



The Economic Contribution of the
**CLARK COUNTY
AIRPORTS**

AUGUST 2019

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August 2019

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EXECUTIVE SUMMARY



Clark County Airports support nearly 250,000 jobs or 25% of all employment in the Las Vegas region.

“Our product is manufactured overseas, and our customers are global. Hence location by a major international airport was critical in our decision to move our company to Clark County.”

—Tammi Harrington,
Chief Operating Officer
Retro Manufacturing

McCarran International Airport was the ninth-busiest airport in the United States in 2018. That year the airport reported a record annual total of more than 49.7 million passengers, or nearly 25 million if recorded as one-way travellers. Oxford Economics concluded that the airport and related activities support 25% of all jobs in Clark County. These calculations include the economic contribution made by the airport and airlines operating at McCarran plus the network of businesses throughout Clark County that support these operations. Our economic impact calculation also includes the economic contribution made by airline passengers arriving in Clark County. We estimate that airline passengers arriving at McCarran account for approximately 80% of the economic impact benefit that we calculated.

In fact, nearly half of all visitors to the region arrive by air. McCarran’s growth and global reach have allowed Las Vegas to remain the country’s number one trade show destination for 25 consecutive years. The resulting economic contribution is significant. Oxford Economics estimates that in 2018 McCarran supported \$35 billion in economic output and contributed \$21 billion toward regional GDP.

We also explored important contributions made by McCarran that are not captured by standard economic impact analysis. For example, we examined the relationship between the \$3 billion in commercial air cargo that is annually exported from McCarran and found that air exports of manufactured goods through McCarran support an estimated 11,000 jobs in Clark County. In our report, we illustrate several manufacturing businesses in the region that are

dependent upon air cargo for critical supply-chain components and to bring their product to global customers.

The global destinations served by McCarran bring additional benefit to residents and businesses in Clark County in less visible but equally critical ways. Much of this benefit results from what economists call the “connectivity effect” and we found much evidence for this in Clark County. For example, profiled in this report are examples of businesses that chose to locate in Clark County because McCarran had the international reach to support their manufacturing or business service operations. Also profiled are several businesses that rely on McCarran to transport global clients or executive teams to Clark County for training or collaboration.

Moreover, Clark County residents benefit by the convenience of having easy access to a major international airport. In 2018, Clark County residents took 4.6 million trips from McCarran (9.2 million if roundtrips are counted). If Clark County did not host a major international airport, residents would need to travel further to access air service (for example by driving to Los Angeles International). In addition to the long drive, once passengers arrived in Los Angeles they would generally pay higher ticket prices than what is offered from McCarran. Our research found that the combination of cheaper ticket prices and time savings available to Clark County passengers because of McCarran generate \$2 billion in convenience value (or “consumer surplus”) for county residents.

1. OUR METHOD AND KEY FINDINGS

INTRODUCTION

The Clark County Department of Aviation operates five airports in Clark County. McCarran is by far the largest but each of the other airports make an important contribution as well. The purpose of this study was to calculate the economic contribution made by McCarran and its four sister airports to the people and businesses of Clark County, Nevada. In addition to McCarran, there are four other Clark County airports. The portion of total Clark County economic impact attributable to two of these airports was also estimated:

- Henderson Executive Airport is a business aviation facility that serves as a primary reliever for McCarran. Henderson supports 1,042 jobs and contributes \$151 million to GDP in Clark County.
- North Las Vegas Airport is a convenient alternative to McCarran for smaller private planes. North Las Vegas supports 919 jobs and contributes \$133 million to GDP in Clark County.
- Jean Sport Aviation Center supports recreational aviation including general aviation aircraft, aerobatic aircraft, gliders, ultralights, and skydiving.
- Overton-Perkins Field is located approximately 70 miles northeast of Las Vegas and serves smaller private aircraft.

FIGURE 1: The Five Clark County Airports



In the report that follows, we generally describe our findings in terms of McCarran's contribution to economic impact. This focus reflects the much larger size of McCarran relative to the other airports plus the importance of passengers and cargo transported to and from that airport to our overall calculations. Nevertheless, it is important to remember that as noted above, some portion of the benefits that we describe are attributable to the four other airports and that each one makes a unique contribution to Clark County.

A quick note on geography. This study examines the economic contribution made by the five airports in Clark County. Please note the United States Census Bureau generally defines regional geographies in terms of Metropolitan Statistical Areas (“MSA”). The Las Vegas-Henderson-Paradise MSA includes only Clark County. Hence in this report the terms “Clark County”, “Las Vegas Region” and “Las Vegas MSA” are used interchangeably and refer to the same exact geographic area.

