Southern Nevada Industrial Land Analysis: Inventory & Implications for Economic Growth & Economic Development

Prepared for:

NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
SOUTHERN NEVADA CHAPTER

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TABLE OF CONTENTS

I. Study Purpose & Need

This memorandum presents the major findings and methodologies employed in RCG Economics' ("RCG") industrial lands analysis. It is not a comprehensive review of the Study's results. The Study's detailed results are presented in the accompanying slide deck.

NAIOP-Southern Nevada commissioned the Study. Its main purpose is to analyze the issue of land scarcity in Clark County (or the "Las Vegas MSA"; "Southern Nevada"), especially in the Las Vegas Valley. The Study is designed to determine whether there are short and long-term developable land constraints that could negatively affect the region's economic resilience. The Study is based on two main analyses: 1) an estimate of the supply of developable "employment land" primarily in the Las Vegas Valley at the end of 2019 of a certain size and slope; and 2) the use of two scenarios to estimate the long-term economic costs of developable land constraints to the Southern Nevada economy.

The analysis does not factor in any negative impacts on the Clark County economy associated with the COVID-19 pandemic. It was not possible to estimate such effects at the time of the analysis due to the lack of data.

The Study is a "fusion" and update of two studies: RCG's 2015 *"Southern Nevada Employment Land Analysis"* completed for the Las Vegas Global Economic Alliance ("LVGEA") and the Theodore Roosevelt Institute's ("TRI") 2016 *"Strategic Analysis of Southern Nevada's Economy: Potential Land Constraints on Economic Growth and Development"*. The latter study was a review of the Bureau of Land Management's ("BLM") *Draft Resource Management Plan Management/Environmental Impact Statement*. It was commissioned by NAIOP-Southern Nevada, along with support from the Nevada Contractors Association, SIOR Southern Nevada Chapter and Southern Nevada CCIM.

The Study has been designed to support the goals of a variety of stakeholders in Southern Nevada, such as NAIOP-Southern Nevada member companies, individual NAIOP members and the government of Clark County. These stakeholders have an interest in the availability of developable lands to provide necessary services. However, developable and appropriate vacant land resources required to support the Southern Nevada economy over the long-term are limited, particularly for industrial (e.g., warehouse distribution and manufacturing) uses. Additionally, pending federal land policies and legislation could negatively affect the health and vitality of Southern Nevada's residents and businesses if their economic impacts are not fully understood and appreciated. Therefore, under the direction of NAIOP-Southern Nevada, RCG conducted a comprehensive analysis of region's available industrial land supply and the corresponding potential economic impacts to the region should future land supply constraints limit its economic and community development potential.

A series of exhibits illustrating the results of our analyses are included starting page 29.

II. Acknowledgements

RCG would like to acknowledge the efforts of the SNWA in this undertaking. The SNWA has vast knowledge on the region's lands and provided much of the Study's initial legwork. They furnished RCG with various data on Clark County parcels, without which RCG could not have completed this analysis. In particular, RCG would like to thank Peter Jauch (Las Vegas Valley Water District), Sharon Kennemer (SNWA), Judy Brandt (SNWA) and Eric Nebiker (SNWA).

Furthermore, RCG would like to thank the members of the Study's working group for their input regarding various traits that make parcels more developable. These members included Mike Shohet (Compass Development), Jeff LaPour (LaPour Partners), Reed Gottesman (Harsch Investment Properties) and Rod Martin (Majestic Realty). Based on their comments, RCG was able to better rank the parcels for their desirability to developers.

III. Glossary of Terms

Acres over seven percent slope: The number of acres of a parcel in which the average grade is over seven percent, as calculated by the Southern Nevada Water Authority.

Assessed value: "The property value determined by the County Assessor and used by the Treasurer to calculate a tax amount. The method of determining the assessed value is specified in Nevada Tax Law (NRS 361) and by regulations from the Nevada Department of Taxation. The assessed value is stored at a rate of 35% of the taxable value of the property." (*Clark County Assessor*)

Average slope: The average grade of a parcel, as a percent, as calculated by the Southern Nevada Water Authority.

Base-case: A scenario that assumes that are no land constraints affecting Clark County's continued economic growth.

Commercial: In the context of the Study, "commercial" lands, projects, etc. refer to office and retail.

Community: The jurisdiction, municipality or township in which a parcel is located. These place names are based on geographic definitions provided by Clark County Comprehensive Planning.

Cost Disadvantage: The increased cost burdens to businesses and their suppliers modeled as a decline in contributions to economic output/spending. In the context of the Study, these disadvantages are estimated for industrial land-using businesses only. The cost disadvantages herein are relative to the unconstrained base-case where the Clark County economy is not affected by land constraints.

Disposal Boundary ("DB"): The boundary within which the Bureau of Land Management may sell off lands under the Southern Nevada Public Land Management Act of 1998.

Earnings: Also "labor income." "The sum of Employee Compensation (wages and benefits) and Proprietor Income." (*IMPLAN*)

Employment Land: Employment land is defined herein as parcels that are most suited for private sector commercial and industrial development.

Employment/Jobs: A job in IMPLAN equals the annual average of monthly jobs in that industry (this is the same definition used by the BLS and BEA). Jobs in IMPLAN are not equal to Full-Time Equivalents (FTE). (*IMPLAN*).

Geographic Information Systems ("GIS"): "A geographic information system is a framework for gathering, managing, and analyzing data. Rooted in the science of geography, GIS integrates many types of data. It analyzes spatial location and organizes layers of information into visualizations using maps and 3D scenes." (*Environmental Systems Research Institute-ESRI*)

Gross Product: As Gross Domestic Product, it is "a comprehensive measure of U.S. economic activity. GDP is the value of the goods and services produced in the United States. The growth rate of GDP is the most popular indicator of the nation's overall economic health." (*Bureau of Economic Analysis*) Gross product, however, can be applied as measure of economic activity to any geographic area. At the state level, it is often referred to as "Gross State Product," or GSP.

IMPLAN: IMPLAN (IMpact Analysis for PLANning) is a widely accepted economic input-output model. The IMPLAN model has been in use since 1979. The model accounts closely follow the accounting conventions used in the "Input-Output Study of the U.S. Economy" by the U.S. Bureau of Economic Analysis.

Las Vegas Valley: The urban portion of Clark County. Generally, lands within the DB.

NAIOP-Southern Nevada: The Southern Nevada chapter of NAIOP, one of the largest commercial real estate organizations in North America.

Ownership: The party that owns a parcel according to the Clark County Assessor.

Output/Gross Output: "Principally, a measure of an industry's sales or receipts. These statistics capture an industry's sales to consumers and other final users (found in GDP), as well as sales to other industries (intermediate inputs not counted in GDP). They reflect the full value of the supply chain by including the business-to-business spending necessary to produce goods and services and deliver them to final consumers." (*Bureau of Economic Analysis*)

Parcel: A legal subdivision of real property. "The Assessor's Parcel Number ("APN") is a unique number assigned by the Assessor to each parcel of land in Clark County." (*Clark County Assessor*)

Scenarios: Three scenarios were discussed in the Study relative to cost "disadvantages" to the Clark County economy. A base-case that assumes no land constraints and unrestricted economic growth, a three percent cost disadvantage to firms and a five percent cost disadvantage to firms.

Southern Nevada Public Land Management Act of 1998 ("SNPLMA"): "An act to provide for the orderly disposal of certain Federal lands in Clark County, Nevada, and to provide for the acquisition of environmentally sensitive lands in the State of Nevada." (*Public Law 105-263*)

Southern Nevada Water Authority ("SNWA"): "A cooperative agency formed in 1991 to address Southern Nevada's unique water needs on a regional basis." (*SNWA*)

Study Area: Clark County (aka Las Vegas MSA). However, relative to the parcels that were ranked, there were several filters applied such that only a group of parcels in and near the Las Vegas Valley remained in the final data set and findings.

Study Period: This period refers to the forecast horizon for the base-case and the three and five percent cost disadvantage scenarios, 2018 – 2035.

Working group: An advisory group of commercial real estate industry experts set up by NAIOP-Southern Nevada to advise RCG on the Study.

Zoning: "Zoning refers to municipal or local laws or regulations that dictate how real property can and cannot be used in certain geographic areas." (*Investopedia*)

IV. Recommendations & Major Findings

As a result of its research data collection and analysis, RCG developed the following major report findings and recommendations:

- Nevada's Congressional delegation should immediately and aggressively pursue changes to federal law, as the Southern Nevada Economic Development and Conservation Act aims to do, in order to expand Southern Nevada's public land disposal boundary.

- Southern Nevada developers will likely begin to face challenges in finding desirable parcels to accommodate employment-oriented projects around 2030 if nothing is done to expand regional access to lands, or sooner if the BLM fails to release lands as needed.

- There are roughly 19,100 gross acres of developable employment land in 20+ acre parcels remaining in the Las Vegas Valley, with approximately 9,100 of those acres having an "above average" rating (see Section V for a discussion of RCG's rating system).

- 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 of more desirable Tier 1 and 2 lands available primarily in the Las Vegas Valley, there would be a deficit of 5,000 acres between land demand and availability.

- The number of parcels to accommodate large-scale development in the near- and medium-terms is limited, and will likely face supply constraints sooner than smaller parcels (see Figures 4 – 6)
    - Non-federally-owned: 22 parcels of 60 acres or more compared to 106 parcels in the 20 – 60-acre range
    - Privately-owned parcels: 15 parcels of 60 acres or more compared to 89 parcels in the 20 – 60-acre range
    - Municipally-owned parcels: Seven parcels of 60 acres or more compared to 17 parcels in the 20–60-acre range

- Failing to ensure an adequate supply of developable employment land in the region could lead to a 27 – 45 percent reduction in annual gross regional product growth. This would result in a reduction in annual growth from 2.8 percent per year in the "base-case" (no land constraints) to 2.0 in the three percent disadvantage scenario and 1.5 percent in the five percent disadvantage scenario (see RCG's growth scenario analysis in Section VI of this technical memorandum).

V. Statement of Methodology/ Key Assumptions

This section describes in detail RCG's methodology and key assumptions used the Study's three analytical sections. Specifically, the three sections are titled:

- Employment Land Inventory
- Land Supply & Economic Development
- Economic Costs of Land Constraints

The remaining sections of the Study did not require a methodology discussion because they were either based solely on data collection or RCG's research and expertise in the field of real estate economics.

As stated previously, the analysis does not factor in impacts associated with the COVID-19 pandemic to the Clark County economy. These data were not available at the time of the analysis.

