historically in the Colorado River basin, and so—together with aging infrastructure, which results in water leakage—any drop of water that leaks into the ground is one fewer that can be provided to customers.

Considering, the deepening concerns about the operating conditions for Lake Powell and Lake Mead[4], it is imperative the SNWA be more formally involved in providing feedback during the economic development of reviewing what types of companies are receiving tax incentives from the State Nevada. The role of

[4] https://www.usbr.gov/newsroom/#/news-release/3950

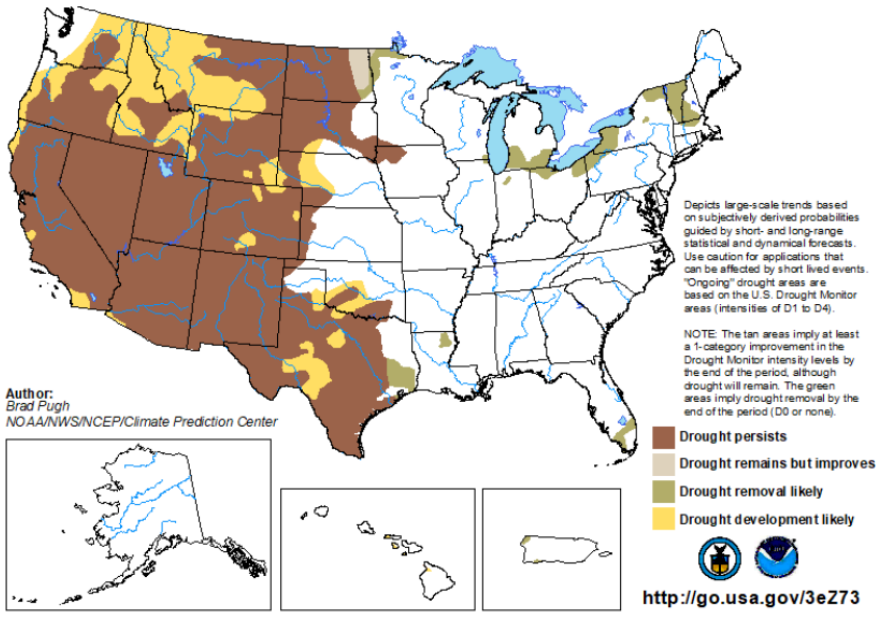
SNWA would be to advise the economic development officials and incentive applicants on the latest water conservation technologies and methods that are available.

Figure II-7: Seven Basin States Drought Monitor



Source: Southern Nevada Water Authority

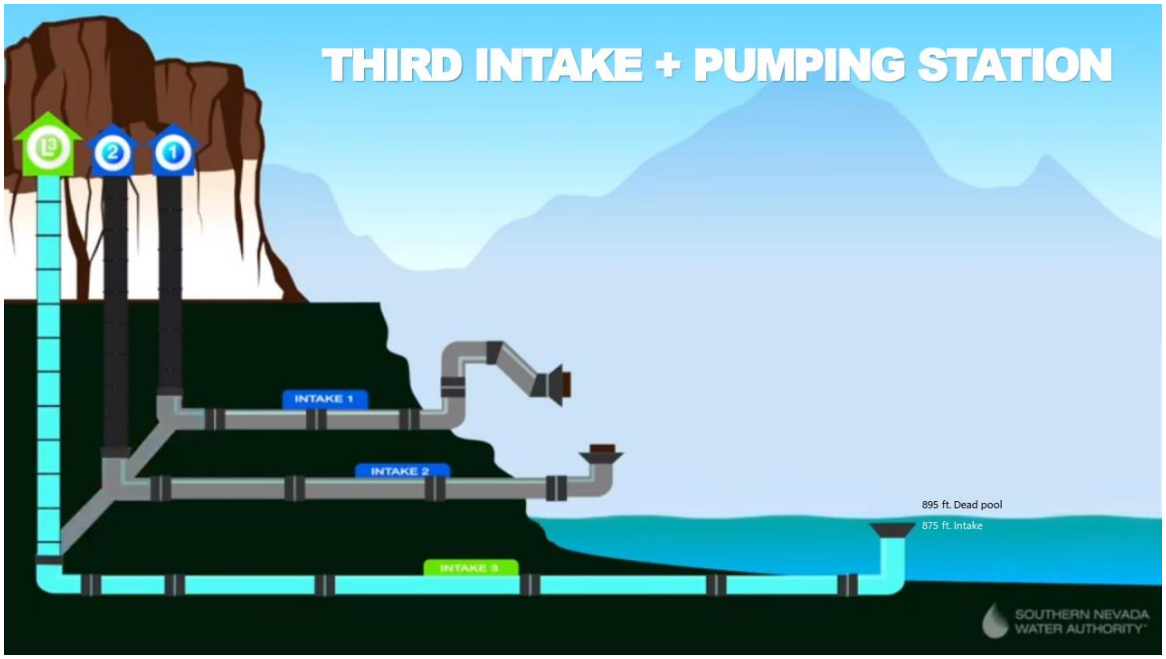
Figure II-8: National Drought Conditions



Source: Southern Nevada Water Authority

What has SNWA has been doing in response? First, a third intake (See Figure II-9 below) and pumping station have been completed and that gives the agency quite a bit of surety—more surety, in fact, than any other of the basin states on the Colorado River—of being able to access the water resources that are available to it. The $1.3 billion of infrastructure to create the additional intake and pumping station was critically important to mitigate the risk of low lake-level scenarios in the short term, and also to shore the region up for the future. Due to that infrastructure investment, even if the lake level were to reach a point where water could no longer be released through Hoover Dam—to Southern California, Mexico and Arizona—the SNWA would still be able to pump water into the Las Vegas Valley.

Figure II-9: Third Intake and Pumping Station

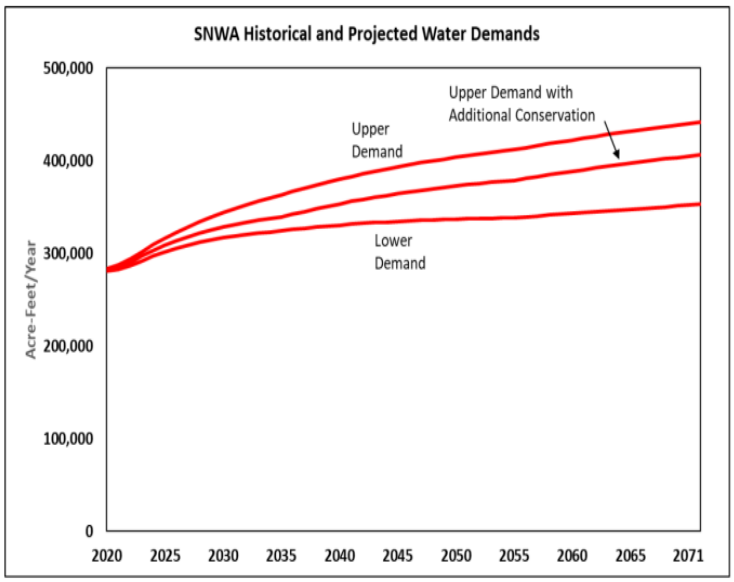


Source: Southern Nevada Water Authority

As illustrated in Figure II-10 below, a second measure is the SNWA's resource planning, including a 50-year resource plan that is updated annually. SNWA employs a multiple scenario-based approach that considers upper demand usage and population growth at upper and lower demands as well as upper demand assuming additional conservation.

Figure II-10: Historical and Projected Water Demands

2020 Population:
2,341,000

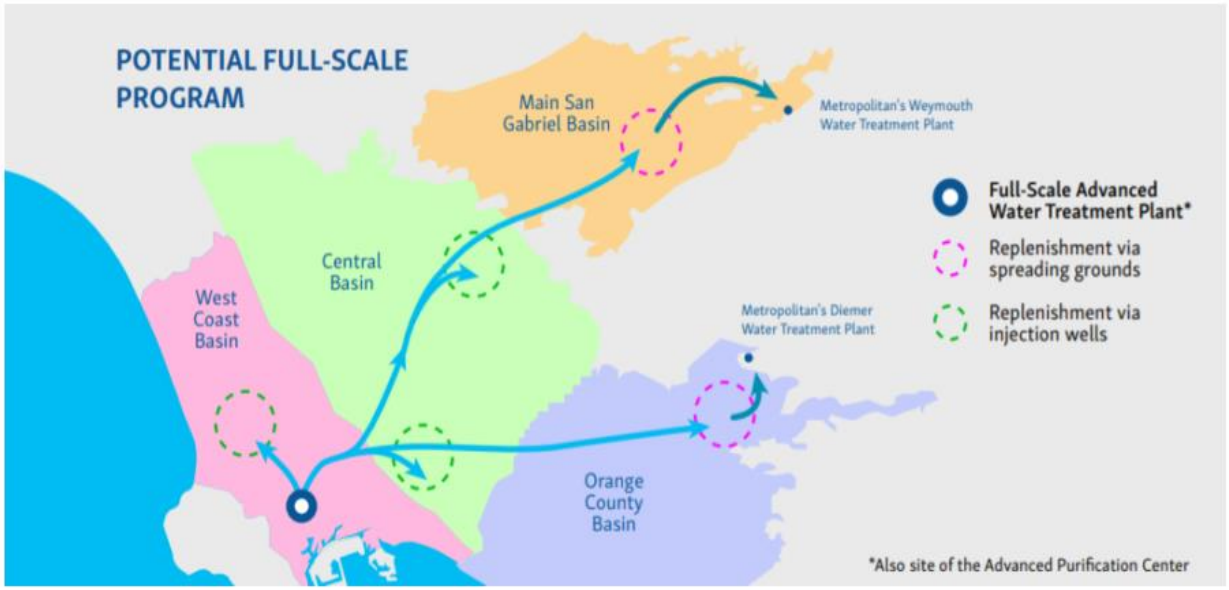


2071 Population:
3,253,000 (Lower Demand)
4,070,000 (Upper Demand)

Source: Southern Nevada Water Authority

Third, the SNWA is working on an agreement with the Metropolitan Water District of Southern California. The agreement will be a regional recycling project whereby Southern California will use treated wastewater and then reinject that water into various areas in the region as shown in Figure II-11 below. From a water reclamation or recycling perspective, this is common practice, though this would be a very large-scale project. Southern Nevada has the opportunity to participate financially in this project and, in return, receive the share of water that would "be equivalent to that financial participation"—i.e., SNWA will effectively purchase some of Southern California's Colorado River allocation through its financial participation in this project, which would increase its overall water portfolio by approximately 10 percent. The SNWA also has water banking arrangements in Lake Mead and, currently, approximately eight years' worth of water at current consumption levels banked in the lake.

Figure II-11: Water Recycling Project



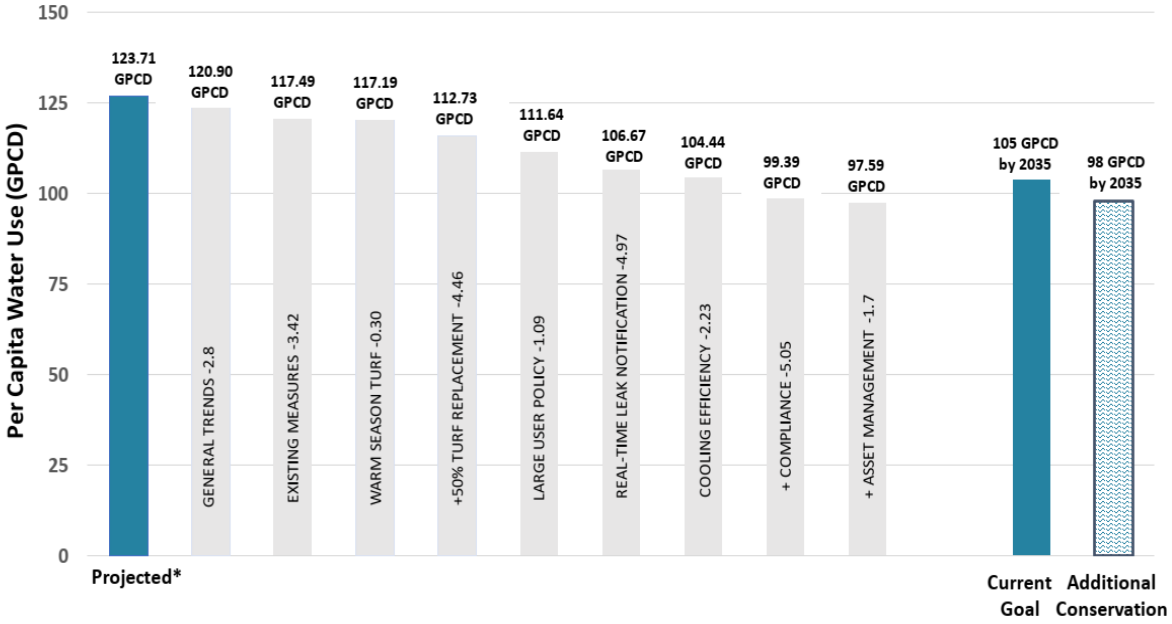
Source: Southern Nevada Water Authority

It should be noted that Southern Nevada has done an effective job responding to the drought situation and conserving water. Since 2002, The Valley's population has increased by 52 percent while, concurrently, per-capita (per-person) water use has declined 47 percent and the overall Colorado River consumption during that same period has declined 23 percent. The SNWA's hallmark program is the Water Smart Landscapes Program. Enough turf/grass has been removed in Southern Nevada to roll an 18-inch-wide swath of turf all the way around the Earth—this has dramatically reduced the region's water consumption. The region needs to continue to do that and more moving forward; unfortunately, water use is trending in the wrong direction. Consumptive use per capita is increasing as people move in and out of Southern Nevada and they forget or were never educated about water conservation.