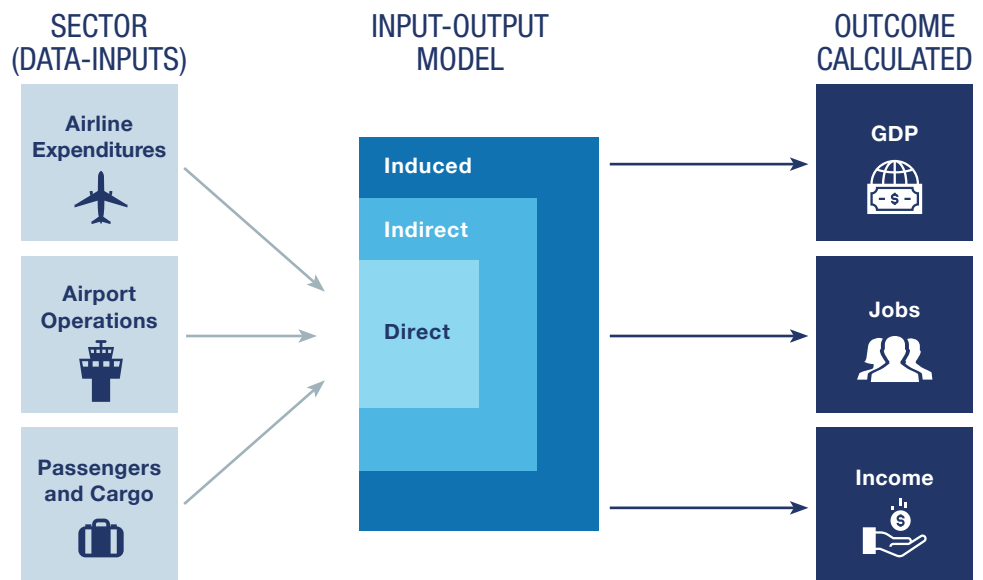
KEY FINDINGS AND ASSUMPTIONS

Our research began with the collection and analysis of data describing employment and expenditure information for three significant categories of airport activity:

- Airline carrier operations
- Airport operations (including concessions)
- Passengers and cargo transported to and from Clark County

Through use of an input-output model (standard in economics) we were able to calculate how this employment and expenditure resulted in increased economic activity (GDP), jobs and income in Clark County. Our overall workflow is illustrated in the following schematic:

FIGURE 2: An Overview of Economic Impact Methodology



(Please see the text box on the following page for more detailed definitions of some of the key terms used in this schematic and throughout the report.)

METHODOLOGICAL INTRODUCTION: ECONOMIC IMPACT ANALYSIS

Economic impact results were calculated using an input-output model. In making our calculations, we examined three categories of activity associated with commercial air service.

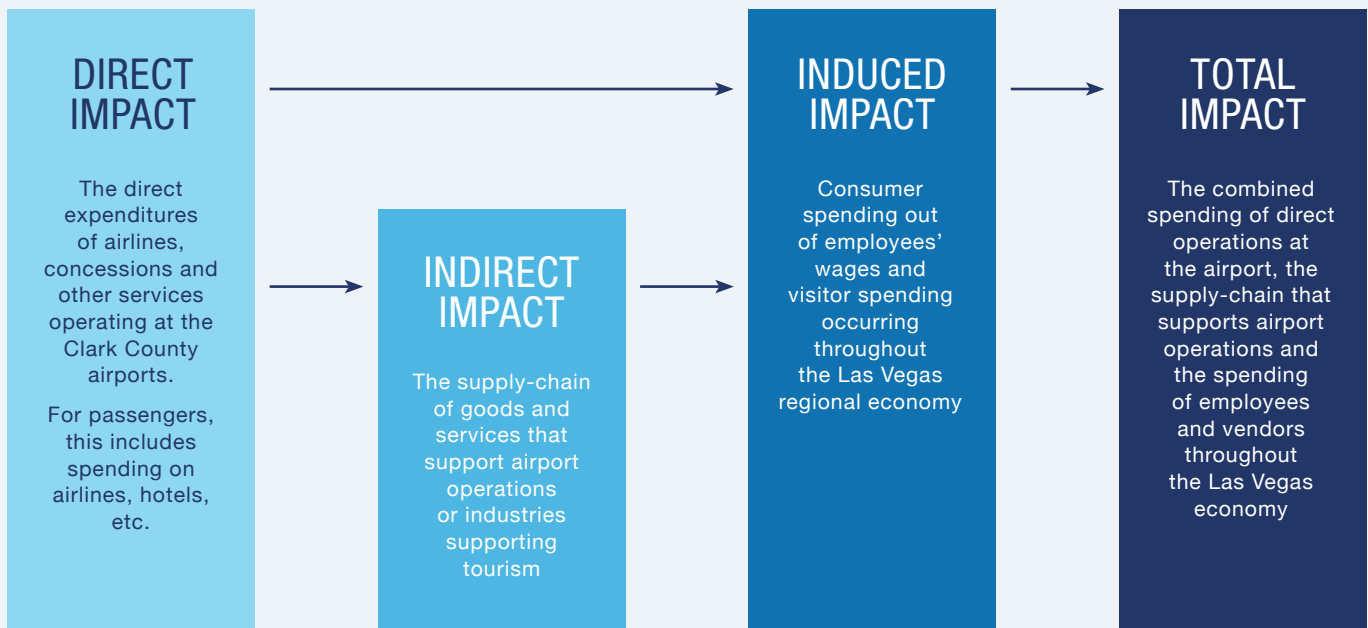
- **Airlines:** Captures ground-based operations that support airline operations in Clark County including flight crews, gate operations, cargo handling and aircraft maintenance.
- **Airport:** Includes all expenditures related to operating and maintaining the airport infrastructure plus major concessions operating at the airport(s). In addition, an annual average amount of capital expenditure plus major on-site airport concessions were included in this category.
- **Passengers:** The estimated spend made by airline passengers arriving in Clark County.

In describing our results, we refer to the following three “channels” of economic activity. These distinguish among spending for direct operations,

the supply-chain supporting those operations, and wider impacts as the employees from the first two channels (direct and suppliers) spend their wages in the broader economy. The three channels are defined as follows:

- **Direct:** These are the jobs and activity attributable directly to airlines and airport operations or the hotels and services directly catering to Clark County visitors arriving by air.
- **Indirect:** These are the employment and value-added contribution attributable to the supply chain that supports the direct operations of the airlines, airports, or hospitality industry.
- **Induced:** This is commonly referred to as the “multiplier effect” and is the economic benefit that results as employees and vendors spend their incomes in the local community.