A. Employment Land Inventory

The purpose of the employment land analysis was to estimate the availability of relevant developable land in Southern Nevada, largely in the Las Vegas Valley, over the next several years, and to rank the parcels according to various factors. RCG focused on lands in and around the Valley because those are the most likely to be developed during the Study Period. RCG applied a series of filters to produce a list of parcels best suited to accommodate commercial and industrial development in the Study Area. Due to data limitations and complexities, the final list is not necessarily a complete list of every potentially developable parcel in the region, but it should contain nearly all qualifying employment land parcels. Below, RCG discusses the methods that produced this final list.

RCG worked in conjunction with the Southern Nevada Water Authority ("SNWA") to reduce the number of parcels in the analysis. The SNWA assisted RCG by applying the first three filters, as discussed below, for the region's vacant parcel data. Since the purpose of the Study was to aggregate developable parcels, the first filter removed all parcels with existing structures, leaving only undeveloped parcels.

The second filter removed any parcel smaller than 20 acres. The Study's working group, which includes several experience NAIOP-Southern Nevada members, determined that the Study's focus should be on these larger parcels. RCG did not consider assemblages of parcels. Therefore, there are assemblages that add up to 20 or more acres that are not included in the analysis.

The third filter removed parcels with more than a seven percent average slope. These parcels with steeper slopes make them difficult to develop for industrial and business park projects. This was the same assumption used in the 2015 study prepared for the LVGEA.

RCG developed and applied the rest of the filters. The fourth filter kept only parcels near the Valley's core, removing outlying parcels too distant for likely development in the coming few years. RCG included parcels located in the following jurisdictions and townships, based on Clark County Assessor ("Assessor") assigned place names:

- Urban Island (Unincorporated Clark County exclaves),
- Unincorporated Clark County,
- North Las Vegas (includes APEX),
- Enterprise,
- Las Vegas,
- Henderson,
- Spring Valley,
- Lower Kyle Canyon,
- Whitney,
- Red Rock - Blue Diamond,
- Summerlin South,
- Sunrise Manor,
- Lone Mountain and
- Sloan and Paradise

RCG included lands at APEX Industrial Park for two reasons. First, APEX is part of North Las Vegas. Second, the park is already active and serves the Valley. However, RCG did not include "exurban" lands potentially available for development. These lands include the following:

- Boulder City (79,500 acres)
- Ivanpah Valley ("Ivanpah") (6,000 to 23,000 acres contingent on airport)
- Mohave Generating Station site (2,500 acres near Laughlin)
- Southland (9,000 acres near Laughlin)

Development in Ivanpah, about 30 miles southwest of the Valley, is limited by the federal government. That land was expressly set aside for an airport and associated land uses.[1] Much of it is contingent on the construction of a new airport by the Clark County Department of Aviation. However, its use for a cargo airport is still 10 years out at the earliest, and more likely to take 20 years, according to County officials.[2] Regarding Boulder City, access to available lands for large-scale development in that jurisdiction are strictly controlled via its Land Management Process.[3] This is a recurring annual process for the sale or lease of city-owned lands. Parcels approved by the city

[1] United States Public Law 106–362
[2] https://lasvegassun.com/news/2019/dec/07/commissioner-ivanpah-airport-could-open-within-10/
[3] https://www.bcnv.org/465/Land-Management-Process

council for potential sale or lease are subject to several bureaucratic steps, including a series of public hearings. Additionally, all sales of city-owned parcels must be approved by voters of Boulder City. The remaining sites are too distant from the County's urban core and unlikely to be developed to any great degree during the Study Period. Southland has remained vacant ever since it was transferred from the federal government[4] and plans for the Mohave Generating Station site are still uncertain despite being cleared since 2011.[5]

For the fifth filter, RCG removed federally-owned lands beyond the DB. Because these lands are not subject to sale through the SNPLMA, they are unlikely to be released for development by the federal government without legislative changes. The Study assumes that all federal lands within the DB will be made available as needed, and assuming the proper environmental safeguards.

The sixth filter removed irregularly shaped parcels that would not be suitable for development. To measure this attribute, RCG calculated the ratio of a parcel's area to its perimeter. Theoretically, a circle minimizes this ratio.[6] The more jagged and irregular a shape becomes, the more its perimeter grows relative to its area (see Figure 1). RCG was able to identify these oddly-shaped parcels using this measure. To limit the removal of parcels with a high ratio that would still be suitable for development, RCG manually checked all parcels that exceeded the threshold for removal.[7]

The seventh filter removed parcels based on their zoning in the Assessor's database. RCG kept only parcels zoned as: industrial/manufacturing, commercial, open land/undeveloped, public/semipublic, rural residential or not zoned. Rural residential zoning is often used by Valley jurisdictions as a default zoning.

The eighth filter removed parcels whose recorded owner is a known residential developer. RCG relied on the expertise and research of Home Builders Research, a well-known supplier of Clark County housing data, to identify and remove these developers' parcels from the data set.

The ninth, and final, filter removed parcels that were located more than one mile from their nearest road access. This one-mile standard came from the Study's working group. This portion of the analysis required geolocating the

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[4] http://www.mohavedailynews.com/laughlin_times/making-moves-to-try-and-develop-the-southland/article_aaa4813a-dba3-11e7-927c-47f3149a35b1.html
[5] https://www.clarkcountynv.gov/administrative-services/laughlin-development/Pages/9,000AcresofLand.aspx
[6] https://math.stackexchange.com/questions/389339/among-all-shapes-with-the-same-area-a-circle-has-the-shortest-perimeter
[7] The threshold for potential removal from the data set was based on a regression analysis. RCG compared the natural logarithm of the area-to-perimeter ratio to the natural logarithm of the area. This produced a linear relationship between the measures that allowed for a linear regression. RCG then calculated the residual errors of every parcel and manually checked all positive outliers—in this case, a residual error greater than 0.375.

parcels relative to Clark County roadways using GIS. Due to inconsistencies in the County's GIS and Assessor databases, eight parcels, comprising 320 acres, could not be geolocated. Because it would be difficult to precisely measure the shortest distance between a parcel and a road manually, these parcels were dropped from the following ranking analysis. However, RCG did separately include them in the final parcel list.

After all the filters were applied, RCG produced a ranking of the final 190 parcels in the data set, excluding the eight mentioned above. The rankings of these parcels were based on eight factors. They included a parcel's zoning, average slope, acres over seven percent slope, ownership, assessed value, distance to freeway, distance to highway and distance to rail. Every parcel was awarded either a zero, one or two points for each ranking factor for a total possible score of 16. Based on these total scores, parcels were ranked into four tiers. Parcels with more points received higher rankings:

- Tier 1: 13 – 16 points
- Tier 2: 9 – 12 points
- Tier 3: 5 – 8 points
- Tier 4: 0 – 4 points.

The first ranking criterion was zoning. Parcels zoned for industrial or manufacturing uses were given two points. Parcels zoned for open space uses were awarded one point. All other zonings, such as commercial, were awarded no points. RCG used this rating system because parcels already zoned for industrial uses should not require a zoning change; parcels zoned as open space must have their zoning changed, by definition, prior to development so RCG would expect that process to be relatively straightforward; other zoning types would require rezoning to industrial zones, which RCG assumed would involve more resources to accomplish.

The second ranking standard was based on a parcel's average slope. An informal survey of the Study's working group suggested that parcels with a slope of less than four percent would be easiest to develop. Because the data set includes only parcels with an average slope of seven percent, RCG divided this slope in half to come up with a split at 3.5 percent—close to four percent. Parcels with an average grade of less than 3.5 percent were awarded two points, otherwise they received no points.

Next, parcels were graded on the amount of land that has more than a seven percent slope. While parcels with an average slope of over seven percent were removed, many parcels with an average slope of less than seven percent contain some share of land with a slope of greater than seven percent. RCG calculated how many acres of each parcel exceeded this limit and assigned it a score based on that amount. Parcels with less than 0.5 acres of land

over this limit received two points. Parcels with 0.5 to two acres of land with more than a seven percent slope received one point. Parcels with more than two acres with more than a seven percent slope received no points.

The fourth ranking metric concerned ownership. Parcels owned by the federal government received no points. Those owned by Clark County municipalities received one point and parcels owned by private parties received two points.

The fifth ranking measure was assessed value per acre, based on Assessor data. Assessments were for fiscal year 2021. Parcels with an assessed value of less than or equal to $50,000 per acres were awarded two points. Assessments per acre of $50,000 to $100,000 were given one point and values greater than $100,000 per acre were given no points. RCG developed these ranges by observing clustering in the data. There appeared to be a cutoff at approximately $50,000. The remaining parcels were spread relatively randomly around $100,000, which helped in determining the other two groups.

The remaining ranking metrics were based on distance from transportation infrastructure. RCG again used clusters in the data to guide in finding cutoffs for the scoring ranges. Clusters nearest the infrastructure type received two points. The remaining parcels were generally split in half into the remaining two groups. Parcels less than one-quarter miles from a freeway were awarded two points. One-quarter mile to one mile equated to one point. Parcels more than one-mile from a freeway received no points. In terms of distance from a highway, parcels received two, one and zero points if they were less than or equal to 250 feet away, 250 feet to one-half mile away and more than half a mile away, respectively. Distance from a railroad was graded as: less than 250 feet (two points), 250 feet to one mile (one point) and more than one mile (no points).

RCG added the points from all eight criteria together to produce final rankings based on four-point increments. The results are presented below.

B. Land Supply & Economic Development

This section reviews the methodology for comparing forecasted job growth with the potential demand for land. RCG used data from the Nevada Department of Employment, Training and Rehabilitation ("DETR"), Woods & Poole Economics ("WPE") as well as previous RCG analyses. WPE is a highly respected forecaster of national economic data.[8]

[8] https://www.woodsandpoole.com/

The purpose of this section was to understand how job growth in various industries are likely to drive land demand. RCG accomplished this in few steps. First, RCG relied on a forecast from WPE for job growth between 2018 and 2035. In the following section, RCG discussed this source and the forecast period as well. For the breakdown of jobs by industry, RCG relied on the most recent 10-year industry employment projection produced by DETR for the Las Vegas MSA between 2016 and 2026. RCG assumed that the job shares by industry between the two sources would be the same in 2016 and 2018 as well as in 2026 and 2035. This yielded estimates for job growth by industry from 2018 to 2035.

Next, RCG identified whether the industries' jobs would be commercial land-using or industrial land-using. In some cases, both would be true, while in others, neither. If both were true, RCG split the jobs evenly over the two land types. In total, RCG estimated that new jobs using either commercial or industrial lands would account for about 77 percent of total new jobs.

The final step was to associate the number of new jobs by land use with the associated new land demands to house those jobs. For this section, RCG relied on its 2014-15 Southern Nevada Strong Employment Land Policy Analysis. That study estimated the employment-to-land ratio for commercial and industrial jobs. These were 53.2 jobs per acre for commercial employment and 12.9 jobs per acre for industrial employment. RCG applied these ratios to the job growth estimates to obtain the land demand results.