Further efforts to remove non-functional turf will provide additional water conservation; this will remain a primary conservation issue for a while. The newly enacted AB356 will eliminate non-functional turf over time. SNWA is also working to implement smart irrigation controllers for homes and commercial properties that will adapt to weather conditions. Additionally, The City of North Las Vegas, the City of Henderson and the Las Vegas Valley Water District are all implementing advanced metering infrastructure in various phases—a smart meter gives SNWA real-time data for how much each residence is using and share that data with consumers. It will be extremely valuable for people to have clarity on their water usage, to compare with other households and with water standards.

As for commercial customers, a "Large Water-User" policy is being discussed. Evaporative cooling, employed by a significant number of industrial customers, uses quite a bit of water. Going forward, the SNWA is going to consider water usage when it evaluates business applicants that wish to operate in Southern Nevada. Figure II-12, below, displays the components of SNWA's plan for achieving its 2035 conservation goal.

Figure II-12: Achieving the Conservation Goal



*With climate change & system loss

Source: Southern Nevada Water Authority

An important concept to understand is "return-flow credits." When water is used indoors, it goes back to a waste-water treatment plant and then returns to Lake Mead, so this does not reduce the region's water allocation from the Colorado River. Outdoor water use, on the other hand, can only be used one time and does not return to Lake Mead.

When development outside the Valley is discussed, any of the water from the Colorado River that is transported outside the Valley, it must be handled it the same way that water in the Valley is handled. For instance, with the future development in Ivanpah, the wastewater will be returned to the Valley in order to get the full use of that water. It is going to be especially important to examine what type of development is planned, what level of consumptive use will happen and how to return the wastewater; otherwise, each additional project will add consumptive use.

In conclusion, the main takeaways are as follows: convert non-functional turf, make new development as efficient as possible, explore air cooling as opposed to water cooling for non-residential buildings (e.g., casino resorts, office buildings, industrial buildings, retail centers), and forge agreements with the SNWA's Colorado River partners (the current agreements expire in 2026) so that Southern Nevada can cooperate to its best advantage and make the best use of Colorado River water.

Voting WG Members in Attendance:

1. Kris Sanchez, Deputy Director, Governor's Office of Economic Development
2. Dave Johnson, Deputy General Manager of Operations, Las Vegas Valley Water District
3. Doa Ross, Deputy General Manager of Engineering, Las Vegas Valley Water District
4. Jeff Brigger, Director of Business Development, NV Energy
5. Justin Brown, Senior VP/General Counsel, Southwest Gas Corp.
6. Bill Arent, Deputy Director of Economic and Urban Development, City of Las Vegas
7. Myisha Williams, Vice Chair and Legislative Subcommittee Chair, Commission on Minority Affairs
8. Shani Coleman, Directory of Community and Economic Development, Clark County
9. Jonas Peterson, LVGEA, proxy for Betsy Fretwell
10. James Chrisley, Deputy Director of Operations, McCarran International Airport
11. Bo Bernhard, Interim Vice President of Economic Development, UNLV
12. Victor Wei, Senior Advisor to the President for Strategy & Partnerships, UNLV
13. David Swallow, Deputy Chief Executive Officer, Regional Transportation Commission of Southern Nevada
14. Jennifer Taylor, Deputy Director of Intergovernmental Relations, Nevada Governor's Office of Energy
15. Dr. Federico Zaragoza, President, College of Southern Nevada
16. Kristina Swallow, Director, Nevada Department of Transportation
17. Sondra Rosenberg, Assistant Director of Planning, Nevada Department of Transportation
18. Jim Lawrence, Deputy Director, Nevada Department of Conservation and Natural Resources
19. Kristen Averyt, Climate Policy Coordinator, Nevada Department of Conservation and Natural Resources
20. Constance Brooks, Vice President, Public Affairs and Diversity, Las Vegas Convention and Visitors Authority
21. Dr. Kumud Acharya, President, DRI
22. Bart Patterson, President of Nevada State College

E. MEETING 5 - JUNE 24, 2021
INTERMODAL FACILITIES, PUBLIC TRANSIT AND LAND DEVELOPMENT

Introduction

The fifth meeting of the WG took place on June 24, 2021. Kristopher Sanchez, Deputy Director, Governor's Office of Economic Development and Chair of the WG, called the meeting to order.

Panel Discussion

- **James Chrisley - Deputy Director of Aviation, McCarran International Airport-Clark County Department of Aviation ("DOA")**

- **Robin Armstrong - Project Manager, DOA-Southern Nevada Supplemental Airport ("SNSA")**

- **Steven Culberson - Project Manager, Ricondo & Associates)**

During the economic boom of the early 2000s, the Clark County Department of Aviation, together with the FAA, began the planning efforts for a second commercial service airport located in the Ivanpah Valley, just south of Jean on the east side of the I-15 corridor. Unfortunately, due to the emergence of the Great Recession in late-2007, the project was put on hold and suspended; it was not cancelled. As the economy recovered over the last decade, the need for the second airport became apparent again. McCarran has a finite capacity, and, as it stands today, will be unable to meet the projected commercial aviation demands of the future, which the Department of Aviation knows is a key to the economic viability of the entire region. Fifty percent of the visitors to Southern Nevada come through McCarran, because it is a key component of the tourism industry and tourism dollars in the local economy. To be clear, though, the proposed airport is considered "supplemental", it is not a replacement for McCarran. McCarran will continue to operate as the primary commercial service airport for the region.

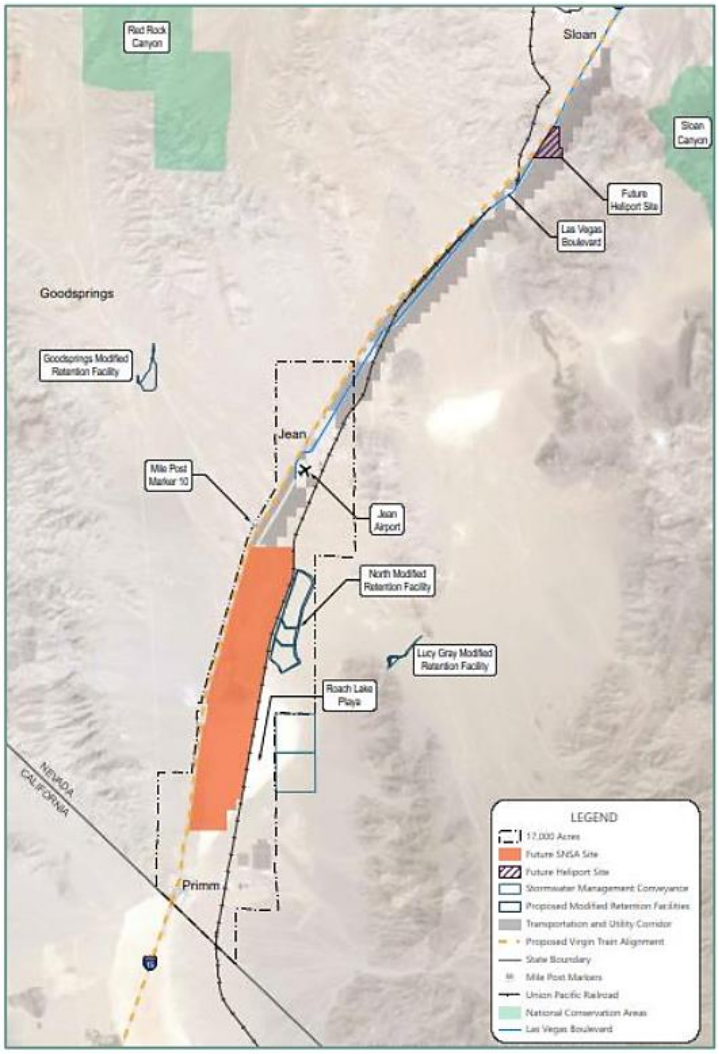
Emerging from the pandemic, the aviation industry is on the front edge of the recovery curve. It is not quite back to 2019 levels, but it is accelerating through the recovery curve. As illustrated in Figure II-13 below, the SNSA in Ivanpah Valley is needed to provide the ability to serve demand growth.

Planning for the SNSA has been underway for nearly 20 years, following a series of congressional acts and studies which confirmed that the Ivanpah Valley is the best location for a supplemental airport. Besides the airport site itself—6,000 acres that was conveyed to Clark County--other congressional acts have

reserved 17,000 acres surrounding the airport for compatible land uses, as well as some areas needed for stormwater retention facilities.

Today, 20-year planning process needs to be updated in order to bring the SNSA up to current FAA design standards as result of changes that have happened in the airline industry, including changes in aircraft types. Many of the airlines have been retiring smaller regional aircraft and have been upgrading to larger, narrow aisle passenger aircraft. This affects the facilities that are required and affects the separation standards needed for FAA approval. Since the building of the St. George Regional Airport in Southern Utah, SNSA will be the first new airport in the U.S. in many years. Hence, it is critical to make sure it can accommodate existing as well as planned technologies and is very forward-thinking way.

Figure II-13: Southern Nevada Supplemental Airport Land Allocation



Source: Ricondo & Associates

The SNSA site is close to the Nevada-California border in Clark County between Primm and Jean just east of I-15. The dashed line in Figure II-13 surrounding the site is the compatibility area, the 17,000 acres that would be conveyed to Clark County once the airport is approved by FAA and BLM. The dark blue areas are the retention facilities that are being planned. The gray hatched area that extends north of the airport up towards Sloan is a designated transportation utility corridor specifically designated for roadways and transit utilities that are needed to service the airport. One of the challenges is that I-15 backs up on Sundays and holiday weekends and reduces to two lanes (each way) on the California side. The site also lacks major utilities. Though there are some major distribution lines that pass through, water, electricity and gas all need to be brought to the site.

There are a multitude of federal, state and local agencies that have an interest in the project either from a regulatory perspective or because of the utilities and services that need to be provided. The DOA has approximately two more years of the planning to get through all the information that FAA has requested. Once that is completed, the environmental effort would begin, which the DOA for another two to three years and then there will be a five to six-year construction period. At this point, then, it is roughly expected that SNSA will open around 2035.

Erik Jimenez – (Senior Policy Director, Nevada Treasurer's Office)

Post-Legislative Update

Through the support of Governor Sisolak, the Nevada Treasurer's office was able to work on Senate Bill 430 during the 2021 the legislative session. The bill not only expanded the State Infrastructure Bank to include a variety of types of projects but also dedicated resources to establish the SIB starting July 1st. With the Governor's recommended budget in the capital improvement program, there are $75 million in bonding authority that will be issued. In the fall, when the Treasurer's office does its normal bond issuance for all of the Capital Improvement Program, it will set up a revolving fund through the SIB whereby local governments, tribal governments, nonprofit entities and public-private partnerships ("P3s") can apply to the bank for loans.