The following schematic depicts the relationship among direct, indirect and induced channels:



In addition to estimating the employment and expenditures of the businesses that operate at the airports, we also analyzed the composition of passengers flying in and out of McCarran and the amount of spend associated with the passengers who arrive in Clark County. Using published data, the Oxford Economics Tourism Economics Group estimates that nearly 25 million passengers arrived in McCarran during 2018, comprised roughly of 16.2 million inbound domestic passengers, 4.0 million inbound international passengers, and 4.6 million county residents (see Figure 3).¹ In addition, average spend per passenger was estimated separately for domestic and international travellers. In total, the spend that is attributable to incoming non-local passengers was estimated to be \$18.7 billion, not including the cost of air transportation.²

FIGURE 3: McCarran’s Passenger Profile

	2018 Air Passengers (Arrivals Only)		
	Number	Per Capita Spend	Total Spend
Domestic	16,172,851	\$773	\$12.5 billion
International	4,043,213	\$1,522	\$6.2 billion
Local Residents	4,633,137	-	-
Total passengers	24,849,201		\$18.7 billion

Source: LVCVA; Oxford’s Tourism Economics



\$10.5 Billion
in Clark County
income is supported
by McCarran and its
sister airports.

Each key sector (airlines, airport, passengers) contributes significantly to jobs, income and GDP but as shown in Figure 4 (next page), 80% or more of the economic impact reported is associated with the spending of the more than 20 million out-of-town visitors to Las Vegas who arrive by air. This makes sense. Commercial aviation’s key contribution in all places is that it connects the community with the rest of the world. Most obviously in Las Vegas, that means bringing visitors from all over the world to spend money in the region’s gaming, convention and hospitality sector. However, as will be explored later in this report air connectivity also makes major contributions throughout the county in sectors as diverse as manufacturing and business services.

1 Note that this total represents incoming passengers; roundtrip passengers are counted only once.
2 In order to do this, assumptions must be made about the nature of the spending. Specifically, the following average spending profile was used: lodging, 19%; ground transportation, 12%; food, 15%; retail, 17%; and recreation, 37%. These assumptions are discussed in more detail in Appendix B.

FIGURE 4: Connectivity (Passengers) Brings Most Benefit

	Sources of Economic Impact			
	Airlines	Operations	Passengers	Total
Jobs	22,824	6,860	216,581	246,265
GDP (billions)	\$3.7	\$0.6	\$17.0	\$21.3
Income (billions)	\$1.6	\$0.4	\$8.6	\$10.5

Source: Oxford Economics, IMPLAN
Rounding errors might occur.

In total, McCarran and its sister airports support nearly 250,000 jobs or one in four jobs in Clark County. The GDP contribution, which represents only the value-add in producing final goods and services within the Las Vegas MSA, is \$21 billion. In 2018, this represents approximately 18% of the total GDP for the Las Vegas MSA.³ In addition, the economic activity supported by the airports generates \$5.9 billion in tax revenue for all levels of government.⁴

FIGURE 5: Generating Tax Revenue



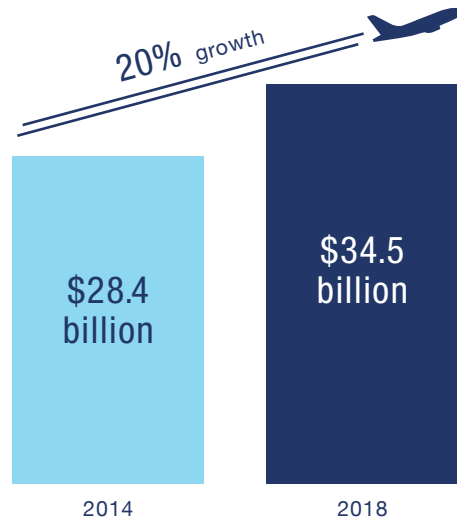
Source: IMPLAN, Oxford Economics

Earlier reports produced for the Clark County airports relied on a different measure of economic activity called “output.” Output differs from GDP in that output includes the full value of all goods and services, including intermediate

3 In 2018, the GDP of the Las Vegas MSA was \$120 billion. Source: Oxford Economics North America Cities Forecast.
4 IMPLAN software includes the following federal tax categories: social insurance (Social Security and Medicare), personal income, corporate income, excise taxes, customs duties, and other taxes on production and imports. These categories are all included in our results. In addition, IMPLAN software includes the following state and local tax categories: social insurance, personal income, taxes on corporate profits and dividends, personal and business property taxes, various sales and excise taxes, motor vehicle taxes, severance tax, and other personal and business taxes.

goods used to produce other goods and services. Measured in this way, total economic output attributable to the airport in 2018 was \$34.5 billion, a growth of 20% since 2014.⁵

FIGURE 6: Economic Output Attributable to McCarran



Business confidence in McCarran’s future growth is the keystone for new business investment in the Las Vegas region. The Las Vegas Convention and Visitors Authority reports that over the next several years \$3.5 billion in new construction projects will be completed in the hotel, convention and entertainment sector. The Las Vegas Stadium for the NFL Raiders and the new convention center are the highest profile of these projects but the list includes significant projects up and down the entire Las Vegas Strip.⁶ McCarran’s economic contribution will continue to grow in lockstep with the Las Vegas regional economy when these new venues and developments come on-line and attract even more visitors from around the world.

5 The following example illustrates the difference between GDP and Output. If a manufacturer produces a \$500 piece of furniture using wood that it buys for \$200, the total output would be \$700 (wood plus furniture), whereas the full GDP impact is only \$500 (the value of the final good). If the furniture is made in the Las Vegas MSA, but the wood is imported from elsewhere, the output in the region would be \$500, and the value-added contribution to GDP in the region would be only \$300. The 2014 figure of \$28.4 billion was produced in a report issued in 2015 by Applied Analysis entitled “McCarran International Airport: Economic Impact Analysis.” Please note that there are some differences in the methodologies used in the earlier study and in the current report in how economic output was calculated.

