Chapter 4. State, Regional, and Local Airport Issues

4.1. Introduction

Aviation is constantly changing, which can have a substantial impact on future airport needs that sponsors should keep apprised of and be able to respond. There are many changes at the national, state, and regional levels that impact Nevada's airports, whether industry trends or specific issues such as new technologies, decreased funding coupled with increasing costs, uncertainty around ownership, and growing infrastructure needs. It is important to understand the major trends and issues affecting Nevada's airports when assessing the historical, current, and future performance of the airport system.

This chapter provides an overview of factors that are influencing aviation at the national level and more specifically, those that were identified by airports, airport sponsors, and various aviation stakeholders as having the most impact on the aviation system's abilities to optimally support its users. Trends and issues discussed in this chapter include:

- COVID-19
- Funding and Increasing Costs
- Weather Reporting
- Federal Land Ownership and Designations
- Special Use Airspace
- Compatible Land Use and Encroachment
- New Technologies
- Aviation Staffing Shortage
- Aerial Firefighting
- Tourism
- Rural and Tribal Communities

4.2. Stakeholder Engagement

The issues and trends described in this chapter were gathered from a variety of sources that captured a broad spectrum of perspectives on the Nevada aviation system including members of the Project Advisory Committee (PAC); interviews with airport managers, aviation stakeholders, and aviation user groups; and conversations with Nevada Department of Transportation (NDOT) staff. While there was an overlap of the issues and trends identified between the groups, there were also themes common among users that were not always mentioned by the airport sponsors.

4.2.1. Project Advisory Committee

The PAC was established to support and guide the implementation of the Nevada Airport and Heliport System Plan (NAHSP). The PAC includes representatives from airport sponsors and managers, policy makers, helicopter tour providers, aircraft owners and airport users, the aerospace industry, emergency medical operators, the Unmanned Aircraft System (UAS)/Unmanned Aerial Vehicle (UAV) industry, aviation special event interests, economic development, transportation interests, the Federal Aviation Administration (FAA), and NDOT. In the first PAC meeting, attendees identified and prioritized the most significant current and long-term issues that could affect the Nevada system, shown in **Figure 4-1.**

Figure 4-1: Major Issues Identified by the PAC During Meeting #1

Source: Kimley-Horn 2021

4.2.2. Airport Interviews

As discussed in **Chapter 2**, airport management provided information on the top three issues affecting their facilities through an Airport Inventory Data Collection Form and virtual meetings. Airport managers identified site-specific issues such as hangar shortages and communications, as well as broad issues such as funding and ownership topics. This feedback is incorporated within the NAHSP analysis and documented throughout this chapter. The most common issues described by airport managers were:

- Encroachment (Land Use Compatibility)
- Maintaining Existing Infrastructure
- Funding and Increasing Costs
- Land Ownership
- Communications
- Weather Reporting
- Fuel Shortage/Storage
- Hangar Shortage
- Runway Length

Other issues Nevada airports noted through this process included need for a crosswind runway to address wind conditions, lack of amenities, airspace and military operations, hangar ownership, water shortage and storage, helipad availability, lack of diversity of revenue sources, drone operations, effects of COVID-19 on local events, climate resiliency/flooding, and roadway capacity/access.

4.2.3. Aviation Stakeholders

Aviation stakeholders interviewed as part of the NAHSP also provided information on the top issues affecting their organizations through a virtual interview that integrated a variety of topics to ensure that consistent information was gathered from each session. Stakeholders identified organization-specific issues such as new aircraft technology and their infrastructure needs, as well as broad issues such as lack of weather reporting and funding. This feedback is incorporated into the NAHSP analysis and presented throughout this chapter. The most common types of issues described by stakeholders were:

- Lack of Weather Reporting
- Operations through Special Use Airspace
- Maintaining Infrastructure
- New Aircraft/Infrastructure Needs
- Funding and Increasing Costs
- Lack of Airport Amenities Available to Users

4.3. COVID-19

First identified in 2019, the Novel Coronavirus or COVID-19[1] was identified as a global pandemic in March 2020. Measures to mitigate the spread imposed a new dynamic to aviation operations worldwide that is still impacting the industry in mid-2021. Unprecedented global, national, and local travel restrictions designed to inhibit the spread of the virus had a profound logistical and financial impact on air travel and associated businesses at all levels. The effects of the travel restrictions have ranged from significantly reduced passenger enplanements and aircraft operations, especially at commercial service airports, but impacted operations at airports of all types and size. With the significant loss of revenue experienced by almost all airports nationwide, additional federal funding was provided to help airports and airlines survive financially.

The spread of COVID-19 brought global travel to a standstill as travel advisories, restrictions, and bans were imposed. The White House issued the first travel restriction between China and the U.S. on January 31, 2020 and expanded the restrictions to Iran, Italy, and South Korea on February 29. By March 11, travel restrictions were announced between the U.S. and continental Europe. On March 18, the U.S. and Canada agreed to close the border for all non-essential travel. The following day, the U.S. State Department raised the global travel advisory to level four, warning against all international travel. As March 2020 progressed, dozens of states closed public schools and universities and issued stay-at home orders that prohibited non-essential business or travel. According to the Bureau of Transportation Statistics, April 2020 was the absolute lowest point for U.S. air travel with passenger enplanements down

[1] COVID-19 is an infectious disease caused by a strain of coronavirus called SARS-CoV-2. First identified in 2019, COVID-19 developed into a global pandemic starting in March 2020.

96 percent over April 2019 levels. For calendar year 2020, air carrier activity declined 27.5 percent and general aviation declined by 8.9 percent compared to full-year 2019 activity levels.[2]

The pandemic had a devastating impact to the global economy in 2020 and in early 2021 as millions of businesses around the globe were forced to shut down or severely limit operations because of public health orders and travel bans. However, a rapid rollout of multiple vaccines in the U.S. in 2021, followed by a decline in caseloads to March 2020 levels and subsequent reductions to COVID-19 mandates have led to a revival of the U.S. economy that has included rapid growth in commercial airline travel. The U.S. Bureau of Economic Analysis (BEA) reported that the nation's gross domestic product (GDP) declined approximately five percent in the first quarter of 2020, the largest quarterly decline since the 2008 Global Financial Crisis but increased by approximately six percent in the first quarter of 2021. The trend was reflected in the stock market, as the Dow Jones Industrial Average plummeted more than 30 percent between February 2020 and March 2020 but increased by more than 57 percent between March 2020 and March 2021. Furthermore, the Bureau of Labor Statistics reported that approximately 14 percent of the total workforce was unemployed in April 2020 but this improved to approximately six percent in April 2021. According to IHS Markit, global trade volumes decreased approximately 13 percent in 2020 compared to 2019. However, global trade volumes are expected to increase by more than seven percent in 2021 compared to 2020. According to the International Monetary Fund, global GDP growth is projected at approximately six percent in 2021 compared to a decline of approximately 3 percent in 2020. Although it is too early to understand the full scope of the economic impacts of the pandemic, it is clear that a strong recovery is underway in the U.S. while the global recovery is positive but comparatively reduced.