With a federal deal on infrastructure, the Treasurer's office is planning on launching the bank in the next few weeks. All local partners are encouraged to continue submitting projects; there is currently a list of hundreds of projects totaling almost $3 billion that will continue to be vetted. There is available funding from the federal government for water, sewer, wastewater and broadband connectivity, so those are likely the types of projects that will likely be funded first.

David Swallow - Deputy Chief Executive Officer, Regional Transportation Commission

Southern Nevada's Surface Transportation Infrastructure

As the public transit authority for Southern Nevada, the Regional Transportation Commission of Southern Nevada ("RTC") has a number of duties. It is also the designated Metropolitan Planning Organization ("MPO") for the region making it responsible for coordinating all the transportation plans between the local municipalities, Clark County, as well as Nevada Department of Transportation ("NDOT") and its federal partners. It is the funding agency for streets and highways and funds a number of roadway projects through the local jurisdictions. It is also responsible for operating the region's Traffic Management Center on behalf of the Cities, the County and NDOT. Finally, it fully supports all options including bicycling and operates the public Bike Share system in Downtown Las Vegas.

The current population of the Valley is about 2.3 million and it is expected to rise to approximately 3 million by 2050; with the growth seen in the past year, surprisingly, it could be sooner than that. Accordingly, RTC is tasked with providing the infrastructure to access goods and services, both within the region as well as coming through interstate travel. There are nearly 7,500 miles of roadway in the Las Vegas metro area and the pre-pandemic ridership on public transit was about 65 million people; even with the Covid-19 pandemic and 2020's shutdowns RTC still transported 56 million people on the bus system. This shows how critical public transportation is to serve the needs of the local community. Finally, approximately 39 million tons of freight move through Southern Nevada each year, whether by rail, air, truck or pipeline.

Right before the pandemic induced shutdown, the region as at approximately at 95 percent of average traffic levels. It then precipitously dropped down to a low of 44 percent. As the economy started to reopen, though, the RTC did not see transit traffic recover quickly. Instead, it hovered around 85-90 percent for most of 2020 before starting to turn upward in December. This last Memorial Day weekend (2021), traffic was at 118 percent of pre-pandemic levels.

As the MPO, a federal designation that is required for any community of a certain size, RTC is required to coordinate all the transportation plans between the cities and the County and bring those together into a regional transportation plan that feeds into NDOT's statewide plan. Every four years RTC provides a regional transportation plan, and the RTC board just adopted the newest plan in January 2021. Currently the plan anticipates close to $30 billion in transportation revenue coming in over the next 30 years.

The RTC's onboard mobility plan focuses on eight large initiatives. To highlight two: 1) The expansion and enhancement of the region's public transportation system must ensure that it reaches a majority of local residents to connect where people live to where they work. 2) High-capacity transit is needed, including rapid bus transit lines and possibly light rail, moving forward.

With 56 million trips on the RTC's bus system in 2020, public transit is absolutely critical to the sustainability of community. A move away from the single occupant vehicle trips is critical as is a move towards combined trips. Transit is similar to a "horizontal elevator" that connects the floors of the community together. In addition to the RTC's standard buses, it also has paratransit for persons who are not able to access a regular system physically or cognitively. The RTC also has some specialized services focused on senior residents, as well as veterans that provides free transit service to and from medical appointments for the veterans and their families and also reduced fares for everyone.

The RTC is also introducing what it calls "micro transit". The RTC will use what it learns from this and bringing in a new micro transit model for the Southwest and Southern parts of the Valley. This will allow riders to hail a transit vehicle to reach the closest transit line in order to get them to their destination. The RCG has also partnered with over 90 employers to distribute to seven-day passes to their employees at no cost, to encourage employees to begin using public transit again.

Another mobility option that the RTC has looked at relates to its public Bike Share system. A new transit app is now available and use of the Bike Share system can now be paid for through the app. Additionally, the RTC has gone forward with providing low-income residents an option to use Bike Share for free.

It is critical for Southern Nevada's future to make sure that it focuses on clean energy and that it implements sustainable practices. And when mobility options are assessed, it is important not to degrade the region's air quality or to create too much congestion. Key to that is reducing single occupant vehicle trips wherever possible. If someone is going somewhere, they should go with friends or family to make it a more efficient trip.

The RTC is also transitioning its bus fleet away from diesel to cleaner, natural gas buses. In fact, 100 percent of the agency's paratransit fleet and the majority of its fixed route fleet are already converted. The RTC is also moving forward with a zero-emission vehicle plan. It has a grant to purchase its first two hydrogen fuel cell electric buses and it is planning to bring in battery-powered buses. The RTC is expecting, that over the next 15 years., the agency will move to a 100 percent zero emission vehicle fleet.

When it comes to roadways, the community supported ballot measures that have given the RTC the roadway funding that it needed. The RTC board just approved the agency's 10-year Capital Improvement Program, which represents approximately $2.2 billion in projects over the next 10 years.

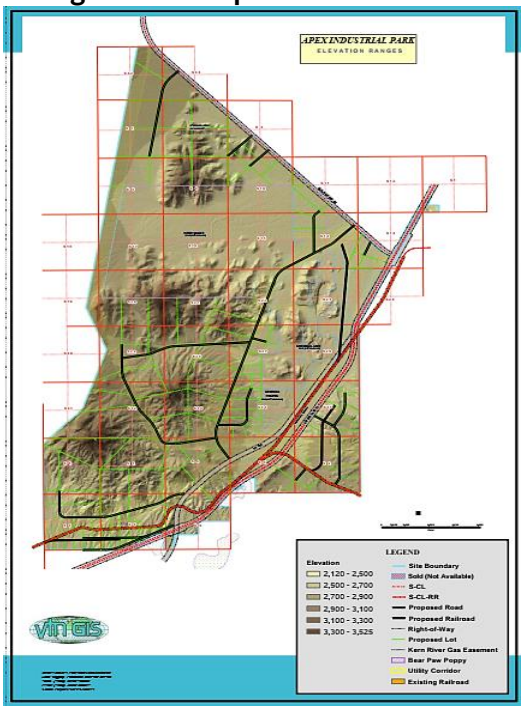
Some projects RTC has undertaken, like signal timing, have paid for themselves. The results are impressive when considering time savings and unburned fuel. The project cost about $900,000 and paid for itself in just over 30 days. Therefore, the RTC considers this a very good, successful implementation.

Dave Brown - President, Land Development Associates

Apex Industrial Park

The Apex Land Act set aside roughly 18,000 acres for development of industrial services (see Figure II-14 below). Kerr McGee, Georgia Pacific, Pabco and Chem-Lime, were virtually the only developments there other than some NV energy and third-party power plants in Apex. Originally, all of this land was owned by the federal government (the BLM) who turned it over to Clark County to be the master developer of Apex. The County prepared several studies, started the development process and then decided to leave to developers to build-out Apex. Apex Holding Company ("AHC") purchased most of the property outside of Kerr McGee, Georgia Pacific, Pabco and Chem-Lime's parcels in 2000.

Figure II-14: Apex Industrial Park



Source: Land Development Associates

What are the impediments to development and why has it several years to build-out Apex? There was no master developer. Apex Holding Company purchased the property, but it purchased it to resell; AHC planned to buy the property in 2000 and sell it by 2004. There is a lack of utilities and little distributable power at Apex. There are three large power plants and hundreds of miles overhead power, but all that power is 250 kilovolts or above. Industrial users require anywhere from 12.47 kilovolts to 480 kilovolts power, so substations need to be constructed. This remains one of the impediments to development at Apex. Also, there currently is no sustainable water source; there are groundwater wells but no surface water system.

When the BLM transferred Apex to Clark County through that Apex Land Act, the County set aside these cross hatched areas in Figure II-14 that bisect Apex as transportation utility corridors for the purpose of promoting development to provide power, water, sewer, and rail. Unfortunately, the county left it under the purview of the federal government. Permitting timeframes are anywhere from 24 to 36 months, which does not necessarily align with private development timetables. Historically, there have been other more economic land development options in Southern Nevada. For example, land the Speedway Industrial Park could be purchased for approximately $6.00 per-square-foot in the not-too-distant past.

Despite these challenges, there have been successful developments at Apex that AHC has worked on in the Kerr McGee area. In 2006, two solar fields were developed under power purchase agreements with NV Energy. They are both 20 megawatt facilities and cover roughly 150 acres each. They were developed by Fotowatio and Nextera. Their power purchase agreements were approximately $.13 and $.10 cents per kilowatt hour, respectively. Those costs have since dropped down to less than $.03 per kilowatt hour. This has made solar field development on private land less attractive and obsolete.

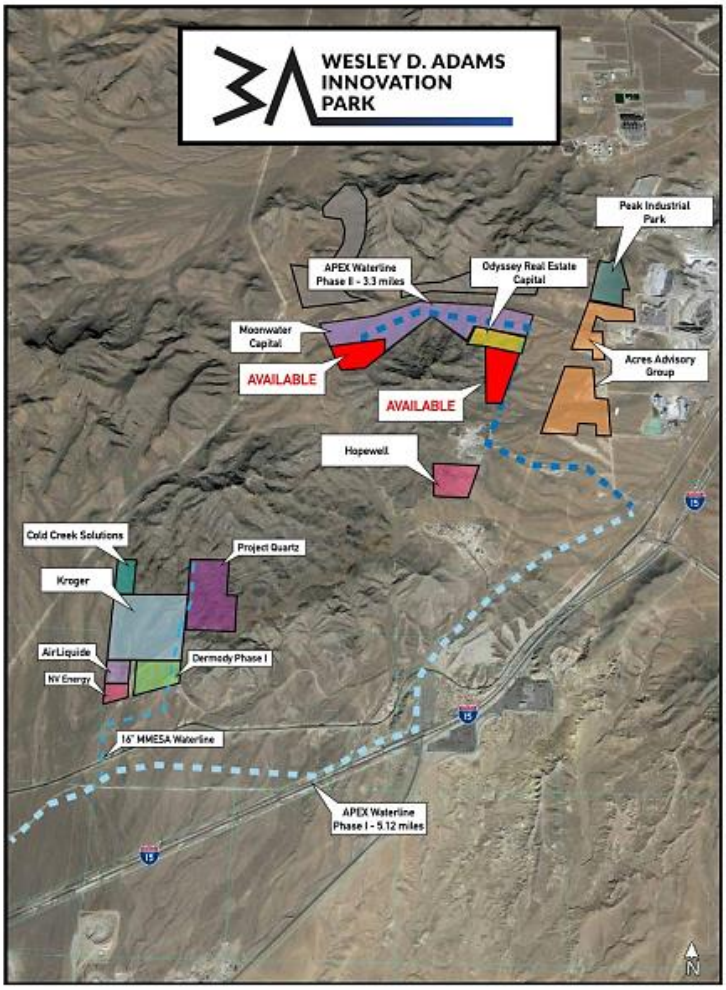
Love's Truck Stop has its most successful location in Apex at the intersection of I 15 and highway 93. During the initial cannabis boom in 2014, the City of North Las Vegas designated a “green zone” and wanted to entice growers to establish facilities in Apex. As a result, 10 to 20 cannabis growers that wanted to purchase property at Apex. However, the lack of usable infrastructure at Apex negatively impacted the desirability of Apex for that industry. That resulted in only two cannabis growers locating to Apex that have been able to survive. And the Hyperloop, which was a huge win for Apex is still operating out there in the northwest portion of Apex.

One of the major losses at Apex was the failure of Faraday Future to move forward with an electric car manufacturing operation, due to filing Chapter 11 bankruptcy in 2019. ALH spent a great deal of time to

with Faraday Future and its development consultants, and it was quite a negative experience when the company went out of business.

But trends are now moving in a positive direction. Wesley D. Adams, who purchased about 320 acres in the southern part of Apex, is now the master developer (see Figure II-15 below) of that part of Apex. The park has been Wesley D. Adams Innovation Park. Mr. Adams also worked with the City of North Las Vegas structure "oversize" water agreement to bring an eight-inch water line to the 320 acres. The City had the foresight to see beyond those 320 acres and decided to oversize the water line. And this oversized waterline is anywhere from 24 to 36 inches and will serve the southern two thirds of Apex. This will amount to five miles of water line with two pump stations and two tanks that will be turned over to the City in the next few weeks.

Figure II-15: Wesley D. Adams Innovation Park Land Allocation



Source: Land Development Associates

The second phase of the water line is another four and a half miles. It will serve the central part of Apex. The line is currently in design now. ALH expects to begin construction on that water line within the next 30 days, and it will serve another 2,000 (approx.) acres within Apex.