6 Las Vegas Convention and Visitors Authority. Las Vegas Construction Bulletin. Published on-line as of June 30, 2019.

2. BROAD SPILLOVER EFFECTS

The hospitality and gaming industries are known for their outsized presence in the Las Vegas region but as the overleaf on the next page describes, there is more diversity in the region than is commonly supposed. The airports help to support the region’s economic diversity through what are called spillover or multiplier effects. Spillover effects result as workers employed at the airports plus those employed in the supply chain supporting air operations spend their earnings throughout the Las Vegas region. In Figure 7 we examine how the total economic impacts presented previously are distributed among the key industry sectors that comprise the Clark County economy.⁷

FIGURE 7: Spillover Throughout Clark County

	Jobs	Income	GDP
	(number)	(millions)	
Natural Resources and Mining	151	\$1	\$3
Construction	1,746	\$93	\$134
Manufacturing	482	\$26	\$38
Trade, Transport, Utilities	59,428	\$3,010	\$6,084
Information	1,595	\$121	\$276
Financial Activities	17,555	\$545	\$2,980
Professional, Business Services	21,261	\$1,160	\$1,537
Education and Health Services	9,906	\$605	\$650
Leisure and Hospitality	115,728	\$4,274	\$8,796
Other Services	16,945	\$564	\$575
Government	1,470	\$145	\$216
Total	246,265	\$10,544	\$21,288

Source: Oxford Economics, IMPLAN

⁷ Direct Operations, Supply Chain and Spillover to the broader economy respectively correspond to the direct, indirect and induced benefit previously described. For more detail on how the total impacts presented by industry in Figure 7 are comprised of their respective direct, indirect, and induced channels please see Appendix A.

CLARK COUNTY AIRPORTS SUPPORT A GROWING LAS VEGAS ECONOMY

The Oxford Economics cities consulting team produces economic forecasts for over 7,000 cities and regions around the world, including Las Vegas (Clark County). Our current Las Vegas forecast shows the region to be enjoying healthy demographic, employment and economic growth. The size of Las Vegas' economy has only recently exceeded its 2007 peak and therefore the local economy has room to run. In fact, Las Vegas is in the top 10% of all 382 US metros for both forecast GDP and employment growth according to the Oxford Economics Cities Consulting team.

	Oxford Economics Forecast for Las Vegas (annual percentage changes unless specified)						
	2018	2019	2020	2021	2022	2023	2019-23
GDP	4.1	2.9	2.0	2.0	2.0	2.0	2.2
Personal Disposable Income	4.4	3.6	2.7	2.7	2.8	2.8	2.9
Employment	3.3	2.6	0.9	0.6	0.7	0.8	1.1
Unemployment Rate (%)	4.8	4.4	4.2	4.5	4.7	4.8	4.5
Population	2.1	1.9	1.9	1.8	1.8	1.8	1.8

Source: BLS, Oxford Economics Cities Consulting Practice

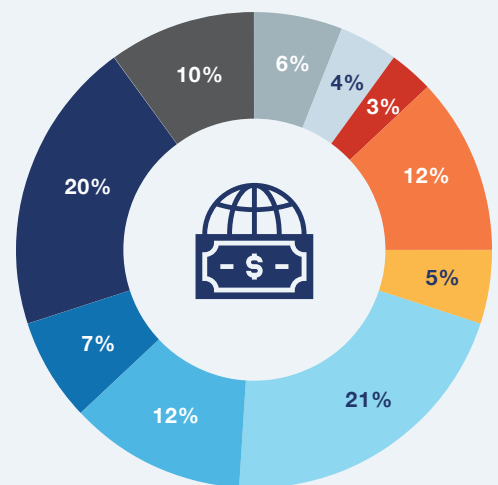
Our research indicates that house price levels have remained stubbornly low this cycle and are currently below 2007 levels. However, the relative affordability of homes in Clark County has made relocating here an attractive proposition for many middle-income Californian households. Indeed, annual net migration has averaged 28,000 during 2014-18 and through 2023 the pace of population growth should be more than twice the US average. This inflow of new residents has also sparked house price appreciation and valuations have grown by twice the US average over the past five years (12% annually). The real estate and construction sectors should account for a fifth of Las Vegas' total economic growth through 2023.

Still, hospitality and entertainment remain the cornerstone of the Las Vegas economy and have accounted for 17% of all new jobs created during the past five years. The pace of hiring will likely slow in coming quarters in tandem with the overall US economy. Nevertheless, Oxford Economics expects domestic overnight stays to grow by over 3% annually through 2023.

FIGURE EIGHT: Components of the Clark County Economy: GDP by Sector (2018)

(share of total, %)

- Agriculture, mining, utilities & transport
- Construction
- Manufacturing
- Wholesale & retail
- Information
- Finance & real estate
- Business services
- Education & health
- Hospitality & other services
- Government



Source: Oxford Economics

“Many of the leading global companies with whom Barclays co-brands its cards and other financial products also need to have easy access to the facility.”

—John Dunahoe
Vice President, Portfolio Delivery
Management Operations
Barclays Bank

“McCarran’s global reach, central location, and easy access make Las Vegas the ideal location to pull the team together for critical face-to-face collaboration.”

