Chapter 1
Inventory

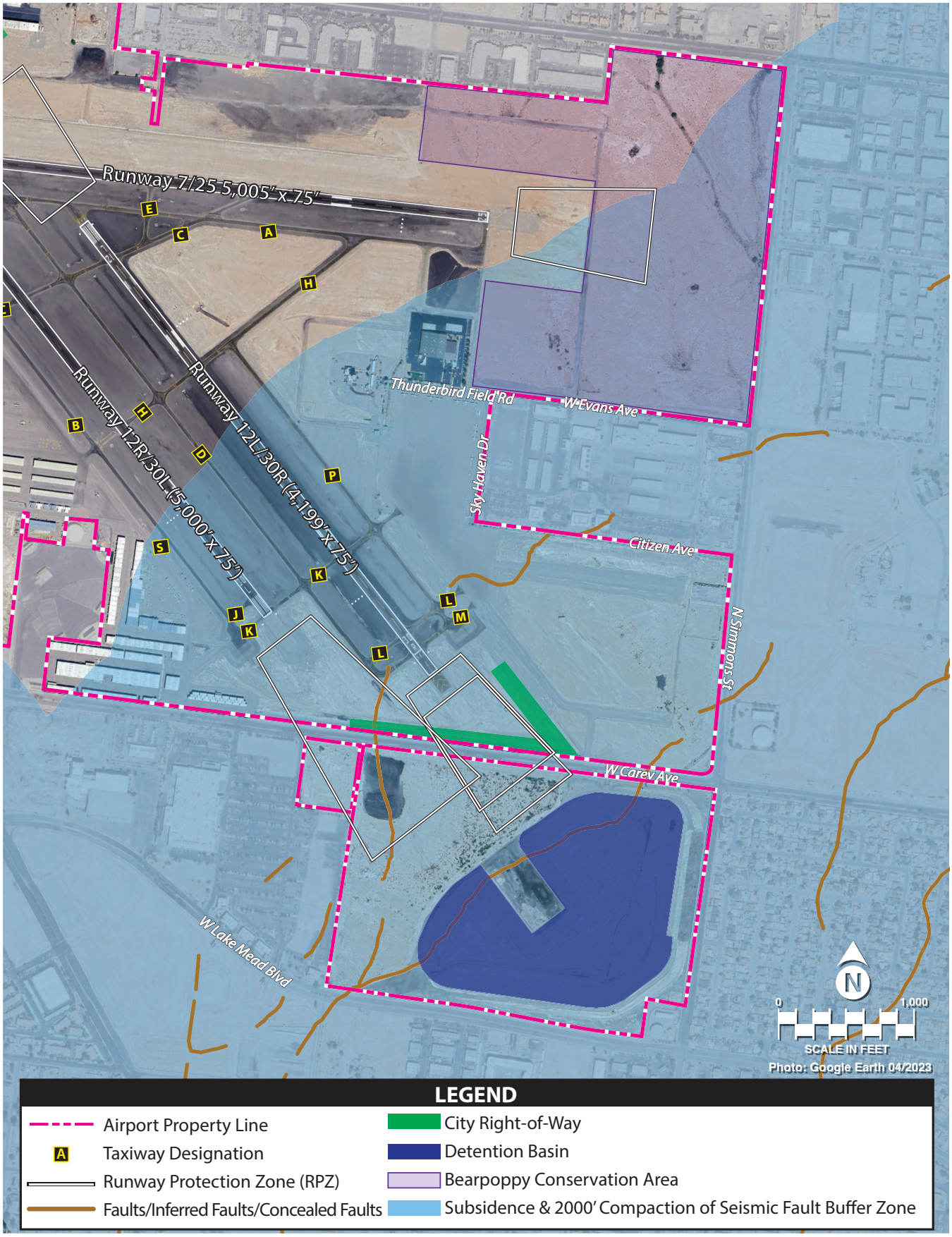
The inventory of existing conditions is the initial step in the preparation of the North Las Vegas Airport (VGT) Master Plan. The inventory will serve as an overview of the airport's physical and operational features, including facilities, users, and activity levels, as well as specific information related to the airspace, air traffic activity, and role of the airport. Additionally, a summary of socioeconomic characteristics and review of existing environmental conditions on and adjacent to the airport are detailed, which will provide further input into the study process.

Information provided in this chapter serves as the baseline for the remainder of the master plan, which is compiled using a wide variety of resources, including: applicable planning documents; on-site visits; interviews with airport staff, tenants, and users; aerial and ground photography; federal, state, and local publications; and project record drawings.

1.1 BACKGROUND AND LOCAL SETTING

VGT is located in the City of North Las Vegas, Nevada, approximately three miles northwest of the Las Vegas city center, providing the closest access to aviation services from downtown. Clark County is Nevada's most populous county, accounting for almost 2.3 million people or approximately 73 percent of the state's population. According to U.S. Census Bureau estimates from 2021, the City of North Las Vegas is home to approximately 274,000 people, the third most populated city in Clark County. North Las Vegas shares its southern and western border with Las Vegas, its northern border with the Desert National Wildlife Range, and its eastern border with Nellis Air Force Base (AFB) and Sunrise Manor.

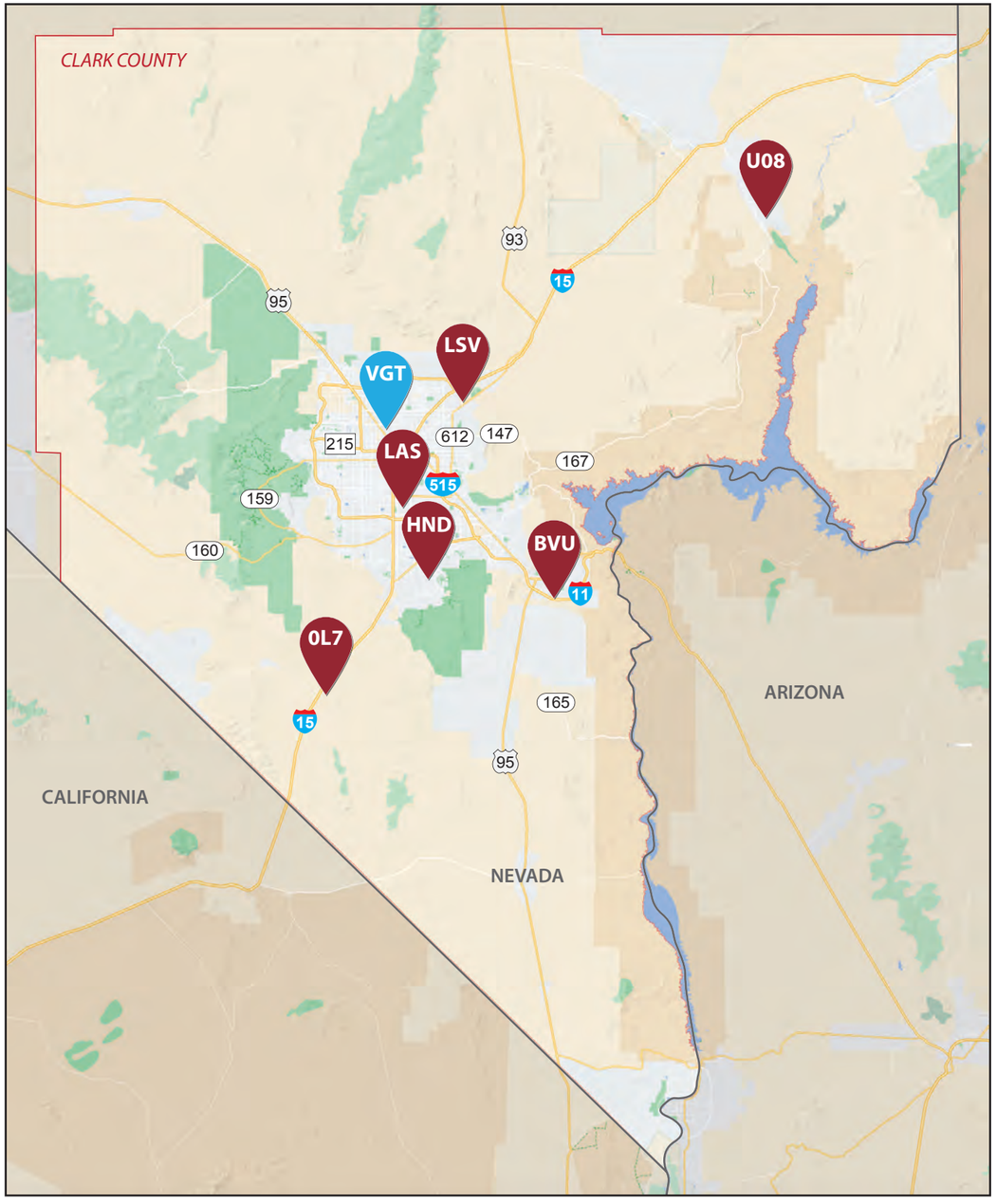
Airport property includes 920 acres of land in the southwest corner of North Las Vegas. The primary airfield property is comprised of 806 acres and is bordered to the west by the major roadway Rancho Drive, to the north by Cheyenne Avenue, to the east by Simmons Street, and the south by Carey Avenue. There are currently approximately 143 acres of undeveloped land in the northeast corner of the airport, which includes the Runway 25 runway protection zone (RPZ), parts of the runway and Taxiways A and W, and Las Vegas Metropolitan Police Department (LVMPD) Metro Search and Rescue facilities. Approximately 110 acres of the northeast area have been designated as a Las Vegas Bearpoppy (a State of Nevada listed Critically Endangered plant species) conservation area. There is approximately 77 acres of undeveloped property in the southeast corner of airport property. Much of this area has been identified to contain hazardous soil including fissures, which may cause challenges for development. Identified challenges are the risk of subsidence-related movements in the vicinity of faults, risk of continued growth of repaired fissures or the development of new fissures, and the tectonic hazard associated with the faults. There are approximately 114 acres of airport land segregated to the south by Carey Avenue. Portions of this undeveloped area are subject to a City of North Las Vegas right-of-way (ROW) for a detention basin and are encumbered by the Runway 30R runway protection zone (RPZ), which will be discussed in greater detail in Chapter Three, which further limit the development potential in this area. The development impediments for the areas described above are depicted on **Figure 1.1**.


Runway 7/25 5,005' x 75'
Runway 12L/30R (4,199' x 75')
Runway 12R/30L (5,000' x 75')
Thunderbird Field Rd
W Evans Ave
Sky Haven Dr
Citizen Ave
N Simmons St
W Carey Ave
W Lake Mead Blvd
A
B
C
D
E
H
J
K
L
M
P
S
N
0
1,000
SCALE IN FEET
Photo: Google Earth 04/2023
LEGEND
Airport Property Line
Taxiway Designation
Runway Protection Zone (RPZ)
Faults/Inferred Faults/Concealed Faults
City Right-of-Way
Detention Basin
Bearpoppy Conservation Area
Subsidence & 2000' Compaction of Seismic Fault Buffer Zone

1.1.1 REGIONAL AVIATION FACILITIES

There are four public use airports within 30 nm of VGT, along with Nellis Air Force Base. In addition to VGT, the System of Airports includes Harry Reid International Airport, Henderson Executive Airport, Jean Airport, and Perkins Field Airport (Overton). The Clark County Department of Aviation (CCDOA) has also proposed development of a second commercial service airport, the Southern Nevada Supplemental Airport (SNSA), to supplement capacity to accommodate anticipated future demand at Harry Reid International Airport. The SNSA is still in the planning stages with an estimated opening date of 2037, contingent on the Environmental Impact Statement (EIS) resulting in a favorable record of decision. Currently, Harry Reid International Airport is the only airport in Clark County offering scheduled passenger service, with the remaining airports in the county providing general aviation services. Both Henderson Executive Airport and VGT serve as reliever airports. These airports are described below with the intent of providing a high-level overview of each facility and additional context regarding VGT's role within the regional system of airports. Additional information on each of the vicinity airports is summarized on **Figure 1.2**.

Airport	Distance From VGT (mi)	Distance From the Las Vegas City Center (mi)	Runway Configuration & Length (ft)	FBO	ATCT	2023 NPIAS Role	Area (acres)	Elevation (ft)	Based Aircraft (Aug. 2023)
North Las Vegas Airport (VGT)	N/A	7	7/25: 5,005' x 75' 12L/30R: 4,199' x 75' 12R/30L: 5,000' x 75'	Yes	Yes	Reliever	920	2,205'	511
Harry Reid International Airport (LAS)	8	2.7	08L-26R: 14,835' x 150' 08R-26L: 10,526' x 150' 01R-19L: 9,770' x 150' 01L-19R: 9,769' x 150'	Yes	Yes	Primary Commercial Service	2,800	2,181'	176
Henderson Executive (HND)	14.5	9	17R-35L: 6,501' x 100' 17L-35R: 5,001' x 75'	Yes	Yes	Reliever	760	2,492'	254
Boulder City Municipal (BVU)	22.6	21	09-27: 5,103' x 75' 15-33: 3,852' x 75'	Yes	Yes	Non-hub Primary	530	2,203'	240
Jean Sport Aviation Center (0L7)	27.3	25	02R-20L: 3,700' x 60' 02L-20R: 4,600' x 75'	No	No	GA Basic	232	2,835'	37
Nellis Air Force Base (LSV)	7.9	12	02R-20L: 3,700' x 60' 02L-20R: 4,600' x 75'	Yes	Yes	N/A	14,000	1,869'	N/A
Perkins Field Airport (U08)	42.0	62.7	13-31: 4,811' x 75'	No	No	GA Basic	250	1,365'	19



Notes:
N/A = not applicable
ATCT = airport traffic control tower
FBO = fixed base operator
NPIAS = National Plan of Integrated Airport Systems
MSL = mean sea level

Figure 1.2
VICINITY AIRPORTS

This page intentionally left blank

Harry Reid International Airport (LAS) | Harry Reid International (LAS) is a large hub primary commercial service airport located about eight nm south of VGT and is also owned/operated by CCDOA. It features four runways and handled approximately 25.48 million passenger enplanements and 581,116 operations in 2022. Almost all activity comes from commercial airline activity but does include some general aviation operations.

Henderson Executive (HND) | Henderson Executive (HND) is the other national reliever airport in Nevada, located 14.5 nm south of VGT, and is also owned/operated by CCDOA. It features two parallel runways, the longest of which is 6,501 feet long. HND handled 78,000 operations in 2022, accommodating primarily general aviation operations such as recreational, business, and air taxi operations.

Boulder City Municipal (BVU) | Boulder City Municipal (BVU) is a nonhub primary commercial service airport located 22.6 nm southeast of VGT. BVU had almost 63,243 passenger enplanements and recorded 115,100 operations in 2022. BVU features two runways, the longest of which is 5,103 feet.

Jean Sport Aviation Center (0L7) | Jean Sport Aviation Center (0L7) is a basic general aviation airport located 27.3 nm south of VGT. It is also owned/operated by CCDOA and had 12 based aircraft and 16,048 operations in 2022. 0L7 features two parallel runways, the longest of which is 4,600 feet.

Nellis Air Force Base (LSV) | Nellis Air Force Base (LSV) is located 7.9 nm east of VGT and supports training activities for military personnel with the U.S. Air Force, Navy, Army, and Marine Corps. The base encompasses more than 14,000 acres and supports more squadrons and units than any other Air Force base in the world.

1.1.2 OWNERSHIP AND MANAGEMENT

VGT is a public-use airport owned by Clark County, Nevada and operated by the CCDOA as a part of the Clark County System of Airports. The CCDOA is operated under the policy direction of the Board of County Commissioners, the authority of the County Manager, and the management of the Director of Aviation and three Senior Directors of Aviation. The department also manages the following divisions:

- Marketing
- Commercial/Business Development
- Diversity, Procurement & Contracts
- Construction/Engineering
- General Aviation
- Landside Operations
- Airside Operations
- Terminal Operations
- Finance
- Airport Employee Services
- Information Technology
- Facilities/Maintenance
- Security

Daily operations at VGT are overseen by an Airport Manager and Supervisors for Customer Service, Line Service, and Maintenance and Operations. These individuals provide oversight and direction for staff that includes operations, maintenance, and administrative personnel. See **Figure 1.3** for the VGT Management Organizational Chart.

Figure 1.3 - NORTH LAS VEGAS AIRPORT MANAGEMENT ORGANIZATIONAL CHART

1.1.3 AIRPORT HISTORY

Aviation enthusiasts opened the airport under its original name of Sky Haven Airport on December 7, 1941. Its opening celebration and flying demonstrations were interrupted by the news of the air raid at Pearl Harbor. Despite its somber start, the airport became successful during World War II as it was used for training navy pilots and was frequented by off-duty Las Vegas Army Airbase pilots. After the war, the airport was bought and sold multiple times, being renamed Thunderbird Field and, later, North Las Vegas Air Terminal. In the 1960s, the runways were paved, and services expanded to include a new administration building and restaurant. In 1974, the airport became a reliever for Harry Reid International Airport and the Federal Aviation Administration (FAA) started to provide air traffic control (ATC) services. Clark County purchased the airport in 1987 and invested heavily in the facilities to support and maintain the large number of based aircraft and high frequency of aircraft operations. Today, VGT is used for a variety of purposes, including primary and advanced flight training, sightseeing flights, and personal and business aviation. The airport is also home to various government agencies that provide support to the community, including the LVMPD, the Bureau of Land Management, and fire support. A timeline of significant events and facility improvements is provided on **Figure 1.4**.

1941

Airfield Grand Opening "Sky Haven Airport."

WWII Navy Pilots trained under the Civilian Pilot Training Program.

1942

1960

Airport sold and renamed Vegas Thunderbird Field, leading to the VGT identifier. Facility improvements included paving the runway, constructing a shaded hangar and office/restaurant.

The FAA classifies the airport as a reliever for Harry Reid International Airport.

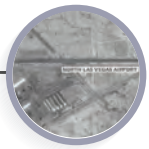
1974

1975

Portable ATCT established.

Clark County purchases Las Vegas Air Terminal and additional surrounding land.

1987



1991

50th Anniversary
Runway 12R-30L reconstructed and expanded to 5,000' long, Taxiway A and B constructed, airfield lighting, NAVAIDS, and 20 acres of apron constructed.

New Terminal Building and Restaurant constructed.

1992

1995

Agency Air Park constructed.

ILS added to Runway 12L/30R. FAA ATCT constructed.

2001

2005

Part 139 certification issued to allow for air carrier operations.

New Fuel tanks installed increasing capacity by 30,000 gallons.

2008

2010

EPA certified facilities installed.

Taxiway A and G reconfigured to improve guidance and reduce confusion.

2013

2015

Wildlife Hazard Assessment completed; Wildlife Hazard Management Plan developed.

Runway Incursion Mitigation (RIM) Analysis (2017-2020).

2017

2019

Main Terminal remodeled. Part 139 certification surrendered following Vision Air's decision to cease operations.

1.1.4 AIRPORT STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS ANALYSIS

A SWOT analysis is a strategic business planning technique used to identify **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats associated with an action or plan. The SWOT analysis involves identifying an action, objective, or element, and then identifying the internal and external forces that are positively and negatively impacting that action, objective, or element in a given environment. For this study, the SWOT analysis factors are applied to the airport within the structure of the master plan. As a result, the SWOT analysis provides a continuous vision and direction for the development of the master plan.

1.1.4.1 SWOT Definitions

The SWOT analysis groups information into two categories:

- **Internal –** attributes of the airport and market area that may be considered strengths or weaknesses to the action, objective, or element.
- **External –** attributes of the aviation industry that may present as opportunities or threats to the action, objective, or element.

The SWOT analysis further categorizes information into one of the following groups:

- **Strengths –** internal attributes of the airport that are helpful to achieving the action, objective, or element.
- **Weaknesses –** internal attributes of the airport that are harmful to achieving the action, objective, or element.
- **Opportunities –** external attributes of the industry that are helpful to achieving the action, objective, or element.
- **Threats –** external attributes of the industry that are harmful to achieving the action, objective, or element.

1.1.4.2 SWOT Analysis Exercise

The SWOT analysis for VGT is based upon information gathered during the first PAC and TAC meetings, which were conducted on June 28, 2023. As previously discussed, the PAC and TAC consist of a diverse group of stakeholders, community leaders, and government agencies that represent several interests in the airport. A SWOT analysis was conducted with each group to identify key factors that might be addressed in the master plan. A summary of the results from the SWOT analysis exercise are detailed below. These results were used to frame the subjective or judgmental processing of the data presented in the master plan.

Strengths

- The airport is located approximately three miles northwest of downtown Las Vegas, contributing to its continued success.
- VGT has three runways, two parallel and a crosswind.
- VGT airport traffic control tower (ATCT) staff work closely with Harry Reid International Airport controllers to ensure the safe and efficient flow of air traffic in the area.
- The instrument landing system (ILS) on Runway 12L allows for continued operations during poor visibility conditions.
- VGT has room for expansion on undeveloped portions of airport property.
- VGT is a well-maintained facility with a recently renovated terminal. A range of services is provided, including an airport restaurant, lounge, wi-fi, TVs, on-site rental cars, flight planning station, and fuel services, and the FBO is an Air Elite® facility, allowing the airport to cater to personal, corporate, and charter aircraft as well as aviation enthusiasts.
- The airport is well-managed by CCDOA and is safe, well-regarded, and a good neighbor to the surrounding communities.
- The airport has an on-site airfield maintenance team managed by CCDOA that offers quick response times.
- Population and business growth in the region contribute to VGT's growth and success.
- High-capacity roadways nearby make the airport easily accessible.
- Sporting events hosted in Las Vegas draw visitors and contribute to increased traffic at VGT.

Weaknesses

- The airport is essentially landlocked with limited room for expansion beyond its current footprint.
- The airspace in and around Las Vegas is congested and can lead to reduced efficiency at airports in the area, including VGT. Diverse aircraft types (i.e., faster corporate jets and slower piston-powered aircraft) can compound this issue.
- The airport's value to the community may be understated due to a lack of public awareness of VGT's economic impact.
- Portions of airport property have been underutilized/undeveloped. This contributes to limited hangar capacity that prevents aircraft owners from basing at VGT.
- VGT does not have on-site Customs and Border Protection, so international flights must use Harry Reid.

- Existing runway lengths are too short for some jets to safely operate, especially during hot weather. The parallel runways are separated by 700 feet, which allows for simultaneous operations in visual flight rule (VFR) conditions only.
- The airfield layout can be confusing or limiting to some pilots.
- The ATCT's height limits visibility to all aircraft queued in non-movement areas. Controllers also face challenges during certain meteorological conditions.
- There are no standard operating procedures for helicopter activity at VGT.
- VGT relies on mutual aid for aircraft rescue and firefighting (ARFF) and police support.
- The terminal building lacks some features that are often included at airports similar to VGT, such as showers for pilot use.
- The immediate area is challenged with unhoused population and crime occurrences.

Opportunities

- The airport and the North Las Vegas area are friendly to businesses, giving VGT the opportunity to promote its growth and economic contributions to the city and region. This could also translate to positive operational changes, such as extended operating hours for the terminal.
- VGT experiences significant local support and enjoys positive partnerships with adjacent neighborhoods.
- VGT is a reliever airport, currently experiencing significant air charter operations and poised for growth in this segment of aviation activity.
- Area entertainment and national events in the area promote growth at VGT.
- Expansion of helicopter facilities to support diverse operations and services by rotorcraft.
- Emerging Advanced Air Mobility (AAM) technology can lead to growth in vertical takeoff and landing (VTOL) aircraft operations and AAM services.
- While undeveloped property adjacent to VGT is limited, the airport could pursue acquisition of available property for future compatible land use and facility expansion.
- Responsible land planning sustainable practices, and airport-compatible land uses can be applied to new development on and near the airport (i.e., industrial and commercial).
- Increased collaboration with the City of North Las Vegas and the CCDOA, along with enhanced public outreach, will be crucial in promoting the airport's growth objectives.

Threats

- VGT is utilized by diverse aircraft types as described above. When these aircraft operate at the same time, it can contribute to increased delay and reduced capacity on the airfield and in apron areas.

- Adjacent land uses, such as residential homes, encroach upon VGT and could limit development potential of the airport and its airspace and increased noise complaints could result. This will also likely increase congestion on the local roadway network and make airport connectivity more difficult.

- Because major stakeholders of VGT include governmental agencies, frequent changes in City and County staff create difficulties in maintaining close relationships. This could prove to be threatening as airport expansion projects rely heavily on partnership with public entities. However, a growing community results in more stakeholders that may influence local development, public policy, and airport operations.

- Corporate jets have recently undergone international scrutiny due to climate change and environmental concerns, and GA accidents have impacted the public perception of safety in private aviation.

1.1.5 ECONOMIC IMPACT

VGT is a significant contributor to the local and regional economy. There are 32 businesses operating at the airport, including flight schools, aerial tour companies, aircraft maintenance providers, aircraft sales/rentals and charter services, catering providers, and rental car services. As part of the *Nevada Airport and Heliport System Plan* (NAHSP), an airport economic impact study (AEIS) was conducted on the 51 airports studied in Nevada. The AEIS evaluated direct, indirect, and induced impact on state-wide employment, labor income, and output activities. Four output activities were measured, including airport operations, airport tenants, capital expenditure, and visitors. **Table 1.1** summarizes the economic impact of VGT.

Table 1.1 | VGT Aviation Economic Impact

Employment (no. of Jobs)	919
Labor Income	$39,183,400
Annual Output	$218,032,790

Source: Nevada Airport and Heliport System Plan (2019)

1.2 AIRPORT SYSTEM PLANNING ROLE

Airport planning exists on many levels: national, state, regional, and local. Each level has a different emphasis and purpose. On the national level, VGT is included in the *National Plan of Integrated Airport Systems* (NPIAS). At the state level, the airport is included in the 2022 *Nevada Airport and Heliport System Plan* (NAHSP). At the regional level, the airport is included in the *Transform Clark County Master Plan*, adopted in 2021. The local planning level includes the last airport master plan, airport layout plan (ALP) update from 2020, and runway incursion mitigation (RIM) study completed from 2017-2020.

1.2.1 FEDERAL SYSTEM PLANNING

Many of the nation's existing airports were initially constructed by the federal government, or their development and maintenance was partially funded through various federal grant-in-aid programs to local communities. The system of airports existing today is thus due in large part to federal policy that promotes the development of civil aviation. As part of a continuing effort to develop a national airport system, the U.S. Congress has maintained a national plan for the development and maintenance of airports.

The FAA maintains the NPIAS, which categorizes all eligible airports by the type of activities that take place, including commercial service, cargo service, reliever operations, and general aviation (shown in **Table 1.2**). The NPIAS is published and used by the FAA in administering the Airport Improvement Program (AIP), which is the source of federal funds for airport improvement projects across the country. The AIP is funded exclusively by user fees and user taxes, such as those on fuel and airline tickets. An airport must be included in the NPIAS to be eligible for federal funding assistance through the AIP.

Table 1.2 | National Plan of Integrated Airport Systems (NPIAS) Classifications

Airport Category	Regional Example
Primary Commercial Service	
Large Hub	Harry Reid International (LAS)
Medium Hub	Reno/Tahoe International (RNO)
Small Hub	Palm Springs International (PSP)
Nonhub	Boulder City Municipal (BVU)
Nonprimary Commercial Service	
–	Vernal Regional (VEL)
General Aviation	
National & Reliever	**North Las Vegas (VGT)**
National & Reliever	Henderson Executive (HND)
Regional	Carson City (CXP)
Local	Fallon Municipal (FLX)
Basic	Jean (0L7); Perkins (U08)
Unclassified	Independence (2O7)

Source: NPIAS (2023-2027)

1.2.1.1 Capital Improvement Program

Like the maintenance, repair, rehabilitation, and expansion of major highway systems, airports also undergo infrastructure projects in order to prolong pavement life, increase safety, update geometry to adhere to new standards, and upgrade facilities for forecasted demands. Infrastructure projects are critical to an airport's safety and success and require significant planning and resources to do so. Airport projects are funded primarily by federal aid administered by the FAA through the AIP. AIP projects at reliever airports in states with greater than five percent public land, which includes Nevada, require a 6.25 percent contribution from the airport sponsor, leading to a 93.75 percent federal contribution. **Table 1.3** summarizes approximately $31.3 million dollars in grant-aided capital improvement projects at VGT since 2002. This has included funding for a variety of projects related to airfield safety, drainage, pavement construction and rehabilitation, and airport planning.