Within the U.S., air travel is improving as of July 2021. According to traveler throughput counts from the Transportation Security Administration (TSA), between April and June 2021 there were over four million more travelers passing through TSA checkpoints than between April and June 2020. However, April to June 2021 TSA traveler throughput counts were approximately two million passengers fewer than they were between April and June of 2019. This is due in part to the uneven nature of the U.S. air travel recovery as leisure travel has generally returned while business travel is not expected to fully recover until 2023.[3]

During the outreach effort airport owners, managers, and other operating personnel were asked about the impact of COVID-19 to their airport and their businesses. The contacts were also asked to explain the likely reasoning for the impact if there was anything specific to the airport or region. The answers varied depending on the size, locations, and amenities that their airport/business had to offer. Normal traffic volumes have remained consistent to what they were pre-COVID-19 for smaller airports, with some increasing activity due to flight training and use of general aviation (GA) for pleasure and some business travel.

In Nevada, the larger commercial airports such as Las Vegas Harry Reid International Airport[4] (LAS) and Reno-Tahoe International Airport (RNO) were severely impacted in the beginning months of the

---

[2] Federal Aviation Administration, FAA Aerospace Forecast Fiscal Years 2021-2041, https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2021-41_FAA_Aerospace_Forecast.pdf

[3] CBS News, United Airlines CEO Scott Kirby on "Face the Nation," July 11, 2021.

[4] Formerly known as McCarran International Airport.

pandemic but have realized traffic increases to closer to pre-COVID levels, particularly with domestic travel, into 2021. However, business and international travel was the most impacted by the pandemic and is recovering more slowly by comparison to pleasure travel as previously mentioned.

For many of the other Nevada airports, the level and severity of the impact was dependent on numerous factors. One example was Carson City Airport (CXP), which saw reduced traffic numbers in the beginning months of the pandemic in March and April 2020, but the airport's traffic picked back up after this timeframe to comparable 2019 levels. Another example, Elko Regional Airport (EKO), experienced reduced GA traffic numbers and reduced commercial flight activity throughout the pandemic, though the airport's commercial flight schedule had generally returned to its pre-pandemic frequency as of mid-2021 according to the FAA's Traffic Flow Management System Counts (TFMSC) database. Furthermore, despite the trend of individuals using GA to reduce their exposure to COVID-19, airports like Henderson Executive Airport (HND) and North Las Vegas Airport (VGT) saw a reduction in total business aircraft activity in calendar year 2020 compared to calendar year 2019 because of the steep decline in business travel caused by the pandemic.

Helicopter tourism, a significant component of the Nevada aviation industry, saw a dramatic decline in demand through the end of 2020 and widespread layoffs affecting many tour operators. In fact, Sundance Helicopters permanently closed in August 2020, taking one of the world's largest helicopter tour companies offline.[5] While demand from domestic travelers for Las Vegas Strip tours has increased, scenic tours of the Grand Canyon were almost entirely made up of international travelers and this group is still largely unable to easily enter the United States.[6] As a result, the helicopter tourism industry in Nevada has generally not seen a recovery from the COVID-19 pandemic as of July 2021.

4.4. Funding and Increasing Costs

When discussing issues facing aviation in the present and in the future, funding is always an issue that is highlighted by all levels of aviation users and providers. This can be attributed to the increased costs of construction, limits on available funding from various sources, and numerous other reasons.

There are two primary methods by which publicly owned airports receive funding. Airports can receive federal funding from the FAA's Airport Improvement Program (AIP), which requires facilities to be included in the National Plan of Integrated Airport Systems (NPIAS). Secondarily, airports can receive money from state and local sources. Privately owned airports and development by private operators at airports are typically funded only by private sources.

4.4.1. Airport Funding

Airports have four primary ways to receive funding:

Federal Government: As noted, the most significant federal funding source is provided by the FAA through the AIP, which requires facilities to be included in the NPIAS. Airports not included in the NPIAS

[5] U.S. News & World Report, Virus-Related Travel Decline Hits Las Vegas Helicopter Tours, 2020, https://www.usnews.com/news/best-states/nevada/articles/2020-09-20/virus-related-travel-decline-hits-las-vegas-helicopter-tours.
[6] Centers for Disease Control and Prevention, Travelers Prohibited from Entry to the United States, April 2021, https://www.cdc.gov/coronavirus/2019-ncov/travelers/from-other-countries.html

are not eligible for AIP funding and must instead rely on state, local, and private sources. In Nevada, there are 30 airports included in the NPIAS. The NAHSP includes these NPIAS airports as well as an additional 21 non-NPIAS airports.

The FAA AIP provides funding for eligible projects at airports included in the NPIAS. The NPIAS is a bi-annual report that the FAA submits to Congress that includes a five-year estimate of project funding needs for approximately 3,310 existing and proposed airports. The NPIAS identifies existing and proposed airports considered "significant" to the nation's air transportation system. Airports included in the NPIAS are eligible for AIP grants for planning and development, which is usually limited to improvements related to aircraft operations and those that are mostly non-revenue producing.

For Large Hub Airports, which in Nevada is solely LAS, AIP grants cover 75 percent of the total eligible project cost. For all other classifications of airports in Nevada, which covers all NPIAS airports in the state aside from LAS, AIP grants cover 93.75 percent of the total eligible project cost. Note that Nevada is one of 13 states in which the FAA provides an increased federal share due to a large percentage of the state's land being owned by the federal government. Outside of an AIP grant, the remainder of a project's cost must be provided through a combination of airport sponsor, state, and private funding. Related to the funds distributed under the AIP are the AIP Supplemental Appropriation grants awarded to airports between FY 2020 and 2022. These Supplemental funds were made available under the FY 2020 Appropriations Act and included $400 million in funding that was distributed to airports based on the parameters of the Airport Capital Improvement Plan (ACIP) process.[7]

It can be challenging for NPIAS GA airports to complete larger capital projects even with an AIP grant due to the limited amount typically received each year from the FAA (currently $150,000 per year through the non-primary entitlement program) and the hardship to provide the local match to the AIP grant. In many cases, an airport will need to defer a project for multiple years to save enough AIP grant funding and local funds to pay for the project or phase the project over many years, which can increase total project costs.

The FAA does provide grants for certain projects depending upon available funds. This can include pilot programs on newer topics, sustainability improvements, and others. A recent example was the 2020 CARES Act, which provided approximately $10 billion in funds as economic relief to airports across the U.S. that were affected by the prevention of, preparation for, and response to the COVID-19 pandemic. Within the State of Nevada, 30 airports received a total of $231,448,014 in CARES Act funding that was made available by the FAA in April 2020.[8] After the CARES Act, the Coronavirus Response and Relief Supplemental Appropriation Act (CRRSA Act) was signed into law in December 2020 and provided a total of $49,627,830 to 29 airports. Subsequent to the CRRSA Act, the American Rescue Plan Act of 2021 (ARP Act) was signed into law in March 2021 and provided a total of $191,919,576 to 29 airports. Note that Boulder City Municipal Airport (BVU) received CARES Act funding but did not receive funding from either the CRRSA Act or the ARP Act. Recently, the Senate passed the Biden administration's bipartisan Infrastructure Investment and Jobs Act, which is a once-in-a-generation investment in U.S. infrastructure

[7] FAA AIP 2020-2022 Supplemental Appropriation https://www.faa.gov/airports/aip/aip_supplemental_appropriation/

[8] Amodei, Mark. Nevada Airports Receive More than $230 Million in Cares Act Funding, https://amodei.house.gov/news-releases/amodei-nevada-airports-receive-more-230-million-cares-act-funding, April 2020.

assets that includes a $25 billion investment in airports to address repair and maintenance backlogs, reduce congestions and emissions near airports, and to support electrification and other low-carbon technologies.[9] The bill passed in late 2021 and Bipartisan Infrastructure Law (BIL) funding will be made available for Nevada airports starting in Fiscal Year 2022.