—Rob Mallery
Vice President of Talent, The AI
Foundation

The largest impacts are felt in the transportation sector (which includes airport operations) and the hospitality sector (including the casinos). For example, of the 246,000 jobs in Clark County that are supported by McCarran, 175,000 (or 71%) are in these two sectors. Still it is important to note that nearly one third of the jobs supported are in industries such as finance or business services.

To learn more about how spillover effects ripple throughout the regional economy, Oxford Economics interviewed more than a dozen business leaders in Clark County. These business leaders described McCarran’s key role in supporting their Clark County manufacturing, technology and business service operations and in some instances noted that McCarran’s global reach was a critical factor in their company’s decision to locate business operations in Clark County.

For example, when Barclays decided to open a national contact center in the Las Vegas region, McCarran was a key reason why according to John Dunahoe, Vice President, Portfolio Delivery Management Operations at Barclays Bank. McCarran matters to Barclays because it is important that the bank’s UK and Delaware based executives have easy access to the Henderson facility. Moreover, Mr. Dunahoe explains “many of the leading global companies with whom Barclays co-brands its cards and other financial products also need to have easy access to the facility.”

McCarran’s benefit spills over to the technology sector as well. The AI Foundation has a team of software engineers and AI researchers dedicated to launching innovative AI products. The foundation is based in Las Vegas but hires talent throughout the world. According to Rob Mallery, Vice President of Talent, “McCarran’s global reach, central location, and easy access make Las Vegas the ideal location to pull the team together for critical face-to-face collaboration.”

The airport’s benefits spillover to the medical and medical-technology field as well. For example, Varian Medical Systems, Inc. is a global leader in comprehensive solutions for radiotherapy and radiosurgery, as well as software systems for managing cancer clinics. The use and maintenance of Varian equipment and technologies requires highly specialized training. To meet this need, the company operates a training center at its Las Vegas campus. McCarran’s global reach and easy access are key reasons why the training center is located in Clark County and it makes a big contribution to the region’s economy. For example, during 2018, over 3,500 students from around the world visited the training center including medical professionals being trained in how to use the equipment safely and effectively and technicians gaining certification

“Medical and technical professionals are flown from around the world to participate in the Varian clinical training program. In 2018 participants spent \$3.5 million on hotel expense alone.”

—Alejandro Fernandez
 Manager, Education Clinical Training
 Varian Medical Systems

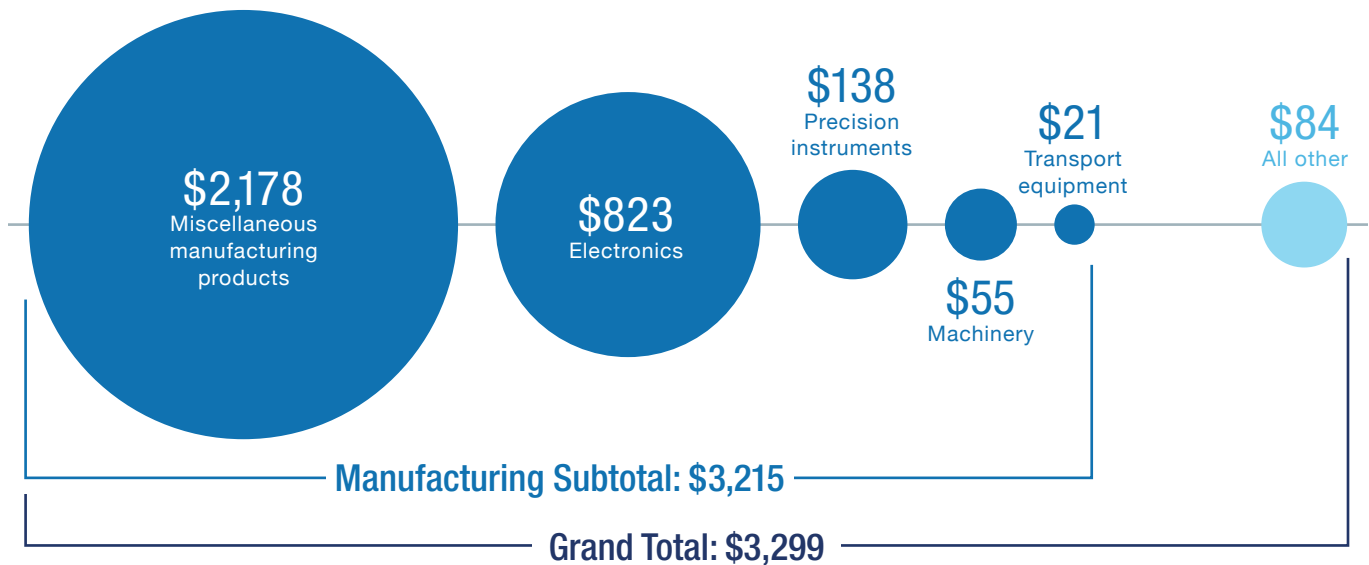
for operation, maintenance and installation of very sophisticated equipment. Alejandro Fernandez who manages the Las Vegas Education Clinical Training program notes that in 2018 these visitors spent \$3.5 million on hotel expenses, and \$400,000 on car rental expenses while in Las Vegas undergoing training.

As these examples illustrate, McCarran is an important competitive strength for the Las Vegas region and is instrumental in helping Clark County attract new companies and diversify its economy while continuing to support growth in the hospitality sector.

A CLOSER LOOK AT AIR CARGO

Our economic impact calculations only partially capture the benefit that McCarran brings to manufacturers in Clark County. That is because the impact calculations reflect the loading and unloading of manufacturing cargo at the airports, but they do not capture the economic activity associated with the cargo itself. To estimate this economic value, we supplemented our economic impact analysis with a bespoke analysis of what it is that is actually being shipped by air. As shown in Figure 9, what we found was that the value of goods exported from McCarran in 2017 was \$3.3 billion almost all of which was manufactured products.