C. Economic Costs of Land Constraints

This section discusses the methodology used to estimate the economic costs of land constraints to the industrial sector in Clark County to the county's economy. Like in the 2016 TRI report, RCG assumed three growth scenarios: an unconstrained base-case scenario, a three percent cost disadvantage and a five percent cost disadvantage. Also, like the TRI report, RCG utilized a forecast horizon in the Study that does not necessarily coincide with the years that would show negative effects due to land constraints. Instead, the purpose was to show that relatively small costs from land constraints could have relatively large effects on future economic growth. RCG used a forecast horizon of 2018 – 2035 because 2018 was the most recent year with updated economic data across the metrics that were analyzed: economic output, employment, earnings and gross product.

The data sources used for this analysis were IMPLAN and WPE. IMPLAN (IMpact Analysis for PLANning) is a widely accepted economic input-output model.[9] The IMPLAN model has been in use since 1979. The model

[9] https://www.implan.com/

accounts closely follow the accounting conventions used in the "Input-Output Study of the U.S. Economy" by the U.S. Bureau of Economic Analysis. The IMPLAN model used in the Study was specific to Clark County.
RCG used IMPLAN to estimate the annual costs of the economic cost disadvantages resulting from potential land constraints. For this reason, RCG based the 2018 start values on IMPLAN data. Also, because IMPLAN is not capable of estimating changes in population, RCG did not include that metric in the analysis.

As mentioned, the first step in this analysis was to establish estimates for 2018 for Clark County. These came from IMPLAN, which, in turn, bases its estimates on data from the Bureau of Economic Analysis' annual National Income and Product Accounts tables. Second, RCG developed the base-case forecast using growth rates from WPE for each of the four metrics.

The next part of the analysis was to estimate the magnitude of the annual economic disadvantages. For this, RCG again relied on IMPLAN. IMPLAN can measure various benefits of sectors' economic contributions. These impacts are direct, indirect and induced.

The concept of a direct benefit is relatively straightforward. However, the concepts of indirect and induced benefits, while critically important in assessing the totality of sectors' economic contributions, are often misunderstood in economic analysis. Fundamentally, these secondary and tertiary benefits are based on an extension of the direct expenditures/spending associated with a group of sectors. Each type of benefit is briefly summarized below.

- ***Direct benefits*** are due to consumer spending at businesses; the jobs created to support those firms; and the earnings (employee compensation, proprietor income and benefits paid) in a region.

- ***Indirect benefits*** are the local purchases of goods and services resulting from the initial direct spending at a business. For example, a food manufacturer's spending on raw meats and vegetables, rent, utilities and the like will cause its suppliers to replenish inventories, etc. These sales are counted as an indirect economic benefit.

- ***Induced benefits*** are the output, employment and earnings growth generated by the employees of a firm and its local suppliers as they consume goods and services in the regional economy. Put another way, induced benefits are benefits from earnings spent by direct and indirect employees. For example, an employee works for a food manufacturer. Some portion of his or her personal income will be spent locally, will cycle through the region and will be exchanged among local merchants, thus, inducing additional new spending (retail, food, gas, etc.) and employment in the region.

The sum of these benefits provides the total contributions of a sector or group of sectors. Therefore, to estimate the effects on the Clark County economy from a three and five percent cost disadvantage to industrial (including manufacturing) firms, RCG modeled three and five percent reductions to the economic contributions of these sectors in the IMPLAN model (see Table 1 and Table 2).

The sum of the direct, indirect and induced contributions for all four metrics provided the total annual contributions of the industrial land-using sectors to the Clark County economy under the two cost disadvantage scenarios. RCG adjusted the disadvantage estimates using the annual growth rates in the base forecast to maintain an apples-to-apples comparison over time between all three scenarios. To estimate the forecasts under the two disadvantage scenarios, RCG applied the reductions in the four metrics to the growth under the base scenario. This resulted in estimates of the dampening effects on base-case growth in the two cost disadvantage scenarios.

For example, if the base-case's growth in 2019 was $100 of economic output and the three percent cost disadvantage on annual growth was $60, then total output growth in 2019 under the latter scenario would be $40 ($100 - $60 = $40). And $40 divided by $100 would equate to a 40 percent reduction in the base-case rate of economic growth in Clark County in 2019 ($40 / $100 = 40%). RCG applied this methodology to the growth rate each year under both disadvantage scenarios, then applied the new growth rates to each metric's starting-2018 value over the forecast horizon to obtain the three forecast scenarios for all four metrics.

For example, if the 2018 value for gross product were $1,000 and the growth rates for 2019 and 2020 in the base case were 1.5 percent in both years, then the 2019 and 2020 gross product values would equal $1,015 and $1,030.23 ($1,000.00 * 1.015 = $1,015.00 and $1,015.00 * 1.015 = $1,030.23), respectively. However, if the growth rates in 2019 and 2020 were to decline to 1.1 percent due to a three percent cost disadvantage, then 2019 and 2020 gross product would instead be $1,011 and $1,022.12 ($1,000.00 * 1.011 = $1,011.00 and $1,011.00 * 1.011 = $1,022.12). As the example indicates, the cost disadvantage's total effect grows every year.

The model's results for economic output/spending, earnings and gross product were in 2018 dollars. The employment forecasts herein are presented in total employment (includes both full-time and part-time jobs).

VI. Results

A. Overview

This section summarizes the Study's major findings from the report sections. As noted above, this report focuses on the major findings of our employment land market analysis for Southern Nevada. Therefore, the focus herein is on the results described in this report's three most impactful sections as listed below. RCG also discusses some of the most critical issues facing the region in the future as it attempts to optimize its long-term economic sustainability. Other important findings from our research on this project are available in the companion "slide deck" RCG has prepared as part of this project.

- Employment Land Inventory
- Land Supply & Economic Development
- Economic Costs of Land Constraints

B. Employment Land Inventory

RCG found 19,088 remaining acres in 198 parcels of potentially developable employment land in the Las Vegas Valley (see Table 3). This is land that could be potentially used for the development of private commercial projects but may not be necessarily used as such. These include federally-owned parcels that have not yet been released under SNPLMA.

As point of reference, the 2015 *Southern Nevada Employment Land Analysis* prepared by RCG found that there were 14,516 acres potentially available at the time, excluding exurban lands that were not included in this Study. The 2015 study, however, included only parcels of 70 acres or more. As noted previously, the Study includes parcels of 20 acres or more, meaning a greater subset of available parcels. The increased difference of only approximately 4,500 acres suggests that a significant amount of potentially available space has been developed since the 2015 study was completed.

Of the 198 parcels included herein, eight were not ranked for technical reasons as discussed in the methodology, Section V. Of the 190 parcels that were ranked (see Figure 2), seven percent are in Tier 1, 39 percent are in Tier 2, 45 percent in Tier 3 and the remaining nine percent in Tier 4. Table 4 provides the rank definitions and Table 5 provides the full list of parcels included in the Study's results.

Table 6 presents the results of the Study, by both community and rank. The City of North Las Vegas ("NLV") contains the most acreage that could be potentially used as employment land, with about 8,900 acres. This is

mainly due to federal lands that have yet to be released and land in the APEX Industrial Park (see Figure 3). The City of Henderson and the City of Las Vegas follow NLV with 3,900 and 3,600 acres, respectively. The remaining roughly 2,700 acres are located throughout unincorporated Clark County and its various townships.

For comparison, the 19,088 developable employment land acres identified in the Study Area is significantly less than the 30,000 acres of developable land at the Tahoe-Reno Industrial Complex,[10] a single industrial park in the Reno-Sparks metropolitan area.

As a note, the employment land discussed here is gross raw acreage and, therefore, not all acres can be developed. Additionally, as mentioned, simply because this land could potentially be developable as employment-oriented uses does not mean that all of it will be used as such. Much of it could possibly be used for other purposes, such as residential and public uses.

C. Land Supply & Economic Development

In this section, RCG forecasted job growth in Clark County to estimate the associated demand for employment land demand. This was necessary to develop and estimate whether the available land supply discussed above may be able to support economic development and growth in Clark County.

As RCG found in its 2015 and the 2016 TRI study, on a gross acreage basis, there may exist sufficient vacant land to accommodate region's economic growth over the next several years, but it is the developability of this land that is in question. Our estimates show that Clark County will potentially experience a growth of 390,000 non-lodging and hospitality industry jobs between 2018 and 2035. These new jobs would require approximately 14,100 acres of land (see Table 7).

With an estimated demand of 14,100 acres and a supply of approximately 19,100 acres, the implication is that there is enough land meeting the needs of the region's economy for the foreseeable future. However, as noted, not all these lands will be used to support employment. Much of it will likely be used for other purposes. Additionally, not all the land in the inventory rated highly as employment land, based on the ranking system employed. Looking at lands in Tiers 1 and 2, there were only 9,100 acres available. This would be a deficit of 5,000 acres. This suggests that the more desirable employment land will be depleted around 2030. After that, the Clark County economy and business community would have to rely on less desirable land for growth. Using land/parcels less suited to industrial and commercial development could introduce cost disadvantages, as modeled below,

[10] http://tahoereno.com/

compared to well-suited Tier 1 and 2 lands. This conclusion assumes that the BLM will make available commercially viable parcels in the final parcel list developed as part of the Study. As RCG showed in the following section, these cost disadvantages can have significant effects on Clark County's economic growth potential.

Additionally, the availability of the right-sized parcels for larger scale development poses a potential problem. The number of large parcels in Southern Nevada is dwindling. For example, there are only 15 privately-owned parcels of 60+ acres remaining mostly in the Las Vegas Valley. Municipal governments own another seven. This adds up to just 22 potentially available large parcels that could be available for development in the near- to mid-term. There is a strong possibility that all these parcels will be absorbed before 2030. The shortage of large and potentially developable parcels in the region poses a significant challenge to future economic sustainability and growth (see Figures 4 – 6).

D. The Economic Cost of Land Constraints: Clark County

RCG found that the effects on the local economy resulting from possible land constraints are significant and increase over time. RCG fashioned its model after the one used in the 2016 TRI report, with the same three economic growth scenarios. As noted above, one scenario provided a "base-case" of growth that assumed no future land constraints in Clark County. Two other scenarios modeled growth under land constraints that produced three percent and five percent cost disadvantages affecting employment land-using sectors. There may be an expectation that such disadvantages are minor, but their effects compound over time and have major long-term consequences for economic growth (see Figures 7 – 10) in Clark County.

The methodology used by RCG in the Study assumes that all dollar results are in 2018 dollars because the initial year of data were in 2018 dollars. Employment results in our model are measured in total jobs (full-time and part-time jobs).