Additional federal-level funding options include Passenger Facility Charge (PFC) funds as well as Customer Facility Charge (CFC) funds. PFCs are fees paid by commercial airline passengers and included in their ticket purchase. These user fees cannot exceed $4.50 per enplaned passenger and the funds must be used by the airport to maintain and enhance airport facilities. CFCs are imposed on those that rent cars at airports and are used to help pay for airport rental car facilities.

State: The State of Nevada maintains the Nevada Fund for Aviation, also known as the Aviation Trust Fund. Signed into law in 2001, the Fund for Aviation provides matching funds for FAA AIP grants and other safety-critical airport projects, up to $50,000 per disbursement per year per airport.[10] The program is intended to assist only rural GA airports and funding from the trust is not available to any aviation facility located in a county with a population greater than or equal to 700,000, which effectively excludes the Reno-Tahoe Airport Authority (RTAA) and Clark County Department of Aviation (CCDOA) airports. Overall, only NPIAS airports are able to take advantage of the Nevada Fund for Aviation as Section 25 of Senate Bill 526 states that money appropriated for this fund must be used to match money that is available from the FAA, which only provides funds to airports included in the NPIAS.

Airports that accept grant funds from this program must keep their facilities accessible and open to the public throughout the entire life of the grant-funded improvement. If an airport is unable to comply with this requirement, the sponsor is required to reimburse the Fund for Aviation for any unexpired useful life of the improvements, on a pro-rata basis.

An additional source of State-level funding that may become available to airports in the near future is the State Infrastructure Bank (SIB). While the SIB was established by the State Legislature in 2017, it was not funded until May 2021, when $75 million was appropriated for the SIB through the passage of the Capital Improvement Projects Bill (AB492) in the Nevada Senate. In addition, Senate Bill 430 was signed into law in June 2021 and expanded the types of projects that can be funded by the SIB. The infrastructure bank provides loans and other financial assistance for the development of infrastructure related to economic development, including transportation facilities.

Local: Many airports are able to generate at least a portion of their sponsor share to match grant funding, as well as pay for maintenance and other projects, through internal revenue sources such as fuel sales, hangar rentals, landing/tie-down fees, and land leases. An airport's financial self-sufficiency can be partially attributed to being located in a high traffic volume area, having a large number of based aircraft, and/or diversification of revenue streams. It can be a significant challenge for airports in rural areas to produce the same level of revenue as other airports in more populous areas. In some cases, municipal funding is dedicated to financially supplement the day-to-day operation of the airport as well as for

[9] https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/02/updated-fact-sheet-bipartisan-infrastructure-investment-and-jobs-act/
[10] Nevada Fund for Aviation Grant Program – Policy and Procedures Manual, 2015.

supporting capital improvement projects. These subsidies can be in the form of general funds, loans, municipal bonds, and other sources.

Depending on the activity at the airport, other strategies for generating revenue locally can be found by providing parking and concession fees from ground transportation, rental cars, advertising, and other retail opportunities. Leasing of certain portions of airport property not needed for aviation purposes for non-aeronautical purposes can be a significant resource to diversify an airport's revenue stream. Examples include leasing land for compatible commercial development such as office buildings, warehouses, hotels, renewable energy production, agriculture, business parks, and hotels. This is only an opportunity where an airport has a large land envelope and that land is not needed to serve aviation needs. Additionally, airports in Nevada have the unique opportunity to generate revenues from gaming concessions as well.

The viability of these strategies can be highly dependent on demand, with more opportunities generally available to urban airports and those located within close proximity to tourism destinations (e.g., ski areas).

Private-Public Partnerships: Financial self-sufficiency should always be one of the main goals for an airport but for many, opportunities to enhance revenues through the development of revenue-generating facilities internally continues to prove to be a challenge. In some cases, funding revenue-generating airport development can be done through third parties as a public-private partnership. It is a common practice for the airport to enter into a long-term ground lease with a private sector partner who designs, builds, operates, and maintains the facility for their own use. This approach can be applied to both aeronautical uses such as fuel storage facilities and hangars as well as non-aeronautical development.

4.4.2. Increasing Costs

In an effort to provide an effective, efficient, and safe airport environment, airports rely on having the most up-to-date technology, pavement in good condition, and amenities accommodating the common aviation activities. The largest issue that hinders airports pertains to the prices to construct and maintain these amenities. This is especially apparent for airports not included in the NPIAS, as they do not have access to FAA AIP funds for their capital projects.

Hangar development has become increasingly difficult in recent years due to higher labor and materials costs, more extensive regulations, and the competitiveness and demand for low monthly rates. As a result, an airport may have high demand for new hangars but encounter challenges in implementing the project when the potential users discover the true cost of the intended development and the owners, whether public or private, understand the potential rate of return on the hangar investment. Furthermore, an airport needs to also be prepared to construct the associated infrastructure to accommodate aircraft storage such as utility extensions, taxilanes, apron space, and vehicle access and parking. Airports noted that they are seeing increases in construction costs from the bidders year after year. Airport equipment has also become more challenging for certain airports to afford with increasing costs. The maintenance and replacement of vehicles and equipment for airport operations as well as weather equipment represent some of the more expensive items. These projects can prove challenging for a non-NPIAS airport as they are unable to utilize AIP funding.

Since the pandemic's start, costs for construction, in terms of labor and materials, has skyrocketed beyond a level ever anticipated. Issues with international materials production and delivery and dealing with COVID-related requirements for social distancing, masking, and limits on the number of people gathering together increased costs significantly. Lumber, paint, microchips, and other materials have been identified as being hard to obtain and extraordinarily expensive, especially compared to budget estimates prepared prior to 2020.

4.5. Weather Reporting

Weather reporting is important to many aviation users that rely on accurate, real-time weather reporting to conduct critical operations. For example, if an airport does not have sufficient weather reporting equipment, medical operators may be unable to operate at that airport, even if it is the closest to a patient, which can lead to delays in treatment. Medical flights may be forced to turn back if inclement weather is discovered enroute due to insufficient weather reporting along the way, a particular issue at night and during winter conditions.

In general, many Nevada stakeholders noted that accurate weather reporting is a high priority in terms of desired infrastructure in order to facilitate their operations in a safe manner. Weather reporting can be challenging to install and utilize due to a lack of broadband connectivity in parts of the state and the requirement for electrical service to be present both at the airport and from the airport to the weather reporting station. In addition, the increased utility cost that comes with these systems can be a challenge for airports located in communities that are unable or unwilling to provide funds for these utility costs. To assist with these issues, NDOT has been working in recent years to utilize existing highway cameras for weather reporting and expand the broadband network to rural areas to provide better connections to report out available weather data.

4.6. Federal Land Ownership and Designations

According to the Congressional Research Service in their February 2020 Report, *Federal Land Ownership: Overview and Data*, the federal government owns roughly 640 million acres of land, which is approximately 28 percent of all land in the U.S. This land can be found in most U.S. states but is concentrated in Alaska and western states such as Nevada, as 45.9 percent of the land in 11 coterminous western states and 60.9 percent of the land in Alaska is owned by the federal government.

4.6.1. Federal Ownership

The federal government currently owns and maintains almost 82 percent of the land in the State of Nevada through various departments such as the U.S. Forest Service (USFS), U.S. National Park Service (NPS), U.S. Fish and Wildlife Service (USFWS), U.S. Bureau of Land Management (BLM), and Department of Defense (DOD). Much of the federal land is managed for conservation and development of natural resources, grazing, and recreation. The various land ownership types are displayed on **Figure 4-2**.