FIGURE 9: \$3.3 Billion Air Cargo Exports (values in millions)



Source: Freight Analysis Framework (“FAF”)

Air cargo exports support more than an estimated 11,000 additional jobs

Our first step toward estimating the number of jobs associated with cargo exports was to examine “labor share.” Labor share is a term that economists use to quantify the portion of value attributable to workers (as opposed to capital). Once the labor share is calculated, we divide that amount by the average manufacturing wage in Clark County to estimate the number of jobs associated with the cargo exported. By mathematically applying each of these factors, we came to an estimate that air cargo supports over 11,000 jobs in Clark County.

FIGURE 10: Air Cargo Supports Over 11,000 Jobs

Manufacturing Exports Supports Jobs	
(All Stats for Clark County)	
Value Air Mfg. Exports	\$3.2 Billion
Labor Share of Mfg.	19.5%
Avg. Manufacturing Wage	\$54,640
Jobs Supported	11,420

Source: FAF, BEA, Oxford Economics

“Approximately 95% of the components that we use arrive by air and an estimated 80% of our finished Printed Circuit Boards are shipped globally by air.”

—Jawaid “Jay” Motiwala
Operations Manager, Vadatech

To learn more about the specific jobs being supported by air cargo in Las Vegas, Oxford Economics visited the region and interviewed several manufacturers who rely on McCarran to export their products or to import critical supply-chain components used in their Clark County manufacturing operations.

One company that both exports product and imports components by air is Vadatech, a world leader in the design and manufacture of embedded computing solutions. Vadatech has both manufacturing and engineering facilities in Clark County. “Approximately 95% of the components that we use arrive by air and an estimated 80% of our finished Printed Circuit Boards are shipped globally by air” from McCarran according to Jawaid “Jay” Motiwala, Operations Manager at Vadatech.

CONNECTIVITY LAS VEGAS STYLE

Participants in almost all of the interviews that Oxford Economics conducted for this report raised the same point regarding aviation and the Las Vegas

“Nearly 100% of our new (global) customers want to visit our plant in Henderson at some point during the initial buy-process...”

—Brandon Main
CEO, Xtreme Cube Corporation

economy. People from around the world love coming to town either for conventions or recreation and this creates a tremendous business opportunity because once vendors and customers are already in town, they will often stop by the plant or office to visit. Being in a location that vendors and customers want to visit and can easily reach provides Clark County businesses with a significant competitive advantage.

For example, Xtreme Cube Corporation makes steel frame modular structures built to the same code as traditional buildings. The modules are customized to meet the unique site and use challenges required for each project. According to Brandon Main, CEO, “nearly 100% of our new (global) customers want to visit our plant in Henderson at some point during the initial buy-process to learn more about our process of customization.” The appeal of Las Vegas as a tourist and convention destination plus the global reach of McCarran help accelerate this customer interaction.

One additional connectivity benefit raised during most interviews was the importance that McCarran plays in recruiting executive and high-skilled technology talent to Clark County from around the country and globally. The fact that easy direct access is available from McCarran to most of the major markets from where talent is drawn makes an enormous difference when recruiting and relocating key personnel here.

Interviews with business leaders in Clark County revealed two key insights about connectivity in the region. Specifically, global passengers arriving at McCarran for convention or recreational purposes often provide increased business opportunity for Clark County businesses that are completely unconnected to hospitality. In addition, McCarran’s global reach makes it far easier to attract talent to the region.

3. CONVENIENCE TO RESIDENTS

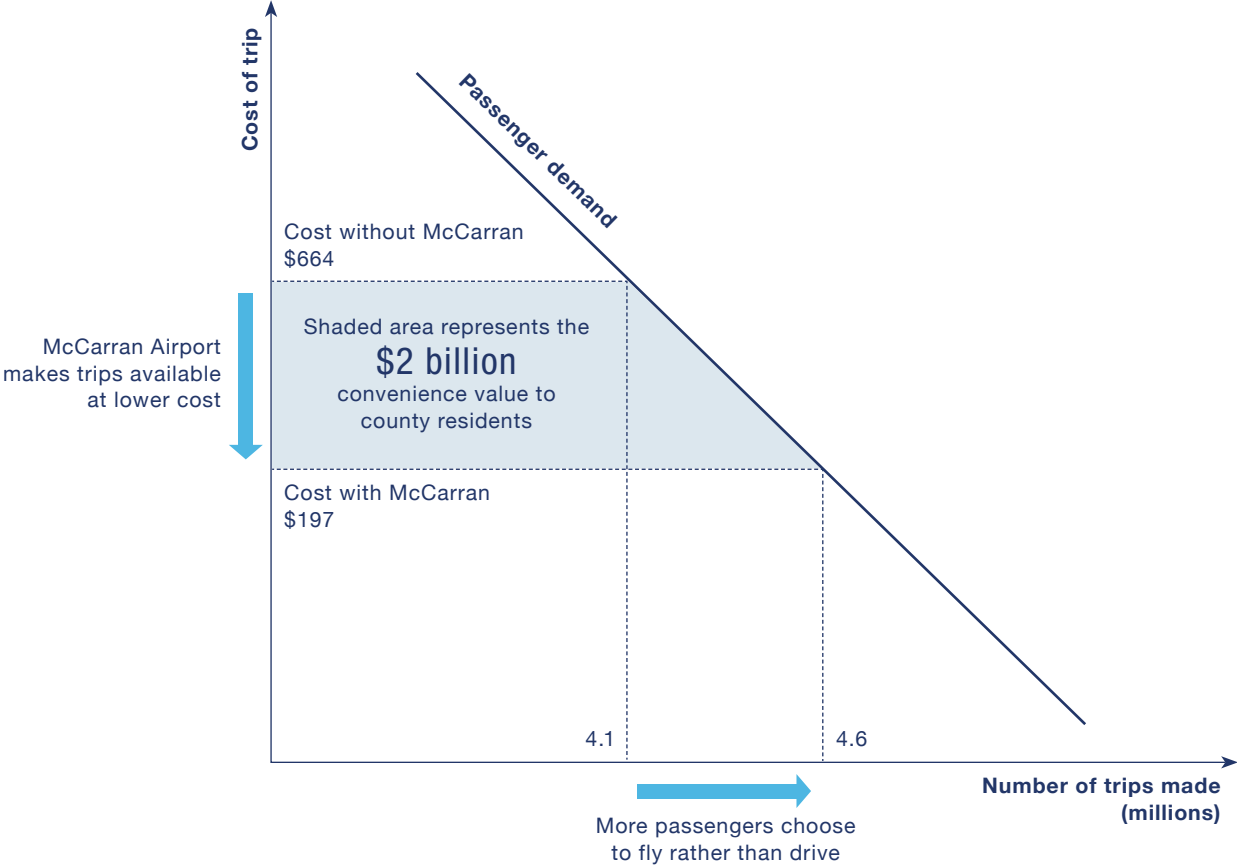
McCarran's convenience value to county residents was \$2 billion in 2018.