In conclusion, promising new business opportunities coming to Apex as part of the first phase of the 320-acre Wesley D. Adams Innovation Park include:

- Air Liquide, a hydrogen fuel cell plant
- Dermody Development is building over four million square feet of distribution centers
- The Kroger Company is building a 1.5 million-square-foot cold storage facility
- A manufacturing facility from Project Quartz, a Fortune 300 company

Finally, there are two remaining parcels, 50-acres each, that ALH is retaining for the foreseeable future because of elevation issues. There are still 4,000 acres left to develop at Apex, 3,300 of them are in Northern Apex. Once utilities are delivered to the north, the remaining land will be developed as the market dictates.

John Restrepo - Principal, RCG Economics

Recap of WG Meetings

The main themes that have been covering in the two-on-one interviews with WG members, within the larger topic of infrastructure, include the relationship between infrastructure and economic development and also the difference between traditional and nontraditional infrastructure. What is the relationship between the built environment and the socio-economic environment, including the issues of diversity and equity and inclusion as part of Southern Nevada's economic development goals?

Beginning with the end in mind, what are some of the opportunities that RCG has been hearing from WG members? In many ways Southern Nevada is a blank slate--it does not have the burdens of old infrastructure and legacy cities. There is "greenfield" infrastructure, for example, that offers an opportunity to Southern Nevada. Accordingly, as a relatively new metro area, the region has certain advantages of having new more modern infrastructure.

That said, there major questions: 1) How does Southern Nevada move from a community with a history of working silos between and among the public and private sector groups and special interests to a more unified approach to infrastructure? 2) How does the region coordinate implementation and investment better? 3) How does Southern Nevada foster better collaboration between the private and public sectors?

Additionally, several WG members expressed a conviction that Southern Nevada should grow by being proactive rather than reactive in terms of the incentives for certain industries and companies the community wants to recruit to the region that will create jobs have low automation potential while still preserving the region's natural resources, particularly water.

How should Southern Nevada spend federal stimulus and recovery money that is coming, whether American Rescue Plan funding or the American Jobs Plan funding, was a recurring theme, and the need to coordinate between the State of Nevada and local government to spend it on meaningful, strategic projects without duplicating efforts. Another theme was that better planning models, impact analyses and rigorous timelines should be used. This will likely require a new model such as an independent, bipartisan public-private commission/board tasked with planning and decision-making with regarding the region's and the state' infrastructure planning and funding strategies and prioritization.

Taking a macro perspective, what does it mean to have a resilient economy? Is it merely the built environment or is it also human infrastructure? And what does that mean for the local workforce in terms of skills, education and quantity? How will the workers of the future be trained for jobs that are not automatable and attract employers who will provide jobs for the region's college graduates?

As for water and utilities, how does Southern Nevada continue balancing conservation during and economic development? The region's water agencies will play a prominent role in deciding which types of companies should be pursued and accepted. At the same time, local jurisdictions should consider how to streamline permitting and regulatory processes and rules in order to reduce costs and inefficiencies, especially regarding the necessary utilities as quickly as possible to areas like Apex, the Southern Nevada Supplemental Airport (in Ivanpah Valley), etc.

Turning to mobility, NDOT noted that there may be a $530 million budget shortfall, which is an obstacle to creating greater equity in public transit, access to employment centers and educational institutions, etc. Some WG members also mentioned the need to be strategic about improvements to I-15 toward California to improve connectivity to Southern California, given that California is the fifth largest economy in the world. There was also some discussion on relative economic development benefits and the various routes being considered for I-11 as it goes through the Las Vegas Valley, some routes are economically beneficial than others.

In terms of diversity and inclusion, how the Southern Nevada workforce is trained for the future was also noted by a number of WG members. As was the important role of the various workforce development programs and the state's community colleges in this regard.

Also, noted by several members was the importance of improving the state's broadband network, especially in rural areas and in struggling urban communities as is the issue of broadband. This type of infrastructure is coming more and more critical to a modern economy because of the permanent role that distance learning and remote work will play.

Additionally, several WG members mentioned that affordable housing is now part of "critical infrastructure" since and has been a key factor in attracting employers. So, the definition of infrastructure is expanding.

Finally, on the issues of conservation and the environment, everything is interconnected: a region cannot have a healthy economy without a healthy environment and vice versa. How does Southern Nevada balance economic growth and development with the region's natural resource constraints and the need to maintain a high quality of life for residents?

Ken Evans - President, Urban Chamber of Commerce

Public Comment

In terms of diversity, equity and inclusion, Mr. Evans expressed a hope that Southern Nevada finds a way for businesses like those represented in the Urban Chamber to participate in the developments being planned by providing the information quickly, in order that that the minority business owners can develop the relationships over the next 5-15 years in order to participate in these promising opportunities.

Voting WG Members in Attendance:

1. Kris Sanchez, Deputy Director, Governor's Office of Economic Development
2. Dave Johnson, Deputy General Manager of Operations, Las Vegas Valley Water District
3. Doa Ross, Deputy General Manager of Engineering, Las Vegas Valley Water District
4. Jeff Brigger, Director of Business Development, NV Energy
5. Stacy Woodbury, proxy for Justin Brown, SVP/General Counsel, Southwest Gas Corp.
6. Terri Sheridan, Economic Development Specialist, City of North Las Vegas
7. Derek Armstrong, Director of Economic Development and Tourism at City of Henderson
8. Bill Arent, Deputy Director of Economic and Urban Development, City of Las Vegas
9. Raffi Festekjian, Economic Development Coordinator, City of Boulder City
10. Myisha Williams, Vice Chair and Legislative Subcommittee Chair, Commission on Minority Affairs
11. Shani Coleman, Directory of Community and Economic Development, Clark County
12. James Chrisley, Deputy Director of Operations, McCarran International Airport
13. Victor Wei, Senior Advisor to the President for Strategy & Partnerships, UNLV
14. Michael Bolognini, Market Vice President, COX Communications
15. David Swallow, Deputy Chief Executive Officer, Regional Transportation Commission of Southern Nevada
16. Jennifer Taylor, Deputy Director of Intergovernmental Relations, Nevada Governor's Office of Energy
17. Kristina Swallow, Director, Nevada Department of Transportation
18. Sondra Rosenberg, Assistant Director of Planning, Nevada Department of Transportation
19. Jim Lawrence, Deputy Director, Nevada Department of Conservation and Natural Resources
20. Kristen Averyt, Climate Policy Coordinator, Nevada Department of Conservation and Natural Resources
21. Constance Brooks, Vice President, Public Affairs and Diversity, Las Vegas Convention and Visitors Authority
22. Dr. Kumud Acharya, President, DRI
23. Bart Patterson, President of Nevada State College

F. MEETING 6 - JULY 29, 2021
INDUSTRIAL DEVELOPMENT, COUNTY INFRASTRUCTURE AND LAND SCARCITY

Introduction

The sixth and final meeting of the WG took place on July 29, 2021. Kristopher Sanchez, Deputy Director, Governor's Office of Economic Development and Chair of the WG, called the meeting to order.

Peter Guzman - President, Latin Chamber of Commerce

Public Comment

Mr. Guzman thanked Chairman Sanchez and GOED Director Brown for organizing this important forum to discuss issues that are important to organizations like the Latin Chamber.

Kristopher Sanchez – Deputy Director, GOED—Las Vegas

WG Chairman's Remarks

The goal of the WG process has been to foster regional collaboration and work toward a focused and shared vision for the region, driven by a genuine desire to break down barriers and move the region forward. In doing so, GOED has been determining the challenges that Southern Nevada faces as well as, more importantly, identifying the shared opportunities in Southern Nevada. We have covered a number of topics over the last six months: the impacts of climate change, water scarcity, supply chain needs in Southern Nevada, land availability, inland ports, intermodal facilities, opportunities at Apex, the airport expansion and opportunities in the South Valley, the future of mobility and electrification and infrastructure funding opportunities.

A key to Southern Nevada's future is to work with California and Utah to establish a tri-state supply chain commission that advises on supply-chain-related infrastructure needs and investments at a "macro-level". The three states are inalterably connected economically and natural resource-wise. The importance of looking forward in an integrated way is key to the Southern Nevada's future, especially considering the long-term changes in supply chains and economic structures wrought the by the Covid-19 pandemic.

Because of the movement at the federal level for infrastructure funding, GOED may reconvene the WG in the near future to examine the funding opportunities and make a strong application. Southern Nevada is in a good position to secure federal funding to address the challenges that have been highlighted by the WG over the previous months.

Terri Sheridan-Economic Development Specialist, City of North Las Vegas

Industrial Development and Infrastructure in North Las Vegas

The City of North Las Vegas has two priority areas for development: the Speedway Industrial Area and the Apex Industrial Area. As for the Speedway (see Figure II-16), since 2006 almost 1,000 acres have been absorbed by development and infrastructure, leaving approximately 120 acres remaining. The City and the State of Nevada have made $156M in infrastructure improvements since 2016, comprised of $46M in sewer connections installed by the City and the $110M Tropical Connector, built by the NDOT, from the Las Vegas Motor Speedway to the I-15. There are currently 2.3M square feet of development under construction and another 3.8M that is planned. After completion, these developments will have created an estimated 10,000+ new jobs in the Valley.

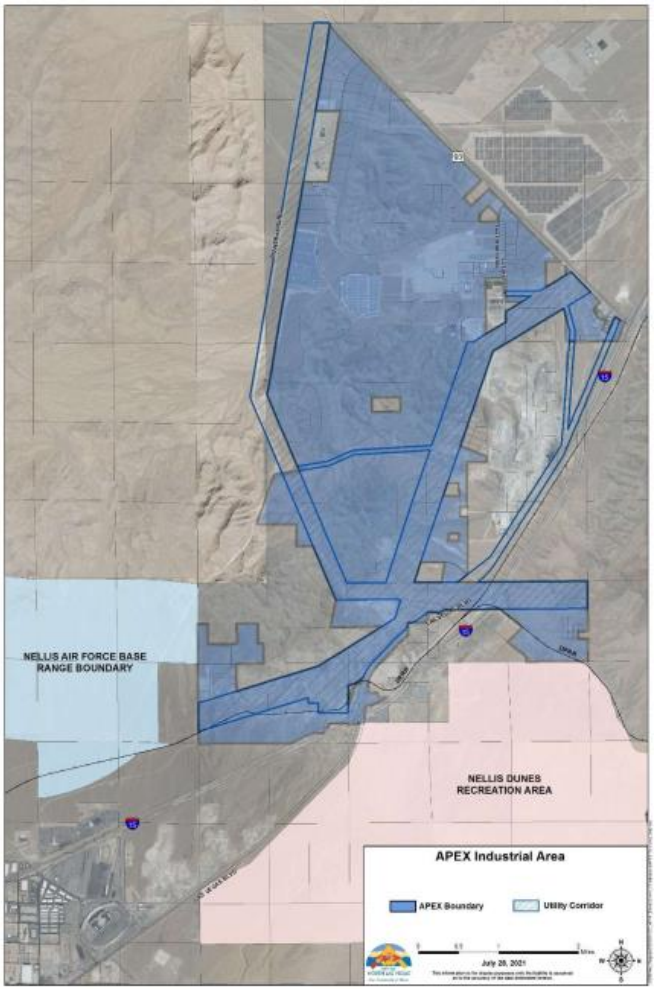
Figure II-16: Speedway Industrial Area

Source: City of North Las Vegas

Turning to Apex (see Figure II-17), there are approximately 7,000 developable acres that are industrially zoned. There is direct freeway access from both I-15 and U.S. Highway 93. Water and sewer

improvements are underway and there is currently access to electrical transmission and natural gas. Fiber connectivity will move at the speed of development.

Figure II-17: Apex Industrial Area



Source: City of North Las Vegas

Completed in December 2018, the Garnet Interchange Design-Build Project was fast-tracked and completed in 16 months. The project provides for safety and operational and capacity improvements to the Garnet Interchange (Interstate 15 at U.S. Hwy 93) and U.S. 93 to the north. These highways carry an increasing level of freight traffic to and from Northern Nevada and provide access to adjacent industrial and manufacturing locations like Apex Industrial Park.