The BLM, part of the United States Department of the Interior, manages almost 84 percent of the federal land in the State of Nevada. Several airports are located on BLM-owned property and must maintain an appropriate leasehold with the agency and renew the agreement periodically. In the past decade, many of these leases have expired due to abandonment by the prior owner or confusion over the process. When local communities and municipalities try to take over an airport to maintain and preserve the facility,

delays in the federal real estate process present a roadblock to their efforts. These airports serve valuable roles in their communities by facilitating access to other markets, allowing firefighting operations to utilize their facilities to combat local fires, and providing emergency access for life-saving medical flights. The aviation community, including NDOT, has expressed an interest in working with BLM to develop an expedited process to transfer ownership of existing airport property to public agencies (e.g., state, county, city, tribal, etc.) and phase out long-term land leases.

4.6.2. Wilderness Area

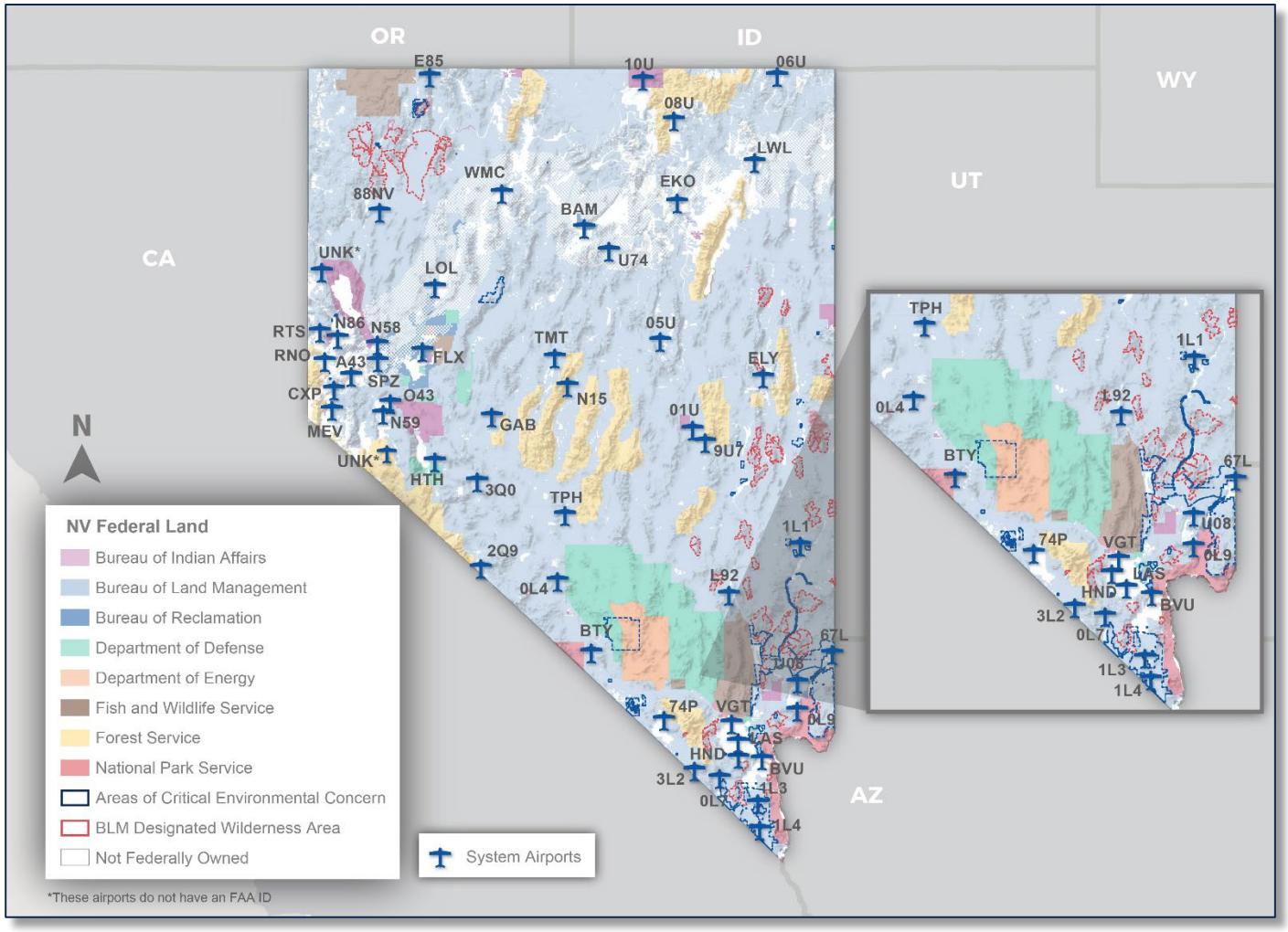
Wilderness areas are the most protected public lands in America.[11] The term is a federal designation given by an act of Congress that permanently classifies a particular area of federal public lands such as national parks and forests, as well as land managed by BLM and USFWS. Restrictions that apply to wilderness areas under 16 U.S.C. 1131-1136 include bans on mechanized and motorized vehicles, new grazing or mining activity, timber harvest, or any kind of permanent development. Additionally, the Clean Air Act (*42 U.S.C. 7472)* designates wildernesses larger than 5,000 acres as Class I areas that are to be kept free of adverse impacts from new pollution sources. Any new airport development near these areas faces significant regulatory challenges to remain in compliance. Wilderness areas within the State of Nevada are marked on **Figure 4-2**.

4.6.3. Areas of Critical Environmental Concern

An Area of Critical Environmental Concern (ACEC) is an administrative designation applied by the BLM that is defined in 43 CFR Part 1610 as an area “within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.” It is important to note that this designation does not automatically preclude or restrict other uses in the area like a wilderness area. Each area has its own restrictions and permissible uses, which can cause varied challenges on airport development in applicable portions of Nevada. Critical Environmental Areas within the State of Nevada are marked on **Figure 4-2**.

[11] Wilderness Connect, Learn About Wilderness, https://wilderness.net/learn-about-wilderness/default.php (accessed April 2021).

Figure 4-2: Federal Lands in the State of Nevada



Sources: ArcGIS, 2020; U.S. Department of the Interior (U.S. DOI), Bureau of Land Management (BLM), Surface Management Agency, 2020; U.S. DOI, BLM, National Landscape Conservation System (NCLS) Wilderness Area, 2017; U.S. DOI, BLM, Designated Areas of Critical Environmental Concern (ACEC), 2019; Kimley-Horn 2021

4.7. Special Use Airspace

Special Use Airspace (SUA) limits certain flight activities, restricts entry, or cautions other aircraft operating within specific boundaries. These areas are depicted on Visual Flight Rule (VFR) charts for reference by pilots. SUA areas are identified by type and identifying name or number and include the following for the purposes of this study: Alert (A), Military Operations Area (MOA), and Restricted (R). It is important to note that the location of an SUA does not automatically indicate that the airspace extends to ground level. For example, the airspace could start at an altitude of several hundred feet above the ground. SUA covers 25,860,454 acres (37 percent) of land in Nevada and 26 airports (public and private) are within or below SUA. SUAs in Nevada are shown in **Figure 4-3.**

Each type of SUA poses its own challenges, but all create similar issues for airports and aircraft operators in Nevada. With respect to restricted areas, pilots must take the time to either navigate around the airspace or contact the controlling agency for approval beforehand, which may not always be a quick process depending on the agency involved. Alert and Military Operating Areas do not require permissions; however, prudent flight planning suggests that these areas should be avoided if there is activity (e.g., “Fallon South MOA 1 is hot”). There are often inconsistencies among the various agencies about how these areas are controlled. As a result, the pilots’ experience of navigating through them can vary.