Table 1.3 | Airport Capital Improvement Project History

Fiscal Year	Grant Number	Project Description	Total Grant Amount
2002	19	Acquire Land for Development	$1,641,683
2002	19	Acquire Land for Development	$1,355,580
2002	19	Construct Taxiway	$200,000
2004	21	Construct Apron	$4,025,732
2005	22	Remove Obstructions	$4,675,732
2006	24	Acquire Aircraft Rescue & Firefighting Vehicle	$156,747
2007	23	Improve Airport Drainage	$4,089,433
2008	25	Safety Management System (SMS) Program	$90,558
2009	26, 27, 28	Remove Obstructions (Overhead Transmission Lines)	$7,566,334
2010	29	Install Airfield Guidance Signs	$35,000
2010	30	Rehabilitate Apron	$1,422,512
2010	29	Rehabilitate Taxiway	$788,212
2013	32	Construct Taxiway	$453,321
2013	32	Improve Airport Drainage	$276,652
2013	32	Improve Airport Erosion Control	$590,394
2013	31	Install Airfield Guidance Signs	$580,578
2013	32	Install Runway Incursion Marking (14 CFR Part 139)	$160,385
2013	32	Rehabilitate Access Road	$525,533
2013	33	Wildlife Hazard Assessments	$89,063
2016	34	Conduct Miscellaneous Study (Runway Incursion Mitigation (RIM) Analysis)	$1,406,250
2021	–	CRRSA Act Funds	$57,000
2021	–	General ARPA	$148,000
2022	39	Update Airport Master Plan or Study	$932,804
		Total FY 2002 – 2022:	**$31,267,503**

Source: FAA Grant History – VGT

The current NPIAS plan, *NPIAS 2023-2027,* classifies VGT as a National Reliever Airport. Due to different operating requirements between small general aviation (GA) aircraft and large commercial aircraft, GA pilots often find it difficult to use a congested commercial service airport. In recognition of this, the FAA has encouraged the development of high-capacity GA airports in major metropolitan areas. These specialized airports, called relievers, provide pilots with attractive alternatives to using congested hub airports as well as GA access to the surrounding area. The formal FAA criteria to define a reliever airport involve designation of an airport by the Secretary of Transportation to relieve congestion at a commercial service airport and to provide more GA access to the overall community. GA roles are defined in **Table 1.4**.

Table 1.4 | General Aviation Airport Roles

Classification	Role Description
National	Supports the National Airport System by providing communities access to national and international markets in multiple states throughout the United States. National Airports have very high levels of aviation activity with many jets and multi-engine propeller aircraft.
Regional	Supports regional economies by connecting communities to regional and national markets. Generally located in metropolitan areas and serve relatively large populations. Regional airports have high levels of activity with some jets and multi-engine propeller aircraft. The metropolitan areas in which regional airports are located can be Metropolitan Statistical Areas with an urban core population of at least 50,000 or Micropolitan Statistical Areas with a core urban population between 10,000 and 50,000.
Local	Supplements local communities by providing access to markets within a state or immediate region. Local airports are most often located near larger population centers, but not necessarily in metropolitan or micropolitan areas. Most of the flying at local airports is by piston aircraft in support of business and personal needs. These airports typically accommodate flight training, emergency services, and charter passenger service.
Basic	Links the community with the national airport system and supports general aviation activities, such as emergency response, air ambulance service, flight training, and personal flying. Most of the flying at basic airports is self-piloted for business and personal reasons using propeller-driven aircraft. They often fulfill their role with a single runway or helipad and minimal infrastructure.
Unclassified	Currently in the NPIAS but with limited activity.

Source: FAA NPIAS 2023-2027

1.2.2 STATE SYSTEM PLANNING

The *Nevada Airport and Heliport System Plan* (NAHSP) was prepared in 2022 and evaluates the State of Nevada's 48 public use airports. The purpose of the NAHSP is to provide an analysis of the state airport system components, including:

- Setting goals and performance measures
- Discussing state, regional, and local aviation issues
- Taking inventory of the system condition and performance
- Conducting and defining airport roles
- Developing system forecasts
- Evaluating system performance
- Identifying system needs
- Considering alternatives
- Recommending system changes

The report also reclassifies airports based upon the following state-recognized roles. Based on this classification system, VGT is considered to have a National role within the State of Nevada airport system. The state role of a National airport means VGT supports the national and state airport system by providing communities with access to national and international markets. North Las Vegas Airport and Henderson Executive Airport are the only two Nevada airports with this State Role Classification. State classifications for primary, national, and regional airports retain the FAA NPIAS classification, while basic, local, and non-NPIAS airports were defined by new state classifications as shown on **Table 1.5**. VGT, therefore, retains its NPIAS classification for the state system plan analysis and is classified as such due to the airport's support of business aviation operations that connect Las Vegas area corporations to national and international markets.

Table 1.5 | NAHSP Classification

NPIAS Classification	NAHSP Classification	Role Description	Number of Airports	Example
Primary	Retains Same NPIAS Classification	Commercial service airports with more than 10,000 passenger boardings each year. Primary airports are further grouped into four sub-categories (Large Hub, Medium Hub, Small Hub, and Nonhub) based on each airport's enplanement totals.	4	Harry Reid International Airport (LAS)
National	**Retains Same NPIAS Classification**	**Support the National Airport System by providing communities access to national and international markets in multiple states throughout the United States. National Airports have very high levels of aviation activity with many jets and multi-engine propeller aircraft.**	**2**	**North Las Vegas Airport (VGT)**
Regional	Retains Same NPIAS Classification	Support regional economies by connecting communities to regional and national markets. Generally, located in metropolitan areas and serve relatively large populations. Regional airports have high levels of activity with some jets and multi-engine propeller aircraft. The metropolitan areas in which regional airports are located can be Metropolitan Statistical Areas with an urban core population of at least 50,000 or Micropolitan Statistical Areas with a core urban population between 10,000 and 50,000.	3	Carson City Airport (CXP)
NPIAS Basic, Local, and Non-NPIAS	General	Multi-purpose public use GA facilities.	18	Jean Airport (07L)
	Access	Regularly utilized for a specific reason related to accessing the location, such as emergency, medical, or business (e.g., mining, casinos).	13	Searchlight Airport (1L3)
	Backcountry	Public use aviation facilities that are primarily rural and contribute to the state's aviation system. These airports may have limited users and are mostly used for recreation.	9	Calvada Meadows Airport (74P)
	Special Event	Privately owned airports that are temporarily used by the public for special events.	2	Dead Cow Lakebed Airstrip (High Sierra)

Source: NAHSP

1.2.3 REGIONAL SYSTEM PLANNING

At the regional level, VGT is included in the *Transform Clark County Master Plan,* which was adopted in November 2021. The master plan serves to identify the community's core values, goals, policies, and desired quality of life in the next 10 to 20 years. One of the master plan's goals is to support continued improvements and expansions of commercial airport operations in Clark County. This goes on to include statements regarding existing public use airports, as well as the goal to minimize encroachment on airport operations by restricting expansion of land use within the airport environs overlay that are incompatible due to noise, safety, and other concerns.

1.2.4 LOCAL SYSTEM PLANNING

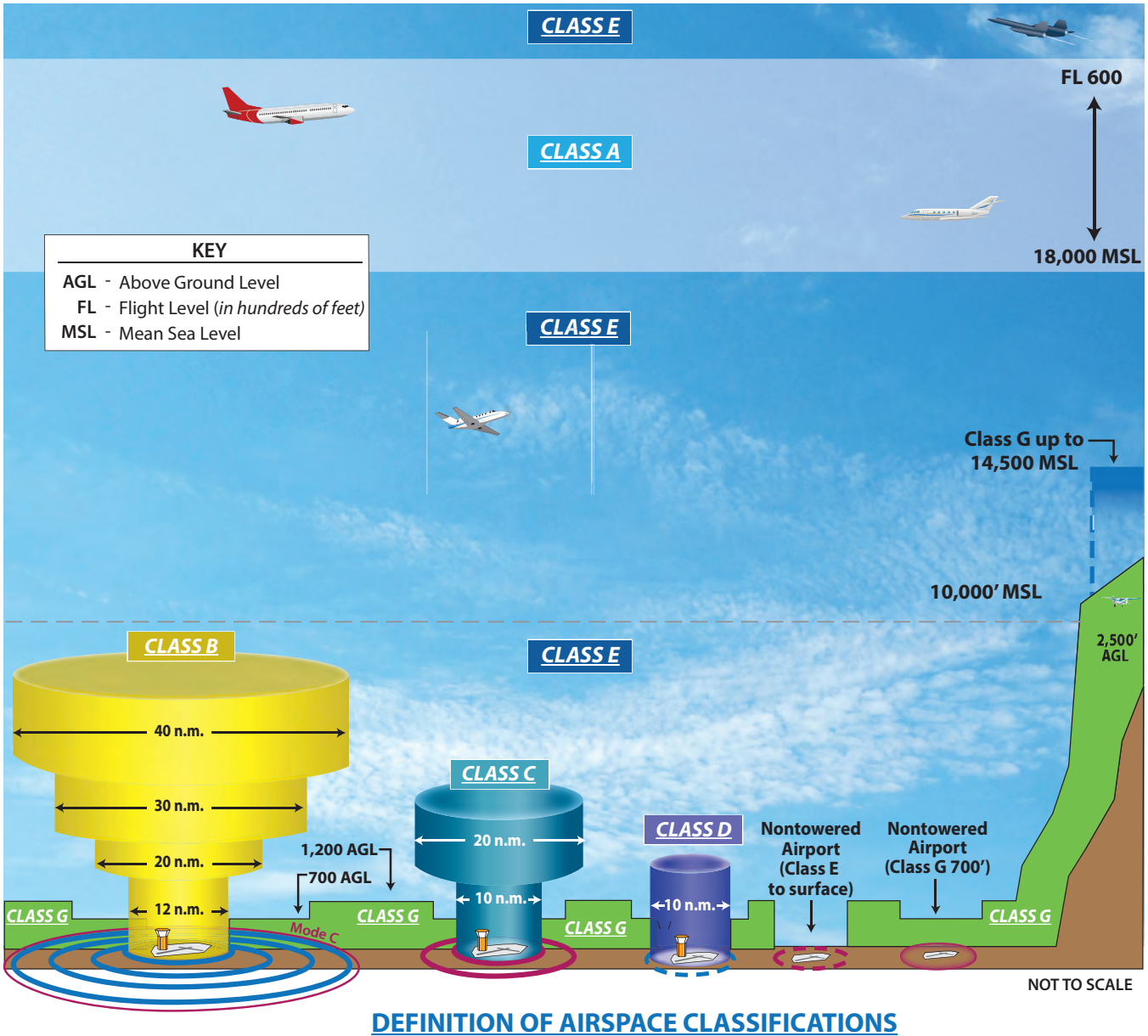
Local system planning at the North Las Vegas Airport includes airport planning documents such as airport layout plans (ALPs) and a runway incursion mitigation (RIM) study. The latest ALP was updated in 2020 and approved by the FAA. It included future development opportunities such as the relocation of taxiways to alleviate hot spots and improve geometry based on the RIM study recommendations. The RIM study was conducted from 2017-2020 to evaluate incidents and accidents as they relate to airport geometry and operations. The results of the study identified and analyzed five alternative airfield layouts that addressed the perceived risks and FAA-designated hot spots. The recommendations from the RIM study will be examined as part of the master plan study.

1.3 AIRSPACE STRUCTURE AND APPROACH CAPABILITIES

The *FAA Act of 1958* established the FAA as the responsible agency for the control and use of navigable airspace within the U.S. The FAA has established the National Airspace System (NAS) to protect persons and property on the ground, in addition to establishing a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; and personnel and material. The system also includes components shared jointly with the military.

1.3.1 AIRSPACE

Airspace within the U.S. is broadly classified as either “controlled” or “uncontrolled.” The difference between controlled and uncontrolled airspace relates primarily to requirements for pilot qualifications, ground-to-air communications, navigation and air traffic services, and weather conditions. Six classes of airspace have been designated in the U.S., as shown on **Figure 1.5**.



DEFINITION OF AIRSPACE CLASSIFICATIONS

CLASS A Think A - Altitude. Airspace above 18,000 feet MSL up to and including FL 600. Instrument Flight Rule (IFR) flights only, ADS-B 1090 ES transponder required, ATC clearance required.

CLASS B Think B - Busy. Multi-layered airspace from the surface up to 10,000 feet MSL surrounding the nation's busiest airports. ADS-B 1090 ES transponder required, ATC clearance required.

CLASS C Think C - Mode C. Mode C transponder required. ATC communication required. Generally airspace from the surface to 4,000 feet AGL surrounding towered airports with service by radar approach control.

CLASS D Think D - Dialogue. Pilot must establish dialogue with tower. Generally airspace from the surface to minimum 2,500 feet AGL surrounding towered airports.

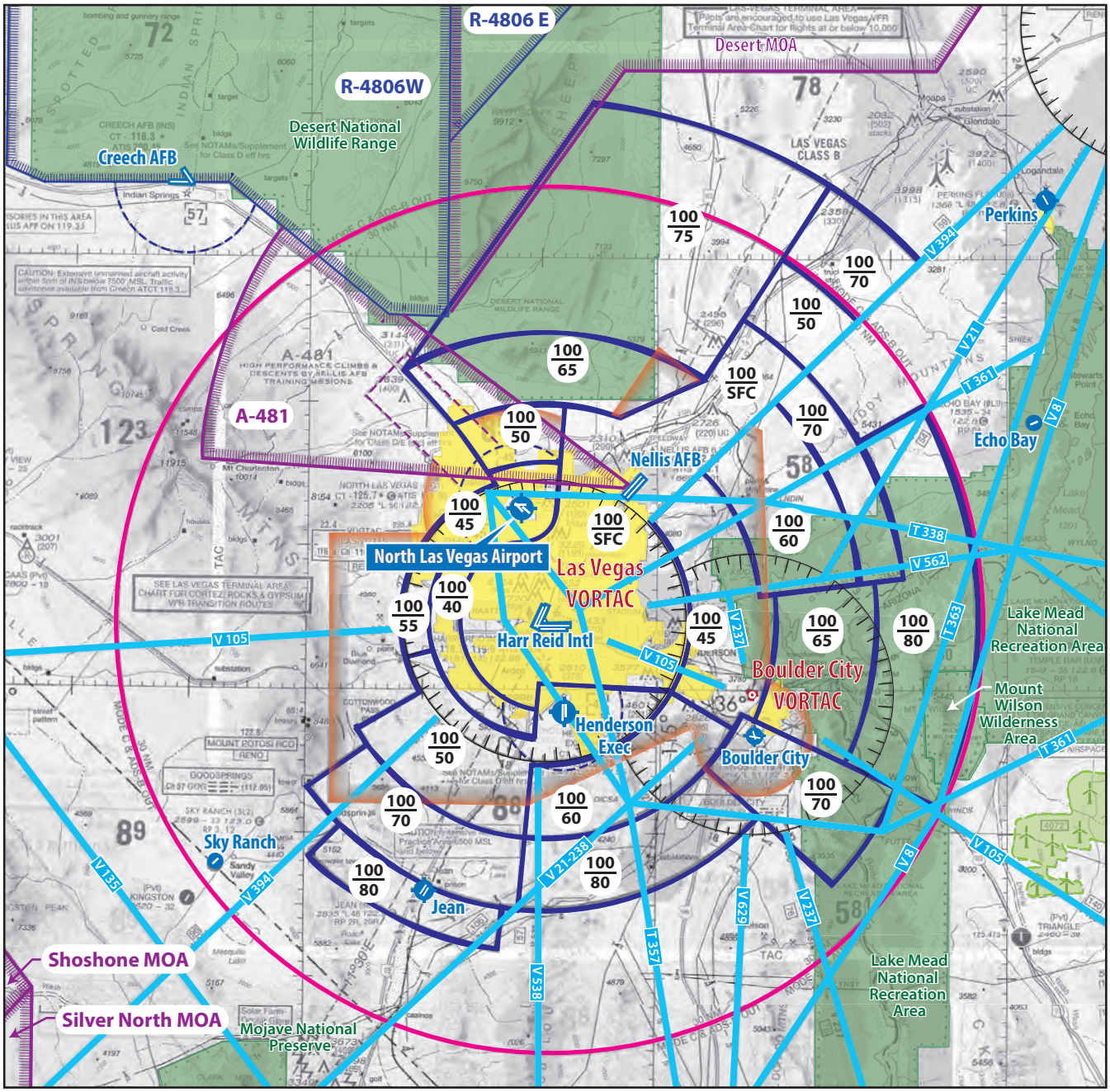
CLASS E Think E - Everywhere. Controlled airspace that is not designated as any other Class of airspace.

CLASS G Think G - Ground. Uncontrolled airspace. From surface to 1,200 feet AGL (in mountainous areas 2,500 feet AGL) Exceptions: near airports it lowers to 700 feet AGL; some airports have Class E to the surface. Visual Flight Rules (VFR) minimums apply.

Source: www.faa.gov/regulations_policies/handbooks_manuals/aviation/phak/media/15_phak_ch15.pdf

Figure 1.5
AIRSPACE CLASSIFICATION

Airspace designated as Class A, B, C, D, or E is considered controlled airspace. Aircraft operating within controlled airspace are subject to varying requirements for positive air traffic control (ATC). Airspace surrounding VGT is depicted on **Figure 1.6**.



LEGEND

- Airports with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- VORTAC
- Compass Rose
- Wilderness Area
- Populated Areas
- Wind Turbine Farm
- Mode C & ADSB
- Class B Airspace
- Class D Airspace
- Class E Airspace starting at 700' AGL
- Class E Airspace starting at the surface
- Victor Airways
- Alert Area and Military Operations Area
- Prohibited, Restricted, and Warning Areas
- 100/65 Class B Shelf Starting/Stopping Altitudes

Source: US Department of Commerce, National Oceanic and Atmospheric Administration; Las Vegas, December 29, 2022

1.3.1.1 Class A Airspace

Class A airspace includes all airspace from 18,000 feet mean sea level (MSL) to flight level (FL) 600 (approximately 60,000 MSL) over the contiguous 48 states and Alaska. This airspace is designated in Federal Aviation Regulation (FAR) Part 71.33 for positive control of aircraft. All aircraft must be on an IFR clearance to operate within Class A airspace.

1.3.1.2 Class B Airspace

Class B airspace has been designated around some of the country's major airports, such as Harry Reid International Airport (LAS), to separate all aircraft within a specified radius of the primary airport. Each Class B airspace is specifically tailored for its primary airport. All aircraft operating within Class B airspace must have ATC clearance. Certain minimum aircraft equipment and pilot certification requirements must also be met. This airspace is the most restrictive controlled airspace routinely encountered by pilots operating under VFR. VGT and its airspace are located under the LAS Class B shelf.

1.3.1.3 Class C Airspace

The FAA has established Class C airspace at approximately 120 airports around the country that have significant levels of IFR traffic. Class C airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance passenger-carrying aircraft at major airports. To fly inside Class C airspace, an aircraft must have a two-way radio, an encoding transponder, and have established communication with the ATC facility. Aircraft may fly below the floor of the Class C airspace or above the Class C airspace ceiling without establishing communication with ATC. There is no Class C airspace within the vicinity of the Las Vegas area.

1.3.1.4 Class D Airspace

Class D airspace is controlled airspace surrounding airports with an ATCT. The Class D airspace typically constitutes a cylinder with a horizontal radius of four or five nautical miles (nm) from the airport, extending from the surface up to a designated vertical limit, typically set approximately 2,500 feet above the airport elevation. As shown on **Figure 1.6**, VGT operates within Class D airspace, beginning at the surface and extending to, but not including, 4,500 feet MSL. Pilots planning to operate within Class D airspace are required to contact the VGT ATC prior to entering or departing VGT airspace and must remain in contact while within the controlled airspace. VGT Class D service is only available when the ATCT is attended 6:00 a.m. to 8:00 p.m. October through March and 6:00 a.m. to 9:00 p.m. April through September. At all other times, when the ATCT is closed, the airspace reverts to Class G.

1.3.1.5 Class E Airspace

Class E airspace consists of controlled airspace designed to contain IFR operations near an airport and while aircraft are transitioning between the airport and enroute environments. Class E airspace vertical dimensions may vary depending on how it is depicted on the sectional chart. Class E airspace may begin

at the surface, 700 feet above ground level (AGL), 1,200 feet AGL, or 14,500 feet MSL, and will typically continue up to 17,999 feet MSL or other overlying airspace. Only aircraft operating under IFR are required to be in contact with ATC when operating in Class E airspace. While aircraft conducting visual flights in Class E airspace are not required to be in radio contact with ATC facilities, visual flight can only be conducted if minimum visibility and cloud ceilings exist. Class E airspace starting from the surface is present northeast of the VGT airspace to control IFR arrivals and departures beyond the Class D boundary.

1.3.1.6 Class G Airspace

Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. ATC does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and the overlying Class E airspace (700 to 1,200 feet AGL).

While aircraft may technically operate within this Class G airspace without any contact with ATC, it is unlikely that many aircraft will operate this low to the ground. Furthermore, federal regulations specify minimum altitudes for flight. FAR Part 19.119, *Minimum Safe Altitudes*, generally states that except when necessary for takeoff or landing, pilots must not operate aircraft over any congested area of a city, town, or settlement, or over any open-air assembly of persons, at an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

Over less congested areas, pilots must maintain an altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure. Helicopters may be operated at less than the minimums prescribed above if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the FAA.

1.3.1.7 Victor Airways

For aircraft arriving or departing the regional area using very high frequency omnidirectional range (VOR) facilities, a system of Federal Airways referred to as Victor Airways has been established. Victor Airways are corridors of airspace eight miles wide that extend upward from 1,200 feet AGL to 18,000 feet MSL and extend between VOR navigational facilities. Victor Airways near VGT are identified on **Figure 1.6**. For aircraft enroute to or departing VGT, there are several Victor Airways available, converging at the Las Vegas VORTAC located nine nm south of the airport.

1.3.1.8 Military Operations Areas

Military Operations Areas (MOAs) are areas of airspace where military activities are conducted. The nearest MOA to VGT is the Desert MOA, which has a southern boundary that begins approximately 15 nm north of VGT. The Desert MOA is controlled by Nellis AFB Approach and Flight Services, with active military aircraft operating in the Desert MOA from 100 feet AGL to, but not including, 18,000 feet MSL. This MOA is operated from sunrise to sunset Monday through Saturday and other times as issued by notices to air missions (NOTAM).

1.3.1.9 Alert Areas

Alert areas are often associated with high concentrations of military aircraft performing training maneuvers. Military activities in these areas typically operate at lower altitudes and may occur any time of day or night. General aviation flights are not restricted within these areas, but pilots are strongly cautioned to be alert for high-speed military training aircraft.

Alert area A-481 is located two nm north of VGT. The area is associated with Nellis AFB and alerts of high-performance climbs and descents by Nellis AFB training missions. Per the Las Vegas VFR sectional chart, the alert area does not extend into the controlled B, D, and E airspace surrounding VGT.

1.3.1.10 Restricted Areas

There are six restricted areas to the northwest of VGT, including R-4806E, R-4806W, R-4808N, R-4807B, R-4807A, and R-4809. The restricted areas begin approximately 15 nm northwest of VGT and extend north and west an additional 120 miles. See **Table 1.6** for a summary of the restricted areas.

Table 1.6 | Restricted Airspace Summary

Number	Altitude	Time of Use	Controlling Agency
R-4806E	100 AGL to Unlimited	0500 – 2000 Mon-Sat	Nellis Range Con
R-4806W	Unlimited	Continuous	Nellis Range Con
R-4808N	Unlimited	Continuous	Nellis Range Con
R-4807B	Unlimited	Continuous	Nellis Range Con
R-4807A	Unlimited	0600 Mon – 1900 Fri	Nellis Range Con
R-4809	Unlimited	Continuous	Nellis Range Con

Source: FAA VFR Sectional Chart – Las Vegas

1.3.1.11 Airspace Control

The FAA has established 21 Air Route Traffic Control Centers (ARTCCs) throughout the continental United States to control aircraft operating under IFR within controlled airspace and while enroute. An ARTCC assigns specific routes and altitudes along Federal Airways to maintain separation and orderly traffic flow. The Los Angeles ARTCC controls IFR airspace enroute to and from VGT.

Flight Service Stations (FSS) are air traffic facilities that provide pilot briefings, flight plan processing, inflight radio communications, search and rescue (SAR) services, and assistance to lost aircraft and aircraft in emergency situations. FSSs also relay ATC clearances, process NOTAMs, broadcast aviation meteorological and aeronautical information, and notify Customs and Border Protection of trans-border flights. The Reno FSS is the nearest FSS facility to VGT.

1.3.1.12 Airport Traffic Control Tower (ATCT)

The VGT ATCT is an FAA-managed tower that operates 6:00 a.m. to 8:00 p.m. October through March and 6:00 a.m. to 9:00 p.m. April through September. The tower was constructed from 2000 to 2002 and is located on the east side of the airfield, accessed by Thunderbird Field Road. It is 85 feet to the top of the beacon and is considered in good condition.

While tower controllers have good visibility for the entirety of the aircraft movement area, some portions of the non-movement area have line-of-sight issues. According to the VGT *Runway Incursion Mitigation Study* (RIM Study) completed in May 2020, ATCT controllers face line-of-sight challenges due to the limited tower height. Controllers have inadequate sightlines of the northwest portion of the airfield which is co-located with three airport hotspots. During the late afternoon hours solar glare creates visual sight line issues to the northwest side of the airfield. Additionally, controllers have difficulty in identifying aircraft on final approach from the northwest, especially during poor meteorological conditions.

Airport Traffic Control Tower

The most common arrival and departure runways are the parallel runways 12R-30L (primary runway) and 12L-30R. The majority of traffic at VGT is VFR and therefore receive suggested heading north/northwest when departing in order to keep aircraft clear of the Las Vegas Class B airspace.

1.3.2 PROCEDURES AND INSTRUMENT APPROACHES

Flight procedures are a set of predetermined aircraft guidance maneuvers established by the FAA, using electronic or visual navigational aids that assist pilots in locating and landing at or departing from an airport. VGT has instrument approach procedures, departure procedures, and standard terminal arrivals (STARs).

1.3.2.1 Instrument Approach Procedures

Instrument approach procedures assist pilots in locating and landing at an airport during low visibility and cloud ceiling conditions. They are defined as either precision, approach with vertical guidance (APV), or non-precision. Precision instrument approach aids provide an exact course alignment and vertical descent path for an aircraft on final approach to a runway with height above threshold (HAT) lower than 250 feet and visibility lower than ¾ mile. APVs also provide course alignment and vertical descent path guidance but have HATs of 250 feet or more and visibility minimums of ¾ mile or greater. Non-precision instrument approach aids provide only course alignment information with no vertical component.

Instrument approach procedure capabilities are defined by visibility and cloud ceiling minimums. Visibility minimums define the horizontal distance a pilot must be able to see to complete the approach, while cloud ceilings define the lowest level a cloud layer (defined in feet above ground) can be situated for the pilot to complete the approach. If the observed visibility or cloud ceilings are below the minimums prescribed for the approach, the pilot cannot complete the instrument approach.

There are currently two published instrument approach procedures at VGT. Runway 12L has an ILS/LOC approach and Runway 12R has an RNAV (GPS) approach. See **Table 1.7** for instrument approach details.