In July 2018 a $59M, 11-mile water pipeline project began as a public-private partnership. Phase 1, the first five miles, has been completed. The remaining six miles will be completed in 18-24 months depending

on permits from the BLM. In Northern Apex, a $5M elevated water tank has been planned that will hold 1.25M gallons. The SNWA is currently designing and constructing a three-mile, 16-inch water distribution line that will be completed in two years. Further, there is a $250M SNWA capital project to construct 18 miles of water pipeline and 43 total miles of wastewater pipeline. The timeline for that project is about seven years, but the City of North Las Vegas is looking to activate and utilize any available funding sources that will expedite that SNWA build, which could create as many as 20,000 jobs according to Ms. Sheridan.

Current and planned development at Apex include:

- Miners Mesa: 320 acres – all parcels sold
- WDA Innovation Park – North
    - 393 acres – all available parcels sold
    - 190 acres – future availability
- WDA Innovation Park – Central: 120 acres – sold or sales pending
- VanTrust – Vantage North
    - 350 acres – available
    - Phase I – 3 bldgs., +/- 1.8M SF
    - Phase II & III – 3 bldgs., +/- 2.8M SF
- HR REIT – VIP (Vegas Industrial Park): 913 acres – available
- Mosaic Development: 678 acres – available
- Apex Power Parkway
    - 178 acres
    - 101 acres

Michael Brown-Executive Director, GOED

Closing Comments

The reshoring of American manufacturing is a reality. There are 17 projects going before the GOED board in September, and three of those are Fortune 300 companies. GOED has never before seen the kind of applications that are coming in now. What makes Nevada particularly attractive is the Pacific time zone and access to the Pacific ports, without actually being in California plus its available workforce. So, the same companies are looking at Nevada, Arizona and Southern Utah as potential locations. The top issues they raise are workforce, land and infrastructure that supports that land. State corporate income taxes have not been a topic of conversation.

The Las Vegas Review Journal has done a series of stories over the last two years on the history of planning in the Valley, including plans for industrial parks that took much longer to become a reality. What community should not want to see is an article 20 years from now about how Southern Nevada should have taken advantage of this moment in American manufacturing. This is the moment. Southern Nevada has 40,000 hospitality workers who may not have an opportunity to return to the gaming sector. GOED believes that, with what it has in the pipeline, it can easily fill up local industrial parks—and create jobs for many of those workers—if the region can meet the infrastructure challenges in the short term.

Shani Coleman-Director, Clark County Department of Community and Economic Development

Clark County's Economic Development Strategy

During the pandemic, Clark County took the opportunity to work with Stanford Research Institute ("SRI") to identify a strategic economic development plan specific to unincorporated Clark County. What came from that plan was an assessment of the local community, identification of assets, a SWOT analysis and a strategic direction. This plan was adopted by the Board of County Commissioners in January of this year. The vision and mission statements that resulted from that planning were:

- Vision: For Clark County to be a world-class gateway to the Mountain West, built upon prosperous and diverse communities and businesses.
- Mission: Clark County catalyzes visionary initiatives that transform Southern Nevada into a smart, green and vibrant region.

The goals identified were to:

- Cultivate a fertile environment for small businesses and entrepreneurs
- Accelerate economic diversification
- Integrate the workforce ecosystem
- Mobilize stakeholders around County-wide initiatives
- Promote community-centered design of the built environment
- Ensure equitable access to resources

The infrastructure needs that Clark County has identified include: an educated and skilled workforce, a clear education-to-employment pipeline, improved and innovative public transit, dedicated workforce housing, an improved and expanded healthcare network, improved broadband/fiber connectivity, an updated public lands bill and increased fundraising capacity.

To accelerate the diversification of the economy, the region needs to improve the I-15 corridor, complete the Southern Nevada Supplemental Airport in the Ivanpah Valley and designate non-residential employment hubs, among other things. To support small businesses and entrepreneurs and integrate the workforce ecosystem, the region also needs a centralized small business network, an incubators and accelerators network, strong skills assessment and training, expanded community financial resources, a venture capital network and expanded mentor and technical assistance programs.

Finally, to ensure equitable access to resources, the region needs programs focused on underserved communities and expanded language services, in addition to the needs and recommendations listed above.

Bill Arent-Deputy Director, City of Las Vegas Department of Economic and Urban Development

The City of Las Vegas' Economic Development Strategy

There are three areas the City of Las Vegas is looking to focus on. The first one is related to its lands in the northwest part of the Las Vegas Valley. When a metro area is located surrounded by federally owned land, most if not all the developable land will eventually absorbed. Thus, the City has been heavily focused—from an industrial development standpoint—on its land assets in the Northwest Valley.

As part of its engagement with stakeholders in the Valley, the City of Las Vegas has been having conversations with the Las Vegas Paiute Tribe. Those conversation culminated in an intergovernmental agreement with the tribe that the Las Vegas City Council approved on April 7, covering three sets of lands. The first is a section of land, north of the Mountain Reservation golf course and bisected by the U.S.-95 corridor, that comprises 633 acres. A second piece of land is a 1,000-acre parcel, controlled by the tribe, that is part of the Snow Mountain reservation south of the golf course. The third piece, which is far north of the golf course, is 3,200 acres. And the concept behind the agreement is that the City would like some near-term development of new industrial parcels in the northwest part of the Valley as an employment center.

Instead of the City doing it on its own or with a land development partner, it would like to develop these lands in conjunction with the tribe itself. So, the concept is to exchange the land that it holds a land patent for from the BLM, essentially giving the 633 acres back to the tribe, in exchange for jointly developing a 1,000-acre parcel south of the Snow Mountain Reservation golf course and resort. The last piece, the 3,200 acres, holds certain spiritual and community significance for the tribe, thus, rather staying under federal ownership, the City of Las Vegas is proposing going to work with the tribe to incorporate these

lands into the reservation. These conversations are in the early stages, but the City is looking forward to successful negotiations with the tribe.

Additionally, as part of the discretionary funds that the EPA is distributing through the American Rescue Plan, there is a $100 million allocation specifically for indigenous communities. And so, the City believes this could be a great opportunity to advance that plan, together with the Las Vegas Paiute Tribe, to use those competitive funds, as well as other potential funds from the state infrastructure bank to help expedite its planning and meet some of the City's infrastructure needs. The City also believes that this would be complementary to and not competitive with what the rest of the region is doing. The City does not anticipate that it would be heavy industrial or heavy manufacturing, as seen at Apex or even in the South Valley. What the City of Las Vegas would like to see is light industrial development that complements what it is already doing with its Smart City and Smart Mobility strategy, as well as some of the advanced technology that is happening at Creech AFB.

The second opportunity the City is considering is small scale infrastructure for infill development. Having some of the first lots of land that were developed after the building of Hoover Dam, the City of Las Vegas has some of the oldest infrastructure in the Valley, especially in the core of Downtown. Much of this infrastructure needs to be replaced. What the City is considering is whether it, through the Redevelopment Agency, should partner with the state infrastructure bank to install some of that private infrastructure, particularly water and sewer lines. For some small businesses, this will make the difference between them opening a location in the Downtown area or opening somewhere else in the Valley.

A third opportunity is infrastructure for the Las Vegas Medical District. The City has seen the great progress that the university system, led by Chancellor Rose and Dr. Khan of the School of Medicine and the Health Sciences system at UNLV are making on the medical education building. The City would like to develop the infrastructure in the Medical District in a coordinated way—such as shared parking, for example. The City believes that parking and related infrastructure to support the growth of the Medical District could be a near-term opportunity to use funds from the state infrastructure bank, in collaboration with its partners at UMC, UNLV and the Valley Hospital System.

There is a long list of infrastructure needs to support the community, but the City of Las Vegas is trying to think and focus on near-term successes that it can work on together with its regional partners. This would demonstrate the importance of the infrastructure bank and all the efforts that state leadership has done to launch the bank and make Southern Nevada more competitive with neighboring states.

Jonas Peterson-President and CEO, Las Vegas Global Economic Alliance

LVGEA's Economic Development Strategy

The Las Vegas Global Economic Alliance ("the LVGEA") is the regional development authority for Southern Nevada designated by GOED. The LVGEA is public private partnership that has over 50 members on its board—from public to private to education leaders—all focused on a common goal: accelerating job creation in Southern Nevada. Its core work involves advancing regional planning for economic development; attracting companies from around the world; and working with hundreds of businesses each year to overcome obstacles, support growth and connect them with available opportunities, programs and services. The LVGEA participates in providing talent and workforce development, aligning and strengthening education and workforce development systems.

Earlier this year with SRI and other partners, the LVGEA board approved a new set of target industries for Southern Nevada that offer the most opportunity—the highest return on investment—over the next five years for the region. The sectors include:

- General and advanced manufacturing
- Creative industries: professional services, media production, media broadcasting and distribution
- Information and communication technologies: professional services, cybersecurity
- Transportation and logistics technologies: distribution and warehousing, transportation support, passenger services, production of unmanned autonomous systems
- Business and financial services: management and professional services, business administration, financial services
- Healthcare services: general and specialized, hospitals, care facilities, healthcare research and technology
- Clean technologies: clean energy generation, distribution and wholesale, engineering and supporting services, HVAC and plumbing contractors

LVGA believes manufacturing is a good fit for Southern Nevada, for a wide variety of reasons. The region is well-located, having access to many markets in the Southwestern U.S., and it has the transportation infrastructure to move goods easily to those markets. The LVGEA thinks that logistics is part of a larger strategy to get into integrated manufacturing and logistics operations and then move higher up the ladder of opportunity to be an attractive location for company headquarters. There is a boom happening across the country right now for industrial space and e-commerce in particular. According to a recent report from CBRE, the U.S. needs 330 million square feet of new warehouse space just to keep up with the existing demand in e-commerce. Current demand is expected to continue to grow new waves of development.

Nevada should be getting a large share of that activity. The demand for industrial buildings is high locally, in fact, the vacancy rate is now down to 2.8 percent, which is very low.

If Southern Nevada has available buildings and sites ready to go to meet company demand, then the future looks bright for this industry in the region. The problem is that the supply of land is being exhausted. According to CBRE, almost every available industrial land parcel in the Las Vegas Valley has been acquired by either a user or developer. The region a very limited availability of readily developable land. Without planned infrastructure investment or the release of more developable land, the next wave of development becomes extremely limited and could hinder potential growth of the Las Vegas industrial market. If does problem is addressed, Southern Nevada will miss playing a major role in industrial development sector, not because companies do not want to locate here but because the region will have limited real estate options that these companies can get in other markets.

What can be done about this? Southern Nevada needs a large industrial park setting, with ready-to-build sites—a park that accommodates many different acreage sizes, including large sites (200 plus acres). Having large sites can attract "game-changing projects" to Southern Nevada, including rail service and the infrastructure in place—not just nearby but to the site so that the development can happen in a timely fashion.

The LVGEA has seen far too many companies that want to establish a presence in Southern Nevada but ultimately choose another location, simply because the region lacks the type of site they are looking for or the infrastructure to service it. For example, earlier this year, the LVGEA along with its partners saw an opportunity to recruit a nationally recognized manufacturing operation—named "Project Orion". Project Orion is a company that members of the WG would agree it should be welcome to locate operations in Southern Nevada, because those operations would potentially create 2,000 jobs by the end of 2022. To do so, Project Orion needed a site with over 200 acres upon to build 3.4 million square feet of new industrial buildings. The company would also invest over $70 million of its own capital to develop the project,

Project Orion needed that site to be properly serviced by infrastructure in order to begin operations as soon as possible. Together with its municipal economic development partners, LVGEA searched every available site meeting the company's size needs and located one at Apex that was not an exact fit, but the best possible option. The company conducted further research and arrived at a number—$35 million (see Figure II-18)—that would be required to extend infrastructure to this site and make it comparable with

sites that could be acquired in other markets. The LVGEA has not since heard from that valuable company again.

Figure II-18: Infrastructure Requirements for Project Orion to Locate Operations in Southern Nevada

Utility Consumption	Unit	2022	2023	2024	2025	2026
Annual Electricity Consumption	KwH	5,963,317	16,273,952	16,201,083	16,209,184	17,953,859
Annual Gas Consumption	Therms	49,058	127,078	127,141	127,205	141,846
Annual Water Consumption	Gallons	8,177,700	25,571,324	25,584,110	25,596,902	32,100,848
Wastewater Requirement	Gallons	17,340,730	31,057,567	31,449,682	31,693,088	32,014,528

- Estimated infrastructure cost: $35 M

Source: LVGEA

This is the problem that Southern Nevada has to solve to be competitive. In other markets, those large, development-ready sites with infrastructure are often in place. If the region is going to compete for those wins, this is an area where Mr. Peterson encourages the WG to focus resources and effort—creating more of those developable sites by extending infrastructure and building an industrial park that can meet the needs of those companies.