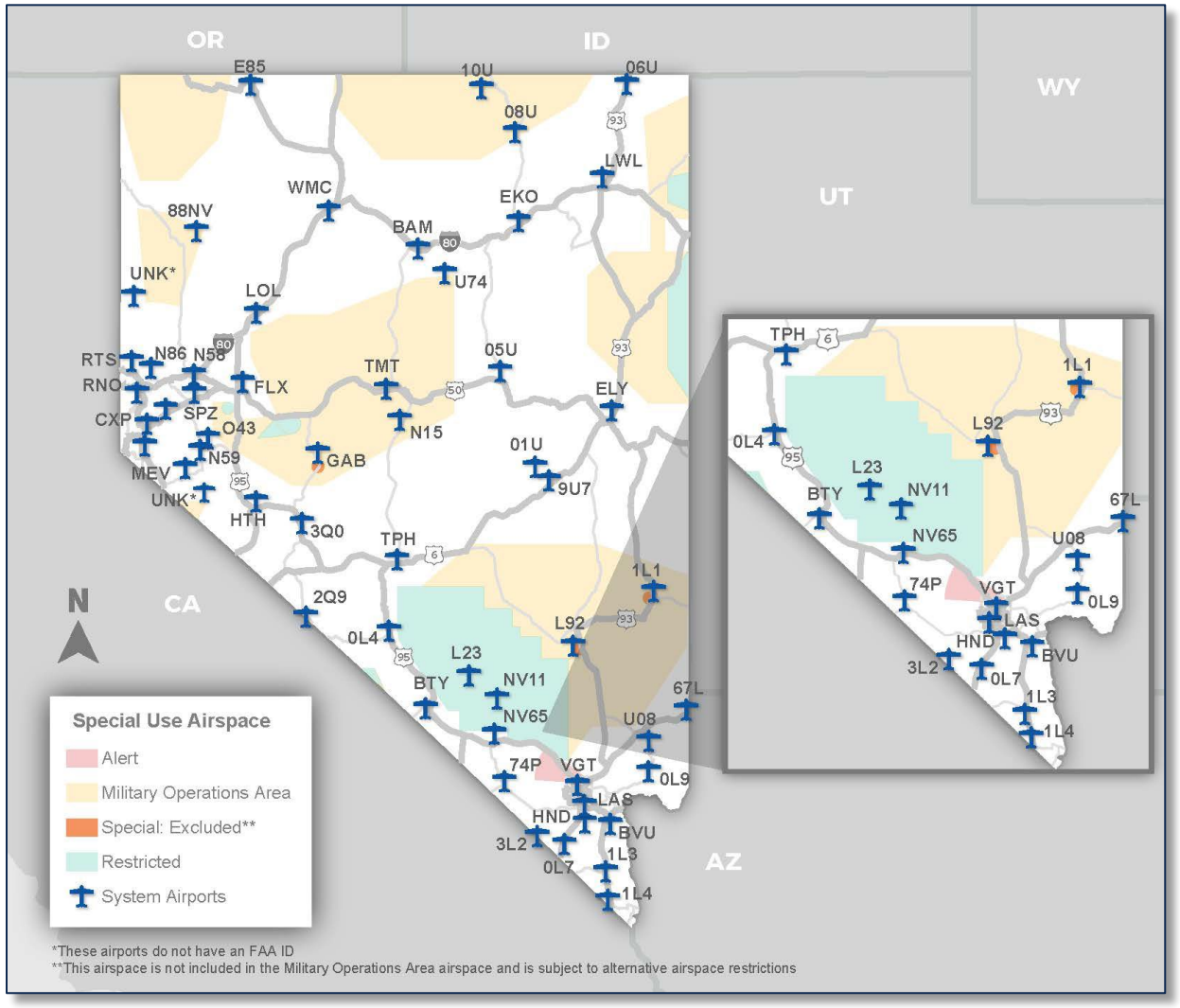
There are eight airports in Nevada that are under SUA and another eight within 10 miles of an SUA. Note that three of the eight airports are located within a MOA but have a small section of airspace immediately above their facility that is excluded from that airspace. These facilities are still subject to alternative airspace restrictions. This includes Gabbs Airport (GAB), Alamo Landing Field (L92), and Lincoln County Airport (1L1). Each circular section of MOA-excluded airspace is centered over the airport and extends up to 1,500 feet or 2,000 feet above ground level (AGL), at which point the airspace is part of the MOA. These areas are designated as “Special: Excluded” in Figure 4-3.

The military is always seeking to expand their SUAs, which creates additional challenges for the Nevada system airports that are located within the SUA. This issue has recently come up again related to the military’s desire to increase SUA for their use from two facilities: Mountain Home Air Force Base (AFB) in Idaho and Naval Air Station Fallon (Nevada). The Mountain Home AFB began an Environmental Impact Statement (EIS) in 2019 for Airspace Optimization which included airspace in northern Nevada (in addition to Idaho and Oregon). The proposed changes to the SUAs would impact nine airports and one hospital heliport, as well other non-aviation Nevada resources. During the initial EIS process NDOT expressed concerns over the ability for non-military aircraft operations to transition through the proposed airspace, the impacts to the use of underlying property and how that may impact property tax revenues to local municipalities, impact to tribal areas, and the responsibility for wildland fire fighting. As of summer 2021, the Draft EIS comment period is underway, with the Final EIS expected to be released in Spring 2022.

The U.S. Navy completed an EIS to assess the potential environmental impacts of modernizing the Fallon Range Training Complex, which included expansion and modifications to the airspace around Naval Air Station Fallon. A Record of Decision was issued in March 2020, which allowed the FAA to expand and reconfigure the existing SUA to accommodate the expanded ranges.

These challenges affect all air traffic in their vicinity and are particularly significant for emergency flights like aerial firefighting and medical evacuation. Every minute counts when transporting a severely injured patient or navigating to a fire scene, and the time spent taking a longer flight path to avoid a SUA or make contact with a controlling agency can have a severe impact on the successful outcome of these special flights. Heavily populated areas of the state experience these issues more acutely.

Figure 4-3: Special Use Airspace in the State of Nevada



Source: ArcGIS, 2020; Federal Aviation Administration (FAA) U.S. Special Use Airspace, 2021; Kimley-Horn 2021

4.8. Compatible Land Use and Encroachment

Population and industry growth drives demand for residential and commercial land development, which tends to sprawl outward from the central business district, usually along major highways and open lands that can be easily developed. As new residential areas are constructed to accommodate population growth, schools, medical facilities, and service-related establishments follow to meet the local needs of the expanding population.

Land use regulations are generally designed to ensure that new development is compatible with existing development and activity. The applicable authority, whether a city, county, or other jurisdictional body, is responsible for ensuring that activities on one parcel of land do not negatively impact nearby activities from a safety, congestion, or nuisance perspective.

An airport's land use compatibility practices are meant to promote safety and to prevent or mitigate the potential nuisance of overhead aircraft operations. FAA guidelines on airport compatible land use consider the unique safety and noise issues that apply to incompatible development in the vicinity of an airport. Airport land use compatibility guidelines are well-established, although their enforcement relies on local enforcement which may not always result in compatible development especially along the approach and departure paths of the runways.