Of the 24.8 million passengers travelling through McCarran last year, an estimated 4.6 million were Clark County residents (see figure 3). Whether travelling for business or pleasure, county residents derive substantial convenience value by having a major international airport so easily accessible.

Using a counterfactual thought exercise, we speculated and analyzed how county residents might change their travel behavior if McCarran did not exist. We examined the top destinations served by McCarran and estimated how many local passengers would instead fly from Los Angeles International ("LAX") if McCarran did not exist. We also estimated how many passengers who currently fly from McCarran to closer destinations would forgo flying altogether rather than fly from LAX and instead drive to their destination. Through that analysis we were able to estimate that McCarran's convenience value to county residents was \$2 billion in 2018. More precisely, this estimate represents the "consumer surplus" benefitting local passengers because McCarran is both more convenient than the next closet airport ("LAX") and generally has cheaper ticket prices as well.

The benefit results because when fares and time are considered, the cost of flying out of LAX instead of McCarran increases by \$467 per passenger trip for those who continue to fly. In addition, we estimate that 11% of Clark County residents who currently fly from McCarran would instead drive to their destination (at considerable time-cost) rather than fly at all. In total, the benefit of paying less for ticket prices at McCarran, and the reduced travel time associated with McCarran versus the next best alternative of using LAX totalled \$2 billion in 2018. This convenience value is represented by the area in blue depicted in Figure 11 on the next page.

FIGURE 11: Consumer Surplus: Flights Cheaper, Drives Shorter with McCarran



For those with an interest in our detailed methodology, please see Appendix B.

4. CONCLUSION

Clark County airports bring widespread benefit to the Las Vegas region. Oxford Economics found that 25% of all jobs here are supported by airport activity and that this benefit is spread throughout the region's economy. For example, passengers arriving by air support over 115,000 jobs in the hospitality and leisure industry and 11,000 jobs in manufacturing and related activities are supported because of air cargo exports from McCarran. Just as importantly, direct access from McCarran to global markets help Clark County diversify its economy and attract new companies to the region. As McCarran's global reach continues to expand, the economic contribution that the airport makes throughout Clark County will continue to grow.

“Since at least the 1990s, casino and hotel traffic have increased in lockstep with growth at McCarran.”

—Jan Jones Blackhurst
EVP, Government Relations and
Corporate Responsibility Caesars
Entertainment Corporation

“There is a direct relationship between air service at McCarran and the casino industry's customer base” according to Jan Jones Blackhurst, EVP, Government Relations and Corporate Responsibility at Caesars Entertainment Corporation. Ms. Blackhurst notes that “since at least the early 1990s, casino and hotel traffic have increased in lockstep with growth at McCarran.” In fact, she notes that this pattern should be expected to continue for the foreseeable future. As McCarran adds more direct service to cities throughout Asia and South America, for example, she expects that casino, hotel and convention visitors from those locations will bring even more economic activity to the Las Vegas region.

McCarran touches nearly every aspect of the Las Vegas regional economy by enabling businesses to attract customers and talent from around the world and allowing manufacturers to rely on aviation to support complex global supply-chain operations. Moreover, McCarran is a strategic asset for the region and plays an instrumental role in encouraging existing businesses to invest in the region and new companies to locate here.

Today, McCarran's success in transporting a growing number of passengers from an increasing number of global destinations is a key reason that an expected \$3.5 billion of new construction in the hospitality, convention and entertainment sector is expected to be completed over the next several years.

Looking to the future, McCarran and its sister Clark county airports will continue to grow in lockstep with the Las Vegas regional economy.