Voting WG Members in Attendance:

1. Kris Sanchez, Deputy Director, Governor's Office of Economic Development
2. Doa Ross, Deputy General Manager of Engineering, Las Vegas Valley Water District
3. Jeff Brigger, Director of Business Development, NV Energy
4. Scott Leedom, proxy for Justin Brown, SVP/General Counsel, Southwest Gas Corp.
5. Terri Sheridan, Economic Development Specialist, City of North Las Vegas
6. Jonas Peterson, LVGEA, proxy for Ms. Betsy Fretwell
7. Bill Arent, Deputy Director of Economic and Urban Development, City of Las Vegas
8. Myisha Williams, Vice Chair and Legislative Subcommittee Chair, Commission on Minority Affairs
9. Shani Coleman, Directory of Community and Economic Development, Clark County
10. James Chrisley, Deputy Director of Operations, McCarran International Airport
11. Dr. Bo Bernhard, Interim Vice President of Economic Development, UNLV
12. Victor Wei, Senior Advisor to the President for Strategy & Partnerships, UNLV
13. Michael Bolognini, Market Vice President, COX Communications
14. MJ Maynard, Chief Executive Officer, Regional Transportation Commission of Southern Nevada
15. David Swallow, Deputy Chief Executive Officer, Regional Transportation Commission of Southern Nevada
16. Dr. Melody Rose, Chancellor, NSHE
17. David Bobzien, Director, Nevada Governor's Office of Energy
18. Jennifer Taylor, Deputy Director of Intergovernmental Relations, Nevada Governor's Office of Energy
19. Jeff Lerud, proxy for Sondra Rosenberg, Assistant Director of Planning, Nevada Department of Transportation
20. Kristen Averyt, Climate Policy Coordinator, Nevada Department of Conservation and Natural Resources
21. Dr. Kumud Acharya, President, DRI
22. Dr. Vickie Shields, President, Nevada State College (for Bart Patterson)

Nevada Governor's Office of
ECONOMIC DEVELOPMENT
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Figure II-19

EXECUTIVE SUMMARY: SOUTHERN NEVADA INDUSTRIAL LAND ANALYSIS INVENTORY & IMPLICATIONS FOR ECONOMIC GROWTH & ECONOMIC DEVELOPMENT ("THE STUDY")

Study Purpose & Need
NAIOP-Southern Nevada ("NAIOP") commissioned RCG Economics ("RCG") to prepare an analysis whose main purpose was to investigate the issue of land scarcity in Clark County (or the "Las Vegas MSA"; "Southern Nevada"). The focus of RCG's scope of work was to evaluate whether future short- and long-term developable land constraints that could negatively impact the region's economic resilience. The Study Period used goes from 2018 through 2035.

Note: RCG did not consider the negative impacts on the Clark County economy associated with the COVID-19 pandemic. The Study was essentially completed prior near closing of the Clark County economy in mid-March 2020.

Recommendations & Major Findings

- Nevada's Congressional delegation should immediately and aggressively pursue changes to federal law included in the Southern Nevada Economic Development and Conservation Act to expand Southern Nevada's disposal boundary.
- Southern Nevada will face a land shortage, stunting economic development around 2030 if nothing is done to expand regional access to lands; sooner if the BLM fails to release lands as needed.
- There are roughly 19,100 gross acres of developable employment land in 198 parcels of 20+ acres remaining in Clark County.
- Approximately 9,100 of those acres are most optimal for development. Includes federally-owned parcels that have not yet been released under SNPLMA.
- The region is projected to require about 14,100 acres of developable employment land to meet the needs of the expected economic and job growth by 2035.
- Based on the estimated 9,100 acres note above, there would be a deficit of 5,000 acres.
- Failing to ensure an adequate supply of employment land could lead to a reduction in yrly. gross regional product growth from 2.8 percent per year to 1.5 – 2.0 percent per year.

NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
SOUTHERN NEVADA CHAPTER

Three Forecast Scenarios Developed (2018 – 2035)

- Base-Case (No land constraints)
- 3% cost disadvantage (due to land constraints)
- 5% cost disadvantage (due to land constraints)

Economic Output Impact
Base-case: Average yrly. growth rate: 2.8% or $119.4 billion reaching $318.3 billion in 2035

3% cost disadvantage: Avg. yrly. growth rate: 1.9%
Growth reduction over Study Period: $43.6 billion or by 13.7%

5% cost disadvantage: Avg. yrly. growth: 1.3%
Growth reduction over Study Period: $69.5 billion or by 21.8%

Job Impact
Base-case: Avg. yrly. growth rate: 1.9% or 504,000 jobs reaching 1.8 million in 2035

3% cost disadvantage: Avg. yrly. growth rate: 1.2%
Growth reduction over Study Period: 204,800 jobs or by 11.3%

5% cost disadvantage: Avg. yrly. job growth rate: 0.7%
Growth reduction over Study Period: 329,100 jobs or by 18.1%

Earnings (Wages and Business Income) Impact
Base-case: Avg. yrly. growth rate: 2.8% or $40.4 billion reaching $109.1 billion in 2035

3% cost disadvantage: Avg. yrly. growth: 2%
Growth reduction over Study Period: $12.2 billion or by 11.1

5% cost disadvantage: Avg. yrly. labor income growth: 1.6%
Growth reduction over Study Period: $19.5 billion or by 17.9%

Gross Regional Product Impact
Base-case: Avg. yrly. growth rate: 2.8% or $71.7 billion reaching $191.3 billion in 2035

3% cost disadvantage: Avg. yrly. growth: 2%.
Growth reduction over Study Period = $22.5 billion or by 11.8%

5% scenario disadvantage: Avg, yrly. growth: 1.5%
Growth reduction over Study Period = $36.1 billion or by 18.9%

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III. Two-on-One Interview Findings

Introduction

Between May 2021 and July 2021, Infrastructure Working Group Chairman, Kristopher Sanchez, and RCG Principal, John Restrepo, conducted a series of confidential two-on-one interviews with members of the WG and selected third party subject matter experts. These are the opinions of the interviewees and do not necessarily represent the views of GOED or RCG. The following reflects salient themes and issues that emerged from those conversations:

A. Theme: Definitions

- Infrastructure includes the built environment and everything it takes to support that built environment, including transportation networks, communication networks, and also what supports your social infrastructure: childcare, parks, hospitals, public safety and service, delivery, etc.

- When discussing what infrastructure does, it must include connectivity of people—to places, to opportunities, and, most importantly, to employment.

- Economic development, whatever the definition, needs to be embedded in the values of the community.

B. Theme: Strategic Thinking/Beginning with the End in Mind

- In some ways, the Southern Nevada landscape can be viewed outside of the developed areas as a bit of a blank slate. This is an opportunity to be proactive in planning. Because the region does not have to replace legacy infrastructure like subway systems and outdated rail, this is an opportunity to be an early adopter of new technology.

- Some communities around the country invest where they want growth to go—they drive the growth. In other places, developers decide where they want to be located and municipalities scurry to provide the infrastructure to support that location. In Southern Nevada, there has not been much of an inclination to have that planned, proactive growth, even with large business parks like Apex.

- When using Federal funding $200 million, it should be used as an investment in the future that does not replicate what is already being done. The priority should be large strategic projects that "move the needle." For example, the City of Tucson is using its American Rescue Plan funding to buildout a complete, private cellular network to serve the city. Digital infrastructure projects like that are impactful, create employment and attract additional private sector investment. Had the

City of Las Vegas not done the two or three large projects it launched during the Great Recession, such as The Smith Center and Symphony Park, for example, the city might not have rebounded the way that it has. Downtown Las Vegas would not have the cultural identity it has now or the tourism it currently sees, and now there are apartments and condominiums going up across from The Smith Center.

- The way infrastructure is thought of should consider the reality of who will be going to college in the future. Ten years from now, what needs to be done to address the needs of a more diverse population in Southern Nevada. What are the needs of this more diverse population? Many will have to juggle family, work, childcare, and many may not have parents who went to college. So, when we think about how to meet the infrastructure needs of that population, transportation is critical, as are high speed internet and childcare.

- Southern Nevada is not currently using a standard, regionally adopted planning model for forecasting. The RTC as Metropolitan Planning Organization should be analyzing new more innovative models. Having a robust regional planning function can be painful, but it can also help eliminate gaps so that situations are avoided where most the infrastructure resources are lined-up but others are not because of different capital improvement timeframes. If this is known at the outset, then better decisions will be made about how Southern Nevada should grow toward becoming more economically and environmentally resilient.

C. Theme: Federal Government/BLM and Land

- "If you're talking about economic development in Southern Nevada but you're not talking about land and its scarcity, you're not really talking about much that's relevant."

- Planning discussions about Nevada cannot take place without addressing the many ways the state depends on the Federal Government agency processes regarding land resources. This "federal nexus" is part of the nature of who Nevada is as a state.

- Few states have had much of an opportunity to influence the solar field versus solar retrofit (distributive solar) discussion. Large solar projects are on federal land and the states lack a clear vision on this topic. Arizona and New Mexico, on the other hand, are generating a lot of revenue for their school system through solar leases. In Nevada, because the solar project is going to be on BLM land, all of the revenue will go to Washington, D.C.

- Reviewing and improving and accelerating BLM 's procedures for releasing land for auction in the Las Vegas Valley is of critical importance. Additionally, the agency's appraisal guidelines and rules should also be revisited to attract a broader range of buyers. Finally, BLM should work with the local jurisdictions in designating parcels for residential and non-residential uses only in order to protect and enhance the regions jobs-housing balance.

D. Theme: Political, Administrative, and Economic Silos

- Southern Nevada should establish a bipartisan, independent commission that has the responsibility and the political weight behind it to make the tough decisions and insulate individual communities from having to make them. Its duration would need to be short-term, maybe timed with the disbursement of Federal funds, but long enough to be effective, develop the plans, and make the tough choices.

- It is unlikely that existing silos will be overcome without an established body—supported by the state but not necessarily chaired by the state employees—that brings the regional governments together for a specific purpose and has some political weight. Then the State of Nevada can align behind that plan and enforce its completion via funding from the State Infrastructure Bank or SIB.

- Southern Nevada should take a collective step back and look at infrastructure, in a broad sense, as a macro-region of neighboring states rather than individual geographic silos. But there are, within each one of those siloes, tremendous opportunities for Southern Nevada to lead if the region chooses to, both in policy development and how to implement solutions, and how the region works with industry to solve those problems. There are various ways to have regional conversations about important decisions. For example, the Bond Oversight Committee manages a variety of regional discussions because it is making financial decisions on large scale projects. But these regional conversations do not always take place.

- The State of Nevada and local governments are striving to spend pandemic-related funds where most effectively, but not all of them necessarily have the political support to do that—to spend public funds in the most effective way. To the extent that candid conversations can be had and be transparent, there are many opportunities make Nevada's economy more resilient.

E. Theme: Southern Nevada Jobs and Attracting New Employers

- ***Workforce***
  - Among the factors influencing employers' decisions to relocate to or expand into Southern Nevada, including tax policy, business climate, workforce, size and quality of work, etc., the workforce is the greatest concern. Employers ask if Southern Nevada has enough "quality" employees; unfortunately, often the answer is, "no, but we will help you build or attract that workforce." However, like providing utility connections, this is not an obstacle that is solved quickly.

  - A substantial obstacle that will hold back our economy, probably more than anything, is not having better prepared students coming out of K-12, especially in the areas of math and writing skills.

  - Southern Nevada needs a much more robust conversation with the public schools, including about dual enrollment, because if students are not college ready, too many are lost from skilled career pipeline before they can join the workforce.

  - A key problem is that students educated in Southern Nevada leave—our trained workforce leaves—for other states, so we need to figure out a way to retain them. This is the issue of "brain drain" that is often mentioned.