The results relative to total and average changes in the economy are summarized as follows:

Economic Output Impact

Base-case: Average annual growth rate = 2.8% or $119.4 billion reaching $318.3 billion in 2035

3% cost disadvantage: Average annual growth rate = 1.9%

Growth reduction over Study Period: $43.6 billion or by 13.7%

5% cost disadvantage: Average annual growth = 1.3%

Growth reduction over Study Period: $69.5 billion or by 21.8%

Job Impact

Base-case: Average annual growth rate = 1.9% or 504,000 jobs reaching 1.8 million jobs in 2035

3% cost disadvantage: Average annual growth rate = 1.2%

Growth reduction over Study Period: 204,800 jobs or by 11.3%

5% cost disadvantage: Average annual 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: Average annual growth rate = 2.8% or $40.4 billion reaching $109.1 billion in 2035

3% cost disadvantage: Average annual growth = 2%

Growth reduction over Study Period: $12.2 billion or by 11.1

5% cost disadvantage: Average Annual labor income growth = 1.6%

Growth reduction over Study Period: $19.5 billion or by 17.9%

Gross Regional Product Impact

Base-case: Average annual growth rate = 2.8% or $71.7 billion reaching $191.3 billion in 2035

3% cost disadvantage: average annual growth = 2%.

Growth reduction over Study Period = $22.5 billion or by 11.8%

5% scenario disadvantage: annual growth = 1.5%

Growth reduction over Study Period = $36.1 billion or by 18.9%

E. Obstacles to Growth

Relative to these findings, there are certain issues that could act as obstacles to economic growth in the region. As discussed above, if the federal government does not release lands in the future by expanding the disposal land area, Clark County would likely face cost disadvantages that would dampen economic growth relative to expected growth. The BLM's previous proposed *Resource Management Plan* ("RMP") for Clark County, which was the subject of the 2016 TRI report, was halted in 2019.[11] However, little progress has been made on Clark County's proposed alternative,[12] the Southern Nevada Economic Development and Conservation Act.[13] This must change.

[11] https://www.reviewjournal.com/news/politics-and-government/blm-scrapping-revision-of-land-use-plan-for-southern-nevada-1660078/
[12] https://www.eenews.net/stories/1062040119
[13] http://www.clarkcountynv.gov/airquality/lands_bill/Pages/default.aspx

Another obstacle that looms large in the current national psyche is the COVID-19 pandemic. It remains too early to understand the full effects of the pandemic on the Clark County economy at this time. However, based on early unemployment insurance claim filings, the short-term effects to the region's economy are likely severe. Nevertheless, the nation and region will recover. The pandemic's economic impacts to Clark County should diminish over the long-run, like the effects of other downturns. Still, the pandemic could shift certain preferences permanently, such as the demand for convention space and how business convenes and meets. Additionally, the social distance rules that have been in place due to the virus have a significant potential to remain long-term, and possibly, even permanent. Finally, the COVID-19 outbreak may accelerate the trend toward automation (known as the Fourth Industrial Revolution).[14] This would have a significant impact on Clark County's job market.

One thing the pandemic is again exposing is the region's age-old issue of economic diversity and economic development or the lack thereof. The pandemic is hitting the lodging and hospitality sector the hardest, according to a variety of sources, including Forbes.[15] That means that the Las Vegas metropolitan area is again likely to be one of the hardest hit metros in the country, if not the hardest hit, just as it was during the Great Recession.[16] The current hope, nationally, and in the MSA, is that the pandemic-induced recession will be deep, but short.[17] This would allow the Southern Nevada economy to get back on its historical growth track sooner rather than later.

Furthermore, a lack of available employment land would do Southern Nevada's diversification efforts no favors. According to TRI, the Governor's Office of Economic Development's ("GOED") seven target industries[18] for growth in Nevada are generally heavily reliant on large facilities and, therefore, on available lands. In order to accelerate diversification efforts, or at least to keep from stifling them, the Valley will need to increase accessibility to employment land. RCG should note that Nevada's target industries and associated report[19] are scheduled to be updated by GOED. The date of the update is currently unknown because of the COVID-19 situation.

Regional goods movement and supply chain changes are other possible growth considerations. Based on data from the Regional Transportation Commission of Southern Nevada ("RTC"), the Valley's main freeway artery, Interstate 15, has seen its daily flow rate reduced to less than 15 percent of free-flow (see Figure 11). Major slowdowns increase shipping time and costs. However, it remains to be seen what positive effects Project Neon—the major

[14] Leduc, Sylvain, and Zheng Liu. 2020. "Can Pandemic-Induced Job Uncertainty Stimulate Automation?," Federal Reserve Bank of San Francisco Working Paper 2020-19. Available at https://doi.org/10.24148/wp2020-19
[15] https://www.forbes.com/sites/chuckjones/2020/03/28/three-industries-that-are-being-decimated-by-the-coronavirus/#7df21d79423a
[16] https://finance.yahoo.com/news/coronavirus-states-hardest-financially-154119387.html
[17] https://www.brookings.edu/blog/up-front/2020/04/03/we-are-already-in-a-recession-can-we-make-it-a-short-one/
[18] https://www.diversifynevada.com/key-industries/
[19] https://www.brookings.edu/wp-content/uploads/2016/06/1114_nevada_economy.pdf

freeway system expansion that was completed in late 2019[20]—will have on traffic flows. Due to the pandemic's effect on road congestion, this will likely remain unknown until 2022.

[20] https://www.reviewjournal.com/local/traffic/project-neon-now-officially-done-goes-out-with-a-bang-in-las-vegas-1822387/

EXHIBITS

Table 1: Annual Economic Contributions of Clark County Industrial Land-Using Firms under a 3% Cost Disadvantage Scenario: 2018

Impact Type	Spending/Output	Employment	Earnings	Gross Product
Direct Benefits	-$1,198,728,000	-6,000	-$306,011,000	-$571,966,000
Indirect Benefits	-$272,863,000	-1,700	-$97,241,000	-$155,216,000
Induced Benefits	-$245,956,000	-1,500	-$72,599,000	-$150,284,000
Total Benefits	-$1,717,548,000	-9,200	-$475,851,000	-$877,466,000
Multipliers	***1.43***	***1.54***	***1.56***	***1.53***

Note: Employment includes full- and part-time jobs.
Sources: RCG, IMPLAN

Table 2: Annual Economic Contributions of Clark County Industrial Land-Using Firms under a 5% Cost Disadvantage Scenario: 2018

Impact Type	Spending/Output	Employment	Earnings	Gross Product
Direct Benefits	-$1,997,881,000	-9,900	-$510,018,000	-$953,277,000
Indirect Benefits	-$454,772,000	-2,800	-$162,068,000	-$258,693,000
Induced Benefits	-$409,927,000	-2,600	-$120,998,000	-$250,473,000
Total Benefits	-$2,862,580,000	-15,300	-$793,084,000	-$1,462,443,000
Multipliers	***1.43***	***1.54***	***1.56***	***1.53***

Note: Employment includes full- and part-time jobs.
Sources: RCG, IMPLAN

Table 3: Employment Land Analysis Parcels, by Rank: 2019

Rank	# of Parcels	Acres
1	13	1,201
2	74	7,910
3	86	7,542
4	17	2,115
NR	8	320
Total	198	19,088

Sources: RCG, SNWA, Assessor

Table 4: Employment Land Analysis Rank Scoring Point Scale: 2019

Rank Criteria	0 Points	1 Point	2 Points
Zoning	Not Industrial/Undeveloped	Undeveloped/Open Space	Industrial
Average Slope	Greater than 3.5%	NA	Less than or equal to 3.5%
Owner	Federal-Owned	Municipality-Owned	Privately-Owned
Acres Over 7% Slope	Greater than 2 Acres	0.5 - 2 Acres	Less than or equal to 0.5 Acres
Assessed Value Per Acre	Greater than $100,000	$50,000 - $100,000	Less than or equal to $50,000
Distance to freeway	Greater than 5,280 sf	1,320 - 5,280 sf	Less than or equal to 1,320 sf
Distance to highway	Greater than 2,640 sf	250 - 2,640 sf	Less than or equal to 250 sf
Distance to railroad	Greater than 5,280 sf	250 - 5,280 sf	Less than or equal to 250 sf

Source: RCG

Table 5: Employment Land Analysis Points, by Parcels: 2019

Parcel	Zone	Owner	% Slope	Acres Over 7% Slope	Assessed Value	Distance to Freeway	Distance to Highway	Distance to Railroad	Total Points	Rank
08432010015	2	2	0	2	2	0	1	0	9	3
08433010010	1	2	0	2	2	0	1	0	8	3
09908000002	1	0	2	2	2	2	0	0	9	3
09908000004	1	0	2	2	2	2	0	0	9	3
09909000003	1	0	2	2	2	2	0	0	9	3
09916000001	1	0	2	2	2	2	0	0	9	3
09916000002	1	0	2	2	2	2	0	0	9	3
09922000001	1	0	2	2	2	2	1	0	10	2
09922000002	1	0	2	1	2	2	1	0	9	3
09923000001	1	0	2	2	2	2	1	0	10	2
10031000001	1	0	2	2	2	2	1	0	10	2
10303010003	1	2	2	2	2	0	2	0	11	2
10304010018	1	2	2	1	2	0	2	0	10	2
10304010019	1	2	0	1	2	0	2	0	8	3
10310010005	1	2	2	2	2	0	2	0	11	2
10310010018	1	2	2	1	2	0	1	0	9	3
10310020001	1	2	2	0	2	0	1	0	8	3
10313010034	1	2	2	2	2	1	2	1	13	1
10327010017	1	2	0	0	2	0	0	1	6	4
10334010015	1	2	0	2	2	1	1	1	10	2
10334010018	1	2	0	0	2	1	1	1	8	3
12202010016	1	2	0	0	2	2	2	2	11	2
12217000004	1	0	0	0	2	2	2	1	8	3
12218000002	1	0	2	0	2	2	0	1	8	3
12218000003	1	0	2	1	2	2	1	1	10	2
12219000002	1	0	2	2	2	1	2	0	10	2
12313000002	1	0	2	1	2	2	0	2	10	2
12313000003	1	0	2	2	2	2	0	1	10	2
12318000001	1	0	2	2	2	2	2	0	11	2
12319000002	1	0	2	2	2	2	2	1	12	2
12320000001	1	0	2	2	2	2	2	2	13	1
12321000003	1	2	2	2	2	2	1	1	13	1
12322301001	1	2	2	2	2	2	1	1	13	1
12322701010	1	2	2	2	2	2	1	1	13	1
12324000008	1	0	2	2	2	2	2	1	12	2
12327301015	1	2	2	2	1	1	0	1	10	2
12327801001	1	2	2	2	2	1	1	1	12	2
12328710001	1	2	2	2	1	2	0	1	11	2
12328801001	1	2	2	2	1	1	0	1	10	2
12331302001	1	2	2	1	1	2	1	2	12	2

Sources: RCG, SNWA, Assessor

Table 5: Employment Land Analysis Points, by Parcels: 2019, cont.