Land use incompatibility generally manifests itself as complaints from nearby residents and the establishment of noise sensitive areas. It may also impact airport operations by the implementation of noise abatement procedures, voluntary curfews, and other measures that attempt to mitigate aircraft noise.

It is important to note that airport operations over or near areas of incompatibility are not always uniform. For example, jets usually follow a straight in/straight out flight path at altitudes higher than helicopters, which may fly a different pattern. Helicopter tour operations are especially important to consider during development particularly since their popularity may generate a large volume of traffic. Flight training activity where aircraft stay in the traffic pattern and fly repetitive practice takeoffs and landings (touch and go) can be another concern for neighborhoods off to the side of the runway.

Airports in Nevada reporting that encroachment from residential and commercial properties is rising. Rapid growth in populations and businesses across many regions has driven significant development at rates faster than land use regulations can be updated. This has caused airspace issues and limited development potential. As a result, there has been an increase in noise complaints and increasingly negative community sentiment in certain airport vicinities. Simultaneously, overall aviation demand has been increasing in Nevada, and some airports are facing challenges in expanding while commercial and residential development is being rapidly implemented.

4.9. New Technologies

Innovations in aviation have led to many improvements throughout the industry and have the potential to transform the industry and economy in Nevada. While there are many opportunities with new technologies and procedures, it is also important to consider the challenges that may accompany such advancements.

4.9.1. Electric Aircraft

The emergence of electric aircraft and the continued popularity of experimental aircraft present potential future opportunities for growth throughout the world and in the State of Nevada. Although electric aircraft have existed for more than five decades, recent developments in battery technology have enabled more aircraft manufacturers to develop electric propulsion systems. The number of electrically propelled aircraft in development has grown by more than 50 percent since 2016, reaching 215 aircraft in development worldwide[12]. Given existing limitations in battery technologies, most of the aircraft being developed are meant to compete with light-sport, general aviation, and small air taxi aircraft. Currently, the United States does not have any regulations to guide manufacturers or airports. The FAA Aerospace Forecasts 2020-2040 does not forecast the outlook of the electric aircraft segment; however, other industry organizations, including the International Civil Aviation Organization (ICAO), anticipate electric aircraft development to continue to grow, first in the small general aviation aircraft category and eventually moving to larger airliner-type aircraft.

Airports will face unique challenges related to electric aircraft, particularly in terms of infrastructure and funding. Electric aircraft will require the installation of charging stations with numerous adapters, as well as robust electrical capacity to handle the additional load placed on the utility system. The charging system may also require a significant number of batteries to store electricity for operational consistency during power outages. These considerations could also pose funding challenges as airports would not be able to charge typical fuel flowage fees for electric power from municipal utility companies under current State regulations.

Additionally, electric aircraft are likely to remain on the apron for longer periods of time while using airport charging facilities due to slower charging speeds relative to the fueling rate of a conventional aircraft. Changing out spent batteries for charged ones is an option but would require changes to FAA regulations before this solution could be implemented. In short, the technology for wide-scale use of electric powered aircraft is still in its early infancy and may not emerge for perhaps 10 years or longer.

4.9.2. Unmanned Aerial Systems (UAS)

While UAS technology has matured under military applications overseas, the use of UAS is relatively new to the U.S. airspace system. With varying scales (size, speed, payloads, etc.), they are becoming immensely popular for recreational, commercial, and governmental use. The FAA has established regulations governing the use of drones including a mandate for recreational users to fly at or below 400 feet when in uncontrolled (i.e., Class G) airspace and restrictions regarding flights near airports and sensitive areas.

In May 2019, the FAA implemented a new rule that requires drone operators to obtain preauthorization before flying in controlled airspace around airports. This new requirement replaces an old requirement that simply mandated that drone operators notify the airport operator and air traffic control tower (ATCT)

---

[12] Thompson, R. (January 2020). “The number of electrically propelled aircraft developments grew by ~30% in 2019.” Available online at: https://www.rolandberger.com/en/Insights/Publications/Electric-propulsion-is-finally-on-the-map.html. (Accessed January 2021).

prior to flying within five miles. Preauthorization is available through the Low Altitude Authorization and Notification Capability (LAANC) system. As of June 2021, LAANC is available at 541 LAANC Enabled Facilities and 732 airports nationwide, which includes the following Nevada airports:

- Battle Mountain Airport (BAM)
- Henderson Executive Airport (HND)
- Las Vegas Harry Reid International Airport (LAS)
- Reno-Tahoe International Airport (RNO)
- Tonopah Airport (TPH)
- North Las Vegas Airport (VGT)

LAANC is available to pilots operating under the Small UAS Rule Part 107 or under the exception for Recreational Flyers.

Part 107 is a set of federal regulations that apply to the operation of civil unmanned aircraft within the U.S. that weigh less than 55 pounds. Business, commercial enterprise, or non-profit uses are the only types of operations that qualify under these regulations. Certain operations under Part 107 require a waiver to be granted by the FAA and include operations without visual line of sight and operations from a moving vehicle or aircraft. As of April 21, 2021, the Operations Over People Rule became effective and allows pilots operating under Part 107 to fly over people and moving vehicles and at night without a waiver as long as the rule's requirements are met. Part 107 also applies to UAS operations conducted for recreational and educational and research purposes through a limited statutory exception (USC 44809) that requires applicable users to take the Recreational UAS Safety Test (TRUST), register their UAS, and only fly for specific, recreational purposes. Drones are also barred from operating in lands and waters administered by the National Park Service as instituted by Policy Memorandum 14-05[13] and are prohibited from operating in security sensitive airspace such as military bases and critical infrastructure. BLM lands do not universally prohibit drone operations, though each area is subject to applicable local restrictions. Some local municipalities have developed ordinances for how drones may be operated in certain areas. Despite these steps, some aviation stakeholders believe that current rules are insufficient and UAS operators are either unaware of or noncompliant with them.

UAS operations are particularly significant to the State of Nevada due to its FAA designation as a UAS Test Site. This designation provides the State with the authority to conduct research and verify UAS safety and procedures to integrate UAS into the National Airspace System (NAS).[14] As a result, the state experiences a large amount of general UAS operations in addition to research operations at its testing ranges located at Reno-Stead Airport (RTS), Silver Springs Airport (SPZ), Hawthorne Industrial Airport (HTH), the Henderson Unmanned Vehicle Range (HUVR) at Nevada State College, and in the Town of Laughlin.[15] These test sites and associated air corridors are managed by the Nevada Institute for Autonomous Systems (NIAS), a non-profit corporation that supports the Autonomous Aerial Vehicle

---

[13] PM 14-05, Unmanned Aircraft – Interim Policy, http://www.nps.gov/subjects/policy/upload/PM_14-05.pdf

[14] Nevada Institute for Autonomous Systems (NIAS), "FAA-designated State of Nevada UAS Test Site", 2019, https://www.leg.state.nv.us/App/NELIS/REL/80th2019/ExhibitDocument/OpenExhibitDocument?exhibitId=41604&fileDownloadName=SB421_NIAS%20Presentation_Dr%20Walach.pdf (accessed April 2021).

[15] Drone tests to rise in Nevada skies under pilot FAA program, 2019, https://apnews.com/article/2b76cdcce10b4ba8869980ecf18c2f0c (accessed April 2021).

Industry through collaboration with business and educational organizations. As an economic driver for the State, limitations on drone operations would likely have an impact on the State's UAS research capabilities.