  - There are several reasons why workers and service members at Nellis Air Force Base stay or leave Southern Nevada. The low tax environment is a plus, the cost of housing has become an issue. And the number one concern is the quality of K-12 education. Quality of life, including the quality of jobs is also an important concern since many workers and service members from Nellis are highly skilled. Many see technical job opportunities in Southern Nevada as being limited. Local wages are often seen, even for technical occupations are seen as relative. And finally, there are those that simply do not like the desert.

  - Related to the previous bullet, the data on the transition (separation, not retirees) rates of Nellis service members and civilian members, and what the associated/correlated skillsets and industries are not generally public information. This said, in 2020, for example, there were 181 separations at Nellis. It is unknown how many of these workers have stayed in Southern Nevada. It is important understand the skill sets of these workers because there are companies considering Southern Nevada who may need these workers, and without a clear

understanding of their skills, there is an incomplete picture the skills of Southern Nevada's workforce. If the general community strives to work with Nellis in a more formal and consistent way, it could prove an important opportunity. Accordingly, a more formal working partnership to retain high-skill workers in the region should be established between Nellis and GOED and the LVGEA, for example

- Nevada's higher education institutions have been lagging—compared to the great research institutions in California, especially in the area of commercialization/monetization of technologies and intellectual properties as they relate to infrastructure.

- Included in the Cortez Masto lands bill is a provision that creates more clarity around the use of the land Nevada State College ("NSC"). The bill stipulates that NSC and the City of Henderson may use the land conveyed "for any purpose relating to the establishment, operation, growth, or maintenance of the College, including any use that may generate financial support for such a purpose"; and "enter into 1 or more public-private partnerships or agreements … with respect to the conveyed land."[1] Should the bill pass, it will be easier to start working with public private partnerships and for private companies to get financing to make long-term investments. NSC needs a more efficient economic structure for building out its campus in Henderson. Currently, ad hoc projects go to the Board of Regents for approval, which can be time consuming and unpredictable.

- ***Economic Diversification***
  - The globalization of the lodging and hospitality industry, especially the digitalization of gaming. could become a significant threat to Southern Nevada. But until the local economy is sufficiently diversified, the industry needs to be protected and supported. Southern Nevada cannot risk the economic and fiscal impacts of not doing so. This will give the region time to become more economically resilient. We have an insecure economic situation in Southern Nevada. Reno and Northern Nevada learned how to reinvent themselves after Native American gaming came in. Southern Nevada is still too tourism dependent.

  - Economic development and diversification should analyze in terms of "degrees of separation" from the Strip. Professional sports and other entertainment amenities are just that amenities; they do not materially improve the economic sustainability of Southern Nevada. More must be done enough to mature the secondary industries that are related to lodging and hospitality as

[1] www.congress.gov/bill/117th-congress/senate-bill/567/

the region's primary industry. When the third or fourth degree of separation are reached, the primary industry is not as much the focus.

- There is one area where the lodging and hospitality industry can materially be beneficial in terms of economic development and that is if our higher education system, especially UNLV, can develop sports medicine, transportation and clean energy specializations that will attract world-class research and academic talent.

- ***Supporting Investment***
  - In Southern Nevada, there is a history of having developers pay for new development, which, in some circumstances, can mean a very high cost of relocation and construction without preexisting "pads" for business relocation, particularly for large employers. As a result, it can take an inordinate amount of time to obtain utility access of all types. This presents a challenge for attracting employers to the state because they work on schedules that are much different than local utility providers.

  - The last 10-year capital plan for the Las Vegas Valley Water District ("LVVWD") was in 2017, which identified the facilities and infrastructure needed to either bolster the water system or serve the areas that will be needing facilities. However, none of the facilities along I-15, even to the Supplemental Airport in the Ivanpah Valley, were included in that plan. This means that the LVVWD does not currently have ability to support those facilities or the water rate to pay for the support of them. All the facility needs that were projected at that time came to fruition very quickly because of the acceleration of development in the Las Vegas Valley. Given the new interest in Sloan and Jean toward the Supplemental Airport, it is in the best interest of the region to put those into the next capital improvement plan. At this time, there are planned facilities in Sloan and the Ivanpah Valley, and when these projects are included in the 10-year capital plan there will likely be a water rate increase to provide the funding for design and construction of those facilities.

  - The South Valley Lateral was designed with enough capacity to serve portions of Sloan and Jean but not the large swath of land that is being contemplated in the Southern Nevada Economic Development and Conservation Act. That development will need the Horizon Lateral to be constructed given the reserved capacity for the Supplemental Airport, etc. The SNWA has a map that shows the areas that were originally part of the of the South Valley Lateral's capacity the areas that were not included.

- ***Other***
  - The case to be made is that the region is not just building "a lane" or a high-tech highway system for goods and services to pass through the state. The bigger picture is that these thoroughfares are incentives for companies to locate here and create jobs.

  - The quality of jobs produced and the quality of economic activity desired needs to drive the region's economic development strategy. This includes consideration for the environment and water resource impacts of different industries.

  - There was a study from the American Transportation Research Institute in 2019 on the impact of e-commerce on the trucking industry. The study identified various locations where it would be smart to set up distribution hubs and the Las Vegas MSA was one of them. According to this report, there are approximately 22 million people living within a one-day truck drive of Southern Nevada.

F. Theme: Conservation and the Environment

- Economic resiliency is dependent on infrastructure—how is it prioritized while still protecting the natural environment? Productive dialogue goes hand in hand with smart planning and smart growth.

- The challenge we have with heat in Southern Nevada during the Summer months is primarily a function of cement and blacktop—it is a result of the materials we use together with the transportation infrastructure, i.e., roads. In some of the Valley's jurisdictions, tree cover is lacking, while in areas like Summerlin and Green Valley there is a wide variety of landscape with trees and cooling areas. On any given day, then, there can be 15 degrees difference between locations in the Valley. Thus, urban reforestation should be included in the discussion of infrastructure.

- There could be a large opportunity for Southern Nevada to apply for and receive Building Resilient Infrastructure and Communities ("BRIC") funding to invest in "resilient infrastructure." A large percentage of those dollars must go to underserved communities. This is an opportunity to solve some of the problems in our underserved communities in terms of urban heat and infrastructure investments. Phoenix is certainly a case study on how to deal the urban heat island is; so is a Baltimore, which has a significant heat island as well as humidity.

- The first week of June 2021 was the lowest point that Lake Mead has reached in its operational history. Aside from the consumptive use of water, the focus should also be on return flow credits—i.e., wastewater from sinks, toilets, etc., must be returned to the Las Vegas Valley. The region should become a net exporter of water to the Ivanpah Valley, without bringing that wastewater back into Valley as "return flow credit". The solution to the water shortage needs to be a combination of technology and conservation practices.

- There is a potential and looming water shortage in Southern Nevada. It is occurring much sooner than was expected in terms of initiating the Arizona, California, Mexico, and Nevada shortage sharing agreement. If the rate of development--in terms of population, etc.--occurs as predicted, there will be a point at which Southern Nevada will be faced with a choice between the human and natural environments. If projects and economic development are being considered that use large amounts of water but only generate a small number of jobs, the return on investment on our scarce water resources will be low versus other types of economic activity that may also use a high-volume of water but brings with it significantly more jobs. So, choices will have to be made.

- There are cutting-edge technologies, strategies and public policies being employed in in other locations that Southern Nevada can learn from. For example, in Israel innovative desalination methods have been developed, as have advanced water recycling and ways to harness technology with low energy usage.

- California is building another desalination plant in Huntington Beach. The Poseidon plant there is the most energy efficient in the world. How they built it and the tax incentives it required is a very interesting case study.

- It is not about the community not allowing an employer/industry with high water needs to operate in Southern Nevada. It is about requiring those kinds of businesses to develop water conservation measures and sophisticated cooling systems.

- GOED does not have a policy or regulations specifically dealing with heavy water using companies who want to operate in Nevada. Those policies and regulations should be developed as soon as possible. And incentives should be established that are specific to different types of companies and industries that are being recruited to Southern Nevada and which GOED is considering providing tax incentives.

- Finally, Southern Nevada should create plans with the state's energy providers to develop smaller, renewable energy grids that are neighborhood- or community-based, as opposed to single family home-based.

G. Theme: Diversity, Equity, and Inclusion

- ***Housing***
  - "So long as Nevada is a neighbor to California, we will always have an affordable housing crisis."

  - There is a huge opportunity for developing new multifamily housing in Southern Nevada. The region trails almost every other market of its size in multifamily housing but permitting for multifamily is also a regional challenge. Over time, multifamily construction may compete with commercial and industrial development for land. There is also a need for a region infill strategy for repurposing some big box retail centers and parcels with multifamily housing. There are opportunities for infill development that can really enrich the community and provide the private sector with opportunities, as well.

  - Southern Nevada has not yet experienced redevelopment to the same level other communities have. Redevelopment is an important key to region's housing and economic future. While Southern Nevada does have the land availability as Southern California and Arizona, sprawl could become an issue. Therefore, we have to redevelopment, adaptive reuse and infill development are important tools that should be part of Southern Nevada's toolkit.

- It is crucial that infrastructure be both accessible and equitable; as investment is made at either the federal or state levels, the region must ensure that infrastructure investments are equitably distributed among residents of Southern Nevada, especially the region's most vulnerable populations and neighborhoods.

- Childcare and access to transportation, in our most at-risk communities, is of critical importance for a variety of socio-economic and environmental reasons. If these problems are not adequately addressed, they will worsen "downstream."

- In community surveys, quality of education, quality of health care and access to health care are always the top three concerns that Southern Nevada residents voice.

- Begin outreach efforts for workforce building within diverse communities a core value and activity—make it a normal part of recruitment and outreach.

- While skills training and workforce development are important for diversifying Southern Nevada's workforce within target industries, there is additional "cultural" work that would have to be done to improve the work environment and a sense of belonging for certain communities and within industries.

- Broadband has become essential all individuals and organizations important and has become a key component in providing and education. Some mobile companies are offering a new Wi Fi system where the person or organization is given a router that can be placed in a residence or workplace to provide broadband. That could become a major opportunity in the education and workforce development space.

H. Theme: Transportation and Distribution

- Funding of public transit in Southern Nevada in 2021 is at the same level as it was in has had in 2002.

- NDOT currently has a $530M annual budget shortfall and anything that it takes on additionally to promote a larger developed area in Southern Nevada, or anywhere in the state, will increase that shortfall.

- The work currently being done on I-15 is likely going to be amongst the last of road work that can be done on I-15 because of right-of-way limitations on both east and west sides of the freeway. This includes multifamily housing, casino-resorts, and other types of developments, including warehouse/distribution. Accordingly, I-15 connectivity to Los Angeles and Southern California will not improve. As the development continues to occur in the I-15 corridor in the Las Vegas Valley, the worse traffic congestion will become. There are many conversations taking place between Nevada and California and the federal delegation on what needs to happen on the California side of the border, but that is not Caltrans top priority.

- Southern Nevada is reaching a number of growth limits in the Las Vegas Valley for a variety of reasons, so how the development and economic growth occur matters now more than ever.

- ***Rail***
  - High speed rail is another way to move passengers between Southern Nevada and Southern California without adding additional lanes to I-15. It will create space in the current lanes, but that space will be occupied by another driver who, today, chooses not to travel the I-15 because of congestion. This phenomenon is known as "induced demand," where additional capacity is filled immediately because of high demand for that space.

  - Light rail is something that is going to be of great interest to NSC as it grows. The college has a master plan for 25,000 students and will cross over the 10,000-student mark within three to five years.

  - It can be difficult to get support for rail in the community because, rail creates noise; so, depending on the hours of operation, it is not something that residents are very willing to accept.

  - Light rail going serving the proposed Southern Nevada Supplemental Airport in the Ivanpah Valley has the potential to become an important transportation issue because of the significant capacity challenges on I-15.

  - In building the Supplemental Airport, the use of trucks to haul construction material to and from the site would potentially have a major impact on air quality control measures due to the emissions and the dust that would be generated. One solution that is being considered is an electric powered rail system of approximately seven miles either under or over I-15 to transport the material. Additionally, the evolution of electric trucks, etc., technology may help solve that issue.

  - The rail company, Brightline West, is moving forward with a high-speed electric rail line from the Las Vegas Valley to Southern California (e.g., Victorville). Carrying up to 500 passengers at a time and around 11 million per year, the trains would follow I-15 into Southern California. The trip between the Valley and Victor Valley would take roughly 85 minutes at speeds up to 200 miles per hour. In July 2021 a holding company for Brightline West purchased 110 acres of land south I-215, near the South Premium Outlets, to build a 65,000-square-foot terminal station as part of phase one of the development. A second phase would link the link the Victor Valley station to Palmdale and/or Rancho Cucamonga and then to Union Station in downtown Los Angeles.