Parcel	Zone	Owner	% Slope	Acres Over 7% Slope	Assessed Value	Distance to Freeway	Distance to Highway	Distance to Railroad	Total	Rank
12331311001	1	2	2	2	1	1	2	2	13	1
12334101005	1	2	2	2	2	1	1	1	12	2
12334601001	2	2	2	2	2	0	2	1	13	1
12410000001	1	0	2	0	2	1	0	0	6	4
12411000001	1	0	2	2	2	1	0	0	8	3
12413101001	1	0	2	1	2	1	0	0	7	3
12413301001	1	2	2	1	2	1	1	0	10	2
12413701001	1	0	2	1	2	2	2	0	10	2
12416710004	1	2	2	2	2	2	0	0	11	2
12418110001	1	2	2	2	1	0	2	0	10	2
12421510002	1	2	2	2	1	2	0	0	10	2
12422101004	1	2	2	2	1	2	0	0	10	2
12424101004	1	0	2	2	0	2	1	0	8	3
12424101006	1	0	2	2	0	2	2	0	9	3
12424501002	1	1	2	1	2	2	2	0	11	2
12436311002	1	2	2	2	1	1	1	1	11	2
12436711001	2	2	2	2	0	1	2	2	13	1
12511101001	1	0	2	2	2	0	1	0	8	3
12511201001	1	0	2	2	2	0	2	0	9	3
12518601031	1	0	2	2	0	1	1	0	7	3
12519301006	1	0	0	2	0	2	1	0	6	4
12519802006	0	0	2	2	2	2	2	0	10	2
12519802010	1	0	2	2	1	2	2	0	10	2
12521401001	0	1	2	2	0	2	2	0	9	3
12528101008	0	2	2	2	0	2	2	0	10	2
12528201006	0	0	2	2	0	1	2	0	7	3
12528701005	0	2	2	2	0	2	2	0	10	2
12531401007	0	0	0	0	1	2	2	0	5	4
12603501005	1	0	0	2	2	0	0	0	5	4
12603501007	1	0	2	1	2	0	1	0	7	3
12603701003	1	0	2	2	2	0	2	0	9	3
12607301012	1	2	0	1	2	0	1	0	7	3
12610201003	1	0	0	1	2	0	2	0	6	4
12611000005	1	0	0	1	2	0	2	0	6	4
12614000003	0	0	0	0	2	1	2	0	5	4
12625401020	1	0	0	2	2	2	2	0	9	3
12625501006	1	0	0	2	1	1	2	0	7	3
12625601053	1	0	0	2	1	2	1	0	7	3
13810201002	0	1	2	2	0	1	1	0	7	3
13813505001	0	2	2	2	1	0	2	0	9	3

Sources: RCG, SNWA, Assessor

Table 5: Employment Land Analysis Points, by Parcels: 2019, cont.

Parcel	Zone	Owner	% Slope	Acres Over 7% Slope	Assessed Value	Distance to Freeway	Distance to Highway	Distance to Railroad	Total	Rank
13902215001	0	2	2	2	1	1	2	1	11	2
13902401004	0	2	2	2	0	1	2	1	10	2
13902401005	0	2	2	2	0	1	2	1	10	2
13902803002	0	2	2	2	0	1	2	1	10	2
13904201017	0	2	2	2	2	0	1	0	9	3
13904416001	0	2	2	2	1	0	2	0	9	3
13904502001	0	1	2	2	2	0	2	0	9	3
13907801015	0	2	2	2	1	0	2	0	9	3
13910801001	0	2	0	0	1	1	2	1	7	3
13917502001	0	2	2	2	1	0	2	0	9	3
13917701001	0	2	2	2	2	0	2	0	10	2
13917801004	0	2	2	1	2	0	2	0	9	3
13919705001	0	2	2	2	1	0	2	0	9	3
13923402007	0	2	2	2	1	1	2	1	11	2
14014101003	0	2	2	2	2	0	2	0	10	2
14015101002	0	1	2	2	2	0	0	0	7	3
14017810004	2	2	2	2	1	0	2	0	11	2
16031101003	0	2	2	2	1	0	0	0	7	3
16031201001	0	1	2	2	1	0	1	0	7	3
16031301003	0	1	2	2	1	0	0	0	6	4
16031401003	0	2	2	2	1	0	1	0	8	3
16031501005	0	1	2	2	1	0	0	0	6	4
16031801002	0	2	2	2	1	0	0	0	7	3
16032501004	0	1	2	2	1	0	0	0	6	4
16033202001	2	2	2	2	1	0	1	0	10	2
16034114006	0	2	0	2	2	0	1	0	7	3
16102301004	0	0	0	0	2	0	1	0	3	4
16114401001	0	1	2	2	2	0	2	0	9	3
16115501002	0	1	2	2	2	0	2	0	9	3
16134302006	0	2	2	2	0	2	2	0	10	2
16134401008	2	2	2	2	1	2	2	0	13	1
16135411002	0	2	2	2	0	1	2	0	9	3
16135501002	0	1	2	2	1	0	2	0	8	3
16136101002	0	2	2	2	2	0	1	0	9	3
16136301001	0	2	2	2	1	0	1	0	8	3
16201201007	0	2	2	2	1	1	2	0	10	2
16222401003	0	1	2	2	0	1	2	0	8	3
16222401004	0	1	2	2	0	1	2	0	8	3
16316301002	0	0	2	2	0	0	2	0	6	4
16328301003	0	1	2	2	0	1	1	0	7	3

Sources: RCG, SNWA, Assessor

Table 5: Employment Land Analysis Points, by Parcels: 2019, cont.

Parcel	Zone	Owner	% Slope	Acres Over 7% Slope	Assessed Value	Distance to Freeway	Distance to Highway	Distance to Railroad	Total	Rank
16333301015	2	2	2	2	0	1	1	0	10	2
16333701007	0	2	2	2	0	1	2	0	9	3
16401312006	1	2	2	2	0	1	1	0	9	3
16401312008	1	2	2	2	0	1	2	0	10	2
16413301002	0	2	2	2	0	2	2	0	10	2
16413411002	1	2	2	2	0	2	2	0	11	2
16413801004	1	2	2	2	0	2	1	0	10	2
17603201010	0	1	2	2	0	2	2	0	9	3
17603401015	0	1	2	2	0	2	2	0	9	3
17605601028	0	2	2	2	0	2	2	0	10	2
17609501011	0	1	2	2	0	1	2	0	8	3
17612401029	2	0	2	2	0	0	2	2	10	2
17623501011	0	0	2	2	1	0	2	2	9	3
17623601017	2	0	2	2	1	0	2	2	11	2
17623701013	2	2	2	2	1	0	1	2	12	2
17626201004	2	0	2	2	2	0	2	2	12	2
17627601011	0	0	2	2	1	0	2	1	8	3
17704201005	0	2	2	2	0	2	2	1	11	2
17708601008	0	2	2	2	0	2	2	0	10	2
17708701014	0	2	2	2	0	2	2	0	10	2
17708803013	0	2	2	2	0	2	2	0	10	2
17708803014	0	2	2	2	0	2	2	0	10	2
17729701044	0	2	2	2	0	2	2	0	10	2
17732601004	0	2	2	2	0	2	2	0	10	2
17732601005	0	2	2	2	0	2	1	0	9	3
17732701007	0	2	2	2	0	2	2	0	10	2
17732801003	0	2	2	2	0	2	2	0	10	2
17734812006	0	2	2	2	0	0	2	0	8	3
17735302047	2	1	2	2	0	0	2	0	9	3
17735401001	0	1	2	2	1	0	1	0	7	3
17735401002	0	1	2	2	1	0	1	0	7	3
17802801002	2	2	2	2	1	1	2	1	13	1
17802801004	2	2	2	2	1	1	2	1	13	1
17813201016	2	2	2	2	1	2	1	1	13	1
17906510001	0	2	2	2	1	0	0	0	7	3
17907201011	0	2	2	2	1	0	2	1	10	2
17907701018	0	2	2	2	0	0	1	0	7	3
17916803005	0	0	2	2	2	0	1	0	7	3
17928202001	2	2	2	2	2	1	2	2	15	1
17933411003	0	1	0	2	1	1	1	1	7	3

Sources: RCG, SNWA, Assessor

Table 5: Employment Land Analysis Points, by Parcels: 2019, cont.

Parcel	Zone	Owner	% Slope	Acres Over 7% Slope	Assessed Value	Distance to Freeway	Distance to Highway	Distance to Railroad	Total	Rank
17934410011	0	1	0	2	1	1	2	1	8	3
19103201002	2	2	2	2	0	0	2	0	10	2
19103310015	2	2	2	2	1	0	2	0	11	2
19104801012	1	2	2	2	0	1	2	0	10	2
19108510004	0	2	2	2	0	2	2	0	10	2
19108510007	0	2	2	2	0	2	2	0	10	2
19109401011	1	2	2	2	2	1	2	0	12	2
19110801003	1	2	2	2	2	0	1	0	10	2
19111101004	1	0	2	0	2	0	2	0	7	3
19114101004	2	2	2	2	0	0	1	0	9	3
19114301001	2	2	2	2	0	0	0	0	8	3
19115101002	1	0	2	0	2	0	2	0	7	3
19115501002	2	2	2	2	0	0	1	0	9	3
19115711002	0	2	2	2	1	0	0	0	7	3
19115811001	0	2	2	2	1	0	0	0	7	3
19115811004	0	2	0	1	1	0	0	0	4	4
19115811006	0	2	2	2	1	0	0	0	7	3
19116101005	1	0	2	2	2	1	1	0	9	3
19116201008	1	2	2	2	2	1	1	0	11	2
19116401001	1	0	2	2	2	1	1	0	9	3
19116601007	1	2	2	2	2	1	1	0	11	2
19116601008	1	0	2	2	2	0	1	0	8	3
19117501010	1	0	2	2	2	1	2	0	10	2
19117801013	1	0	2	2	2	1	1	0	9	3
19120501006	1	0	2	2	2	1	1	0	9	3
19121000001	0	0	2	2	2	1	0	0	7	3
19121000002	1	0	2	0	2	1	0	0	6	4
19122101001	0	0	2	0	2	0	0	0	4	4
19123111006	0	2	2	2	1	0	0	0	7	3
19130501005	1	0	0	0	2	2	1	0	6	4
Dropped from Ranking Analysis/No GIS Match										
13904210015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13904610003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17727801021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17812201010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19103201005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19110201016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19114115003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19114314001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Sources: RCG, SNWA, Assessor