Table 1.7 | Instrument Approach Procedures

	Approach Minimums by Aircraft Approach Category							
	Category A		Category B		Category C		Category D	
	DA	VIS	DA	VIS	DA	VIS	DA	VIS
ILS or LOC Runway 12L								
S-ILS 12L	2456	1[a]	2456	1[a]	N/A		N/A	
S-LOC 12L	2620	1	2620	1	N/A		N/A	
Sidestep 12R	2720	1-3/8	2720	1-3/8	N/A		N/A	
Circling	2720	1	2720	1	N/A		N/A	
RNAV (GPS) Runway 12R								
LP MDA	2620	1	2620	1	2620	1-1/8	2620	1-1/8
LNAV MDA	2820	1	2820	1	2820	1-3/4	2820	1-3/4
Sidestep 12L	2820	1	2820	1	2820	1-3/4	2820	2
Circling	2820	1	2820	1	2840	1-3/4	3540	3

Notes: [a] The S-ILS 12L approach has published minimums of 7/8-miles; however, the airport and the FAA have agreed that the minimums should be raised to 1-mile. The airport will be issuing a notice to airmen (NOTAM) in the interim until new approach plates with the correct 1-mile minimums are published.

Source: FAA Approach Plates

1.3.2.2 Arrival and Departure Procedures

Due to heavily used airspace as well as terrain obstacles in the vicinity of the Las Vegas metropolitan area, the FAA has established a series of standard terminal arrival (STAR) and departure procedures. A STAR is a preplanned ATC arrival procedure designed to provide for the transition from the enroute phase of the flight to an outer fix or an instrument approach fix in the terminal area. The three published STARs are FLCHR One (RNAV), NTNDO One (RNAV), and WYLND One (RNAV).

Departure procedures are preplanned instrument procedures that provide obstruction clearance from the terminal area to the appropriate enroute structure. These procedures can either provide obstacle clearance protection information to pilots through obstacle departure procedures (ODPs) or increase airspace efficiency and reduce communications and departure delays through standard instrument departures (SIDs). There are two departure procedures published for VGT. Northtown Five is a SID and Boulder City One is an ODP. Northtown Five is the most commonly issued instrument departure, which departs traffic to the west before intercepting a radial from the Las Vegas VOR.

1.3.2.3 VFR Transition Routes

Three VFR transition routes have been established to provide safe passages and standards for arriving and departing VFR traffic at VGT. The Rocks Route, Cortez Route, and Gypsum Route establish procedures including VFR waypoints, altitudes, and frequencies required for the appropriate clearances and separation from congested commercial and military traffic in the Las Vegas area. The Rocks Route provides arrival and departure information and guidance for the west side of the LAS Class B airspace, the Cortez Route provides arrival information and guidance for aircraft arriving from the east, and the Gypsum Route provides information and guidance for air traffic departing from VGT to the east and for air traffic arriving from the east and transitioning to the west. These VFR transition routes are depicted and described on the LAS terminal area chart.

1.4 AIRSIDE FACILITIES

Airport facilities can be functionally classified into two categories: airside and landside. The airside category includes those facilities directly associated with aircraft operations, such as taxi, takeoff, and landing operations. The landside category includes those facilities that are located outside the airport operations area (AOA) fence and support aircraft servicing, storage, maintenance, and operational safety. This section describes the airside facilities, including runways, taxiways, lighting, marking, navigational aids, and weather reporting. Airside facilities are depicted and detailed on **Figure 1.7**.

Runway Data Table

	Runway 12R-30L		Runway 12L-30R		Runway 7-25	
Runway Feature	**12R End**	**30L End**	**12L End**	**30R End**	**7 End**	**25 End**
Length (feet)	5,000'		4,199'		5,005'	
Width (feet)	75'		75'		75'	
Runway End Elevation (MSL)	2,205.0'	2,163.0'	2,188.6'	2,145.1'	2,204.2'	2,172.5'
Gradient	-0.8%	+0.8%	-1.0%	+1.0%	-0.6%	+0.6%
Magnetic Heading	120	300	120	300	074	254
True Heading	134	314	134	314	088	268
Runway Design Code (RDC)	B-II-5000	B-II-VIS	B-II-4000	B-II-VIS	B-II-VIS	B-II-VIS
Pavement Surface Material	Asphalt		Asphalt		Asphalt	
Pavement Condtion	Good		Good		Good	
Pavement Markings	Non-Precision	Non-Precision	Precision	Basic	Basic	Basic
Pavement Marking Conditions	Good	Good	Good	Good	Good	Good
Traffic Pattern Direction	Left	Left	Left	Left	Left	Left
Pavement Load Bearing Strength						
Single Wheel Loading (S)	30,000 lbs		30,000 lbs		30,000 lbs	
Pavement Classification Number (PCN)	48/F/C/X/T		15/F/C/X/T		58/F/C/X/T	
Visual and Instrument Approach Aids						
Visual Slope Indicator	PAPI-4 on left	PAPI-4 on left	PAPI-4 on left	PAPI-4 on left	PAPI-4 on left	PAPI-4 on left
Visual Glide Angle	3.00 Degrees	3.00 Degrees	3.20 Degrees	3.00 Degrees	3.00 Degrees	3.00 Degrees
Approach Lighting	None	None	None	None	None	None
Edge Lighting	MIRL		MIRL		MIRL	
Runway End Identifier Lights (REILs)	Yes	Yes	Yes	Yes	Yes	Yes
Instrument Approach Aids	RNAV (GPS)	None	ILS/DME	None	None	None

LEGEND

- Airport Property Line
- A — Taxiway Designation

KEY

- **ASOS** - Automated Surface Observation System
- **ATCT** - Airport Traffic Control Tower
- **ILS** - Instrument Landing System
- **PAPI** - Precision Approach Path Indicator
- **REILs** - Runway End Identifier Lights

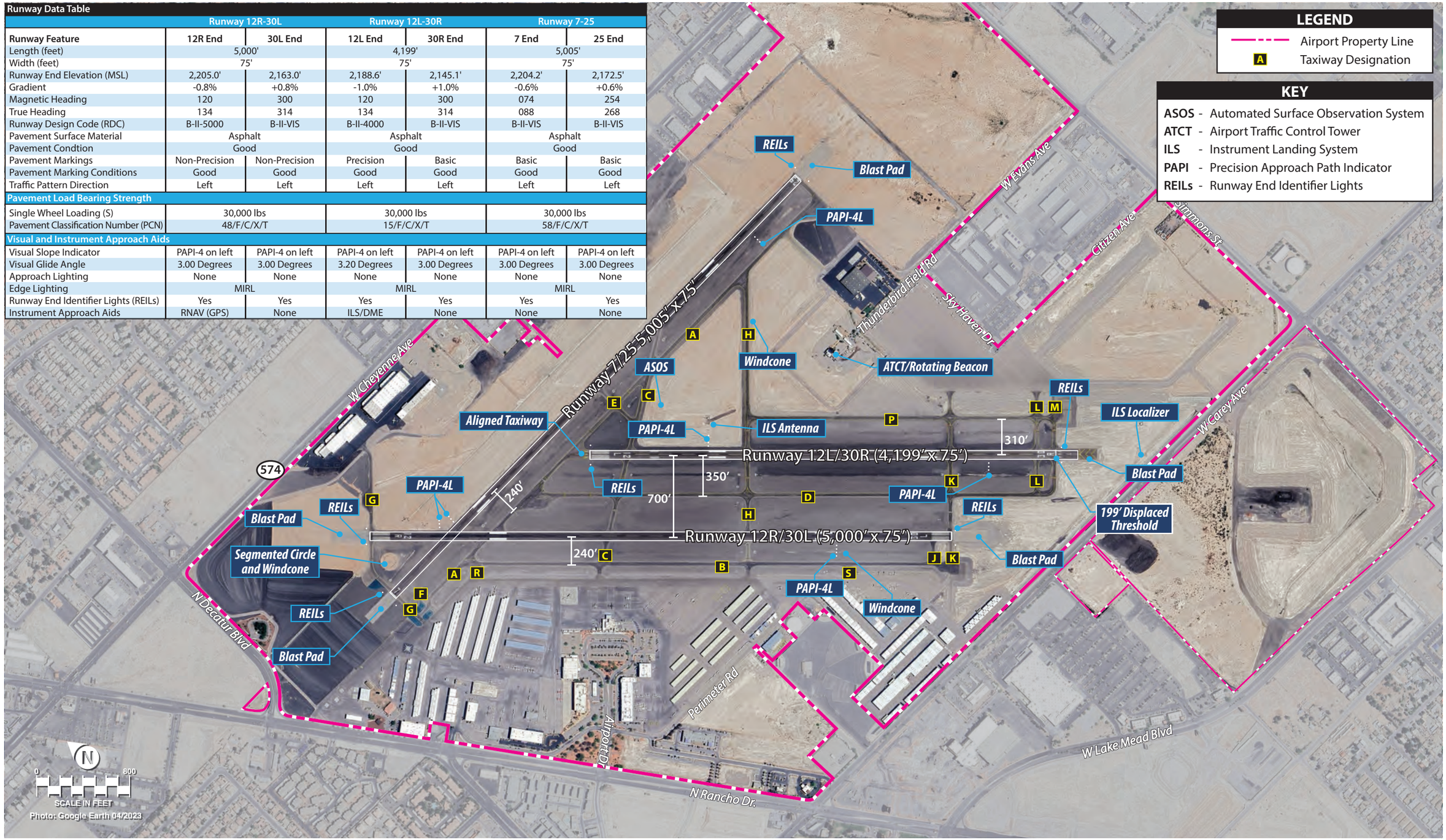


Figure 1.7
EXISTING AIRSIDE FACILITIES

This page intentionally left blank

1.4.1 AIRPORT DESIGN STANDARDS

Airport design standards are contained within FAA Advisory Circular (AC) 150/5300-13B, *Airport Design*. The standards relate to various airport infrastructure and their functions and cover a wide range of size and performance characteristics of aircraft that are anticipated to use an airport. One of the most important aspects of AC 150/5300-13B, is the consideration of an airport's critical aircraft and Airport Reference Code (ARC). As defined by FAA, the critical aircraft is the most demanding aircraft that conducts at least 500 operations per year at the airport. This may be one aircraft, or a combination of multiple aircraft, which presents the most demand on the airport in terms of operational and physical characteristics.

The ARC is used to relate airport design criteria to the operational and physical characteristics of the aircraft types that will operate at the airport. The ARC is comprised of two components: 1) the aircraft approach category (AAC), which is designated with a capital letter (A through E) and is based on operational characteristics; and 2) the airplane design group (ADG), which is designated by a Roman numeral (I through VI) and is based on an aircraft's wingspan and tail height (physical characteristics). AAC and ADG are detailed in **Tables 1.8** and **1.9**.

The 2020 Airport Layout Plan for VGT assigned an ARC of B-II to the airport, with the King Air 350 identified as the critical aircraft for each runway. The ARC and critical aircraft will be reevaluated as part of the aviation forecasts in the next chapter of the Airport Master Plan.

Table 1.8 | Aircraft Approach Category

APPROACH CATEGORY	
A	< 91 knots
B	91 - <121 knots
C	121 - <141 knots
D	141 - <166 knots
E	166 knots or more

Table 1.9 | Airplane Design Group

AIRPLANE DESIGN GROUP		
Group #	Tail Height	Wingspan
I	<20'	< 49'
II	20' - <30'	49' - <79'
III	30' - <45'	79' - <118'
IV	45' - <60'	118' - <171'
V	60' - <66'	171' - <214'
VI	66' - <80'	214' - <262'

1.4.2 RUNWAYS

VGT has three runways: two parallel (12R-30L and 12L-30R) and one crosswind (7-25). All three runways are constructed from asphalt and are reported to be in good pavement condition. The parallel runways are separated by 700 feet from centerline to centerline, which is the minimum separation distance required for simultaneous independent VFR landings and takeoffs.

1.4.2.1 Runway 12R-30L

Runway 12R-30L is a parallel runway and is the closest runway to the terminal and primary GA aprons. This runway is oriented northwest-southeast and is 5,000 feet long and 75 feet wide, with blast pads on each end measuring 95 feet wide and 300 feet long. This runway features non-precision pavement markings in excellent condition, which include markings for the runway threshold, aiming point, landing designation, centerline, and pavement edge. Runway lighting features medium intensity runway lights (MIRL) and runway end identifier lights (REILs) for both ends. Visual approach guidance includes a four-light precision approach path indicator (PAPI) on the left side for each runway direction.

Runway 30L (Source: Google Earth)

Runway 30R (Source: Google Earth)

1.4.2.2 Runway 12L-30R

Runway 12L-30R is the primary runway, located farther northeast on the airfield. 12L-30R is VGT's only precision runway and features an instrument landing system (ILS)/distance measuring equipment (DME) instrument approach aid for the 12L end. This runway is 4,199 feet long and 75 feet wide, the shortest runway of the three. This runway has a 199-foot-long displaced threshold on the 30R end as well as a 95-foot-wide and 152-foot-long blast pad. The 12L end has an aligned taxiway runway entrance. As the only precision runway, the 12L end features precision pavement markings in excellent condition, which include markings for the runway threshold, aiming point, landing designation, centerline, pavement edge, and touchdown zone. The 30R end features basic pavement markings. Runway lighting features MIRLs and REILs for both ends. Visual approach guidance includes a four-light PAPI on the left side for each runway direction.

1.4.2.3 Runway 7-25

Runway 7-25 is VGT's crosswind runway, which is located on the north part of the airfield and intersects Runway 12R-30L at the 7/12R ends. This runway is 5,005 feet long and 75 feet wide and has blast pads on each runway end measuring 95 feet wide and 300 feet long. It features basic pavement markings for both runway ends, including markings for the landing designation, centerline, and pavement edge. Runway lighting features MIRL and REILs for both ends. Visual approach guidance includes a four-light PAPI on the left side for each runway direction.

1.4.2.4 Runway Declared Distance Information

Declared distance information is how the FAA defines distances for different types of aircraft operations on a runway. Understanding how physical runway elements at an airport affect these distances is critical to creating airfield geometry that supports the safe operation of aircraft. There are four operations for which declared distances are defined:

- *Takeoff Run Available (TORA)* – the length of the runway suitable for the ground run of an aircraft taking off plus the length of a displaced threshold, if present
- *Takeoff Distance Available (TODA)* – the length of TORA plus the length of a clearway, if present
- *Accelerate-Stop Distance Available (ASDA)* – the length of the runway plus the length of a stopway, if present, for the acceleration and deceleration of an aircraft aborting a takeoff
- *Landing Distance Available (LDA)* – the length of the runway declared available for the ground run of a landing aircraft

Some runways may have different physical elements on opposite sides of the same runway, so the declared distances are specific to the runway end in which they are defined. For example, the LDA for Runway 30R is different than the LDA for Runway 12L, even though they are the same span of pavement (12L-30R). The physical runway elements that affect declared distances include stopways, clearways, and displaced thresholds. VGT does not have stopways or clearways, but it does have a displaced threshold. Declared distances are summarized in **Table 1.10**.

Table 1.10 | North Las Vegas Airport Declared Distances

Declared Distance	Runway 12R-30L		Runway 12L-30R		Runway 7-25	
	12R	30L	12L	30R	7	25
Takeoff Run Available (TORA)	5,000	5,000	4,199	4,199	5,005	5,005
Takeoff Distance Available (TODA)	5,000	5,000	4,199	4,199	5,005	5,005
Accelerate-Stop Distance Available (ASDA)	5,000	5,000	4,199	4,199	5,005	5,005
Landing Distance Available (LDA)	5,000	5,000	4,199	4,000	5,005	5,005
All measurements are in feet.						

Source: FAA Airport Master Record Form 5010

1.4.2.5 Dimensional Criteria

The following dimensional criteria are established in FAA AC 150/5300-13B. The required dimensions for VGT are provided in **Table 1.11**.

Table 1.11 | Existing Runway Characteristics (2020 ALP)

	Runway 12R-30L		Runway 12L-30R		Runway 7-25	
Runway Component	**12R**	**30L**	**12L**	**30R**	**7**	**25**
Runway Length	5,000'		4,199'		5,005'	
Runway Width	75'		75'		75'	
Aircraft Approach Category (AAC)	C		B		B	
Airplane Design Group (ADG)	II		II		II	
Runway Visual Range (RVR)	5000		5000		Visual	
Runway Design Code (RDC)	C-II-5000		B-II-5000		B-II-VIS	
Critical Aircraft	Challenger 300		King Air 350		King Air 350	
Pavement Type	Asphalt		Asphalt		Asphalt	
Pavement Markings	Nonprecision	Nonprecision	Precision	Basic	Basic	Basic
Edge Lights	MIRL		MIRL		MIRL	
Declared Distances	See Table 1.10		See Table 1.10		See Table 1.10	
Displaced Threshold	No	No	No	199’	No	No
Runway End Elevation (MSL)	2,205.0'	2,163.0'	2,188.6'	2,145.1'	2,204.2'	2,172.5'
Approach Lighting	No	No	No	No	No	No
Runway End Identifier Lights (REILs)	Yes	Yes	Yes	Yes	Yes	Yes
Visual Approach Aids	PAPI-4	PAPI-4	PAPI-4	PAPI-4	PAPI-4	PAPI-4
Runway Shoulder Width	10'	10'	10'	10'	10'	10'
Runway Blast Pad Width	95'	95'	N/A	95'	95'	95'
Runway Blast Pad Length	300'	300'	N/A	152'	300'	300'
Runway Centerline to Holding Position Distance	200'		200'		200'	
RSA Width	500'		150'		150'	
RSA Length Beyond Runway End	1,000'		300'		300'	
ROFA Area Width	800'		500'		500'	
ROFA Length Beyond Runway End	1,000'		300'		300'	
OFZ Width	400'		400'		400'	
OFZ Length Beyond Runway End	200'		200'		200'	
RPZ Length	1,700'	1,700'	1,000'	1,000'	1,000'	1,000'
RPZ Inner Width	500'	500'	500'	500'	500'	500'
RPZ Outer Width	1,010'	1,010'	700'	700'	700'	700'

Source: VGT ALP (2020) updated to reflect current runway design code for Runway 12R-30L.

Runway Safety Area (RSA)

The RSA is a surface surrounding a runway identified to reduce the risk of damage to an aircraft in the event of an undershot, overshot, or excursion from the runway. The RSA must be cleared and graded and have no hazardous surface variations and free of objects, except for objects needed for air navigation or aircraft ground maneuvering. The FAA does not permit modifications to the standards of an RSA.

Runway Object Free Area (ROFA)

The ROFA is an area centered and surrounding the runway that precludes parked airplanes and objects, except those needed for air navigation. The ROFA clearing standard requires clearance of above ground objects protruding above the nearest point of the RSA. It is acceptable for objects that need to be located in the ROFA for air navigation or aircraft ground maneuvering purposes to protrude above the nearest point of the RSA, and to taxi and hold aircraft in the ROFA. Objects nonessential for air navigation or aircraft ground maneuvering purposes must not be placed in the ROFA.

Obstacle Free Zone (OFZ)

An OFZ is a three-dimensional volume of airspace along the runway and extended runway centerline that provides clearance protection for arriving and departing aircraft. The OFZ is required to be free of all penetrations, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function. An additional OFZ component is its height, which is the airspace above the surface whose elevation at any point is the same as the elevation of the nearest point on the runway centerline.

Runway Protection Zone (RPZ)

The RPZs function is to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape and centered on the extended runway centerline. There are both approach and departure RPZs applicable to each runway end and their location is dependent upon landing and takeoff distances. In the case of VGT, both the approach and departure RPZs are located with respect to the physical runway ends for all runway ends except for Runway 30R, which has a displaced threshold. The approach RPZ dimension for a particular runway end is a function of the type of aircraft and approach visibility minimums associated with that runway end.

Due to a recent change in design standard for Runway 12R-30L, the RSA and ROFA associated with this runway extend beyond airport property and include incompatibilities (West Cheyenne Avenue, perimeter road/fencing to the north, West Carey Avenue and perimeter road/fencing to the south, and Taxiway B). The existing RSA and ROFA associated with Runways 12L-30R and 7-25 are fully contained on airport property. The RPZs associated with Runways 12R, 30L, 30R, and 7 extend beyond the airport's boundary and encompass public roadways, and in the case of the 12R RPZs, commercial structures. Refer to **Figure 1.8** for an illustration of these surfaces. A full analysis of required dimensional standards associated with the existing and future ARC will be performed as part of the Facility Requirements of this Airport Master Plan Update.

This page intentionally left blank

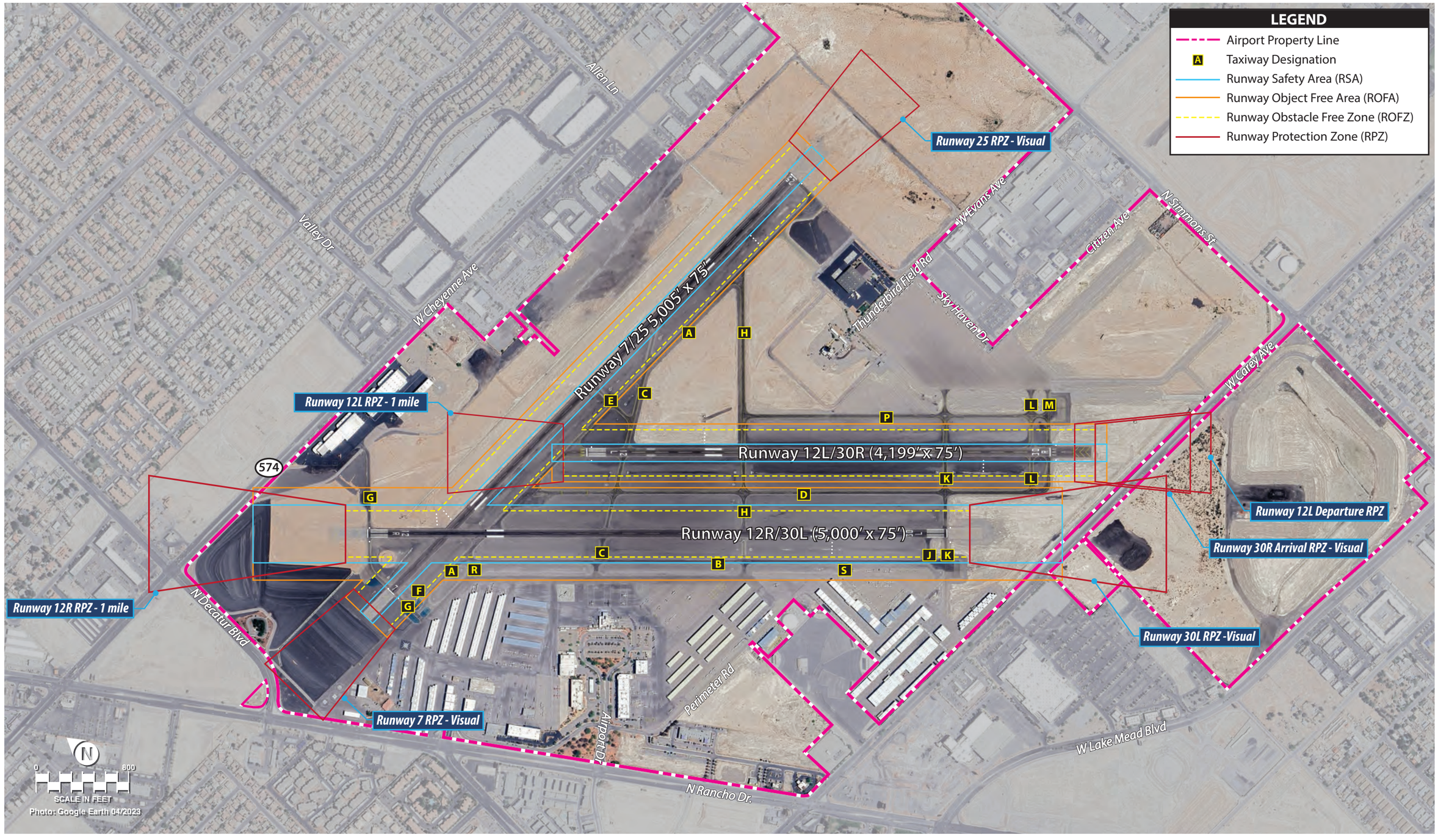


Figure 1.8
EXISTING SAFETY AREAS

This page intentionally left blank

1.4.3 TAXIWAYS

The taxiway network at VGT (shown on **Figure 1.7**) consists of parallel, connecting, access, and entrance/exit taxiways. All taxiways are paved with asphalt and have a width of 35 feet. The taxiways are marked with centerline and edge markings outlined in black paint to enhance the conspicuity of the markings. The primary taxiways – A, B, and D – are all parallel taxiways serving movements for arriving and departing aircraft. All taxiways have medium intensity blue edge lights (MITL) for enhanced visibility at night or during reduced visibility conditions. **Table 1.12** provides additional information for each taxiway at VGT.

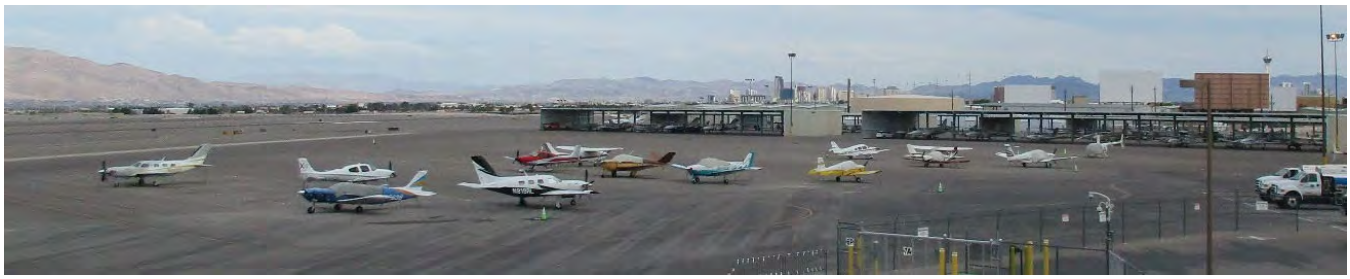
Table 1.12 | Taxiway Data Table

Designation	Width (feet)	Description
A	35	Parallel taxiway to Runway 7-25
B	35	Parallel taxiway to Runway 12R-30L
C	35	Connector and high-speed exit between Runway 7-25 and terminal apron
D	35	Parallel taxiway between Runways 12R-30L and 12L-30R
E	35	Exit/connector between Taxiway C and Runway 7-25
F	35	Entrance/connector between Taxiway A and Runway 7-25
G	35	Entrance/connector to Runway 7 and Runway 12R; connector to Cheyenne Air Center apron
H	35	Connector taxiway between Shaded Hangar Units and Taxiway A
J	35	Connector from Taxiway B to Runway 12R-30L
K	35	Entrance/connector from Taxiway B to Runway 30L, Runway 12L-30R, and the Outback Hangars
L	35	Connector taxiway between Taxiways D and P; entrance to Runway 12L-30R
M	35	Connector taxiway between Taxiway P and the east transient apron
P	35	Parallel taxiway to Runway 12L-30R
R	60	Connector taxiway from portable T-hangars to Taxiways A and B
S	40	Connector taxiway from the Skid Row Hangars to Taxiway B
W	35	Connector taxiway from the LVMPD Hangar to Taxiway A

Source: FAA Airport Diagram

1.4.4 APRON AREAS

Aircraft aprons are large pavement areas typically situated between hangars and taxiways. Aprons provide aircraft ample space to maneuver, park, and load and unload passengers without interfering with active taxiing operations. An apron area is not controlled by the ATCT and is considered a non-movement area, meaning aircraft can freely taxi on the apron pavement without the pilot needing authorization from the ATCT. VGT has approximately 4.4 million sf of apron pavement for public and tenant use. Aprons also house aircraft tie-downs, which are generally more economical options to store aircraft rather than renting enclosed hangar space. VGT features 238 open tie-downs that are leased month to month.