APPENDIX A: INDUSTRY DETAIL



	Jobs by Industry Sector			
	Direct	Indirect	Induced	Total
Natural Resources and Mining	0	108	43	151
Construction	280	974	492	1,746
Manufacturing	0	333	149	482
Trade, Transport, Utilities	40,426	7,993	11,008	59,428
Information	0	896	698	1,595
Financial Activities	1,252	9,424	6,878	17,555
Professional, Business Services	0	15,674	5,587	21,261
Education and Health Services	0	158	9,747	9,906
Leisure and Hospitality	101,998	6,250	7,480	115,728
Other Services	10,661	1,747	4,537	16,945
Government	0	946	523	1,470
Total	154,617	44,504	47,145	246,265



	GDP By Industry Sector (millions)			
	Direct	Indirect	Induced	Total
Natural Resources and Mining	\$0	\$2	\$0	\$3
Construction	\$21	\$75	\$37	\$134
Manufacturing	\$0	\$25	\$14	\$38
Trade, Transport, Utilities	\$4,468	\$730	\$885	\$6,084
Information	\$0	\$142	\$134	\$276
Financial Activities	\$368	\$1,280	\$1,332	\$2,980
Professional, Business Services	\$0	\$1,178	\$359	\$1,537
Education and Health Services	\$0	\$5	\$645	\$650
Leisure and Hospitality	\$8,000	\$364	\$432	\$8,796
Other Services	\$271	\$99	\$206	\$575
Government	\$0	\$141	\$75	\$216
Total	\$13,128	\$4,040	\$4,120	\$21,288



Income by Industry Sector (millions)

	Direct	Indirect	Induced	Total
Natural Resources and Mining	\$0	\$1	\$0	\$1
Construction	\$15	\$52	\$26	\$93
Manufacturing	\$0	\$18	\$8	\$26
Trade, Transport, Utilities	\$2,083	\$460	\$467	\$3,010
Information	\$0	\$70	\$51	\$121
Financial Activities	\$86	\$277	\$182	\$545
Professional, Business Services	\$0	\$881	\$279	\$1,160
Education and Health Services	\$0	\$5	\$600	\$605
Leisure and Hospitality	\$3,888	\$180	\$206	\$4,274
Other Services	\$299	\$78	\$187	\$564
Government	\$0	\$94	\$51	\$145
Total	\$6,371	\$2,116	\$2,057	\$10,544

Source: Oxford Economics, IMPLAN (rounding errors may occur)

APPENDIX B: ECONOMIC IMPACT METHODOLOGY

KEY ASSUMPTIONS: ECONOMIC IMPACT

Survey data that provide high-level employment, payroll and expenditure summaries were obtained from many of the key businesses operating at the Clark County airports. Survey responses represented approximately 100% of airport operations, 75% of major airport concessions, and more than 50% of airline operations (as measured as a percentage of daily flights).

All economic impacts were calculated using IMPLAN economic impact software and reflect the full (direct, indirect, and induced) economic impacts of the activities in question. All results are for Clark County, NV and are expressed in 2018 USD unless otherwise specified. The sources for the inputs are as follows:

- Airport operations are based on survey data from the Clark County Department of Aviation, and reflect specific responses on direct employment, employee compensation, and supplier spend.
- Airport capital investment spending data were also obtained directly from the Clark County Department of Aviation.
- Airport concession impacts were estimated using survey responses from three of four airport major concessionaires, scaled up to account for the missing respondent. For these impacts, direct employment figures were used along with default industry spending patterns for the county.
- Airline operations are based on published employment figures for Clark County from the Quarterly Census of Employment and Wages and include both air transport (NAICS 481) and other support activities for air transportation (NAICS 48819), which includes aircraft maintenance and repair.
- Impacts from passenger spend were calculated using an estimate of 16.1 million inbound domestic passengers and 4.0 million inbound international passengers from LVCVA and Tourism Economics. These sources also estimated an average local spend (excluding air transport) of \$773 per domestic passenger per trip, and \$1,522 per international passenger, for a total spend by inbound passengers of \$18.7 billion. This spending was apportioned into detailed spend categories using estimates of spend shares produced by Tourism Economics.

KEY ASSUMPTIONS: CONSUMER SURPLUS CALCULATIONS

Generalized Cost of Travel: This analysis relies on a technical concept—the generalized cost of travel (GCT), which represents the overall cost of making a journey in terms of travel time and money. Direct travel costs take account of things like airfares and the full economic cost of private road transport. Time spent travelling is converted into monetary values based on estimated median hourly wages in Clark County.

For this study a GCT value is calculated for McCarran local passengers based on their origin (Clark County) and likely airfare. Equivalent values were then computed for those McCarran passengers who in the hypothetical scenario would instead use LAX or drive to their destinations. That analysis suggests that the average GCT (roundtrip) for McCarran is \$197 per journey, compared to \$664 for LAX.

Some Choose to Drive Instead: If McCarran local passengers had to use LAX they would experience, on average, a \$467 increase, or 237 percent rise, in their GCT. That steep increase means that some McCarran local passengers will drive instead of fly. To calculate how many would make that choice, we used data on the 50 most popular destinations from McCarran Airport (drawn from OAG). We assumed for longer trips people continue to fly, for shorter trips (like Phoenix) we assume they will instead choose to drive. Based on that analysis we concluded that 11 percent of local passengers in 2018 (500,000) would now drive instead of fly.

The remaining 4.1 million (89 percent of 4.6 million) passengers willing to drive to LAX were assumed also willing to pay the higher prices at LAX. The additional benefit or consumer surplus these passengers received from being able to use McCarran is the difference between LAX's and McCarran's GCT. We can calculate their total consumer surplus as follows: 4.1 million remaining passengers times \$467 GCT differential equals \$1.9 billion consumer surplus (this is equivalent to the area of the blue shaded rectangle in the Figure 11).

Even those who would have no longer travelled by plane if they had to use LAX also derive benefit from McCarran existing even though their consumer surplus is smaller. It is equivalent to the blue shaded triangle in the Figure 11 and is equivalent to: 0.5 million passengers who now drive times the \$467 GCT differential (but divided by half to average driving preferences across this group), that results in \$119 million consumer surplus.

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