Table 6: Employment Land Analysis Parcels, by Community & Rank: 2019

Community	Rank	# Parcels	Acres
Enterprise	2	15	701
Enterprise	3	3	72
Subtotal		*18*	*773*
Henderson	1	4	143
Henderson	2	11	549
Henderson	3	32	2,455
Henderson	4	7	752
Subtotal		*54*	*3,899*
Las Vegas	2	8	1,943
Las Vegas	3	14	1,243
Las Vegas	4	3	407
Subtotal		*25*	*3,593*
Lone Mountain	4	1	30
Lower Kyle Canyon	3	3	132
Lower Kyle Canyon	4	2	81
Subtotal		*5*	*213*
North Las Vegas	1	7	979
North Las Vegas	2	32	4,411
North Las Vegas	3	20	2,798
North Las Vegas	4	2	733
Subtotal		*61*	*8,923*
Paradise	3	2	43
Spring Valley	2	2	95
Spring Valley	3	5	226
Spring Valley	4	1	71
Subtotal		*8*	*393*
Summerlin South	2	4	153
Summerlin South	3	1	23
Subtotal		*5*	*176*
Sunrise Manor	2	2	57
Sunrise Manor	3	1	31
Sunrise Manor	4	1	41
Subtotal		*4*	*128*
Unincorporated	3	2	331
Urban Island	1	2	79
Whitney	3	3	187
Not Ranked	NA	8	320
Total		198	19,088

Sources: RCG, SNWA, Assessor

Table 7: Clark County Job Growth & Land Demand: 2018 - 2035

Description	Commercial	Industrial	Total
Job Growth	274,433	115,590	390,023
Land Demand (ac.)	5,159	8,960	14,119

Sources: RCG, IMPLAN

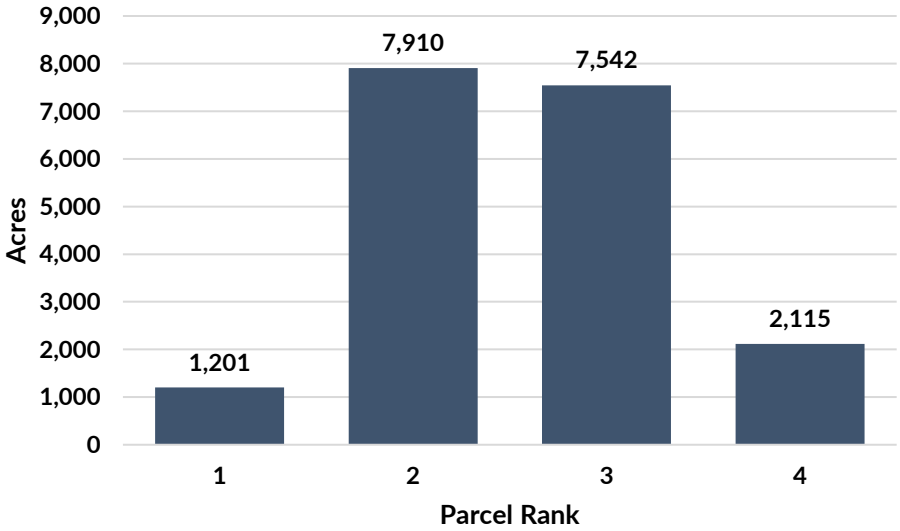
Figure 1: Example Regarding Area-to-Perimeter Ratio

Square
Side Length: 1 unit
Area: 1 square unit
Perimeter: 4 units
Ratio: 4

L-Shape
Side Length: 1 unit
Area: 0.75 square units
Perimeter: 4 units
Ratio: 5.3

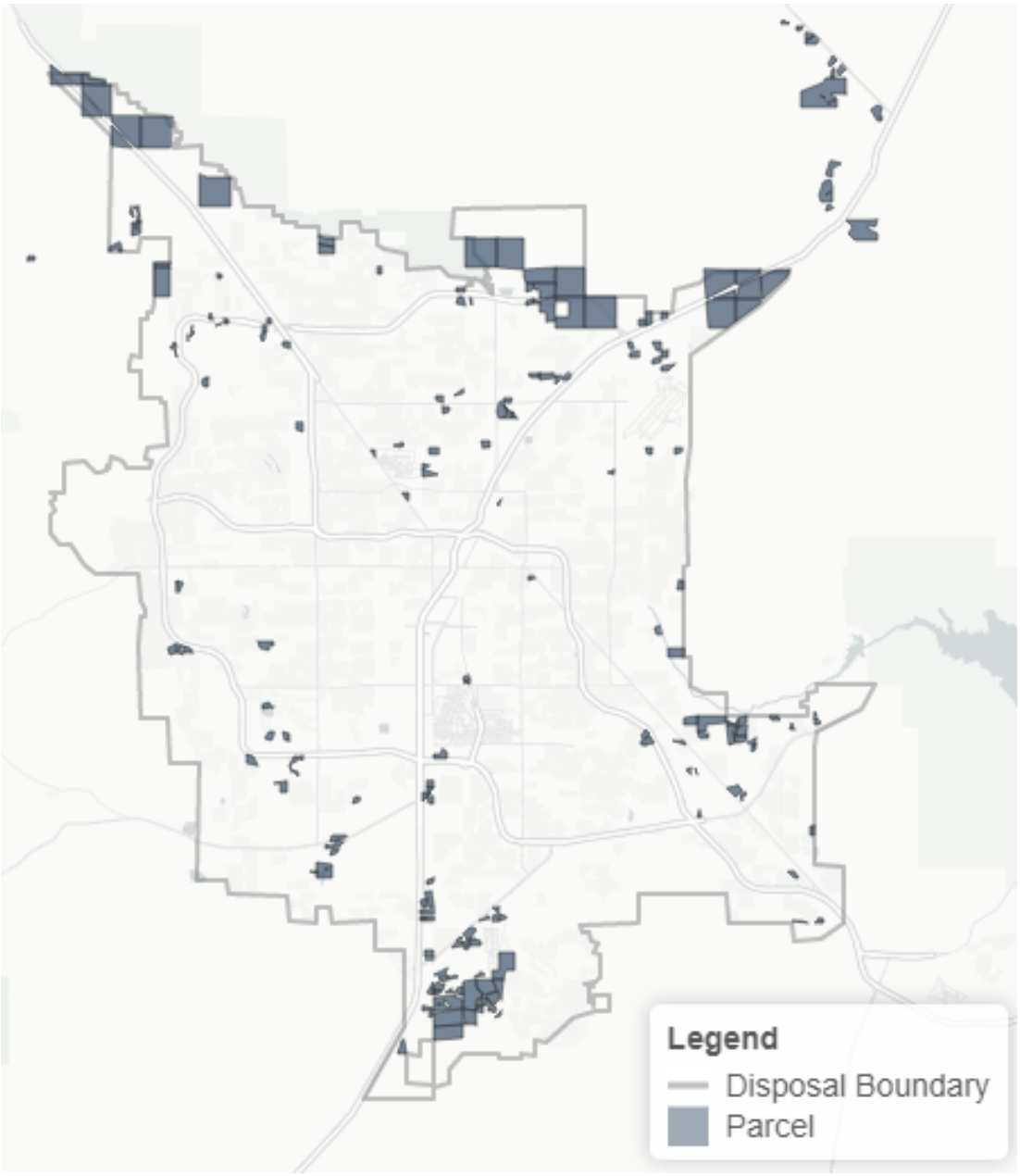
Note: A simple example that shows that more complicated shapes tend to have longer perimeters relative to their areas.
Source: RCG