Terminal Apron – Itinerant Aircraft Parking

1.4.4.1 Helipads

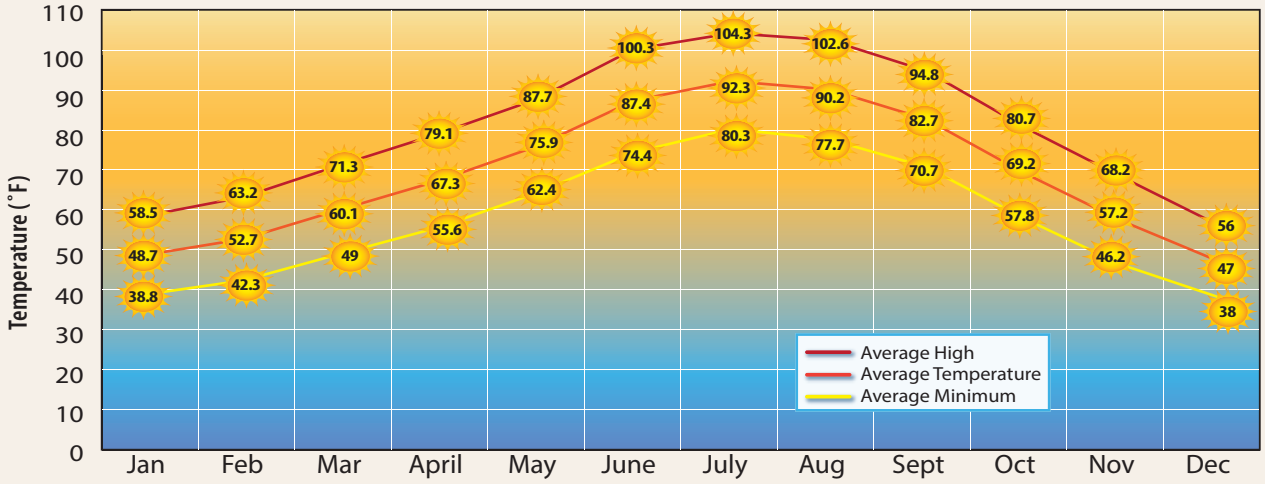
VGT experiences significant helicopter activity, both recreational and for essential services including activities associated with air ambulance operators, the LVMPD, and the Bureau of Land Management. In terms of recreational helicopter operations, the Las Vegas area is very popular for aerial tours. With numerous helicopter air tour operators based at VGT, there are multiple helicopter landing pads. VGT has 18 helipads on the main GA apron and three helipads on the Cheyenne apron. All of the helipads have asphalt pavement except for five concrete helipads near the inter-agency hangars.

1.4.5 METEOROLOGICAL CONDITIONS

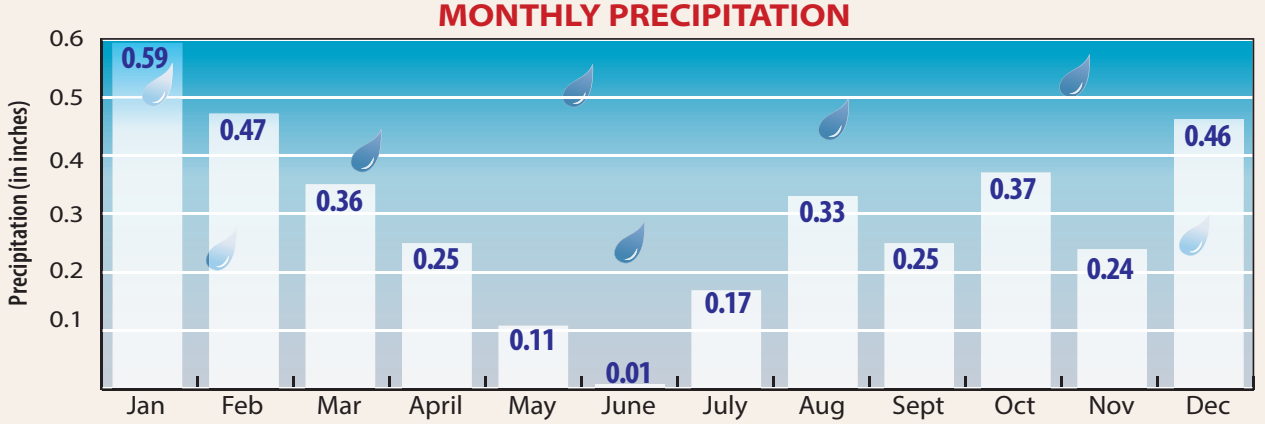
Knowledge of climate and weather conditions is important to the planning and development of an airport. Elements such as temperature, wind speed, and direction directly influence the geometric dimensions and layouts of runways at an airport. Temperature is an essential factor in determining runway length requirements, while wind direction and speed are used to determine optimum runway orientation. The need for navigational aids and lighting is determined by the percentage of time that visibility is impaired due to cloud coverage or other conditions.

The Las Vegas area climate is described as a hot desert climate which features usually hot, and sometimes exceptionally hot, periods of the year. Weather data shown in **Figure 1.9** is provided by the National Oceanic and Atmospheric Administration (NOAA) via the on-airport automatic surface observing system (ASOS). Precipitation occurs in small amounts, averaging only four inches annually, which is significantly less than the U.S. average of 30 inches of annual precipitation. December through March are the wettest parts of the year with monthly average precipitation amounts between 0.36 and 0.59 inches. The annual average temperature is around 69 degrees, with the hottest monthly average maximum temperature of 104.3 degrees occurring in July and an average monthly minimum temperature of 38 degrees occurring in December.

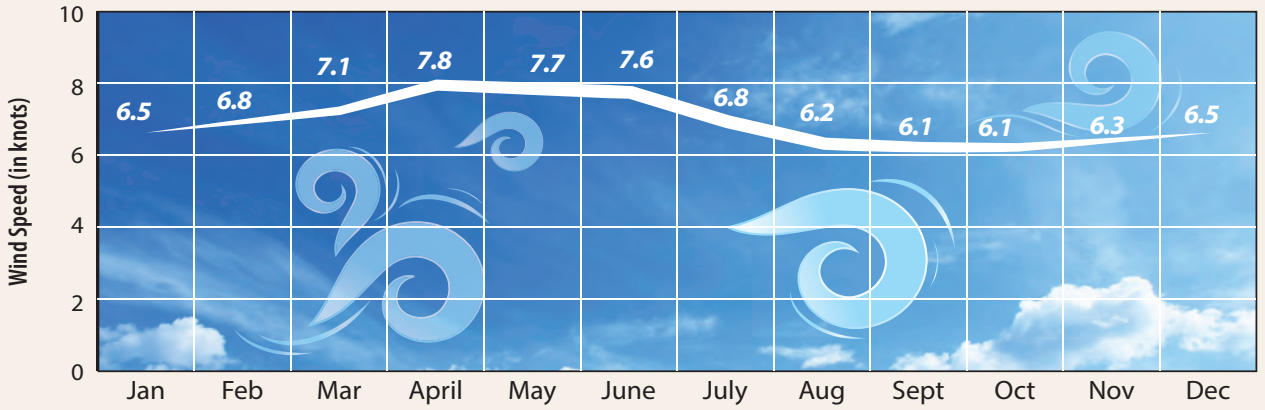
MONTHLY TEMPERATURES



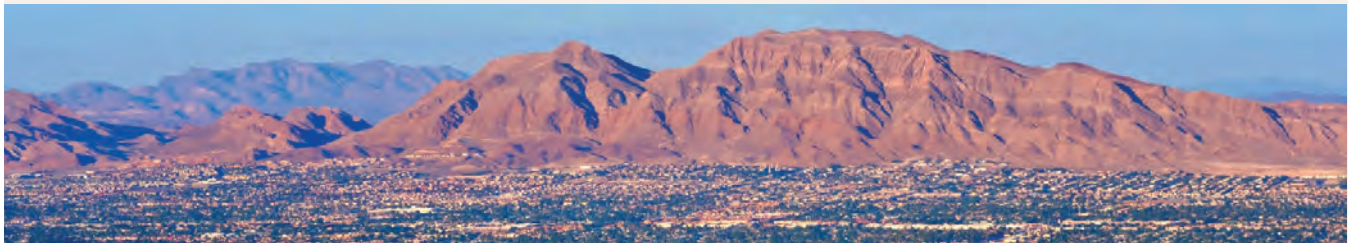
MONTHLY PRECIPITATION



AVERAGE WIND SPEED BY MONTH



Source: Las Vegas Air Terminal, GHCND: USW00053123, NOAA 2006-2020



1.4.5.1 Weather Conditions

Pilots are required to gather all available weather information prior to conducting a flight under IFR or a flight not in the vicinity of an airport. This means pilots arriving at or departing from VGT typically gather local weather information provided by the weather reporting station located at the airport. On-airport weather reporting stations provide pilots with the best available weather information for the terminal area they represent. At VGT, this information is provided by an Automated Surface Observation System (ASOS) and a Limited Aviation Weather Reporting System (LAWRS) and is communicated by an Automatic Terminal Information System (ATIS) broadcast. The ASOS equipment is co-located with the Runway 12L ILS antenna and PAPI equipment on the left side of the Runway 12L aiming point markings. Other weather and communication facilities located on the airport include a segmented circle and lighted wind cone. These facilities are located between the Runway 12R, Runway 7, and Taxiway G island.

ASOS Equipment

Table 1.13 indicates that visual meteorological conditions (VMC) occur 99.85 percent of the time. When under VMC conditions, pilots can operate using visual flight rules (VFR) and are responsible for maintaining proper separation from objects and other aircraft. Instrument meteorological conditions (IMC) account for all weather conditions less than VMC conditions that still allow for aircraft to safely operate under instrument flight rules (IFR). Under IFR, pilots rely on instruments in the aircraft to accomplish navigation. Less than IMC, or poor visibility conditions (PVC), are weather conditions that are lower than instrument approach minimums, making the airport inaccessible to most air traffic. IMC and PVC conditions combined occur well under one percent of the time annually at the airport.

Table 1.13 | Weather Observations Breakdown

Type	Duration (minutes)	Percentage
IFR	6,387	0.12%
PVC	1,394	0.03%
VFR	5,249,353	99.85%
Total	5,257,134	100.00%

Source: North Las Vegas Air Terminal Weather Observations 1/1/13 - 12/31/22. Site: 72484653123

1.4.5.2 Traffic Flow

Local operating procedures at VGT consist of standard traffic pattern procedures for arriving, departing, and local traffic as well as procedures for the Las Vegas Class B airspace assisting VFR arrivals and departures utilizing VGT. The most common arrival and departure runways are the parallel Runways 12R-30L and 12L-30R. Most of the traffic at VGT is VFR and therefore receive suggested heading west/northwest when departing VGT in order to keep aircraft clear of the Las Vegas Class B airspace. About 90 percent of traffic pattern operations are conducted on Runway 12L-30R, which is considered the “inboard” runway and is the closer of the two parallel runways to the tower. Pattern operations make up approximately one third of all operations at VGT due to the high concentration of flight schools.

Jet aircraft are estimated to utilize Runway 12R-30L 85 percent of the time, Runway 7-25 10 percent of the time, and Runway 12L-30R 5 percent of the time. Turboprop aircraft are estimated to use Runway 12R-30L 70 percent of the time, Runway 12L-30R 20 percent of the time, and Runway 7-25 10 percent of the time. Single engine piston aircraft are estimated to use Runway 12R-30L 45 percent of the time, Runway 12L-30R 45 percent of the time, and Runway 7-25 10 percent of the time.

Due to the congested traffic surrounding Harry Reid International Airport (LAS), the FAA published additional charts and procedures to safely separate VFR traffic transiting through or near the LAS Class B airspace enroute to VGT. The published material includes a terminal area chart (TAC) for the Las Vegas area, a VFR Flyway Planning Chart, and three VFR transition routes to and from VGT.

1.4.5.3 Crosswind Coverage

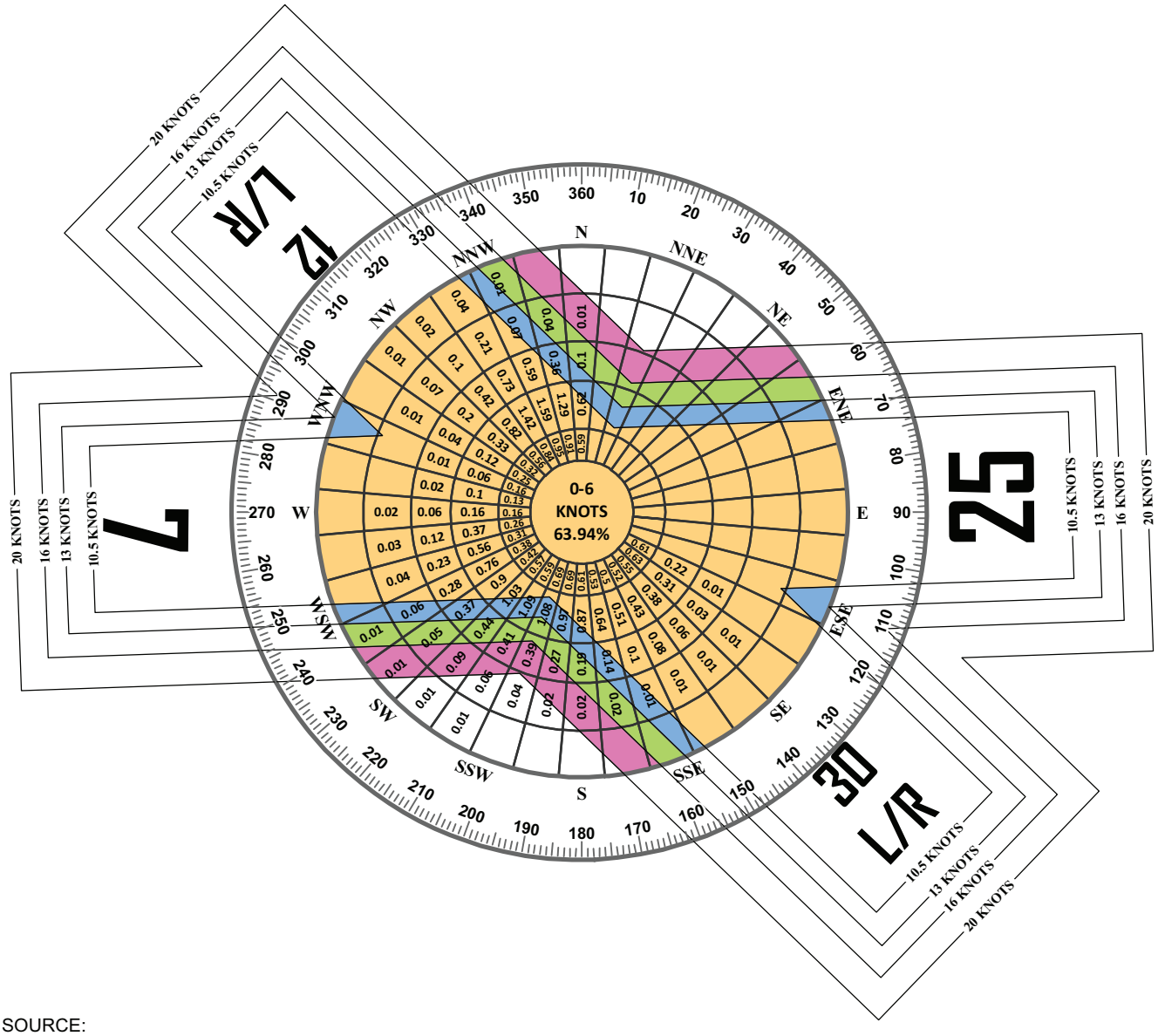
Prevailing winds are winds that blow predominately in a given direction. At an airport, the direction of prevailing winds determines the desired alignment, configuration, and usage of a runway. Aircraft can only tolerate limited crosswind, a component of wind that blows perpendicular to the runway centerline. Ideally, runways are configured to allow aircraft to take off and land into the wind 100 percent of the time. Because winds change direction, FAA planning standards indicate that an airport's primary runway should be capable of operating under allowable wind conditions at least 95 percent of the time. The 95 percent wind coverage is based on a crosswind not exceeding the wind speed listed in **Table 1.14**. If a runway does not meet this 95 percent coverage, then FAA funding assistance for the development of a crosswind runway may be advisable.

Table 1.14 | Allowable Crosswind Component

Crosswind	Airport Reference Code	Aircraft Characteristics
10.5 knots	A-I and B-I (includes small)	Small single engine and light-twin engine aircraft
13 knots	A-II and B-II	Larger and heavier turboprop and medium jet-type aircraft
16 knots	A-III, B-III C-I thru C-III D-I thru D-III	Larger corporate/military jet and narrow-body commercial type aircraft
20 knots	A-IV and B-IV C-IV thru C-VI D-IV thru D-VI E-I thru E-VI	Larger narrow-body and wide-body commercial-type aircraft

Figure 1.10 presents the calculated coverage of Runways 12-30 and Runway 7-25 for each of the four crosswind components (10.5, 13, 16, and 20 knots). It should be noted that, per FAA guidelines, this analysis uses the airport's true runway headings of 134 and 314 degrees for Runways 12R/L and 30L/R and 088 degrees and 268 degrees for Runway 7-25. While runway designations represent the existing magnetic heading, the Earth's magnetic lines slowly drift over time causing the true runway headings to shift.

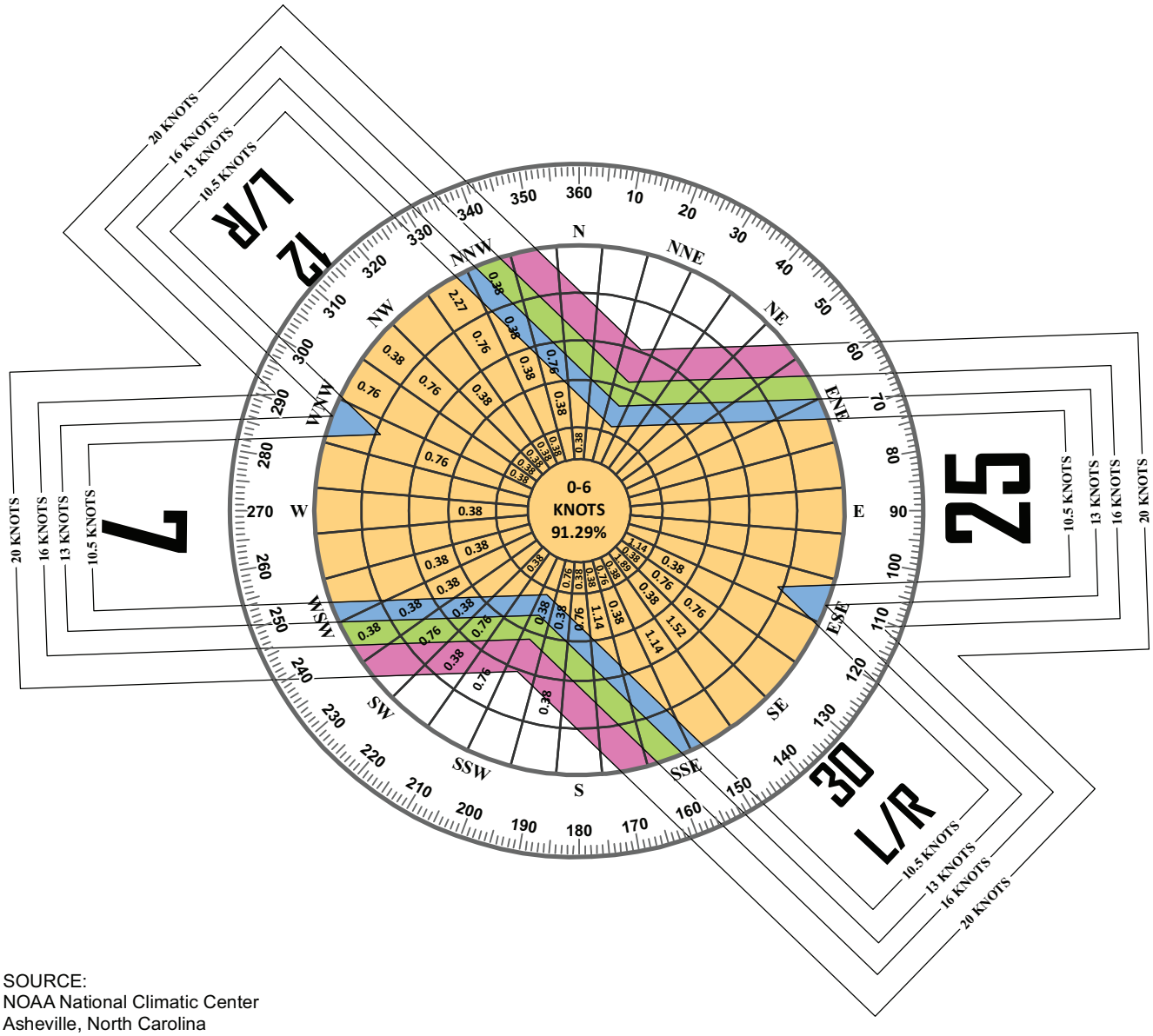
ALL WEATHER WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 7/25	85.39%	90.80%	96.38%	99.12%
Runway 12LR/30LR	90.18%	94.02%	97.43%	99.28%
All Runways	94.19%	97.34%	99.10%	99.87%



SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
North Las Vegas Airport
Las Vegas, Nevada

OBSERVATIONS:
85,176 All Weather Observations
Jan. 1, 2013 - Dec, 31 2022

IFR WIND COVERAGE				
Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 7/25	85.90%	87.74%	91.33%	94.23%
Runway 12LR/30LR	92.65%	94.46%	95.50%	97.18%
All Runways	94.20%	96.22%	97.89%	99.15%



SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
North Las Vegas Airport
Las Vegas, Nevada

OBSERVATIONS:
448 IFR Weather Observations
Jan. 1, 2013 - Dec, 31 2022

Figure 1.10 (continued)
WINDROSES

As shown in **Table 1.14**, with an ARC of B-II, VGT's runway configuration should provide availability of at least 95 percent on the basis of the crosswind component not exceeding 13 knots. Overall, the existing runway headings exceed the FAA's 95 percent recommendation under all-weather and IFR and conditions for the B-II aircraft category. However, smaller aircraft such as group A-I aircraft generally operate only in VFR conditions and are unable to use the airport approximately six percent of the time due to a lack of crosswind coverage.

1.4.6 AIRFIELD LIGHTING

Airfield lighting systems provide pilots with enhanced visual cues for airport elements (such as taxiways and runways) and guidance during night operations and periods of poor visibility. A variety of lighting systems are installed at VGT for this purpose and are categorized by function below.

1.4.6.1 Runway Pavement and Edge Lighting

Pavement edge lighting utilizes light fixtures placed near the edge of the pavement to define the lateral limits of the pavement. This lighting is essential for safe operations at night and/or during times of low visibility in order to maintain safe and efficient access to and from the runway and aircraft parking areas. Different colored edge lights identify different pavement uses: runway edge lights are white and taxiway edge lights are blue. VGT's runways and taxiways are equipped with medium intensity runway lighting (MIRL) and medium intensity taxiway lighting (MITL), which is pilot controlled during hours when the ATCT is closed.

Medium Intensity Runway Light (MIRL) Fixture

1.4.6.2 Taxiway Lighting

All airfield taxiways serving the runway system are equipped with MITL along the taxiway edges. Taxiway lighting systems also include runway guard lights (RGL), which provide a visual indication to pilots that they are about to enter an active runway. RGLs are made up of two unidirectional alternating yellow lights co-located with hold positions on taxiways.

Medium Intensity Taxiway Light (MITL) Fixture

1.4.6.3 Pilot Controlled Lighting

During nighttime hours when the ATCT is closed, pilots can utilize the pilot-controlled lighting system to activate certain airfield lights from their aircraft. Pilots can turn on and change the intensity of the lighting system by clicking their radio transmitter microphone a certain number of times in series while tuned in to the common traffic advisor frequency (CTAF) of 125.7 Mhz.

1.4.7 NAVIGATIONAL AIDS

Navigational aids (NAVAIDS) are electronic devices that transmit radio frequencies which pilots in properly equipped aircraft can translate into point-to-point guidance and position information. The types of electronic navigational aids available for aircraft flying to and from VGT include very high frequency omnidirectional range tactical air navigation (VORTAC), distance measuring equipment (DME), and global positioning (GPS) systems. VOR, VORTAC, and DME systems require ground-based facilities to emit the radio frequency information received by aircraft equipment. GPS utilizes satellites in the earth's orbit to provide navigational information to aircraft without any ground-based facility. The Runway 12L ILS approach utilizes the on-site localizer and glideslope antenna as well as the VORTAC NAVAID equipment located at Harry Reid International Airport (LAS) for missed approaches; the facility is approximately nine miles south of VGT.

Runway 12L Localizer Equipment

Runway 12L ILS Glideslope Equipment

1.4.7.1 Airport Identification Lighting

The location of the airport at night or during low-visibility weather is universally identified by a rotating beacon. Civilian land airport rotating beacons project two beams of light, one white and one green, 180 degrees apart. The rotating beacon at VGT is located on the roof of the ATCT.

1.4.7.2 Visual Approach Lighting

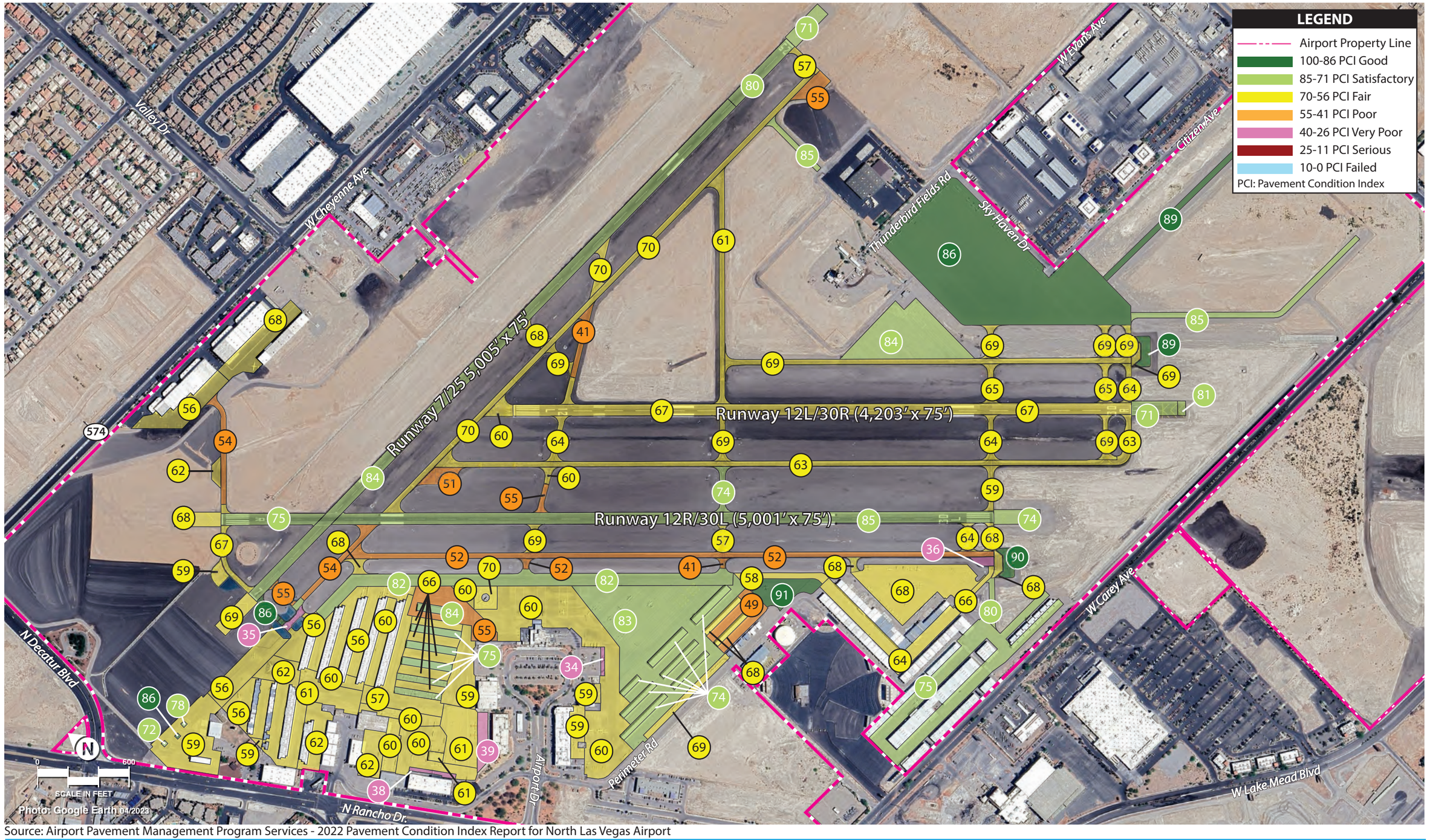
Visual approach aids have been installed at VGT to assist pilots in determining the correct descent path to the runways during an approach. A precision approach path indicator (PAPI) provides visual information that helps pilots determine whether they are below, above, or on the specified glide angle. The Runway 7-25 and Runway 12R-30L PAPIs are FAA-owned while the CCDOA owns the PAPIs on Runway 12L-30R. A PAPI is made up of either two lights (PAPI-2) or four lights (PAPI-4) which are located on either the right (PAPI-2R or PAPI-4R) or left (PAPI-2L or PAPI-4L) side of the runway. They emit two-color light beams (white and red) and display either color depending on the aircraft's position relative to the glide angle. PAPIs have an effective visual range of five miles during the day and 20 miles at night. VGT has six (6) four-light PAPI (PAPI-4L) systems installed on the left sides of each runway end. Runway 12L has a glide angle of 3.20 degrees while all other runways have the standard 3.00-degree glide angle. Glide angles may be higher than normal to clear obstructions or reduce noise impacts to surrounding areas.