Several airports in Nevada continue to accommodate extensive UAS operations from a variety of different users. One example is the Searchlight Airport (1L3), which primarily focuses on UAS activity and features a 125-mile UAS corridor around the airport in addition to two areas that allow UAS operations beyond line of sight. Another example is RTS, which hosts the FAA and NASA UAS flight test location that conducted the first-ever test of NASA's air traffic management platform concepts for UAS.[16] Statewide, other UAS opportunities made possible by Nevada airports have included cloud-seeding tests, land surveying, and an international partnership with the Korean Civil UAS Research Consortium (K-CURC).[17] Airports and opportunities such as these demonstrate the significance of Nevada's FAA designation as a UAS Test Site and the State's dedication towards helping the industry succeed.

4.10. Aviation Staffing Shortage

A current problem that the entire aviation industry is facing is a growing shortage within the workforce. While staffing is a national issue in 2021 with the relaxation of rules regarding COVID-19, airports and aviation as an industry has had shortages since prior to the pandemic. The pilot shortage has been widely publicized for several years and is influenced by factors such as the high cost of flight training, the minimum requirement of 1,500 hours for a new commercial airline pilot, and the mandatory retirement age of 65 for airline pilots. This trend is especially acute for regional and essential air service (EAS) carriers that operate smaller aircraft and provide air access to rural airports across the State of Nevada. When smaller operators are unable to source pilots, it affects the level of service they can provide to rural communities and could also have impacts on medical flight operations for areas dependent on aircraft for certain medical situations. The COVID-19 pandemic alleviated the need for new personnel temporarily; however, as travel started to recover and continues its robust return in the summer of 2021, many commercial pilots who had been laid off are electing to not return to work, which has accelerated the demand for new pilots to fill the void.

Shortages in aviation maintenance technicians, air traffic controllers, and other aviation and aerospace related specialties are being experienced as a result of attrition by the demographics of the boomer generation (i.e., those born between 1947-1964) reaching retirement age. As air travel returns to and even surpasses pre-COVID levels, aviation workforce shortages will continue to have an impact on the ability to serve the travelling public. It is important to note that individuals employed at airport concessions, as well as rental car facilities and other on-airport businesses, are included in the aviation workforce impacted by COVID-19.

Recent developments in autonomous flight technology have enabled aerospace manufacturers to conduct test flights with reduced pilot input. For example, Airbus concluded its Autonomous Taxi, Take-

[16] Nevada Today, "Multiple drones flying beyond line of sight perform in first-ever tests by NASA", 2016. https://www.unr.edu/nevada-today/news/2016/drone-air-traffic-research (accessed July 2021).
[17] Nevada Institute for Autonomous Systems, July 2016 Activity Plan Update, 2016, https://www.diversifynevada.com/wp-content/uploads/2018/12/NIAS_Agenda_Item_13_-_ActivityPlanUpdate.pdf

Off and Landing Project (ATTOL) after more than 500 test flights with a widebody Airbus A350 aircraft that conducted the taxi, take-off, and landing phases of a flight without any pilot involvement.[18] Another example involves research being conducted by NASA and Boeing regarding single pilot operations of commercial aircraft. The concept involves a single pilot aloft supported by a first officer/dispatcher on the ground monitoring the flight who can provide weather and routing updates and could intervene by flying the aircraft remotely if necessary. It is anticipated that this concept could be implemented first with cargo aircraft and expanded to passenger aircraft after the technology applications and experience matures.

The economic benefits for aviation operators are obvious. However, similar to how air mail was used to develop early aviation technology, these concepts must be tested to ensure the safety of the aircraft and people on the ground before they can be applied.

4.11. Aerial Firefighting

Extensive and highly variable resources are often required to suppress fires, which makes the emergency firefighting response system highly organized and reliant on interagency effort. Organizations involved in the State's firefighting system include the USFS, the BLM, the Bureau of Indian Affairs, the Army National Guard, the Air National Guard, the Nevada Division of Forestry (NDF), and local firefighting units. To complete their missions, firefighters and search and rescue (SAR) teams often rely on fixed-wing aircraft and helicopters operating at local airports for a timely response to an emergency. As such, airports and heliports and associated infrastructure are essential in the support of emergency evacuations, aerial inspections, aerial wildland firefighting, and medical airlift of responders and patients.

Nevada experiences hundreds of wildfires each year. In 2018 alone, the state experienced the Martin and Sugarloaf wildfires, which burned nearly one million acres of land in the northeast portion of the state. In 2020, there were over 800 fires throughout the state with more than 300,000 acres burned. Persistent drought conditions combined with intermittent wet years and the spread of invasive plants like cheatgrass has led to increasingly dangerous fire seasons. Wet years create plant growth that becomes fuel for wildfires during drought years. These conditions result in a high level of need for aerial firefighting in Nevada, particularly in more rural portions of the state.

Wildfires can have a significant impact on local and state economies from the high cost of fighting fires and costs associated with lost structures and burned agricultural lands. As described by the Research Division of Nevada's Legislative Counsel Bureau in their 2020 document "Wildfires in Nevada: an Overview," rural communities can experience tens of millions of dollars in wildfire-related costs each year.[19] Federal Emergency Management Agency (FEMA) fire management assistance grants are available to repay up to 75 percent of state costs for suppression of large fires, with remaining costs covered by the State's Wildland Fire Protection Program and local funds.

During the fire season, medium- to heavy-lift military and civilian aircraft such as C-130s, DC-9s, and DC-10s, which serve as aerial firefighting aircraft, are contracted by the USFS and the BLM. On average, the

[18] Airbus, "Airbus concludes ATTOL with fully autonomous flight tests", 2020. https://www.airbus.com/newsroom/press-releases/en/2020/06/airbus-concludes-attol-with-fully-autonomous-flight-tests.html (accessed April 2021).
[19] Research Division, Legislative Counsel Bureau, Wildfires in Nevada: an Overview, https://www.leg.state.nv.us/Division/Research/Documents/Wildfires-in-Nevada-2020-FINAL.pdf

BLM utilizes three helicopters, seven single engine air tankers (SEAT), and two air attack aircraft for firefighting purposes across six District Offices: Elko, Winnemucca, Carson City, Ely, Las Vegas, and Battle Mountain.[20] Additionally, the NDF bases three helicopters at the Minden-Tahoe Airport (MEV) to respond to fires throughout the eastern front of the Sierra Nevada mountain range, and manages an airtanker base at the BAM.[21] Additionally, Reno-Stead Airport (RTS) operates a seasonal tanker base for northern Nevada and northeast California. This BLM fire tanker base was extremely active during the 2021 fire season. Other NDF support includes an air operations program with access to Nevada National Guard helicopters, specialized equipment, and firefighting crews.[22] Interviews with BLM officials revealed a desire for the integration of UAS into their firefighting fleet and for regulations to allow the use of a surveillance drone up to 500 feet above ground level (AGL), above the standard height restriction of up to 400 feet AGL.

4.12. Tourism

Airports in Nevada play a direct role in aviation-related tourism in addition to their general tourism impacts. While the state's commercial airports provide a principal form of access for visitors to the state, the entire airport system also provides a venue for tourism, including helicopter tours, aviation-related conferences and events, and opportunities for tourism using general aviation.

Helicopter tours primarily focus on flying tourists over Grand Canyon and the Las Vegas Strip. According to the Grand Canyon Visitor Center website, a single helicopter tour operator typically flies approximately 600,000 passengers annually over the Grand Canyon.[23] In recent years, helicopter flights over the Las Vegas strip at night have become more prevalent and attract a greater share of domestic tourists compared to other types of tours. The COVID-19 pandemic caused a sharp decline in visitors in 2020, and while the momentum in domestic travel is increasing, international travel has yet to show a similar pattern in early 2021. As a result, the Grand Canyon helicopter tours that catered to a large percentage of international tourists remain substantially diminished. As a result, area helicopter tour operators have diversified by pivoting towards offering twilight Las Vegas strip tours targeting domestic visitors and operations have increased in 2021.