Figure 2: Employment Land Analysis Parcel Acres, by Rank: 2019



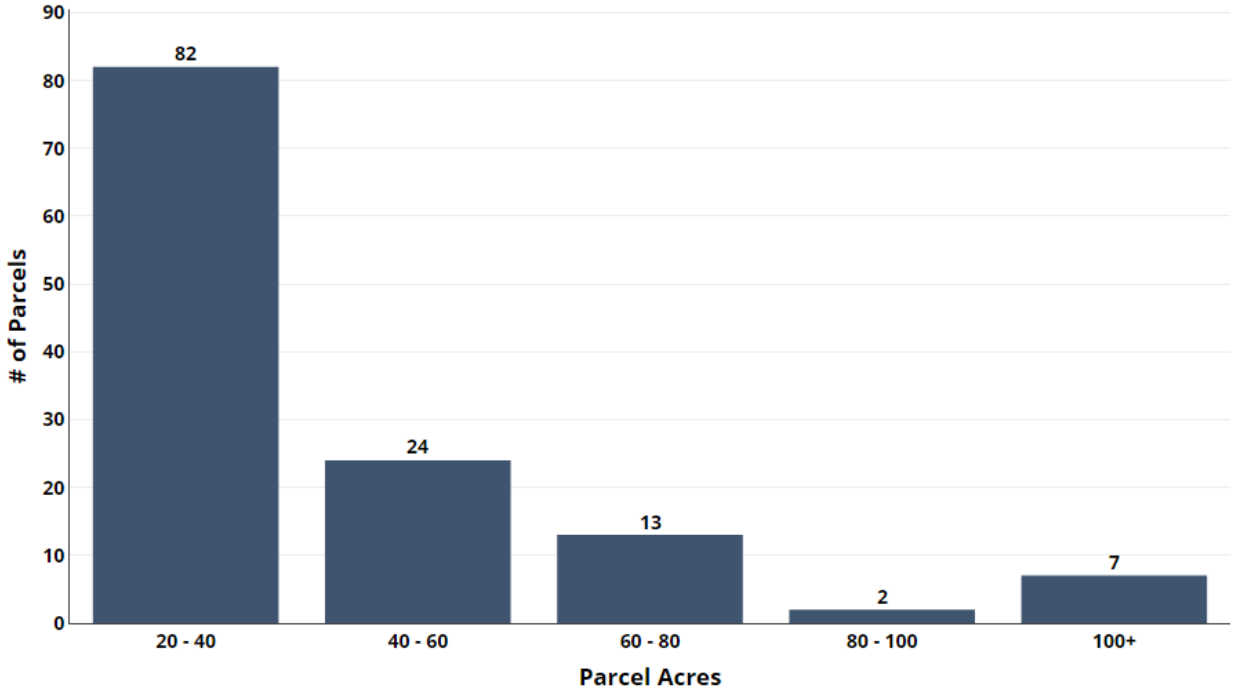
Sources: RCG, SNWA, Assessor

Figure 3: Employment Land Analysis Parcels Map: 2019



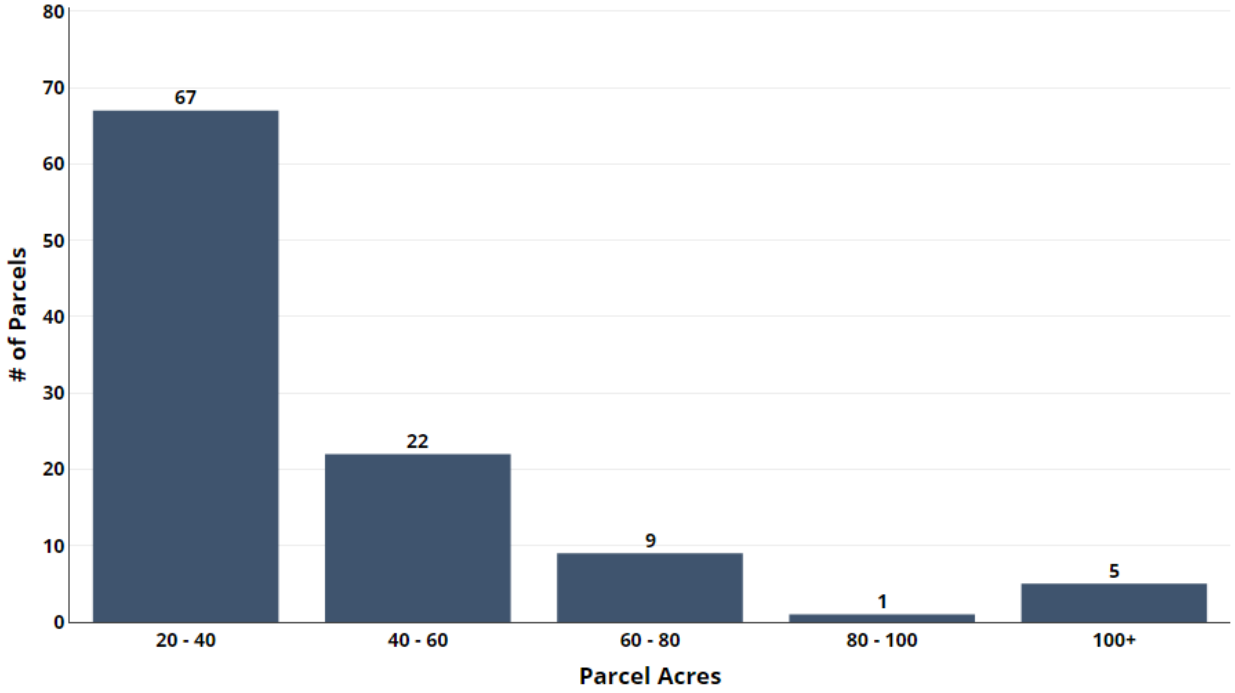
Sources: RCG, SNWA, Assessor

Figure 4: Employment Land Analysis Non-Federally-Owned Parcel Inventory, by Acres: 2019



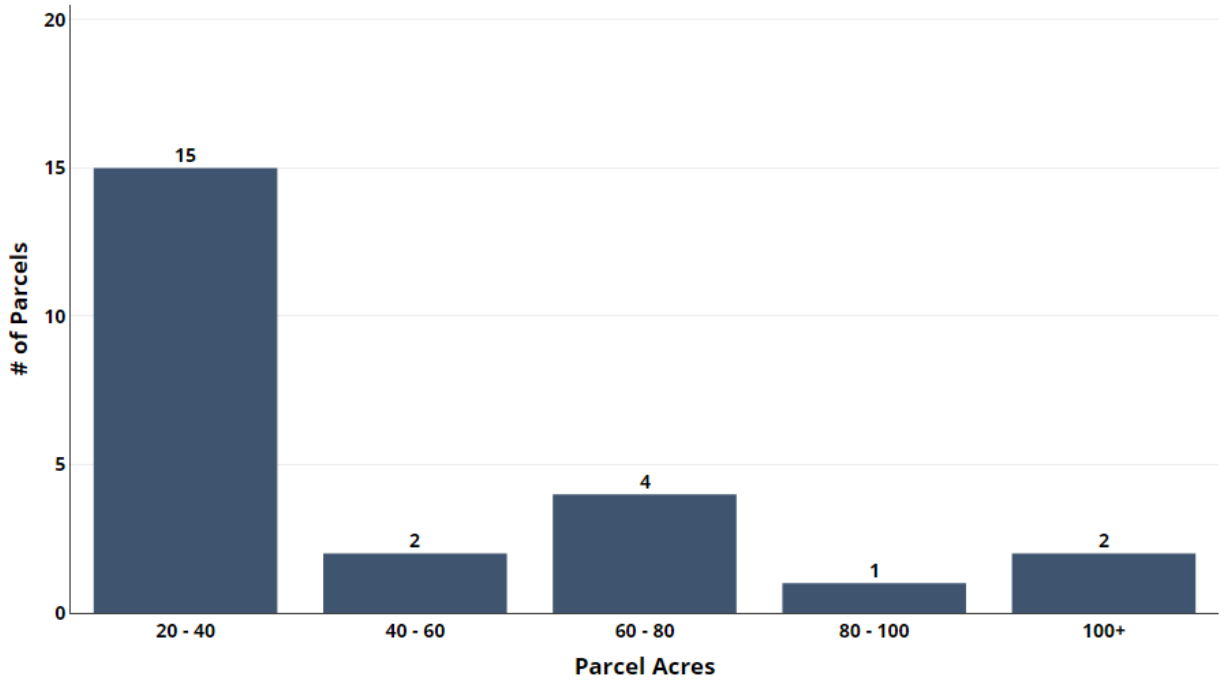
Sources: RCG, SNWA, Assessor

Figure 5: Employment Land Analysis Privately-Owned Parcel Inventory, by Acres: 2019



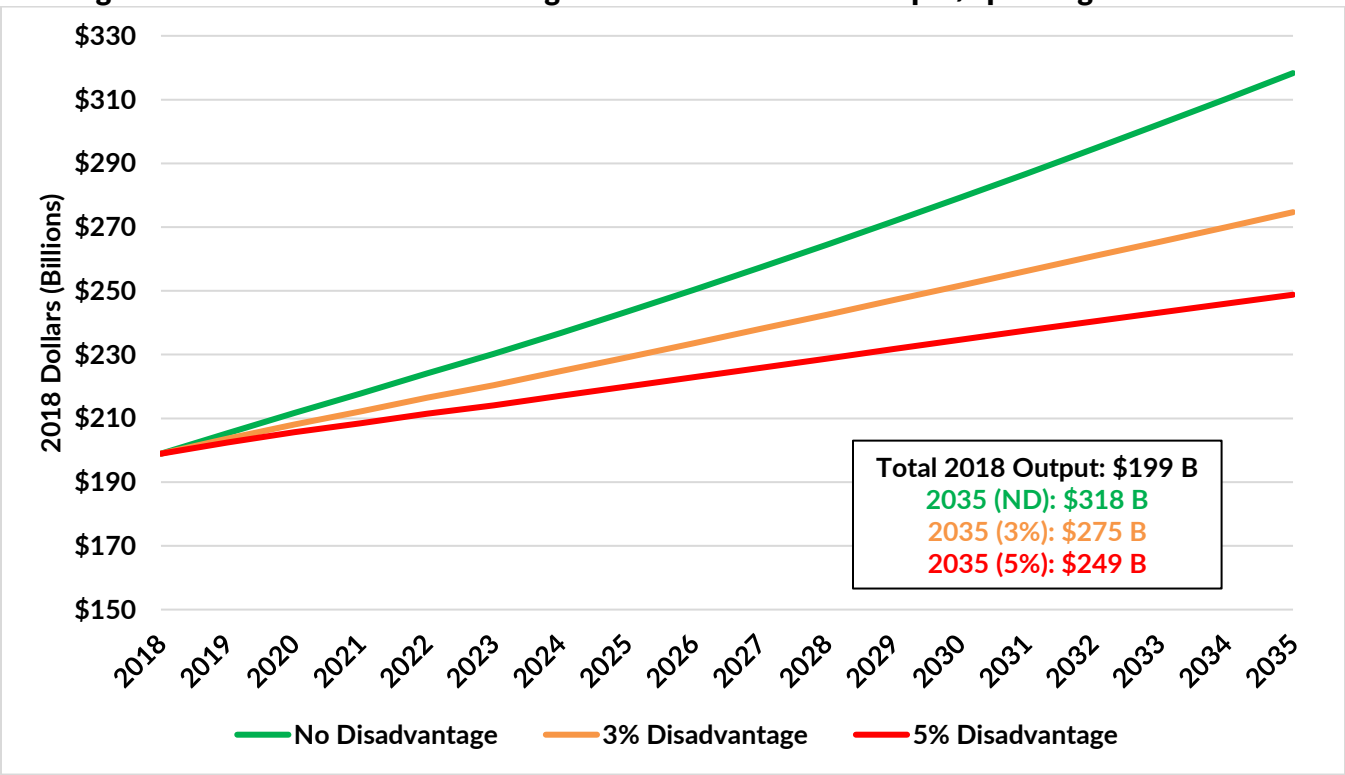
Sources: RCG, SNWA, Assessor

Figure 6: Employment Land Analysis Municipal-Owned Parcel Inventory, by Acres: 2019



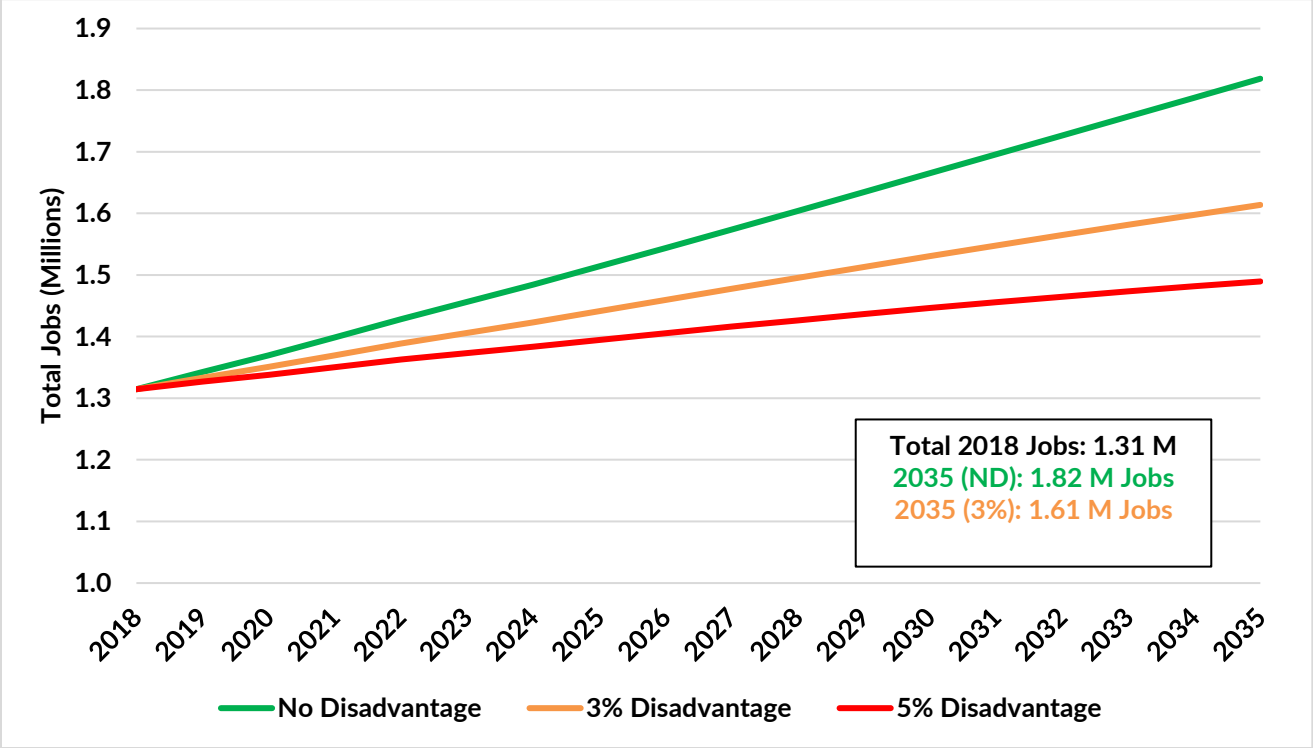
Sources: RCG, SNWA, Assessor

Figure 7: Effects of Cost Disadvantage on Southern Nevada Output/Spending: 2018 – 2035