1.4.7.3 Runway End Identifier Lights (REILs)

REILs provide a visual identification of the runway end for landing aircraft. The REILs consist of two synchronized flashing white lights, located laterally on each side of the runway end, facing the approaching aircraft. These flashing lights can be seen day or night for a distance up to 20 miles, depending on visibility conditions. Each runway at VGT has an FAA-owned REIL system installed.

1.4.8 AIRFIELD PAVEMENT

Airfield pavement includes runways, taxiways, and aprons. Pavement condition management and improvement is critical due to the hazard poor pavement may pose to aircraft operational safety. Cracked and broken pavement may damage aircraft tires and/or landing gear or become dislodged due to prop and jet wash, creating dangerous Foreign Object Debris (FOD) on the airfield. CCDOA has a pavement management program (PMP) in place for VGT which evaluates airfield pavement and provides a plan for the replacement and repair of pavement surfaces in poor condition. The most recent PMP was evaluated in 2022 and is recommended to be updated every three years. Pavement conditions are analyzed by calculating a Pavement Condition Index (PCI) for areas of pavement with similar properties (type, dimensions, and construction date). The PCI uses a scale from 0 to 100 to identify the pavement condition, where 0 indicates a failed pavement and 100 is a newly constructed pavement. These ratings consider the distress type, quantity, and severity to calculate a single PCI value. VGT's PCI indices are depicted on **Figure 1.11**.



Source: Airport Pavement Management Program Services - 2022 Pavement Condition Index Report for North Las Vegas Airport

This page intentionally left blank

The 2022 PCI Map indicates that the majority of airfield pavement at VGT is generally in good to fair condition. Pavements in poor condition include the full length of Taxiway B, portions of Taxiway A and Taxiway C, the Runway 12L holding bay, and a few minimal ramp areas. Very poor pavement was indicated at the Taxiway A/G/F intersection, Taxiway B/K intersection, and a few minimal ramp areas.

Holding Position Marking, Enhanced Taxiway Centerline, and In-Pavement RGLs

The PCI report is typically used by airport maintenance, planners, engineers, and contractors for information pertaining to the life cycle and repair management of airfield pavement, but it is not used for the immediate determination of pavement strength for aircraft use. The FAA utilizes a different pavement strength reporting method for aircraft use through the Aircraft Classification Number (ACN) and Pavement Classification Number (PCN) method. The ACN-PCN is a standardized system used by pilots and airports to determine if an airfield's pavement strength is adequate for the aircraft load utilizing the airfield. Airports across the country have different pavement thicknesses and strengths based on the levels of activity and types of aircraft that use them. A pilot can look up an airport's PCN values on FAA-published airport diagrams and chart supplements and can check their ACN to determine if the aircraft they intend to use at the airport will be within the airport's PCN limitations. The ACN-PCN system is designed so that airport pavement with a particular PCN value can support aircraft with an ACN value equal to or less than the PCN. **Table 1.15** depicts the PCN value for each runway at VGT.

Table 1.15 | VGT Pavement Classification Numbers

Runway	PCN
07-25	58/F/C/X/T
12L-30R	15/F/C/X/T
12R-30L	48/F/C/X/T

Source: FAA Airport Master Record Form 5010

1.4.8.1 Airport Pavement Markings

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on the airport. VGT provides and maintains a pavement marking system in accordance with Part 139.311(a) and FAA AC 150/5340-1, *Standards for Airport Markings*. All pavement markings on VGT's three runways are in excellent condition.

Specific configurations of pavement markings are used on different runways to identify and aid in the type of operation that a runway may have. As detailed previously, Runway 12R-30L has non-precision pavement markings, Runway 12L has precision pavement markings due to its precision instrument approach, and Runways 30R and 7-25 have basic pavement markings.

Taxiway and taxilane centerline markings are provided to assist pilots in maintaining proper clearance from pavement edges and objects near the taxiways. Taxiway markings also include elements used to enhance the pilot's awareness when nearing a runway, including holding position markings, surface painted holding position signs (SPHPS), and enhanced centerlines. Holding position markings are used on a taxiway prior to runway/taxiway intersections to alert taxiing aircraft that they are about to enter

an active runway. The function of holding position markings is to keep aircraft from entering the runway environment without clearance from the ATCT. Holding position markings are located 200 feet from the runway centerline for all three VGT runways. SPHPS markings identify the runway designator on which the taxiway will intersect. Enhanced centerline markings provide centerline dashes on either side of it to signal that the taxiway is leading to a runway intersection.

Other applications of pavement markings at VGT include no-taxi island pavement markings adjacent to Taxiway G which help to visually separate the taxiway from surrounding pavement. Another pavement marking element at VGT is the aligned taxiway lead-in to Runway 12L. Aligned taxiways for new construction or reconstruction projects are prohibited and corrective measures for the aligned taxiway will be evaluated as part of the master plan.

No-Taxi Island Painted Green and Lighted for Enhanced Visibility

1.4.9 RUNWAY INCURSION MITIGATION

A runway incursion is defined by the FAA as an occurrence at an airport involving the incorrect presence of an aircraft, vehicle, or person on a protected area designated for the landing and takeoff of aircraft. Specific locations on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary, are known as hot spots. As depicted in **Figure 1.12**, VGT has four[1] published hot spots. These hot spots are identified in the FAA's Airport/Facility Directory to make it easier for the airport's users to plan the safest possible path of movement in and around the airfield.

[1] Since the original publishing of this chapter, the FAA has eliminated hot spots 5 and 6, resulting in four total hot spots at VGT.

Figure 1.12
FAA HOT SPOTS

This page intentionally left blank

- Hot Spot 1 encompasses the area around the intersections of Taxiways F and G with the Runway 7 end. The hold lines on Taxiways F and G are in close proximity to the edge of a large paved area, and pilots often cross the Runway 7 hold line on Taxiway G without ATC authorization.

- Hot Spot 2 is the result of pilots sometimes entering or crossing Runway 12R without authorization.

- Hot Spot 3 is located at the convergence of Taxiways A, B, and R. Pilots taxiing east on Taxiway A to Runway 30L sometimes miss the turn onto Taxiway B, proceeding onto Runway 12R without authorization.

- Hot Spot 4 includes the area of Taxiway A between the north end of Taxiway D and the Runway 12L threshold. Pilots taxiing east on Taxiway A sometimes fail to hold short of Runway 12L, or neglect to turn onto Runway 12L for departure, instead departing on Taxiway A.

- Hot Spot 5 was the result of pilots mistaking Runway 12L for Runway 12R or vice versa when landing. **Hot Spot 5 has been removed by the FAA**.

- Hot Spot 6 was the result of pilots mistaking Runway 30R for Runway 30L when landing, especially during overhead crossing to left downwind approach. **Hot Spot 6 has been removed by the FAA**.

1.4.10 AIRFIELD SIGNAGE

The airport has a runway/taxiway signage system that is designed to assist pilots in identifying their location on the airfield and direct them to their desired location. The presence of runway/taxiway signage is an essential component of a surface movement guidance control system and is necessary for the safe and efficient operation of the airport. The signage system installed at VGT includes runway and taxiway designations, holding positions, routing/directional, distance remaining, and runway exits.

Runway Hold Position Signage

Taxiway Directional Signage

1.5 LANDSIDE FACILITIES

Landside facilities support the aircraft and pilot/passenger handling functions as well as other non-aviation facilities typically providing a revenue stream to the airport. These facilities include general aviation facilities such as the airport terminal building, aircraft storage hangars, and vehicle parking lots. The primary landside facilities at the airport are identified on **Figure 1.13**. VGT's landside facilities include over one million square feet (sf) of buildings, hangars, and offices.

Building #	Tenant Name	Services	Facility Type
A-01	VGT	Airport Administration, Fuel	Terminal Building
A-01	Sunshine and Tailwinds Café	Dining	Terminal Building
A-01	Enterprise	Rental Car	Terminal Building
A-01	Hertz	Rental Car	Terminal Building
A-02	FAA ATCT	Government	Control Tower
A-03	Horton Avionics Services	Aircraft Maintenance/ Aircraft Rental	Conventional Hangar
A-04	Vacant	N/A	Conventional Hangar
A-05	VGT	Fuel Storage	Fuel Farm
A-06	Metro/Homeland Security	Government	Offices
A-07 & A-14	Airport Mainentance Building	Maintenance	Storage Building
A-08	Desert Aviation Center Hangars	Aircraft Storage	Conventional Hangar
A-09 (OB1-OB12, OB21-OB44 OB50-OB63)	Outback Hangars	Aircraft Storage	Executive Hangars
A-09 (OB70-OB84)	Private Portable T-Hangars	Aircraft Storage	T-Hangars
A-10	Civil Air Patrol (Ranch House)	Government	Offices
A-11 (A1-A12, B1-B12, C1-C12, D1-D12, E1-E12, F1-F11, G1-G10, H1-H10, 1-J5, K1-K5, L1-L6, M1-M5, N1-N9, P1-P10, Q1-Q12, R1-R11)	Private Portable T-Hangars	Aircraft Storage	T-Hangars
A-11 (SP1-SP6)	Private Portable T-Hangars	Aircraft Storage	T-Hangars
A-12 (SH28-43, SH 44-59, SH60-75, SH76-88)	Private Shaded Tie-down (North Shade Hangar)	Aircraft Storage	Shaded Tie-down
A-12 (SHA1-7, SHB1-14, SHC 1-19, SHD1-13, SHE1-15, SHF1-15, SHG1-13, SHH1-15, SHJ1-15)	Private Shaded Tie-down (South Shade Hangar)	Aircraft Storage	Shaded Tie-down

Building #	Tenant Name	Services	Facility Type
A-15	VGT	Self Service Fuel	Fuel Island
A-17	Sin City Flying Club	Flight Training	Offices
A-18	Vegas Aviation	Flight Training	Conventional Hangar
A-18	Skyline Helicopters	Flight Training	Conventional Hangar
A-18	702 Helicopters	Air Tour/Aircraft Maintenance/ Flight Training	Conventional Hangar
A-18	Wild West Helicopters	Air Tour	Conventional Hangar
A-18	Flyright Aviation	Flight Training	Conventional Hangar
A-19	BLM Helitak Building	Government	Offices
A-20	LVMPD Armor	Government	Conventional Hangar
A-21	Agency Hangars	Government	Box Hangars
A-22	West Air Flight Training	Air Tour/Flight Training	Conventional Hangar
A-23 (SR01-SR31)	Skid Row Hangars	Aircraft Storage	Executive Hangars
A-24	Cheyenne Air Center	Commercial Leasing	Conventional Hangar
A-24	5 Star Helicopter Tours	Air Tour	Conventional Hangar
A-25	Steelman Aviation	Air Charter	Conventional Hangar
A-25	AirSmart	Air Charter	Conventional Hangar
A-26	Desert Aviation Center	Commercial Leasing	Conventional Hangar
A-26	Airwork Las Vegas	Air Tour/Aircraft Rental/Flight Training	Conventional Hangar
A-26	Desert Dogs Aviation	Flight Training	Conventional Hangar
A-26	Sheble Flight School	Flight Training	Conventional Hangar
A-26	Chennault Flying Services	Flight Training	Conventional Hangar
A-26	Light Sport Aviation	Flight Training	Conventional Hangar
A-27	Private Executive Hangars	Aircraft Storage	Conventional Hangar
A-27	All In Aviation	Flight Training	Conventional Hangar
A-27	Lone Mountain Aviation	Aircraft Maintenance	Conventional Hangar
A-28	EGA Aviation	Aircraft Maintenance	Conventional Hangar
A-29	Las Vegas Metropolitan Police	Government	Conventional Hangar
EH1-EH-4	Private Executive Hangars	Aircraft Storage	Executive Hangars

Information current as of February 28, 2023

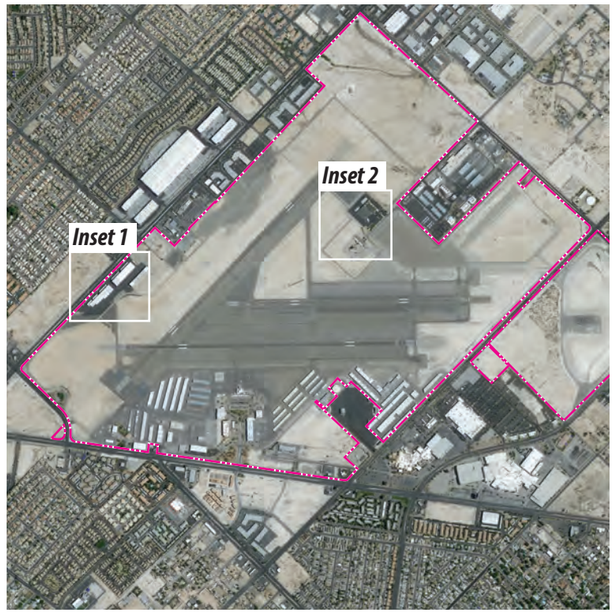
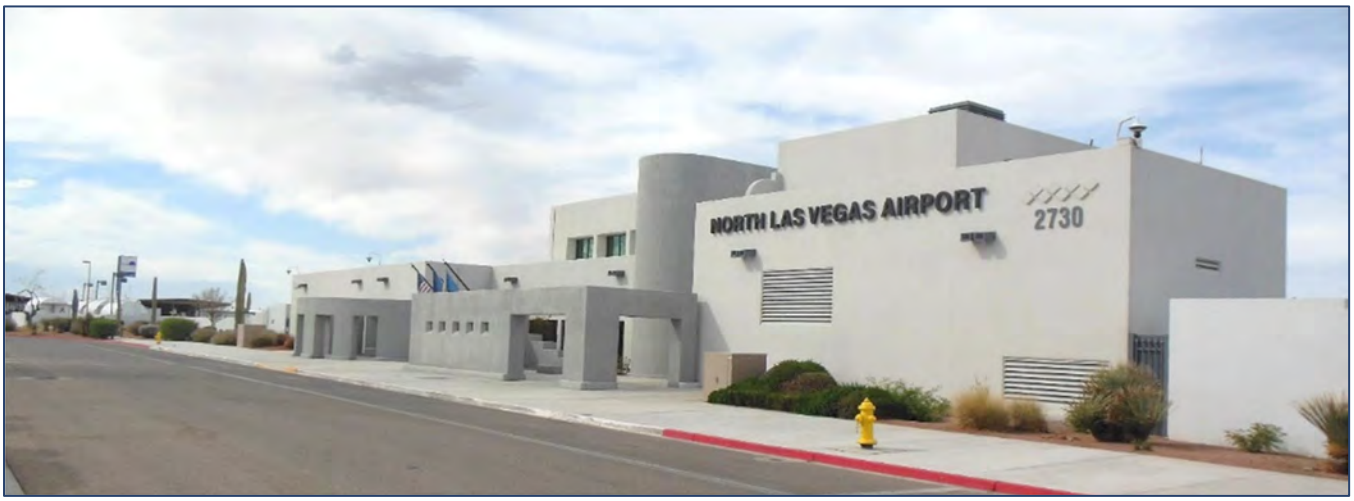


Figure 1.13
EXISTING LANDSIDE FACILITIES

This page intentionally left blank

1.5.1 TERMINAL BUILDING

VGT's terminal building, which consists of two levels encompassing approximately 20,612 sf, was constructed in 1992 and renovated in 2019. The terminal building includes offices for VGT airport staff, FBO services, rental car agencies, restrooms, a lobby, a pilot lounge, a vending area, rental conference rooms, an observation deck, and a café. The terminal provides apron access to the center of the west apron.



North Las Vegas Airport Terminal – Landside

North Las Vegas Airport Terminal – Airside

1.5.1.1 Fixed Based Operator

FBOs provide aviation services and other amenities at an airport to based and transient aircraft. FBOs are operated by private companies or the airport owner, and services often include aircraft fueling, maintenance and repair, aircraft rental and/or charter services, pilot lounge and flight planning facilities, and aircraft tie-down and/or hangar storage.

1.5.1.2 Automobile Parking

There are three public parking lots available for vehicle use at the main terminal. The central parking lot provides 148 spaces, including five accessible spaces. The two parking lots on either side of the terminal building provide an additional 50 spaces each for a total of 248 spaces. Private businesses operating at VGT have adjacent parking lots. Public parking lots near the terminal building are depicted on **Figure 1.13**. ATCT employees utilize a vehicle parking lot consisting of 18 covered parking spaces and 20 uncovered spaces.

VGT's only FBO is owned by Clark County and operated by CCDOA as an Air Elite® location. Air Elite® is a network built to elevate FBO service and facility standards to the level of the legendary diamond standard in hospitality. Each Air Elite® FBO is a member of the World Fuel Services Network and has met strict criteria for facility and service standards. A variety of general aviation services are provided by the full-service FBO at VGT. The FBO is based in the terminal building and provides transient aircraft tie-downs on the main terminal apron for jets, piston aircraft, and helicopters.

1.5.2 GENERAL AVIATION TENANTS

Businesses that choose to locate on or adjacent to an airport provide significant impact not only to the airport, but also to the region. Encouraging businesses to locate in the vicinity of an airport is a good practice for several reasons. First, the business will benefit from being near a commerce and transportation hub. Second, the community will benefit because the airport will develop a buffer of industry and manufacturing that will restrict incompatible land uses – such as residential housing – from locating too close to the airport. Third, business development on and around airports can generate a direct revenue stream for the airport and lead to airport self-sufficiency.

Many general aviation services are available at VGT, including aircraft rental, flight training, maintenance, avionics, air charter, aircraft management, fueling, sales, detailing, hangar rental, pilot supplies, car rental, a restaurant, and many other services. In total, there are 32 businesses operating at VGT, as well as community services such as the Civil Air Patrol (CAP), Las Vegas Metropolitan Police Department (LVMPD), and Bureau of Land Management (BLM). The table in **Figure 1.13**, shown previously, provides a summary of airport businesses.

LVMPD Search and Rescue

1.5.2.1 Aircraft Hangar Facilities

Existing hangar facilities at VGT consist of large conventional hangars, mid-sized executive hangars, T-hangars, shade hangars, and box hangars designed to accommodate smaller aircraft. Conventional and executive hangars make up the majority of hangar capacity based on square footage at VGT. T-hangars are typically about 1,500 sf and each hold one small aircraft. Shade units are leased month to month while conventional, box, T-hangar, and executive hangar leases vary based on lease agreements. Hangars at VGT are identified on **Figure 1.13** and approximate square footage for each hangar type are summarized in **Table 1.16**.

Table 1.16 | VGT Hangar Facilities Summary

Type	Quantity	Approx. Square Footage
Conventional	14	373,300
Executive	85	324,100
Box Hangars	7	30,800
T-Hangar Units	175	241,100
Shade Units	182	184,100
	Total:	**1,153,400**

Source: North Las Vegas Airport, Coffman Associates analysis

Commercial Hangar

Shade Hangar

1.6 ANCILLARY AND SUPPORT FACILITIES

1.6.1 AIRPORT ADMINISTRATION AND MAINTENANCE

The airport's administrative offices are located in the main terminal building. CCDOA's maintenance facility is located south of the main terminal on the perimeter road and adjacent to the "South Shade Hangars." It consists of a 12,500-sf building housing the following equipment:

- Sweepers (2)
- Lift (1)
- Roller (1)
- Dump Truck (1)
- Backhoe (1)
- Boxblade (1)
- Pressure Washer (1)
- Lighted X's (2)
- Trailers (2)
- Forklift (1)
- Water Truck (1)
- Lighted Tower (1)
- Tarpod (1)

Airport Maintenance Facility

1.6.2 FUEL STORAGE

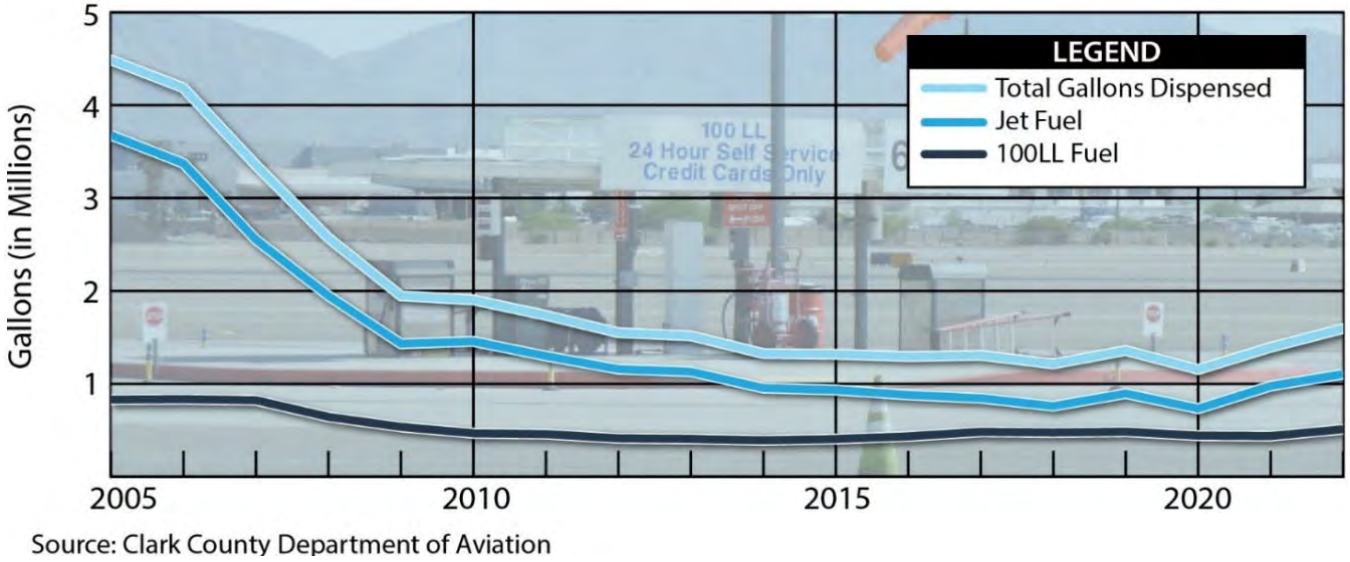
Aviation fuel services are offered by VGT's FBO at the main terminal. Aircraft can be fueled at the self-service fuel island, which provides two pumps of 100LL. Full-service Jet A and 100LL are available by contacting the FBO. Fuel is stored at the fuel farm adjacent to the north public parking lot near the main terminal. It provides one (1) 30,000-gallon Jet A storage tank, one (1) 20,000-gallon Jet A storage tank, and two (2) 20,000-gallon 100LL storage tanks. There are also four (4) CCDOA fuel trucks providing full-service fuel to aircraft, as well as five (5) fuel trucks that are leased by the CCDOA to based commercial tenants.

Fuel Farm

Self-Service 100LL Fuel Island

Annual gallons of dispensed aviation fuel tracked by the airport between 2005 and 2022 are displayed in **Figure 1.14**. Total fuel dispensed at VGT has declined since 2005, most likely as a result of the decrease in based aircraft at the airport, increase in more fuel-efficient aircraft engines, and the 2008 recession. Other factors contributing to the overall decline include a decrease in operations by Vision Air before they ceased service in 2017, and the discontinuation of services by Silver State Helicopters in 2008. There has been an increase in Jet A dispensed since 2020, which indicates more jet and turboprop activity, while annually dispensed piston fuel (100LL) has remained flat.

Figure 1.14 – *Annual Fuel Dispensed*



Source: Clark County Department of Aviation

1.6.3 EMERGENCY SERVICES

Part 139 Certified airports are required to provide ARFF services during air carrier operations. Depending on the airport index assigned, different types and quantities of ARFF equipment are necessary.

VGT was previously Part 139 certified until 2019, when the certificate was surrendered after the Part 121 carrier (Vision Air) ceased operations. The airport maintains and staffs one TM-5150 Renegade Support Vehicle which is operated by CCDOA staff and available between 6:00 a.m. and 10:00 p.m. local time. This vehicle is stored under a shade unit on the west ramp and carries 500 pounds of PKW dry chemical, five gallons of aqueous film forming foam, and 150 gallons of water equal to 2,000 gallons of finished foam. The dry chemical agents are sufficient to meet FAA Index A requirements. VGT also has mutual aid agreements with the City of North Las Vegas and North Las Vegas Fire Departments. The City of North Las Vegas Fire Station 43 is the nearest fire station, 2.4 miles away from the airport.

1.6.4 AIRPORT SECURITY

VGT is secured with a six-foot perimeter fence topped with three-strand barbed wire. There are six RFID card reader access gates located along the perimeter fence around the airport. There are 61 combined pedestrian and vehicle gates located along the perimeter of the airport. Perimeter fencing and gate locations are depicted on **Figure 1.15**.

Security Gate

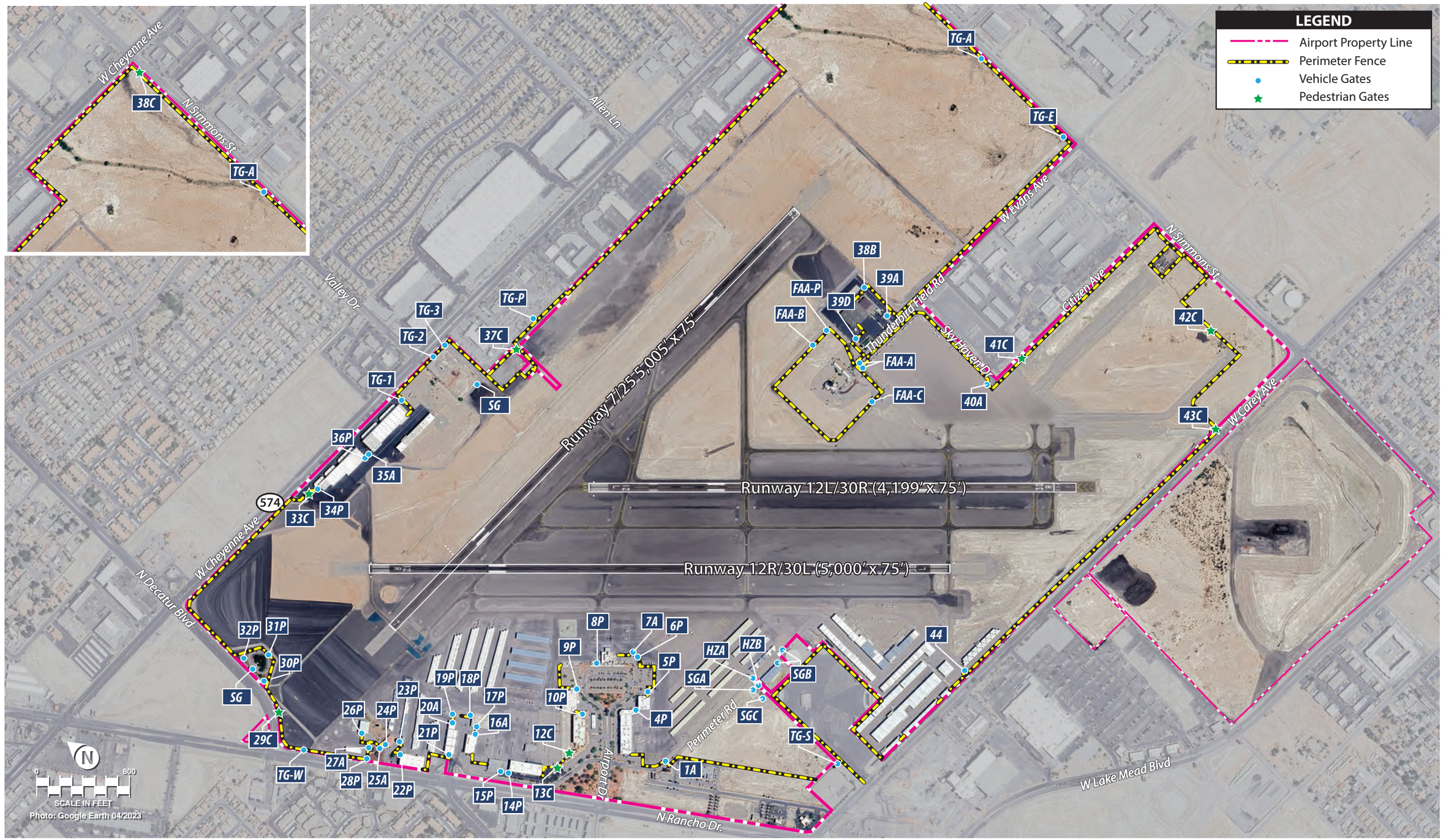


Figure 1.15
PERIMETER FENCE AND GATES

This page intentionally left blank

1.6.5 UTILITY INFRASTRUCTURE

Utility availability and capacity are critical elements when considering future expansion for both airside and landside components at an airport.