Nevada is home to numerous conferences and conventions in Las Vegas that play a key role in the millions of visitors that the state welcomes annually. According to the Las Vegas Convention and Visitors Authority, Las Vegas saw a record number of over 6.6 million convention attendees in 2019, contributing to the total number of over 42.5 million visitors hosted by the city throughout the year.[24] Some of the largest conferences that occur in Las Vegas are the Consumer Electronics Show (CES), ConExpo-

---

[20] Bureau of Land Management, Nevada Fire Information, https://www.blm.gov/programs/public-safety-and-fire/fire-and-aviation/state-information/nevada (accessed July 2021).
[21] Nevada Division of Forestry, Aviation, http://forestry.nv.gov/fire-program/aviation/ (accessed April 2021).
[22] Nevada Division of Forestry, Fire Management, http://forestry.nv.gov/fire-program/ (accessed April 2021).
[23] Grand Canyon Visitor Center, Grand Canyon Helicopter Tours, https://explorethecanyon.com/tour-types/grand-canyon-helicopter-airplane-tours/ (accessed April 2021).
[24] LCVA Executive Summary of Las Vegas, Laughlin & Mesquite, NV Tourism Indicators, December 2019, https://assets.simpleviewcms.com/simpleview/image/upload/v1/clients/lasvegas/ES_Dec_2019_b203a4d3-49c6-4d50-835b-88442937d2d9.pdf

ConAgg, and the Specialty Equipment Market Association (SEMA). In some cases, large conferences in Las Vegas will create such high demand for air travel to the city that airlines will add new flights to the city in order to accommodate the increased demand from these events. Air travel for major conventions combined with consistently high demand throughout the year for attractions in the city contributed to a record level of 51.5 million passengers throughout 2019.[25]

Aviation tourism in Nevada also includes aviation-focused conferences. One of the largest examples is the Business Aviation Convention & Exhibition (BACE), which is a popular venue for showcasing new business aircraft and services hosted by the National Business Aviation Association (NBAA) in Las Vegas every two years. Between HND and the Las Vegas Convention Center, NBAA-BACE featured over 1,000 exhibits and more than 100 aircraft on static display in 2019.[26] In the same year, over 25,000 attendees generated $40.5 million for the Las Vegas economy during the four-day conference.[27]

Nevada hosts multiple nationally recognized events each year that draw thousands of attendees and aircraft to the state. These events are the National Championship Air Races (commonly known as the Reno Air Races), the High Sierra Fly-In, and Burning Man. The Reno Air Races take place at RTS in September and feature six racing classes, military and civil flight demonstrations, and static aircraft displays. The High Sierra Fly-In takes place in October at the Dead Cow Lakebed and features backcountry aviation events such as the Short Take Off and Landing (STOL) Drag Racing Event. Finally, Burning Man takes place in Black Rock Desert around Labor Day and is centered around community, self-reliance, and art. As part of the Burning Man experience, an airport (Black Rock City Municipal Airport) is created each year and then torn down after the conclusion of Burning Man for the year.

4.13. Rural and Tribal Communities

Rural and tribal communities often have limited medical facilities, equipment, and staff capacity. As a result, these communities tend to rely on medical evacuation flights for urgent or specialized medical care. However, airports that support these communities often face challenges in pursuing federal and/or state funding or to implement improvements to meet even the minimum design criteria. In some cases, deferred maintenance and airfield development needs are hindered, which could restrict the accessibility for critical medical flights.

Some economically disadvantaged areas of the state, often rural, face challenges in setting aside money for the local match component of an AIP grant for an airport project, much less cover operational expenses. Additionally, without State funding for non-NPIAS airports, rural and tribal communities are often competing with each other for a small share of funds. As airport sponsors struggle to balance limited funds for meeting their operational needs, there is very little left of their own revenue for projects. Overall,

---

[25] Las Vegas Review-Journal, McCarran sets 3rd Straight Annual Record with 51.5M Travelers in 2019, https://www.reviewjournal.com/business/tourism/mccarran-sets-3rd-straight-annual-record-with-51-5m-travelers-in-2019-1945837/

[26] NBAA, NBAA-BACE Report – Aug. 21, 2019, https://nbaa.org/events/2019-business-aviation-convention-exhibition/news/nbaa-bace-report/aug-21-2019/#:~:text=NBAA%2DBACE%20Offers%20a%20World,the%20Las%20Vegas%20Convention%20Center. (accessed April 2021).

[27] 8 News Now Las Vegas, Business aviation trade show bringing 25,000 attendees to the valley, https://www.8newsnow.com/news/local-news/business-aviation-trade-show-bringing-25000-attendees-to-the-valley/ (accessed April 2021).

airports in rural and tribal communities face financial challenges in keeping pace with the community's need for access to the national air transportation system while providing a facility that can accommodate demand.

These airports also encounter difficulties in adapting to changing technologies, such as those of the FAA's NextGen plan. NextGen is rapidly shifting air navigation from ground-based legacy equipment to a satellite-based system using global positioning for communications, aircraft tracking, and weather systems. Ultimately, the NextGen system will eventually force all aircraft operating in certain airspace classifications to have the necessary equipment to operate in the airspace. Rural and tribal airports tend to have fewer resources and broadband availability to install such technology, and airports in these areas may see a decline in medical evacuation access and GA operations if nearby airspace restrictions limit their appeal.

As previously discussed, rural and tribal communities can face challenges in providing specialized medical care and rely on medical evacuation flights for such situations, particularly if limited municipal medical equipment precludes a direct transfer by a city itself. Medical evacuation operators like CareFlight and REACH provide a valuable service to many areas in Nevada by transferring patients to hospitals that best suit the patient's needs. Their operations benefit from having access to as many airports as possible, as do the communities around those facilities. However, if an airport cannot maintain its facilities, medical flights may experience delays or become unable to operate to a particular community. As a result, lack of resources to maintain airport facilities and weather reporting equipment can make a significant difference in a patient's outcome.

4.14. Summary

Future airport needs can be substantially impacted by the rapidly changing aviation industry and sponsors need to be aware of these developments. Many issues at the national, state, and regional levels impact Nevada's airports, including new technologies, growing infrastructure needs, decreased funding combined with increasing costs, and uncertainty around land ownership.

When assessing the historical, current, and future performance of the aviation system, it is important to understand the major issues affecting Nevada's airports. Many sources provided information on these issues, including the PAC, NDOT, as well as interviews with airport managers, aviation stakeholders, and aviation use groups.

Outreach to a variety of sources revealed common issues and trends as well as themes unique to specific groups. Funding was important to each airport and identified as a high priority issue for many, a factor highlighted by the COVID-19 pandemic, though some rural and tribal facilities may not have the capacity to provide matching funds for certain federal grants in general. Additionally, medical and firefighting flights are important aviation use cases in Nevada and these groups rely on accurate, real-time weather information from weather reporting equipment to conduct their operations without incurring delays. These users are also affected by the large amount of special use airspace caused by the extensive military presence in Nevada. An individual airport may also encounter difficulties from encroachment and from restrictions driven by federally protected land. Finally, aviation in Nevada is driven by the state's strong tourism industry and its designation by the FAA as a UAS Test Site.