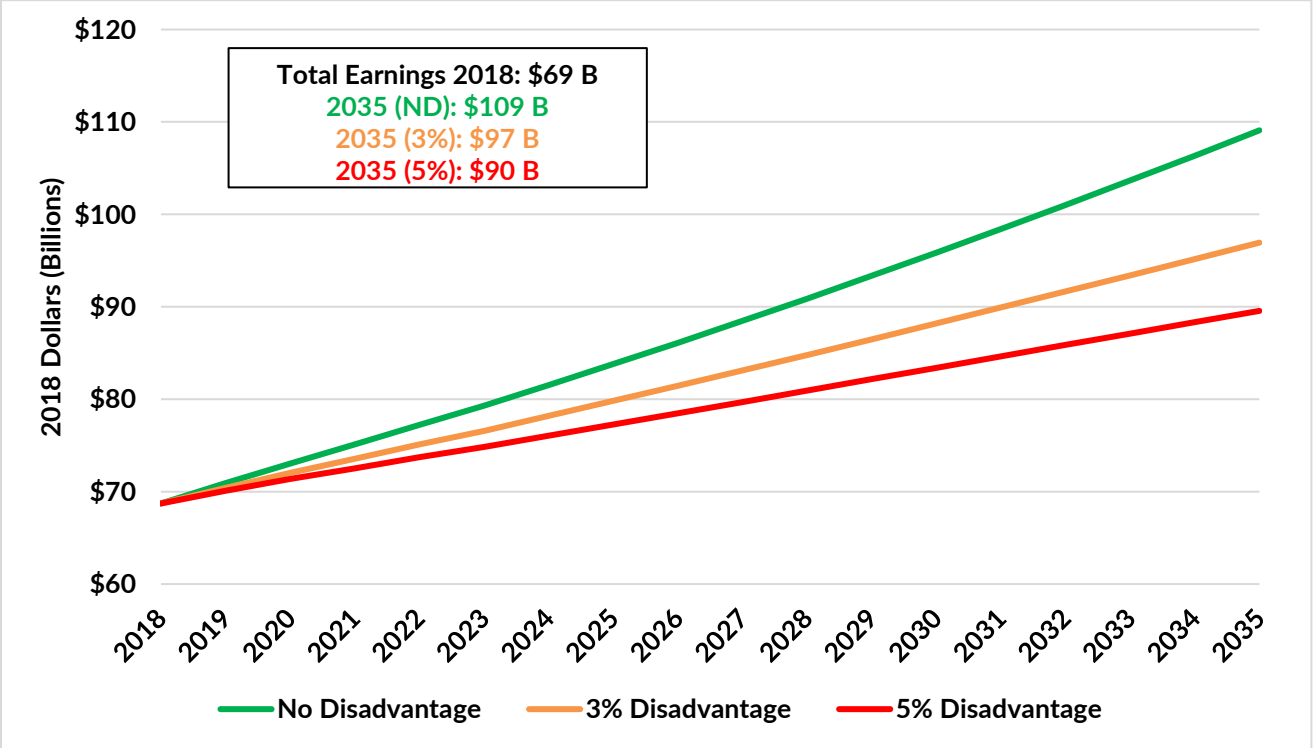
Sources: RCG, IMPLAN

Figure 8: Effects of Cost Disadvantage on Southern Nevada Employment: 2018 – 2035



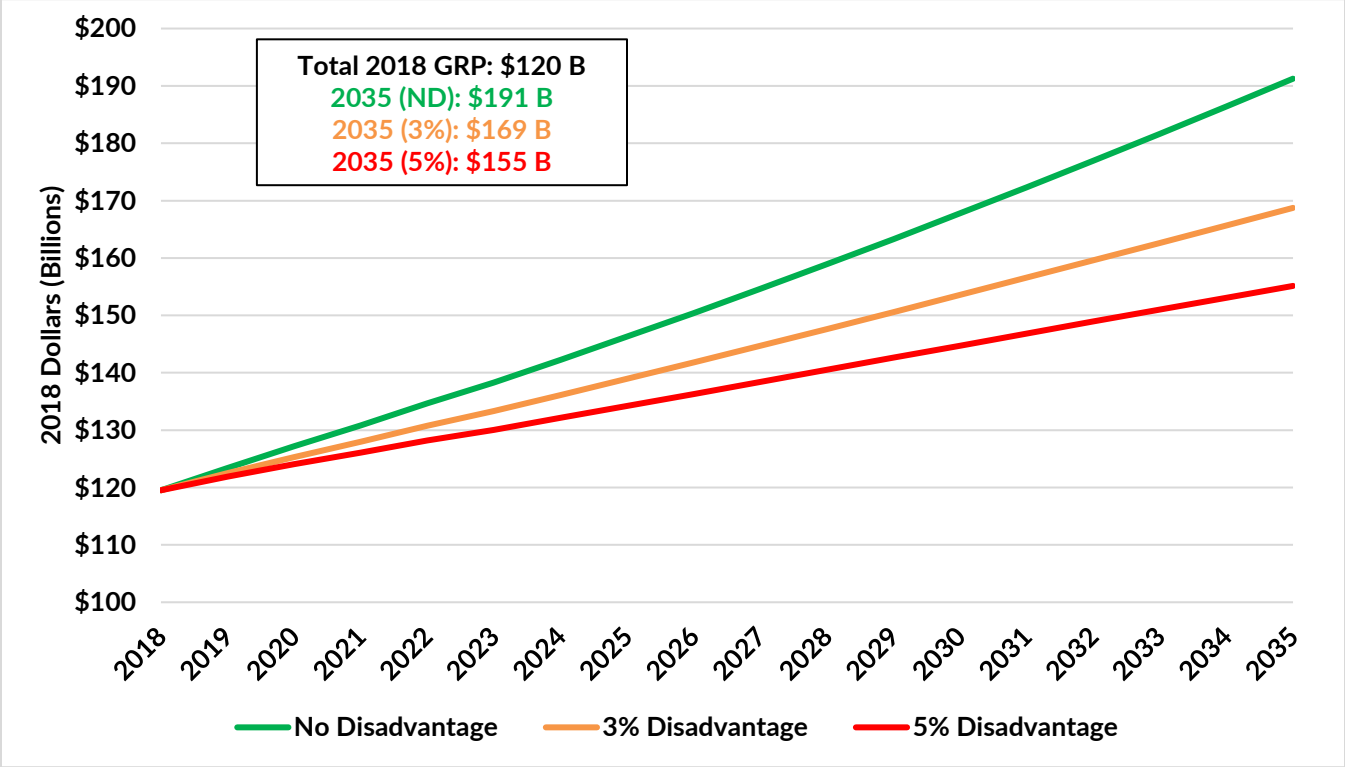
Sources: RCG, IMPLAN

Figure 9: Effects of Cost Disadvantage on Southern Nevada Earnings: 2018 – 2035



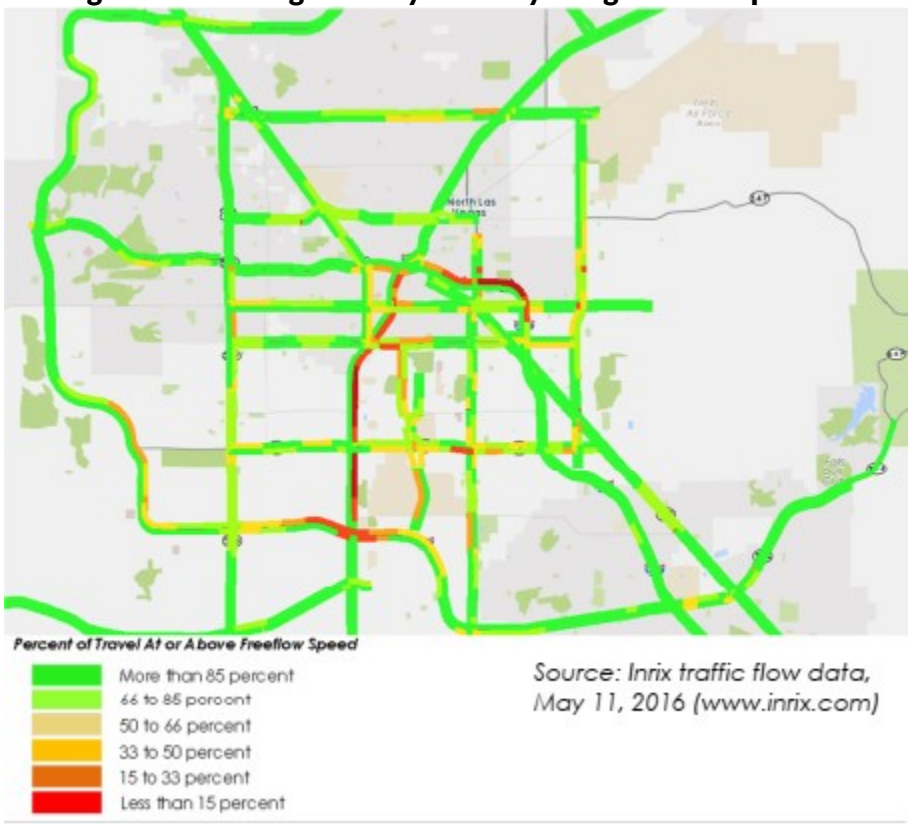
Sources: RCG, IMPLAN

Figure 10: Effects of Cost Disadvantage on Southern Nevada Gross Product: 2018 – 2035



Sources: RCG, IMPLAN

Figure 11: Las Vegas Valley Freeway Congestion Map: 2016



Source: RTC

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