- **Water |** Water is provided by the City of North Las Vegas. The current water system connects to multiple water mains surrounding the airport property. The main terminal and western parts of the airport connect via Rancho Drive and Decatur Boulevard. The system includes a water line that runs north south under the middle of the airfield connecting Carey Avenue with Cheyenne Avenue. Water lines serving the LVMPD hangar and FAA tower join City of North Las Vegas water mains at Thunderbird Field Road.

- **Sewer |** Sanitary sewer is provided by the City of North Las Vegas. The main terminal and east apron are served by sewer lines connecting to Rancho Drive. The Outback and Skid Row hangar areas connect to Carey Avenue while the Cheyenne Air Center connects via Cheyenne Avenue. To the east, the LVMPD hangar and FAA tower join at Thunderbird Rd.

- **Stormwater |** Storm water lines run throughout the airport property and drain to various connections within the City of North Las Vegas systems. Storm water is collected at many drainage inlets and drainage trenches throughout the airfield. Trenches parallel to all three runways collect and redirect runoff away from the runways, taxiways, and aprons.

- **Electricity |** Electrical service is provided by NV Energy with backup generators owned by the CCDOA on-site in electrical vaults on the east and west sides of the airport.

- **Natural Gas |** Natural Gas service is provided by Southwest Gas. Gas lines run to most corporate hangars on the west side of the airport, Outback and Skidrow hangars to the south, the Cheyenne Air Center to the north, and the LVMPD hangar on the east.

- **Communication |** Communications at the airport are provided by COX and CenturyLink. These lines provide internet and phone service to the west side of the airport including the airport terminal and hangars.

1.7 LAND USE AND ZONING

Land use planning and zoning regulations near an airport help to ensure that land uses, structures, and activities are compatible with aviation operations. Pursuant to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the compatibility of land uses near an airport is focused primarily on noise levels in the community and the safety of persons and property both on the ground and in the air. Under ideal conditions, land uses that are generally considered to be noncompatible with airport operations (e.g., residential, schools, and churches) would be located away from airports and land uses that are more compatible (e.g., industrial, commercial) would be located near airports.

Currently, there are several noise-sensitive land uses, primarily residential, adjacent to VGT. There are also several schools, churches, and a senior care facility that represent potential incompatible land uses due to aircraft noise and disruption. Future development near the airport also may be incompatible with airspace and pose a threat to the airport's operational safety, efficiency, and capacity.

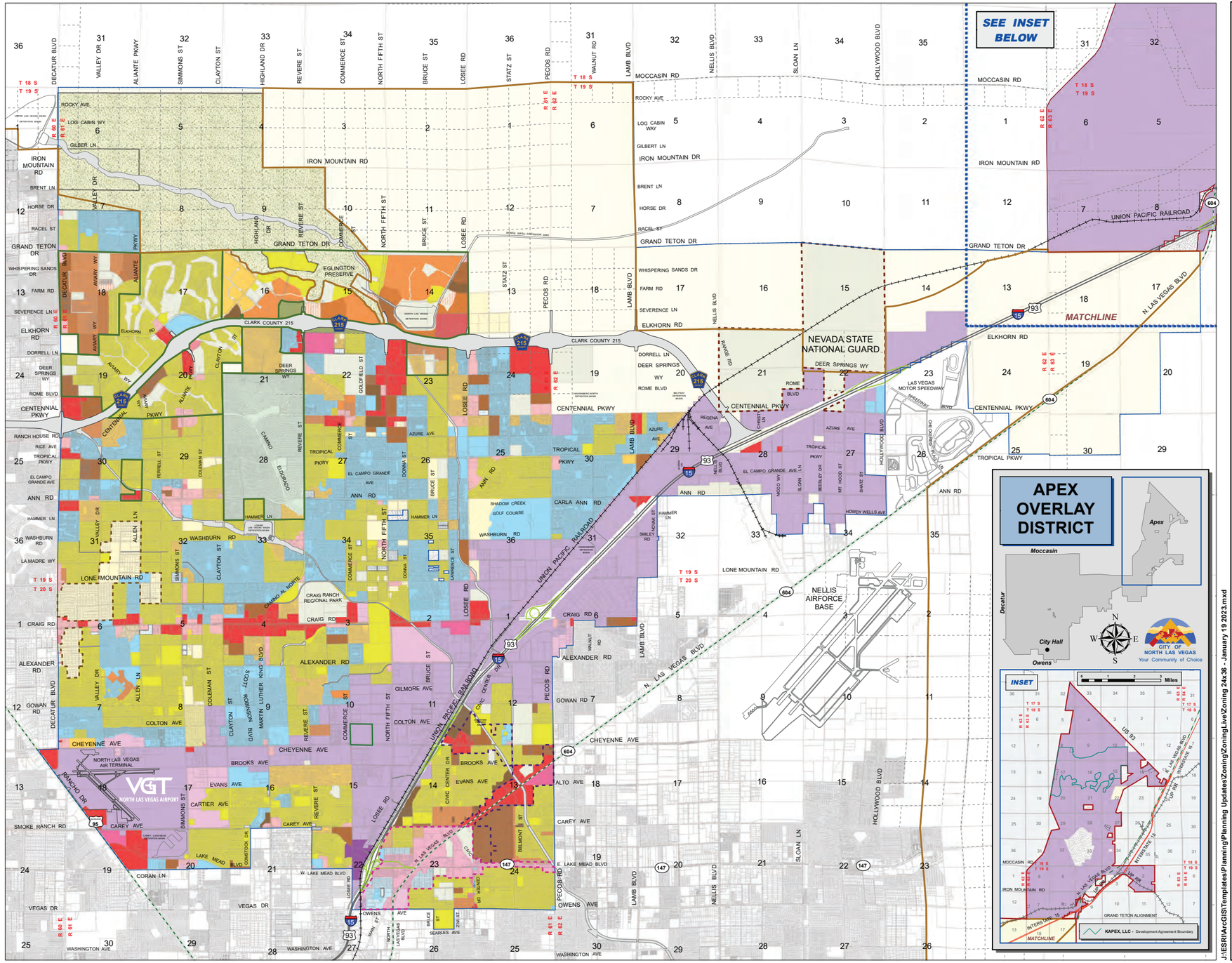
While the FAA encourages airport owners to seek compatible land uses in the areas surrounding an airport through appropriate positive control (e.g., fee-simple purchase or easement acquisition), coordinated zoning, and municipal planning efforts, the FAA also recognizes that local governments are responsible for administering land use planning and zoning regulations. Because VGT is owned by Clark County and resides within the City of North Las Vegas and portions of the airspace reside within the City of Las Vegas, interjurisdictional collaboration is central to ensuring compatible land use in the vicinity of the airport. This collaborative planning promotes shared objectives, economic development, and optimal land uses that will enhance long-term public benefits.

This section provides an overview of zoning and land uses in the vicinity of VGT.

1.7.1 ZONING

VGT is located in the southwest corner of the City of North Las Vegas and borders the City of Las Vegas to its west. The airport is surrounded by a variety of land uses, including industrial, commercial, public use, and residential. To the north, the airport is bordered by mainly industrial and residential areas with a small amount of commercial development along W. Cheyenne Avenue. To the east is all industrial use and some public/semi-public land use for the Regional Transportation Commission. West of VGT is a mix of residential, commercial, and some industrial land use along Rancho Drive. South land use includes commercial and residential land use. Residential areas are primarily single-family homes and some multi-family apartments and condominiums. The industrial area to the east includes aerospace manufacturing, distribution, and storage facilities. The commercial land use is home to shopping, restaurants, hotels, a variety of independent businesses, and a drive-in movie theater.

Zoning on and around VGT is shown on **Figure 1.16**.



ZONING

January 25, 2023

BOUNDARIES
- Clark County Island
- Apex Overlay District
- SNPLMA Land Disposal Boundary
- * Development Agreements
- Downtown Redevelopment Area
- North Redevelopment Area
- Ranch Estates Rural Preservation Overlay District
- National Guard
- Open Space

RESIDENTIAL
- O-L Open Land
- R-E Ranch Estates or *R-E PCD
- R-EL Ranch Estates Limited
- R-1 Single Family Low Density or *R-1 PCD or * RZ6 MPC
- R-CL Single Family Compact Lot or *R-CL PCD
- R-2 Medium Density or *RZ10 MPC or *R-2 PCD
- *RZ13 MPC
- R-3 Multifamily or *RZ25 MPC or *R-3 PCD
- R-4 High Density or *RZ50 MPC or *R-4 PCD

DOWNTOWN REDEVELOPMENT AREA SUBDISTRICTS
- R-A/DC Downtown Core
- R-A/PSP Public / Semi-Public
- R-A/R-2 Medium Density Residential
- R-A/R-3 Medium High Density Residential
- R-A/R-4 High Density Residential

COMMERCIAL
- C-1 Neighborhood or *C-1 PCD
- C-2 General or *C-2 PCD
- C-3 General Service
- C-P Professional Office
- *C/RC PCD Commercial / Resort Casino
- PSP Public / Semi Public or *PSP PCD

INDUSTRIAL
- M-1 Business Park
- M-2 General
- M-3 Heavy

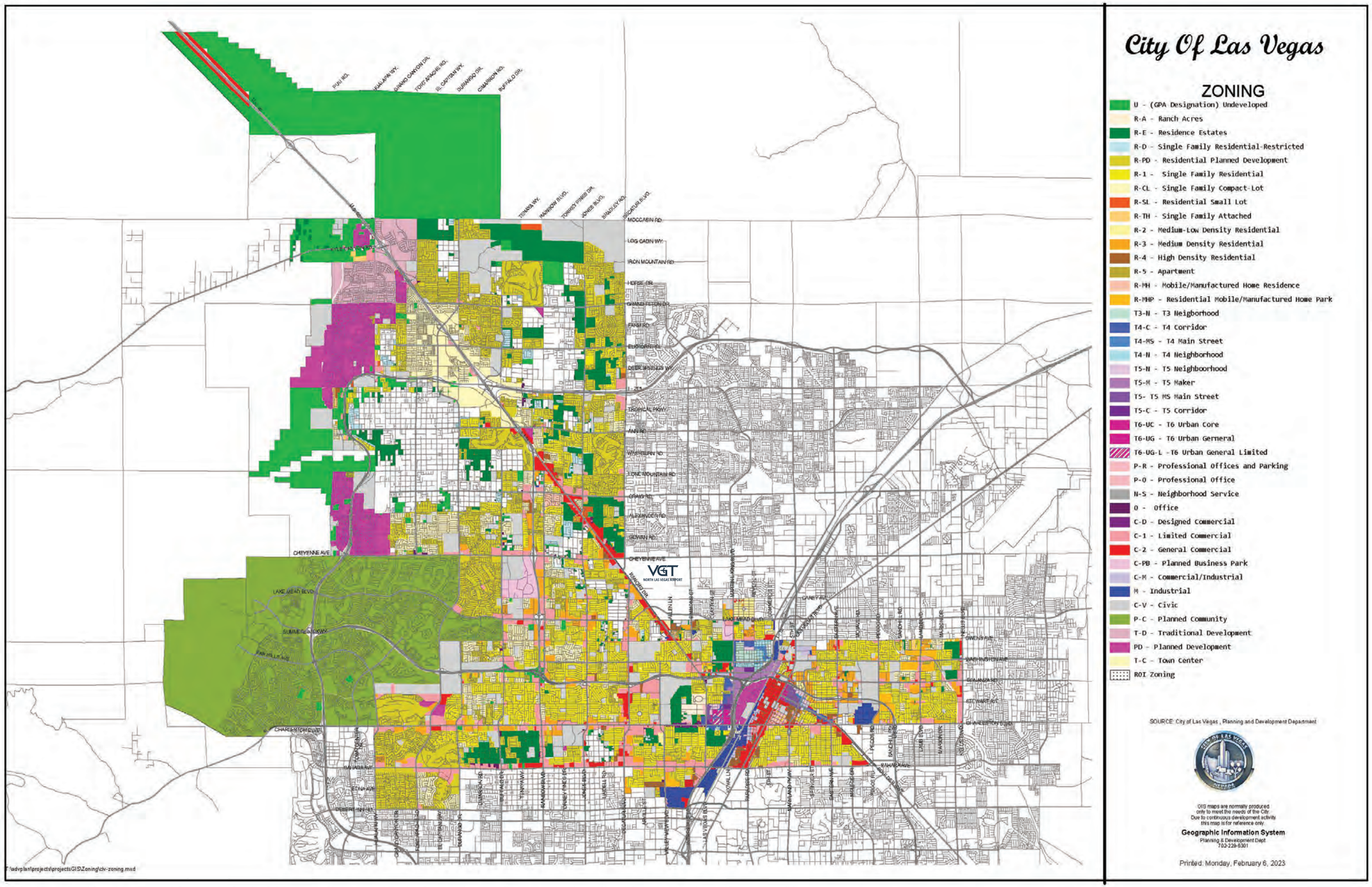
MIXED USE CENTERS
- MUD MX-1 NEIGHBORHOOD
- MUD MX-2 COMMUNITY
- MUD MX-3 REGIONAL
- *MUZ MPC

OTHER
- PCD Planned Community District
- PUD Planned Unit Development
- PID Planned Infill Development
- PUD PID Planned Unit Development / Planned Infill Development
- O-L DA Eldorado Master Planned Community

**** See Appropriate Development Agreement for Specific Requirements.***

Source: City of North Las Vegas, Land Development and Community Service Department, Planning and Zoning Division. Map can be accessed at: https://www.cityofnorthlasvegas.com/home/showpublisheddocument/5800/638210398264470000

Figure 1.16
CITY OF NORTH LAS VEGAS ZONING MAP



Source: City of North Las Vegas, Land Development and Community Service Department, Planning and Zoning Division. Map can be accessed at: https://www.lasvegasnevada.gov/Government/Maps

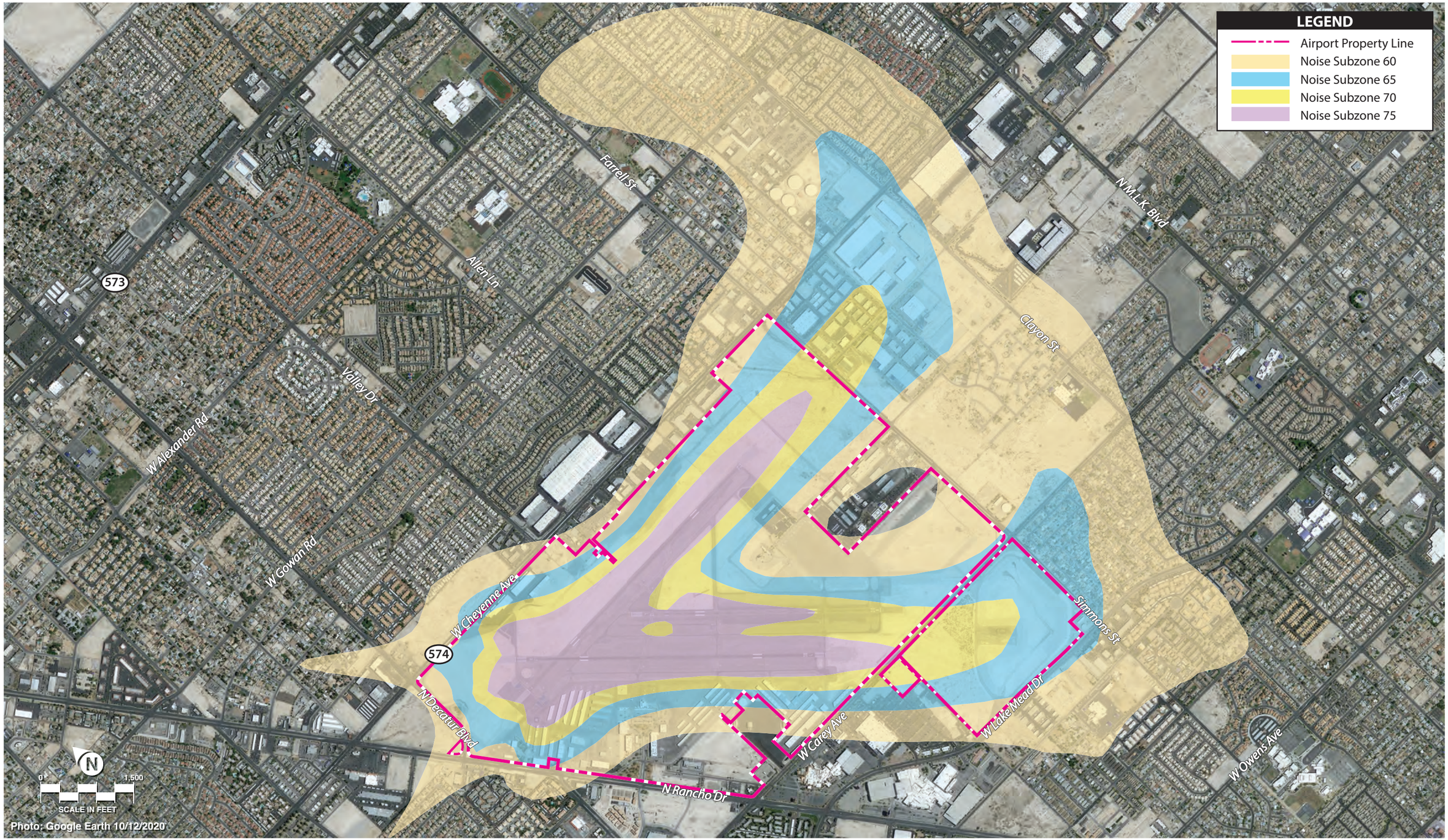
Figure 1.16 (continued)
CITY OF LAS VEGAS ZONING MAP

The intent of the zoning map and ordinance in the City of North Las Vegas is to implement the North Las Vegas Comprehensive Plan, as well as to protect the public health, safety, and general welfare of the community and the people of North Las Vegas. Zoning establishes regulations governing development and use of land to promote the balanced supply of commercial, industrial, institutional, and transportation land that is compatible with adjacent land uses.

The airport itself is zoned as general industrial (M-2), which includes both the primary airport property and the segmented airport property south of Carey Avenue. Zoning to the south of the airport property includes general industrial (M-2), general commercial (C-2), general service commercial (C-3), neighborhood commercial (C-1), and planned unit development (PUD). Land west of the airport is zoned as general industrial (M-2), general service commercial (G-2) and general commercial (C-2), medium density residential (R-3), residential planned development (R-PD), and commercial/industrial (C-M). Zoning to the north of the airport includes planned unit development (PUD), business park industrial (M-1), single-family compact lot residential (R-CL), and neighborhood commercial (C-1). Finally, zoning east of the airport includes general industrial (M-2), business park industrial (M-1), general commercial (C-2), and single-family low density residential (R-1).

As an additional land use aid, the City of North Las Vegas published an Air Terminal Environs Overlay District shown on **Figure 1.17**. The purpose of the overlay is to define noise subzones in relation to the land surrounding the airport and to identify boundaries such as runway protection zones (RPZs) and accident potential zones.

This page intentionally left blank



Source: City of North Las Vegas Air Terminal Environs Overlay Districts January 11, 2023

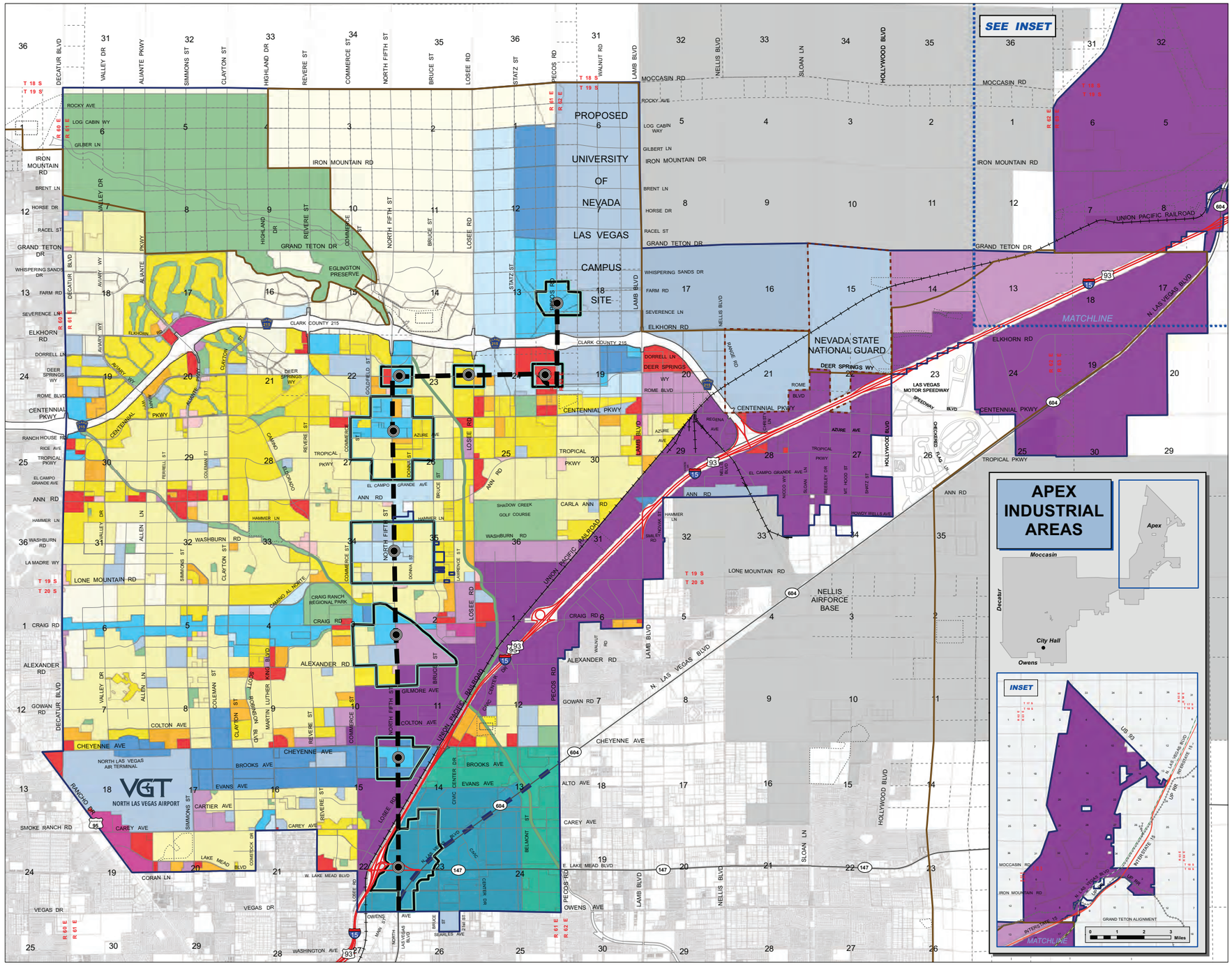
Figure 1.17
AIR TERMINAL ENVIRONS OVERLAY DISTRICT

This page intentionally left blank

1.7.2 LAND USE PLANNING

Land use planning at and around an airport ensures that new and existing development is compatible with aviation-related activities in relation to both safety and noise concerns. The City of North Las Vegas adopted their Comprehensive Master Plan in November 2006, with an amendment made in February 2011. The plan includes three specific planning areas: residential neighborhoods, activity centers, and employment districts. VGT is bounded to the north by the Cheyenne North District and to the south by the South District, both of which are categorized as residential neighborhoods. The Cheyenne North District also includes the Cheyenne Technology Corridor, which includes mixed-use development (i.e., office, retail, services, and housing). The city's current land use plan, which was updated in May 2023, identifies the areas immediately adjacent to the airport as community commercial, resort commercial, mixed-use employment, employment, and single family residential. The City of Las Vegas, which bounds the airport on the west, adopted the 2050 Master Plan in July 2021. Specific plans for the area adjacent to VGT along Rancho Drive include mixed use center, corridor mixed use, and medium density residential. Both cities' land use plans are depicted in **Figure 1.18**.

This page intentionally left blank



LAND USE PLAN

May 22, 2023

LAND USES

RESIDENTIAL

- Ranch Estates (up to 2 du / ac)
- Single Family Low (up to 6 du / ac)
- Single Family Medium (up to 13 du / ac)
- Multi-Family (up to 25 du / ac)
- Master Planned Community

NON - RESIDENTIAL

- Open Space
- Neighborhood Commercial
- Resort Commecial
- Community Commercial
- Public / Semi - Public
- Downtown Business District
- Downtown Area of Influence
- Employment
- Heavy Industrial

MIXED - USE

- Mixed - Use Employment
- Mixed - Use Commercial
- Mixed - Use Neighborhood

TRANSPORTATION

- Future North 5th Transit Route
- Future Transit Influence Area
- Future North 5th Transit Station
- Existing Transit Route
- Main Streets
- Union-Pacific Railroad
- Flood Control Basins

N W E S

CITY OF NORTH LAS VEGAS
Your Community of Choice

0 0.5 1 1.5 2 Miles

LAND DEVELOPMENT AND COMMUNITY SERVICE DEPARTMENT
PLANNING AND ZONING DIVISION

This information is for display purposes only.
No liability is assumed as to the accuracy of the geographic data delineated hereon.