  - Once Brightline meets its initial goal for passenger rail for Southern California visitors to Southern Nevada, other conversations might be possible regarding other types of rail service This could result in partnership opportunities. If higher train speeds can be achieved, this could enable commuter opportunities between Southern Nevada and Southern California.

  - Expanding air carriers to secondary and tertiary markets and increasing flights to smaller cities is going to be important for growing business travel and visitors to the region.

- As for regulations, local jurisdictions should move toward eliminate minimum parking requirements and evolve toward maximum parking regulations. Minimum parking regulations drive the car ownership which drive traffic congestion. To make matters worse, some employers like many casino-resort on the Las Vegas Strip validate employees for parking which discourages employees from using other modes of transportation like public transit or even bikes.

- One the big question marks for Southern Nevada, is the future of transit opportunities. There is a lot of excitement about the Boring Company, but that it's below ground tunnel system is mainly the Resort Corridor for the foreseeable future. How do we look at regional transit in the future? Will the Boring Company ultimately build the Vegas Loop and how extensive will it be? Is there infrastructure that could support the last mile or last quarter mile to get from a station to your final destination?

- A large share of Southern Nevada's workforce lives on the east side of the Valley, where there is more affordable/workforce housing (often defined as affordable to households earning between 60 and 120 percent of Area Median Household Income); but there is not much in the way of transit availability in the East Valley. For example, with three bus transfers to get to Summerlin or parts of the Strip, many workers are spending two and a half hours on a bus ride to get to work, sometimes. This is potentially major health concern during the summer months.

- An example of the challenges facing RTC's transit system is the case of the of Levy Strauss factory in Henderson. Because the cost of housing is relatively high in Henderson many of the factory's employees commute from North Las Vegas.

- For electric charging infrastructure, it may just have to be mandated at the state level so that traditional infrastructure planning and electrification planning are optimally coordinated. In other words, the State of Nevada should mandate an electric charging baseline that all municipalities

must meet. Otherwise, it would become a confused mixture of strategies with every jurisdiction having different implementation plans and schedules.

- While autonomous driver-assisted trucks will help relieve the current driver shortage, driverless trucks are unlikely to be in viable for the foreseeable future because of potential payload liability risks That said, there are a lot of challenges with having the supply of electricity to be able to make truck electrification work. Hydrogen or diesel-electric hybrid trucks make more sense than moving completely to electric at this juncture.

- Is it possible to create a separate highway lane for the trucking industry, possibly tied into electrification, i.e., a dedicated transit lane for the trucking industry? This could be a more efficient logistics lane for trucking rather than mixing that traffic with general traffic. There is the possibility that some funds might become available the Federal infrastructure bill and the larger reconciliation bill.

- Henderson needs to have several additional exits funded and approved through NDOT to help support some of the trailer truck traffic that the Las Vegas Valley is going to be experiencing as West Henderson develops as a logistics and warehousing cluster. A way has to be found to pay for infrastructure in advance—for water, power, wastewater and gas. If these issues are resolved, the diversification of the Southern Nevada economy will be accelerated.

- University researchers have conducted a big data, AI project that maps food, energy, and water webs across the country. This model allows researchers to simulate road shutdowns and it shows where the possible choke points/bottlenecks are in distribution and logistics.

I. Theme: Other Opportunities and Threats

- The philosophy behind how Southern Nevada should grow must change. For example, the planning for the Supplemental Airport in the Ivanpah Valley hinges on development of 6,500-acre airport site. How the region looks it this project, how it is strategized, and how it eventually takes shape will dictate what happens with the remainder of the 17,000 acres associated with the airport

- What Southern Nevada is generally missing is a bold strategy and the associated deployment component, In other words, aligning these two factors with the types of projects that are going to

be catalytic for the region—that are going to drive the type of evolutionary change that is needed. The recommendations developed in this report to the Governor need to help in this regard.

IV. Next Steps

Through the process of the WG meetings and the private interview with many of the members, a common theme emerged: the need to approach the infrastructure challenges facing Southern Nevada as a region rather than as siloed units, e.g., by jurisdiction, industry groups/trade organizations, governmental agency, political party, legislative district, etc. Accordingly, RCG has developed some thoughts and ideas regarding "Next Steps" in Nevada's infrastructure planning.

Background

Experts generally agree that greater integration and coordination across governmental siloes is "desirable and necessary to deal with the complexity of many policy challenges… Since commissions tend to promote integration and coordination, they will remain appealing vehicles for advancing these goals."[1] Therefore, to support the SIB board in forming such a committee —should it choose to do so—RCG conducted a literature search on best practices in the forming of such committees/panels. Some of our findings are presented below:

1. Broad public and political agreement are needed: *"There needs to be broad public and political agreement that the issue to be addressed is urgent and important, and agreement on the need to establish a commission and on its goals. … In some cases (BRAC is an example) the agreement is less about urgency than that a different procedure is needed to break a political logjam …. If the sense of urgency to address a serious problem is lacking, it is extremely difficult for a commission to overcome the political fault lines."*[2]

2. Committee membership selection and voting rules matter greatly.
    a. *"Including a significant number of outside experts has the benefit of introducing new ideas and perspectives as well as expertise. On the other hand, a commission with a large number of experts runs the danger of being dismissed by lawmakers, and even the public, as a group of unelected individuals making decisions that are more properly made directly by Congress [or the legislature] …. Interestingly, the BRAC Commission managed to navigate this issue, despite not having served congressional lawmakers among its membership. In fact, its success may well*

[1] Jordan Tama, "Crises, commissions, and reform: the impact of blue-ribbon panels," *Political Research Quarterly* 67, no. 1 (2014): 152-164.
[2] Stuart Butler and Timothy Higashi, "Redesigning the Budget Process: A Role for Independent Commissions?" Brookings (2018). www.brookings.edu/research/redesigning-the-budget-process-a--role-for-independent-commissions. The Base Realignment and Closure (BRAC) commission is an independent, nine-member panel that advises the President of the United States on military base closings.

have been due to its distance from serving congressional leaders and backbenchers, combined with the broad support for its overall goals among those same lawmakers."[3]

b. *"Generally, appointing members seen as independent from political influence enhances the likelihood that a quasi-legislative commission will be viewed as successful. Scholars have noted that a commission is best positioned for success when its individual commissioners have no stake in the outcome, and are perceived by the public as outside of politics. … [The] commission's conclusions are more likely to be respected and adopted."*[4]

c. *"Potential commissioners who do not harbor immediate ambition to run for elected office are particularly well suited for the work of quasi-legislative independent commissions and the appointment of such commissioners minimizes the likelihood that a commission's conclusions will be seen as politically motivated."*[5]

3. Turning the Committee's recommendations into law requires care and finesse; there can be considerable resistance to allowing non-lawmakers to make major decisions: *"One approach to address this concern is to narrow the scope of a commission. BRAC was initially limited to considering only [Department of Defense]-controlled bases for closure, a provision that was eventually relaxed in subsequent rounds of the Commission as lawmakers and the public became more comfortable. … [T]he BRAC Commission provided cover for members of both parties on tough votes by packaging all the base closures together in one bill and not allowing amendments."*[6]

4. Strong legislative and executive branch (gubernatorial) support is essential for success.[7]

Senate Bill 430-Nevada State Infrastructure Bank: Working Committee

RCG's research for this report combined with the insights provided by WG members has led us to the conclusion that establishing an Infrastructure Working Committee ("the Committee") under the auspices of the Nevada State Infrastructure Bank Board as described by SB430, "Committee on Growth and Infrastructure,"[8] would be worth considering. SB430 went into law on July 1, 2021. The Committee's

[3] Butler and Higashi, 2018.
[4] S.R. Ross, R.A. Prober, and G.K. Gillett, "The Rise and Permanence of Quasi-Legislative Independent Commissions," *Journal of Law & Politics* 27 (2011): 415.
[5] Ibid.
[6] Butler and Higashi, 2018.
[7] Ibid.
[8] https://www.leg.state.nv.us/App/NELIS/REL/81st2021/Bill/8161/Text

charge would be to evaluate and prioritize Southern Nevada's infrastructure needs and opportunities and to independently choose what infrastructure projects and investments would be optimal for the region in the context of Southern Nevada's resources, priorities, and needs. Once the Committee developed its priorities and investment strategy, it would be the role of the SIB Board, through the appropriate state staff, along with the Governor's office and the Nevada Legislature to fund the investments from the SIB.

According to the **Legislative Counsel's Digest-for SB430**:

"Existing law establishes the Nevada State Infrastructure Bank, the purpose of which is to provide loans and other financial assistance to various units of state and local government for the development, construction, repair, improvement, maintenance, decommissioning, operation and ownership of certain transportation facilities and utility infrastructure. (NRS 408.55048-408.55088) Existing law provides that the establishment of the Bank becomes effective on the date on which the Director of the Department of Transportation notifies the Governor and the Director of the Legislative Counsel Bureau that sufficient money is available to capitalize and carry out the business of the Bank. (Section 39 of chapter 575, Statutes of Nevada 2017, at page 4142) ***Section 20*** *of this bill makes the establishment of the Bank effective on July 1, 2021.*

Section 15 *of this bill adds the Director of the Office of Energy to the Board of Directors of the Bank and provides that the Bank operates under the direction of the Board of Directors.*

Sections 10 and 15 *of this bill expand the types of facilities for which the Bank is authorized to provide loans and other financial assistance to include water and wastewater infrastructure, renewable energy infrastructure, recycling and sustainability infrastructure, digital infrastructure, social infrastructure and other infrastructure related to economic development.* ***Sections 17 and 18*** *of this bill make conforming changes to reflect the wider range of facilities for which the Bank is authorized to provide loans and offer financial assistance.*

(Regarding Sections 16 and 18 of the SB430: "digital infrastructure, recycling and sustainability infrastructure, renewable energy infrastructure, social infrastructure, transportation facilities, utility infrastructure, water and wastewater infrastructure, or other infrastructure related to economic development.")

Sections 12 and 15 *of this bill authorize the Bank to provide loans and financial assistance to Indian reservations, Indian colonies and private nonprofit entities created for charitable or educational purposes.*

Section 17 *makes a conforming change to reflect that the Bank may provide loans and financial assistance to entities other than governmental units.*

Existing law creates the Nevada State Infrastructure Bank Fund and authorizes the Board of Directors to establish certain accounts within the fund. (NRS408.55073) ***Section 16*** *of this bill authorizes the Board of Directors to establish accounts and subaccounts within the Fund and removes the requirement for the Board of Directors to establish certain specific accounts.* ***Section 16*** *requires the Board of Directors to ensure that the money in the Fund is accounted for in accordance with all applicable laws and regulations governing the use of funds.*

Existing law authorizes any division of the Department of Transportation to provide technical advice, support and assistance to the Bank, to the extent that money is available for that purpose. (NRS 408.55088) ***Section 19*** *of this bill authorizes other governmental units of (inserted by RCG, including:" Any division of the Department of Transportation, the Department of Business and Industry, the Office of Economic Development, the State Department of Conservation and Natural Resources, the Office of the State Treasurer, the Office of Energy…") to provide such technical advice, support and assistance to the Bank, to the extent that money is available for that purpose."*

In conclusion, it is RCG's opinion that establishing an Infrastructure Working Committee under SB430 would be an effective option to encourage a regional approach to infrastructure investments in Southern Nevada (and in the state, generally). RCG recommends that the Committee report to the Board of Directors of the SIB. The Committee could have between nine and 15 members comprised of experts in Urban Planning, Transportation, Public Works, Real Estate Development, Conservation, Construction, Civil Engineering, Economic Development, etc., as well as representatives from GOED and the Nevada Legislature. We believe that such a committee would be instrumental in achieving Nevada's goals for infrastructure in Southern Nevada and the WG's mission priorities of:

- Adding significant value to the state's economic ecosystem,
- Ensuring that infrastructure enhancement will benefit Southern Nevada's most at-risk communities,
- Ensuring that it will benefit small businesses,
- Avoiding incremental and siloed approaches to infrastructure development, and
- Planning beyond and across jurisdictional boundaries.

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