J:\ESRI\ArcGIS\Templates\Planning\Planning Updates\Land Use\LandUseLive\LandUse 24x36 - April 25 2023.mxd

Figure 1.18
CITY OF NORTH LAS VEGAS LAND USE PLAN

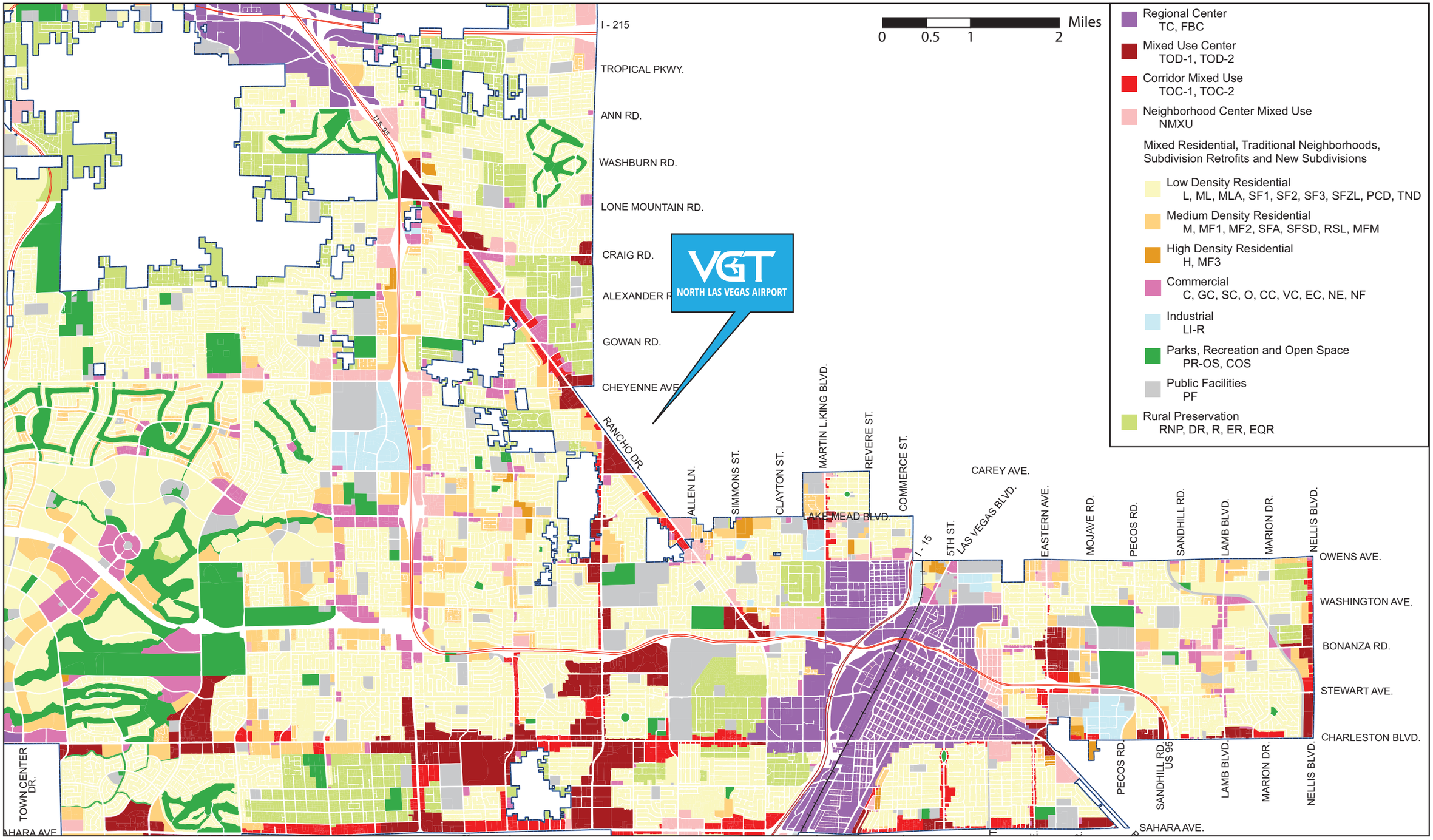


Figure 1.18 (continued)
CITY OF LAS VEGAS LAND USE PLAN

1.7.3 OFF-AIRPORT LAND USES

The areas immediately west, north, and south of VGT are heavily developed with residential neighborhoods, schools, parks, and industrial and commercial businesses. The land to the east of the airport is moderately developed, with commercial uses and low density residential. The following sections provide additional detail on the existing land uses in the vicinity of the airport.

- **Northern Airport Vicinity |** There is a combination of commercial and residential land uses north of VGT, which is bounded on the north side by Cheyenne Avenue. This area is developed with land uses that include retail/commercial/industrial and a church. Additionally, an approximate 30-acre area between the 7-11 convenience store and the Calvary Chapel Meadow Mesa church is currently under development for residential use. Land immediately north of this area is heavily developed with multi-family and single-family housing.

- **Eastern Airport Vicinity |** Simmons Street serves as VGT's primary boundary to the east, except for the area bounded by Sky Haven Drive, Citizen Avenue, and Evans Avenue. This area, along with much of the land east of Simmons Street and north of Evans Avenue, is moderately developed with commercial/industrial uses. The land east of Simmons and south of Evans has limited single family residential development and includes Greater Faith Baptist Church and Gilbert Magnet Elementary School.

- **Southern Airport Vicinity |** The area south of the airport is generally bounded by Carey Avenue, Rancho Drive, and Simmons Street. The CCDOA owns an undeveloped portion of land immediately south of Carey Avenue and west of Simmons Street. As described previously, this portion of property includes a portion of the Runway 30R RPZ and a detention basin right-of-way (ROW). West of this, the area is developed with commercial uses including a Walmart Supercenter, the Hylo Park Arena, and other commercial and retail uses.

- **Western Airport Vicinity |** The western boundary of the airport is established by Rancho Drive and Decatur Boulevard to the north. The land west of Rancho Drive is heavily developed with a mix of residential uses, including multi-family and single-family homes. Other land uses include commercial/retail and community facilities, including multiple churches and Doris M. Reed Elementary School.

As the area around VGT continues to grow and develop, consideration should be made to accommodate current and forecasted operations and development at the airport. Land use compatibility is especially important under flight paths and within the RPZs. While noise attenuation can help in maintaining quality of life inside of residences, residents located within and adjacent to the Air Terminal Environs Overlay District will still experience noise when outdoors. The FAA encourages the airport owner to control the RPZ through fee simple ownership of the land.

1.7.4 NOISE ABATEMENT PROCEDURES

CCDOA has implemented voluntary noise abatement procedures for VGT through the "Fly Safely and Quietly" program. Procedures include preferred departure practices, touch-and-go operation practices, calm wind runway preferences, and nighttime noise management practices. These procedures are summarized in **Table 1.17** and depicted on **Figure 1.19**.

"Fly Safely and Quietly" Signage

Table 1.17 | Noise Abatement Voluntary Rules and Procedures

General Operations and Arrivals
Runway 12R and Runway 7 are the designated calm wind runways.
Runway 12L is the designated calm wind runway for touch-and-go operations.
At night or after hours, use Runway 7 for departure unless operationally necessary.
Avoid overflight of populated areas whenever feasible.
For aircraft with a variable pitch propeller, avoid propeller setting changes below pattern altitude whenever practicable.
Intersection departures between the hours of 8:00 p.m. and 7:00 a.m. are prohibited.
Please refrain from doing engine runs for maintenance purposes from 11:00 p.m. to 7:00 a.m.
Automated runway lights - microphone activated 125.7 MHZ VHF; 3 clicks – "low" intensity; 5 clicks – "medium" intensity; 7 clicks – "high" intensity; lights automatically turn off 15 minutes after the last click.
For arrivals, utilize high profile, low throttle approaches whenever possible.
Avoid large propeller RPM increases below pattern altitude.
Departure Operations
All Runways
Utilize Pilots Operating Handbook procedures, if available.
Climb at best rate until reaching 500 feel AGL (weather permitting) before making any turns.
Remain clear of the Class B airspace unless clearance has been received.
For aircraft with variable pitch propellers, reduce power and prop RPM to climb power setting (preferably to 2500 RPM and 25 in. for non-turbo charged aircraft) as soon as practicable.
Runway 12L/12R
For departures making a left turn, turn left to remain north of the freeway (US-95); downwind should remain west of Martin Luther King (MLK) Blvd.
For departures making a right turn, turn right to remain north of the Freeway (US-95); downwind departures should remain well west of Rancho Blvd. to avoid inbound traffic.
Runway 7 (Silent 7 Departure)
For departures requiring a left turn, turn left, fly a northerly heading until crossing Craig Rd., and remain clear of Class B airspace (elevation 4500 feet MSL) before executing any turns.
Runway 30 (Rancho Road Departure)
After crossing Cheyenne Ave., proceed along Rancho Rd. until attaining 800 feet AGL before executing any runs.
Touch-and-Go Operations
Traffic pattern altitude 3003 MSL (800 feet AGL)
On downwind leg of Runway 12L, if practical, remain north of Lake Mead Blvd., west of MLK Blvd.
On downwind leg of Runway 7, if practical, remain west of MLK Blvd. and south of Gowan Rd.

Source: Fly Safely and Quietly at North Las Vegas Airport (VGT)

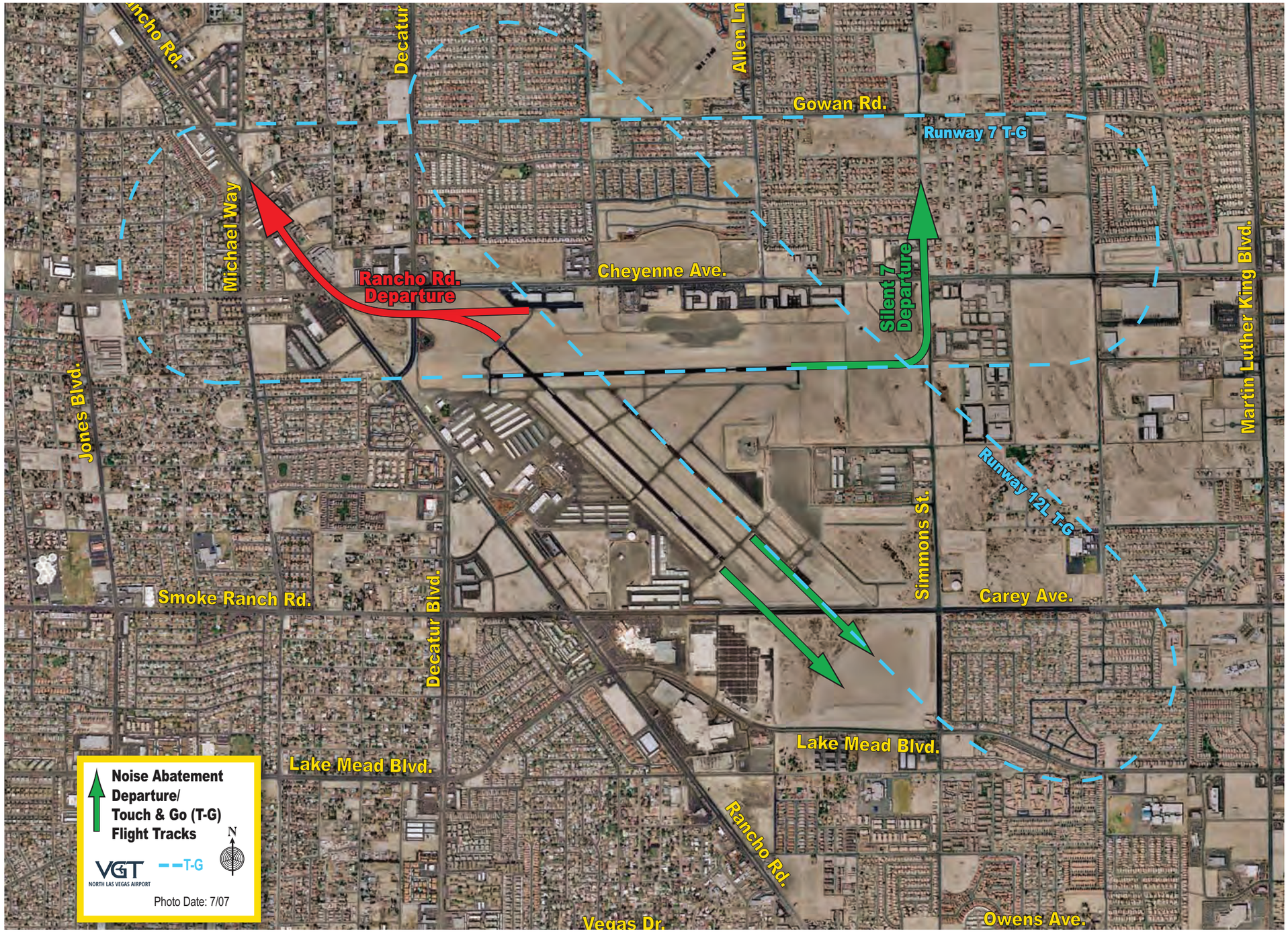


Figure 1.19
NOISE ABATEMENT PROCEDURES

This page intentionally left blank

1.7.5 PART 77 REQUIREMENTS

Part 77 establishes civil airport imaginary surfaces in relation to the airport and to each runway. The purpose of Part 77 is to help the FAA and sponsors identify potential obstructions to navigable airspace. These surfaces support the proper planning of land uses and zoning so that as new development occurs in a community, it can be evaluated to determine potential effects on airport airspace. The size and slope of each imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The Part 77 classifications for each runway end at VGT are as follows: 12L is a precision approach runway with visibility minimums greater than ¾-mile [P (C)]; 12R is a non-precision approach runway with visibility minimums greater than ¾-mile [NP (C)]; and 30R, 30L, 7, and 25 are each visual approach runways [V (B)]. The Part 77 surface descriptions are outlined below:

- The **Primary Surface** is a surface longitudinally centered on a runway. It extends 200 feet beyond each end of the runway; the elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of a primary surface is 500 feet for all visual and non-precision runways at VGT. Runway 12L, the precision runway, has a primary surface width of 1,000 feet.

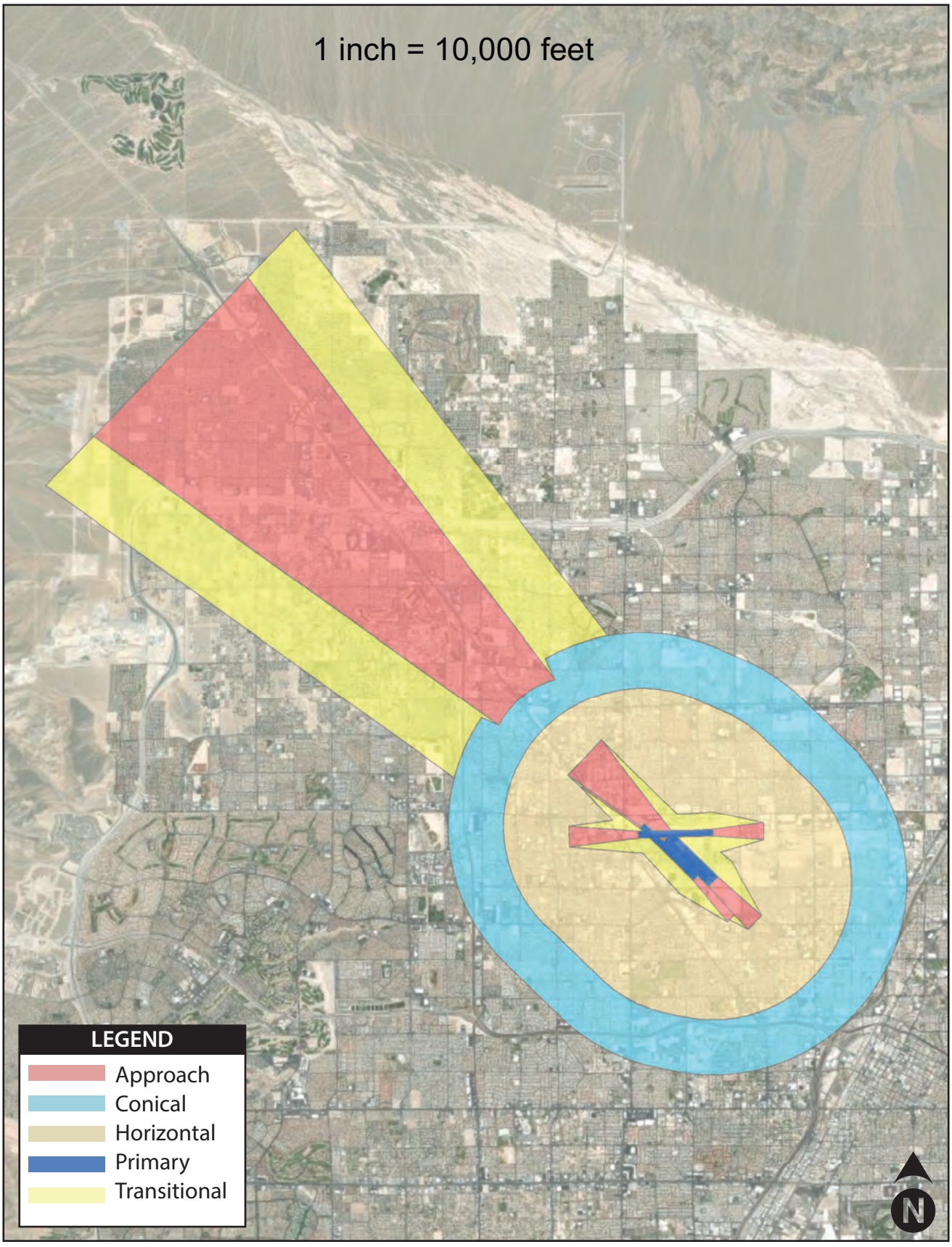
- The **Approach Surface** is a surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. The inner edge of the approach surface is the same width as the primary surface, and it expands uniformly to a width of 1,500 feet for all visual runways; 3,500 feet for non-precision runways; and 16,000 feet for precision runways. The approach surface for visual runways extends for a horizontal distance of 5,000 feet at a slope of 20 to 1. Non-precision runway approach surfaces extend for a horizontal distance of 10,000 feet at a slope of 34 to 1. Precision runway approach surfaces extend for a horizontal distance of 10,000 feet at a slope of 50 to 1 with an additional 40,000 feet at 40 to 1.

- The **Transitional Surface** extends outward and upward at right angles to the runway centerline and the runway centerline extended, at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces.

- The **Horizontal Surface** consists of a horizontal plane, which is 150 feet above the established airport elevation. The established airport elevation at VGT is 2,205 feet above MSL; thus, the horizontal surface is 2,355 feet.

- The **Conical Surface** extends outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

The existing Part 77 surfaces at VGT are depicted on **Figure 1.20**. Should the runway threshold locations change in the ultimate runway configuration, the Part 77 surfaces would subsequently need to be modified to reflect any new runway configuration or lengths.



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

1.8 SURFACE TRANSPORTATION

1.8.1 REGIONAL ROADWAYS

Regional roadways are designed to serve multiple communities and accommodate large volumes of traffic, often through uninterrupted travel. These roadways include freeways, highways, and arterials that provide access to the airport but are used primarily for non-airport trips. The following describes the main regional roadways providing access to VGT, while **Figure 1.21** depicts the regional setting graphically.

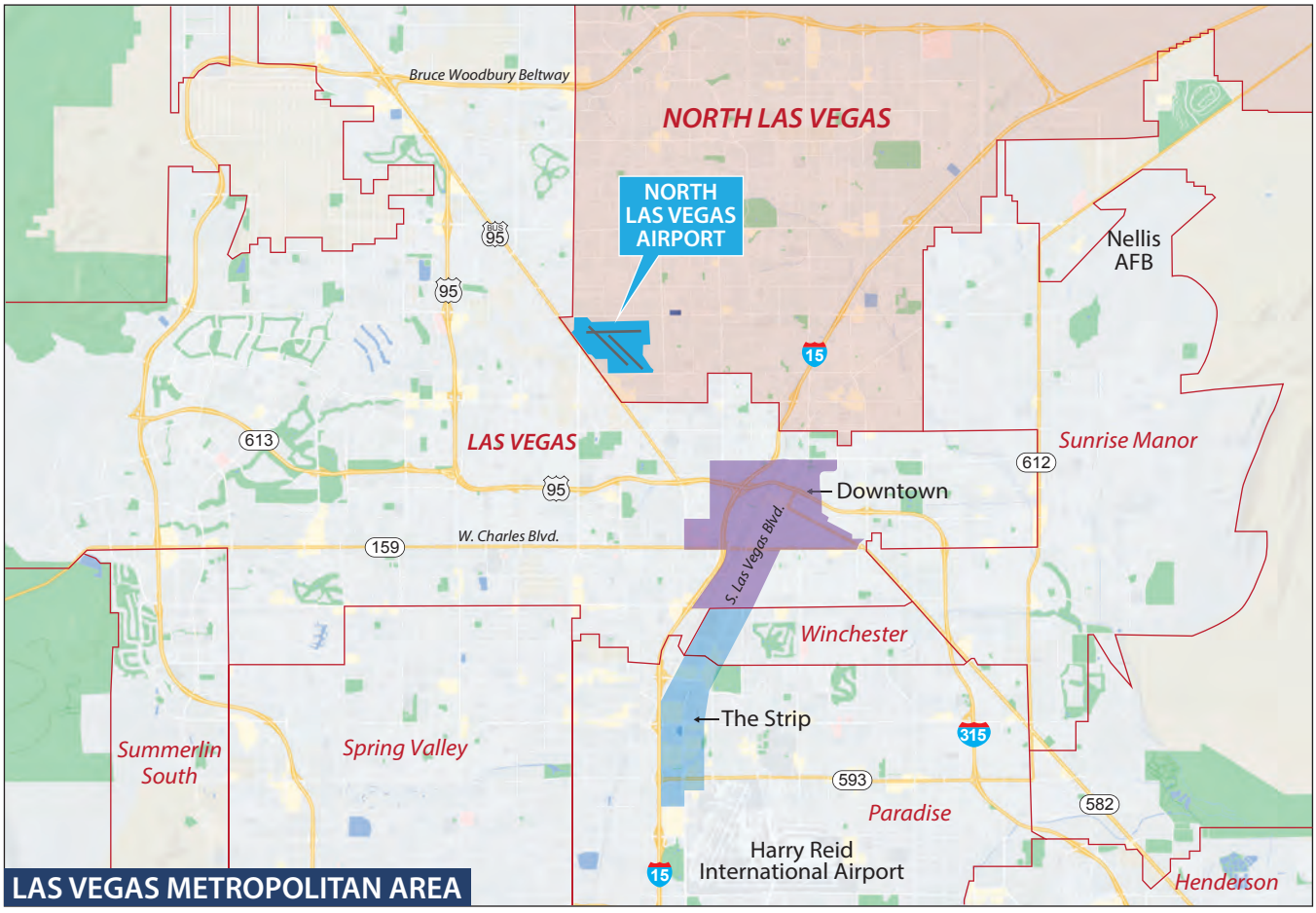


Figure 1.21
AIRPORT VICINITY/LOCATION MAPS

- **Interstate 15 |** Interstate 15 is a major north-south Interstate Highway located east of the airport. The segment of the Interstate that runs through the Las Vegas Valley is designated as the Las Vegas Freeway and is the only major north-south Interstate in the area.

- **Bruce Woodbury Beltway (Interstate 215 and Clark County Route 215) |** Located north of the airport, the Bruce Woodbury Beltway, also known as the Las Vegas Beltway, is a semicircle around the Las Vegas Valley and carries two numerical designations. Beginning at its southern terminus east of Interstate 515/Interstate 11, the highway is designated as Interstate 215 and runs west and northwest toward Interstate 15. Upon its intersection with Interstate 15 southwest of Harry Reid International Airport, the highway's designation changes to Clark County Route 215.

- **U.S. Highway 95 (Oran K. Gragson Freeway and Veterans Memorial Highway) |** U.S. Highway 95 is a major highway that traverses the state of Nevada from north to south and runs directly through Las Vegas. The highway runs north-south on VGT's west side, approximately 2.7 miles from the airport, before turning to the east and connecting with Interstate 15.

1.8.2 ROADWAY PLANNING

The State of Nevada developed the *One Nevada Transportation Plan* in 2018, which used a data-driven planning process to create a Statewide Transportation Improvement Program. This plan analyzed the existing transportation facilities and their needs statewide and developed a program to improve mobility and meet the state's future transportation needs. The six goal areas identified from this plan are:

- Enhance safety by building, maintaining, and operating the safest transportation system possible.

- Preserve infrastructure to support economic vitality, visitor experience, and travel safety.

- Optimize mobility to provide convenient and reliable movement of people and goods across all modes.

- Transform economies by supporting an innovative transportation framework.

- Foster sustainability by lowering long-term maintenance costs, promoting fiscal responsibility, and reducing greenhouse gas emissions from the transportation sector.

- Connect communities to local resources and amenities and collaborate with partners to best serve our communities.

The *One Nevada Transportation Plan* addresses aviation by reaffirming the alignment of goals between the Nevada Department of Transportation (NDOT) and the plan to work towards common outcomes.

1.8.3 MUNICIPAL AND LOCAL ROADWAYS

Municipal and local roadways are integral elements of a transportation network. These roadways are designed to provide access and traffic circulation between arterial roadways, community amenities, and residential properties. The following provides a summary of municipal and local roadways in the vicinity of VGT.

- **Rancho Drive (U.S. Route 95 Business and State Route 599) |** Rancho Drive is a six-lane major roadway located immediately west of VGT and connecting the northwest suburbs to central Las Vegas. The City of Las Vegas is currently studying a 6.6-mile segment of Rancho Drive from Rainbow Boulevard to Mesquite Avenue to convert it to a Complete Street, which could consist of three lanes in each direction, offset sidewalks, dedicated shared bus/bike lane, and other amenities.

- **Cheyenne Avenue (State Route 574) |** Cheyenne Avenue is situated north of VGT and is a six-lane east-west roadway. It originates west of the metropolitan area at Bruce Woodbury Beltway and extends for approximately 15 miles before terminating at Nellis Boulevard, just southwest of Nellis AFB.

- **Simmons Street |** Simmons Street is a north-south roadway consisting of four lanes and located east of VGT. It extends from Centennial Parkway to the north for approximately six miles before terminating at Vegas Drive to the south.

- **Carey Avenue |** Located south of the airfield, Carey Avenue bounds the main portion of airport property to the south. Carey Avenue is a four-lane roadway that extends east-west, from Rancho Drive on the west side to its termination east of Arnona Road at the LVMPD Range.

1.8.4 AIRPORT ROADWAYS

VGT's roadways serve as the landside interface between the regional, municipal, and local roadways and the airport's curb-front facilities. A summary of each roadway's characteristics is provided below.

- **Airport Drive |** Airport Drive is a loop road extending from Rancho Drive and providing access to the terminal building and aviation businesses in the immediate vicinity of the terminal.

- **Perimeter Road |** Perimeter Road is accessed from Rancho Drive at its northern terminus and is also centrally accessible from Airport Drive. Perimeter Road provides access to on-airport businesses and hangar facilities on the west side of the airport.

- **Thunderbird Field Road |** Thunderbird Field Road is located on the airport's east side and provides access to the ATCT and the on-airport LVMPD facilities. It is accessible from Simmons Street via Citizen Avenue and Sky Haven Drive.

1.9 SUSTAINABILITY

Sustainability is the responsible management of the environment while maintaining a viable economy and providing for the social well-being of the community. As the long-term road map for airport development, master plans incorporate sustainability to help reduce environmental impacts, increase operational efficiency, and improve community relations while realizing high, stable levels of economic growth. An evaluation of possible sustainability initiatives at VGT are included in later chapters of this Airport Master Plan Update.

The CCDOA has adopted departmentwide sustainable practices, approaches, and goals that are implemented throughout the Clark County airport system. The CCDOA Sustainability Team is tasked with maintaining and enhancing community quality of life by reviewing and implementing all sustainability initiatives at the County's airports. At VGT, there are sustainable practices and features currently in place, including the following:

- Drought tolerant and desert landscaping
- Lower-flow fixtures, sinks, and toilets
- In-terminal, airfield and hangar comingled recycling program
- LED lighting retrofits including in the main terminal, parking lot, roadway, high-mast, and airfield
- Asphalt millings repurposing program
- Hazardous materials disposal and cleanup
- CCDOA Environmental Management System (includes stormwater pollution prevention plans (SWPPP), Spill Prevention Control & Countermeasures plans, and environmental guidelines)
- Waste oil and battery disposal program
- Utility management software to track electricity, gas, water, and waste usage
- (Accreditation *currently pending*) Membership to Airport Carbon Accreditation program and successful calculation of Scope 1 & 2 carbon emissions
- Water refilling stations to reduce plastic waste
- Noise mitigation: "Fly Safely & Quietly" program
- Dry washing rental cars and aircraft

1.10 ENVIRONMENTAL CONSIDERATIONS

The purpose of the following environmental inventory is to identify potential environmental sensitivities that should be considered when planning future improvements at the airport. Research was performed for each of the 14 environmental impact categories described within FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*.

1.10.1 WATER RESOURCES

1.10.1.1 Stormwater Management

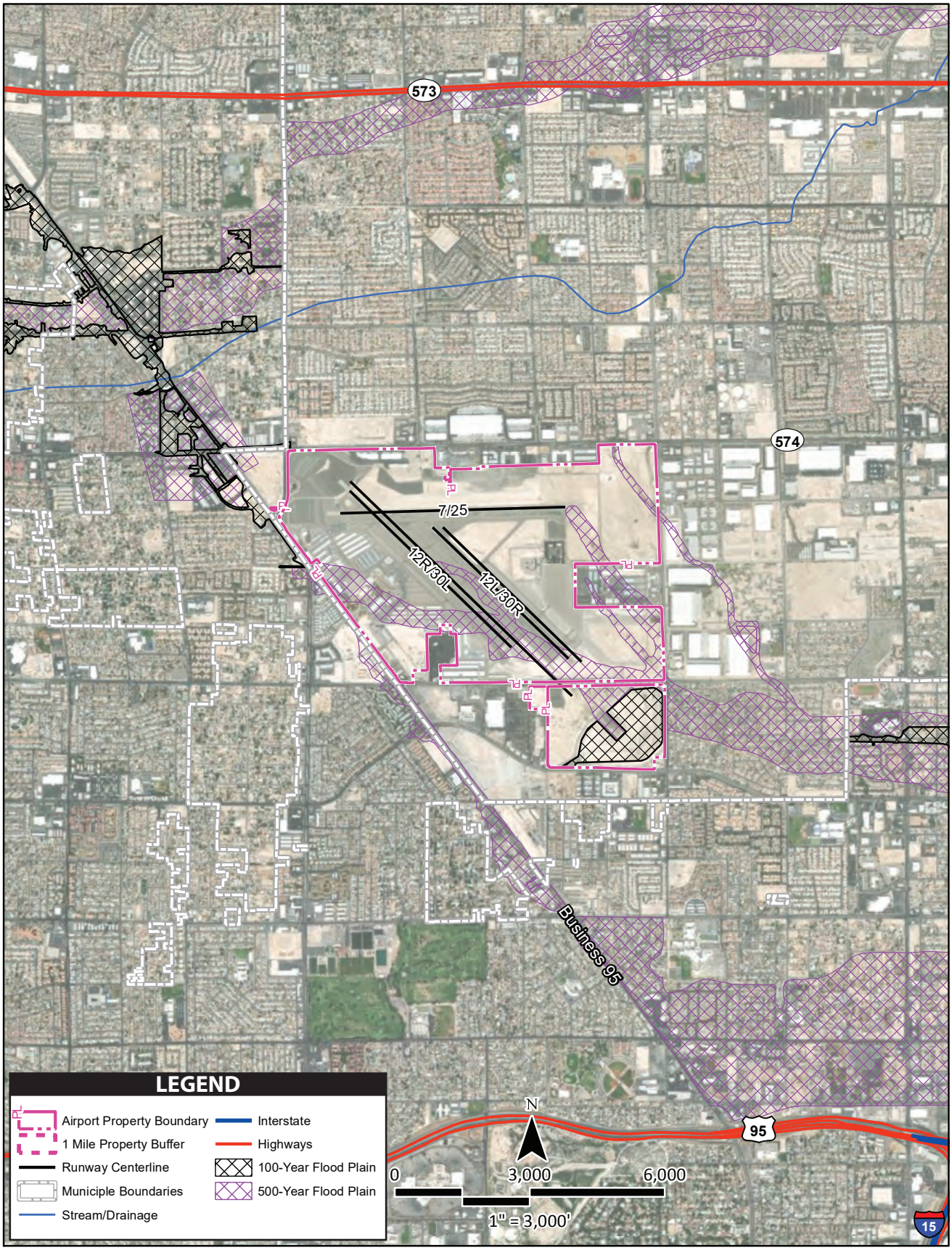
National Pollutant Discharge Elimination System (NPDES) permits outline the regulatory requirements of municipal stormwater management programs and establish requirements to help protect the beneficial uses of the receiving waters. They require permittees to develop and implement Best Management Practices (BMPs) to control/reduce the discharge of pollutants to waters of the United States to the maximum extent practicable (MEP). The NPDES program manages wastewater, construction, stormwater, and pretreatment.

The airport maintains a stormwater pollution prevention plan (SWPPP). The SWPPP ensures that the airport remains in compliance with the requirements of the NPDES program administered by the Nevada Division of Environmental Protection (NDEP) and the U.S. Environmental Protection Agency (EPA) by identifying and evaluating potential pollutant discharge activities that may be conducted by the airport and its tenants. As a result of the identified pollutant discharge activities, the SWPPP has outlined several best management practices (BMPs) that are implemented at VGT to eliminate, prevent, or reduce the potential for pollutants to enter the airport's stormwater system.

1.10.1.2 Floodplains

Executive Order (EO) 11988, *Floodplain Management*, directs federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. U.S. Department of Transportation (DOT) Order 5650.2, *Floodplain Management and Protection*, implements the guidelines contained in EO 11988.

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel numbers 32003C2155F and 32003C2160F, effective November 16, 2011, indicates that some of the airport is in Zone X, an Area of Minimal Flood Hazard. However, a portion of the airport located south of West Carey Avenue is in Zone A, Special Flood Hazard Areas Without Base Flood Elevation (BFE). This area is located within the 100-year floodplain. In addition, portions of the airport are in the 500-year floodplain (Zone X, 0.2 Pct Annual Chance Flood Hazard) (**Figure 1.22**).



Source: ESRI Basemap Imagery (2022), USDA, FEMA, USGS, TIGER/Line, Clark County, Nevada

1.10.1.3 Wetlands

The U.S. Army Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States, including adjacent wetlands, under Section 404 of the *Clean Water Act* (CWA). Wetlands are defined in EO 11990, *Protection of Wetlands*, as "those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." Wetlands can include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mudflats, natural ponds, estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation. Wetlands have three characteristics: the soil is inundated or saturated to the surface at some time during the growing season (hydrology), has a population of plants able to tolerate various degrees of flooding or frequent saturation (hydrophytes), and is saturated enough to develop anaerobic (absent of air or oxygen) conditions during the growing season (hydric).

According to the National Wetlands Inventory, there are no wetlands located within airport property boundaries.[2]

1.10.1.4 Surface Waters

The CWA establishes water quality standards, controls discharges, develops waste treatment management plans and practices, prevents or minimizes the loss of wetlands, and regulates other issues concerning water quality. Water quality concerns related to airport development most often relate to the potential for surface runoff and soil erosion, as well as the storage and handling of fuel, petroleum products, solvents, etc. Additionally, the U.S. Congress has mandated the NPDES under the CWA.

VGT is in the City of Las Vegas-Las Vegas Wash watershed. There are four waterbodies in this watershed, of which all four are designated as impaired.[3] The four waterbodies are not located within airport property boundaries.

1.10.1.5 Groundwater

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater, such as wells, springs, and other water sources. Examples of direct impacts to groundwater could include withdrawal of groundwater for operational purposes or reduction of infiltration or recharge area due to new impervious surfaces.[4]

[2] U.S. Fish & Wildlife Service, National Wetlands Inventory (https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper)
[3] U.S. EPA, How's My Waterway (https://mywaterway.epa.gov/community/north%20las%20vegas%20airport/overview)
[4] United States Geological Survey, What is Groundwater? (https://www.usgs.gov/faqs/what-groundwater)

The City of North Las Vegas obtains a portion of its water from a deep carbonate aquifer at various wells throughout the city. These wells are owned and operated by the city and are primarily used during the summer months to help meet city residents' peak demands.[5]

In 1990, the city established an artificial recharge program. Four recharge wells are used to inject treated Colorado River water when available during off-peak winter months. This water is then banked in the valley's groundwater system and has improved groundwater levels within the area.

The U.S. EPA's Sole Source Aquifer (SSA) Program was established under Section 1424(e) of the *Safe Drinking Water Act* (SDWA). Since 1977, it has been used by communities to help prevent contamination of groundwater from federally funded projects. It has increased public awareness of the vulnerability of groundwater resources. The SSA program is authorized by Section 1424(e) of the SDWA (Public Law 93-523, 42 U.S.C. 300 et. seq), which states:

> "*If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register*."[6]

There are no sole source aquifers located within airport boundaries. The nearest sole source aquifer is Fresno Streamflow Source Zone, which is located 178 miles from the airport.[7]

1.10.1.6 Wild and Scenic Rivers

The *National Wild and Scenic Rivers Act* was established to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations.

The Nationwide River Inventory (NRI) is a list of over 3,400 rivers or river segments that appear to meet the minimum *Wild and Scenic Rivers Act* eligibility requirements based on their free-flowing status and resource values. The development of the NRI resulted from Section 5(d)(1) in the *Wild and Scenic Rivers Act*, directing federal agencies to consider potential wild and scenic rivers in the comprehensive planning process.

There are no designated National Wild and Scenic Rivers in Nevada. The closest designated National Wild and Scenic River identified is the Amargosa River, located 62 miles from the airport in California.[8] The nearest National River Inventory feature is Virgin River, located 51 miles from the airport, where it flows into the northern reaches of Lake Mead.[9]

---

[5] City of North Las Vegas (https://www.cityofnorthlasvegas.com/residents/water/water-quality/water-resources?locale=en)
[6] U.S. EPA, Overview of the Drinking Water Sole Source Aquifer Program (https://www.epa.gov/dwssa/overview-drinking-water-sole-source-aquifer-program#Authority)
[7] U.S. EPA, Sole Source Aquifers (https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b)
[8] National Wild and Scenic River System in the U.S. (https://nps.maps.arcgis.com/apps/MapJournal/index.html?appid=ba6debd907c7431ea765071e9502d5ac#)
[9] Nationwide River Inventory (https://www.nps.gov/maps/full.html?mapId=8adbe798-0d7e-40fb-bd48-225513d64977)

1.10.2 ENDANGERED AND THREATENED SPECIES

Biotic resources include the various types of plants and animals that are present in an area. The term also applies to rivers, lakes, wetlands, forests, and other habitat types that support plants and animals.

The U.S. Fish and Wildlife Service (USFWS) is charged with overseeing the requirements contained within Section 7 of the *Endangered Species Act* (ESA). The ESA provides a framework to conserve and protect animal or plant species whose populations are threatened by human activities. The FAA and USFWS review projects to determine if a significant impact to protected species will result during the implementation of a proposed project. Significant impacts occur when a proposed action could jeopardize the continued existence of a protected species or would result in the destruction or adverse modification of federally designated critical habitat in the area. The USFWS's Information for Planning and Consultation (IPaC) resource list describes species and habitat protected under the ESA within the vicinity of the airport (**Table 1.18**).

Table 1.18 | Species Protected Under ESA Section 7 with Potential to Occur Within Two Miles of the Airport

Common Name (*Scientific Name*)	Federal Status	Habitat and Range	Potential for Occurrence
Birds			
yellow-billed cuckoo (*Coccyzus americanus*)	Threatened	Require contiguous patches of multilayered riparian habitat for nesting. Also found in cottonwood-willow forests (*Populus* spp.- *Salix* spp.). During the winter, yellow-billed cuckoos inhabit a variety of conditions, such as coastal scrub, second-growth forests and woodlands, hedgerows, forest edges, and in smaller riparian patches than those used for breeding.	Unlikely to occur. No suitable habitat is present within airport property boundaries.
Reptiles			
desert tortoise (*Gopherus agassizii*)	Threatened	Sandy flats to rocky foothills, including alluvial fans, washes, and canyons where suitable soils for den construction may occur.	Unlikely to occur. The airport does not contain suitable habitat for this species.
Fishes			
Pahrump poolfish (*Empetrichthys latos*)	Endangered	Endemic to Manse Spring. This species prefers springs (i.e., places where underground water emerges at the surface – the start of streams and ponds) that consist of cool and often permanently flowing water.	Unlikely to occur. No perennial water, cienegas, or stock tanks are present at the airport or in the adjacent vicinity.
Insects			
monarch butterfly (*Danaus plexippus*)	Proposed Threatened	A migratory species found in a variety of habitats. Requires milkweed (*Asclepias* spp.) for breeding. In the southwestern United States, migrating monarch butterflies often occur near water sources (e.g., rivers, creeks, riparian corridors, roadside ditches, and irrigated gardens).	Unlikely to occur. The airport is mostly devoid of flowering plants.

USFWS Status Definitions:
***Endangered*:** an animal or plant species that is in danger of extinction throughout all or a significant portion of its habitat range
***Threatened*:** an animal or plant species that is in danger of extinction throughout all or a significant portion of its habitat range
***Proposed Threatened*:** an animal or plant species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and has been proposed to be listed as threatened; proposed threatened species are not protected by the take prohibitions of section 9 of the ESA

Sources: USFWS IPaC (https://ipac.ecosphere.fws.gov/); U.S. National Park Service (https://www.nps.gov/); Freshwater Habitats Trust (https://freshwaterhabitats.org.uk/habitats/spring/)

Section 3 of the ESA is used to protect critical habitat areas. Designated critical habitat areas are geographically defined and have been determined to be essential to the recovery of a specific species. There is no federally designated critical habitat at the airport.

There is potential for avian concerns for areas at the airport listed in the IPaC. Habitat for migratory birds may occur if bushes or other ground nesting substrate is present.

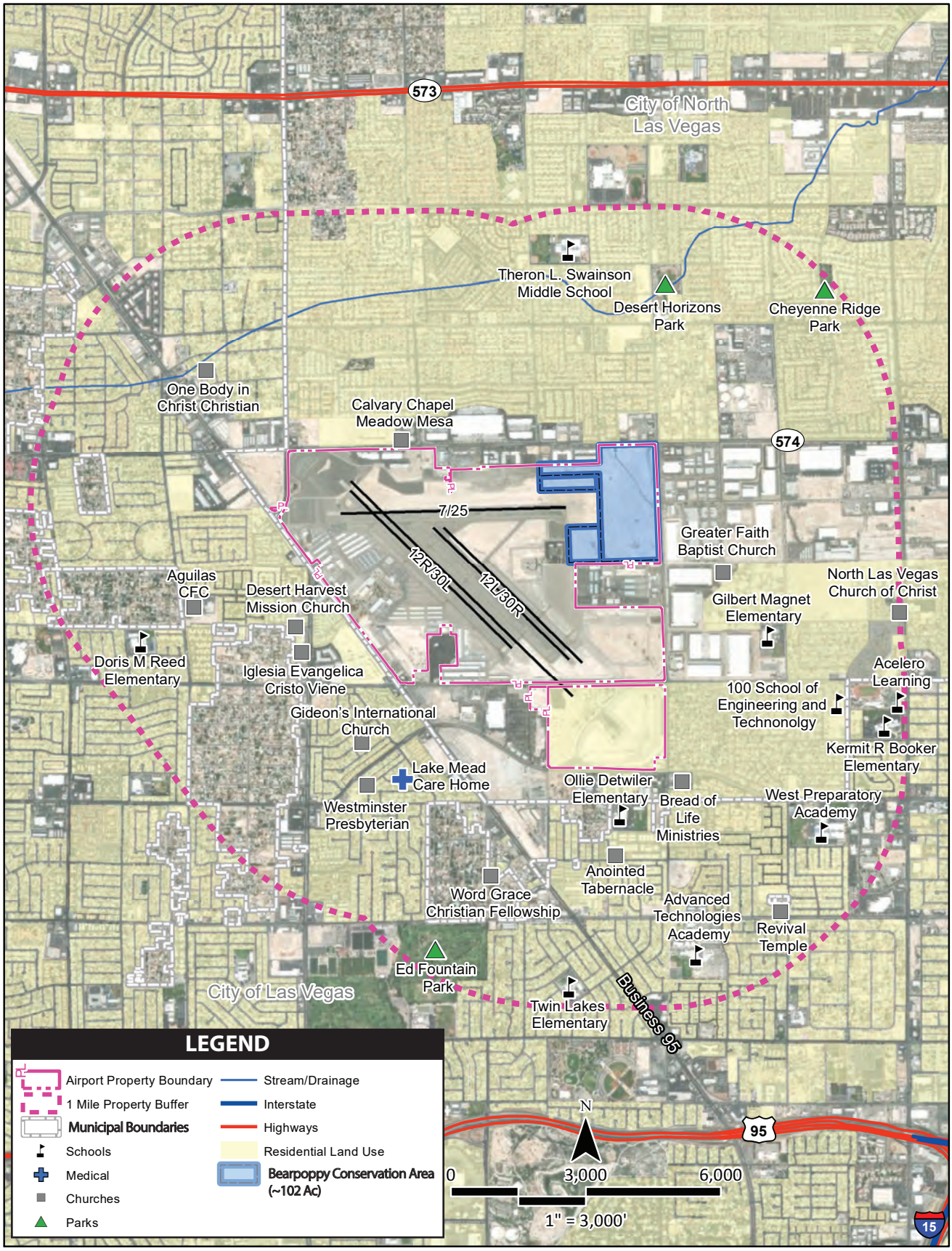
Other species of special concern in this area include the Las Vegas bearpoppy (*Arctomecon californica).* The bearpoppy is listed as critically endangered by the State of Nevada pursuant to NRS 527.260, *et.seq*., and is currently under petition to be listed under the ESA for federal protection. Its status and protection are overseen and administered by the Nevada State Division of Forestry. This species can be found at the airport on a 110-acre undeveloped lot that is located south of Cheyenne Avenue and east of the approach end of Runway 25 (**Figure 1.1**). To preserve the bearpoppy's habitat, Clark County (which owns and manages the 110 acres) entered a Memorandum of Understanding (MOU) with the Bureau of Land Management (BLM). Outlined in the MOU, the county and BLM have agreed to manage this lot as an undeveloped open space, and thus preserve the bearpoppy habitat and ensure the long-term survival of this species.

1.10.3 NOISE EXPOSURE

An Airport Overlay District (AOD) was adopted in 1990 by the City of Las Vegas pursuant to Section 19.10.080 of the *City of Las Vegas Unified Development Ordinance*[10] and in conjunction with Section 17.16.050 of the *City of North Las Vegas Code of Ordinances*[11] and Section30.02.26C, Part A of the *Clark County Title 30: Unified Development Code*.[12] The AOD was created to regulate land uses near the airport and to identify specific ranges of land uses that are compatible with airport hazard and noise exposure zones. The AOD encompasses an area of land characterized by noise levels -- specifically within the 60 day-night average sound level (DNL) noise exposure zone and greater. It also outlines the requirements of specific land uses located within the AOD to be deemed compatible. In the City of North Las Vegas ordinance, residential land uses, for example, are permitted only within areas associated with the 60-70 DNL noise exposure subzones and those units must include noise-attenuated construction (e.g., soundproofing) to be permitted. Similarly, institutional land uses such as schools and churches without noise-attenuated construction are only permitted within the 60 DNL noise exposure zones or within the 65 and 70 DNL noise exposure zones with noise-attenuated construction.

Table 1.19 identifies noise-sensitive land uses within one mile of the airport. These land uses are also shown on **Figure 1.23**. The closest single-family residential areas are located southeast and adjacent to the airport boundary. The nearest multi-family residential areas are located west and adjacent to the airport boundary and to the west of Rancho Drive.

[10] City of Las Vegas Unified Development Ordinance (https://files.lasvegasnevada.gov/planning/Sunstone-Exhibit-I-UDC-2019.pdf)
[11] City of North Las Vegas Code of Ordinances (https://library.municode.com/nv/north_las_vegas/codes/code_of_ordinances)
[12] Clark County Title 30: Unified Development Code (https://www.clarkcountynv.gov/government/departments/comprehensive_planning_department/library/title-30)



Source: ESRI Basemap Imagery (2022), USDA, FEMA, USGS, TIGER/Line, Clark County, Nevada

Table 1.19 | Noise-Sensitive Land Uses Within One Mile of Airport Boundaries

Facility	Location	Distance from Airport (miles)	Direction from Airport
Schools			
Gilbert Magnet Elementary School	2101 W Cartier Avenue	0.40	East
100 School of Engineering and Technology	2341 Comstock Drive	0.70	Southeast
Ollie Detwiler Elementary School	1960 Ferrell Street	0.20	South
Doris M. Reed Elementary School	2501 Winwood Street	0.80	West
Theron L. Swainston Middle School	3500 W Gilmore Avenue	0.90	North
Twin Lakes Elementary School	1205 Silver Lake Drive	1.00	South
Advanced Technologies Academy	1411 Robin Street	0.80	Southeast
West Preparatory Academy	2050 Sapphire Stone Avenue	0.70	Southeast
Kermit R. Booker Elementary School	2277 N M.L.K. Boulevard	0.90	Southeast
Acelero Learning	4366 W Cheyenne Avenue	0.11	Southeast
Places of Worship			
Calvary Chapel Meadow Mesa	4370 W Cheyenne Avenue	0.04	North
Aguilas Christian Family Center (CFC)	5355 Madre Mesa Drive	0.50	West
Revival Temple	1601 N Tonopah Drive	0.80	Southeast
North Las Vegas Church of Christ	2626 N M.L.K. Boulevard	1.00	East
Bread of Life Ministries of His Glory	2721 Coran Lane	0.20	Southeast
Anointed Tabernacle	3050 Holly Avenue	0.40	South
Iglesia Evangélica Cristo Viene	2481 N Decatur Boulevard	0.30	West
Word of Grace Christian Fellowship	3956 Melody Lane	0.50	South
Westminster Presbyterian	4601 W Lake Mead Boulevard	0.50	Southwest
Gideons International Church	4321 Mark Avenue	0.30	West
Desert Harvest Mission Church	4900 Bevvie Drive	0.30	West
One Body in Christ Christian Church	5367 Jay Avenue	0.60	Northwest
Greater Faith Baptist Church	2736 Chamberlain Lane	0.30	East
Health Care Facilities			
Lake Mead Care Home	4325 W Lake Mead Boulevard	0.30	South

Source: U.S. EPA, EJScreen (https://ejscreen.epa.gov/mapper/); Google Earth Aerial Imagery, January 2023

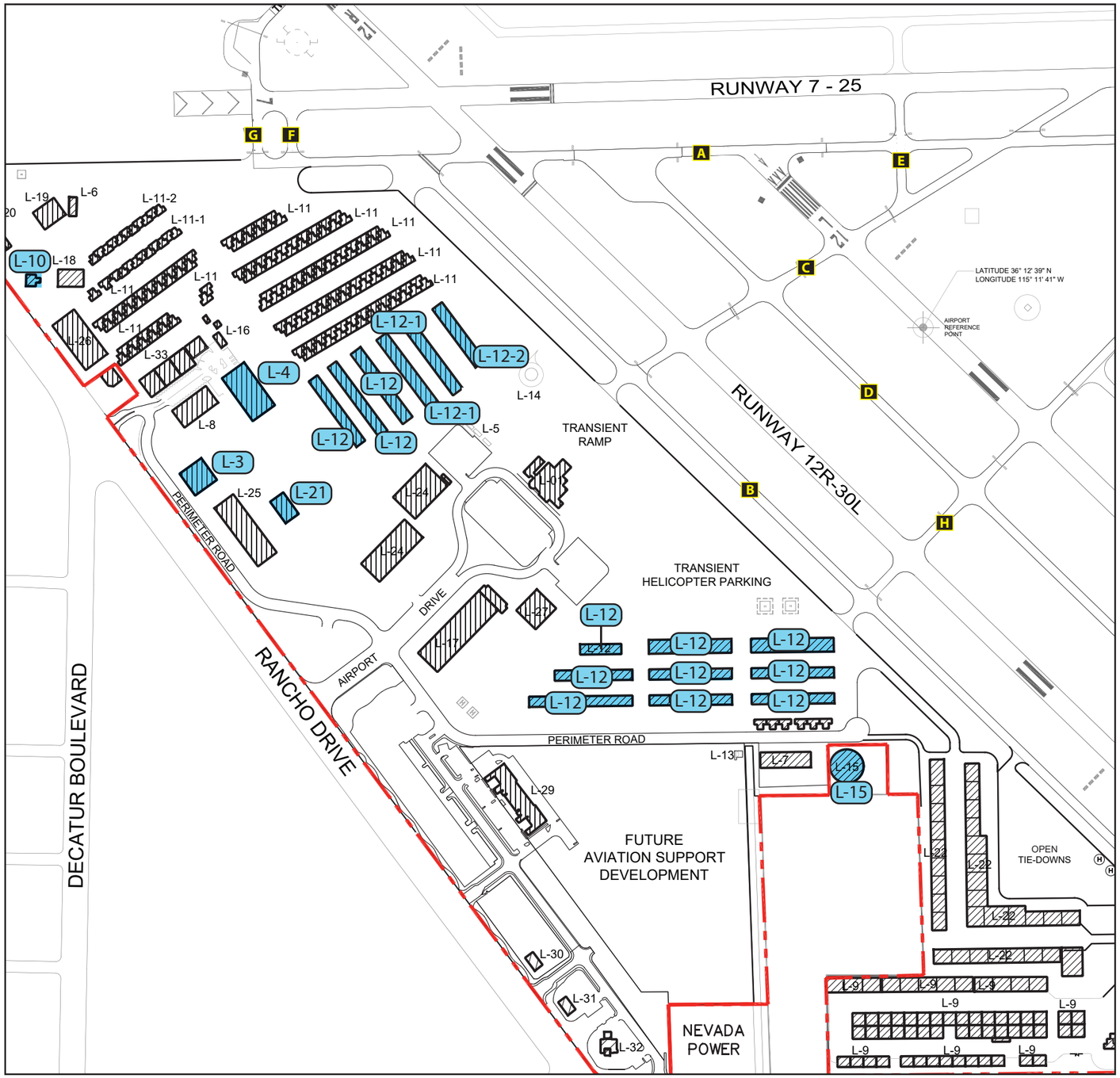
1.10.4 DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F)

Section 4(f) of the *Department of Transportation Act,* which was recodified and renumbered as Section 303(c) of 49 United States Code, provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly or privately owned historic sites, public parks or recreation areas, or waterfowl and wildlife refuges of national, state, regional, or local importance unless there is no feasible and prudent alternative to the use of such land, and the project includes all possible planning to minimize harm resulting from the use.[13]

Figure 1.24 and **Table 1.20** identify potential Section 4(f) resources within one mile of the airport. School playgrounds or athletic fields may be considered a Section 4(f) resource if the recreational facilities at the school are readily available to the public.

[13] Title 49 U.S. Code § 303, Policy on Lands, Wildlife and Waterfowl Refuges, and Historic Sites

This page intentionally left blank



Source: Clark County Department of Aviation

50+ YEAR OLD BUILDING LEGEND

NAME	DOAADDRESS	MGMT	BLDGID	AOA	CONSTYR
MAIN TERMINAL	4265 PERIMTER RD	PRIVATE	L-01	YES	1991
FAA CONTROL TOWER	THUNDERBIRD FIELD RD	PRIVATE	L-02	YES	2001
HORTON AVIONICS	2732 PERIMETER RD	DOA	L-03	YES	1963
VACANT-DOA	4265 PERIMTER RD	PRIVATE	L-04	YES	1964
FUEL TANKS AVGAS/JET A	4265 PERIMTER RD	PRIVATE	L-05	YES	1996
LAS VEGAS METROPOLITAN POLICE	4265 PERIMTER RD	PRIVATE	L-06	YES	1983*
DEPARMENT OF AVIATION MAINTENANCE BUILDING	4265 PERIMTER RD	PRIVATE	L-07	YES	1996
DESERT AVIATION CENTER HANGARS	4265 PERIMTER RD	PRIVATE	L-08	YES	2001
OUTBACK HANGARS	2806 PERIMETER RD	PRIVATE	L-09	YES	2005
CIVIL AIR PATROL	4265 PERIMTER RD	PRIVATE	L-10	YES	1969
PORTABLE HANGARS	4265 PERIMTER RD	DOA	L-11	YES	1998
PORTABLE HANGARS	4265 PERIMTER RD	DOA	L-11-1	YES	1987*
PORTABLE HANGARS	4265 PERIMTER RD	DOA	L-11-2	YES	1995
SHADE HANGARS	4265 PERIMTER RD	PRIVATE	L-12	YES	1967
SHADE HANGARS	4265 PERIMTER RD	PRIVATE	L-12-1	YES	1979
SHADE HANGARS	4265 PERIMTER RD	PRIVATE	L-12-2	YES	1997
MAINTENANCE BUILDING WASH RACK	4265 PERIMTER RD	PRIVATE	L-13	YES	2009
SELF SERVICE FUEL STATION	4265 PERIMTER RD	PRIVATE	L-14	YES	1992
CITY OF NORTH LAS VEGAS WATER WELL	4265 PERIMTER RD	PRIVATE	L-15	NO	1964
AIRWORK	2826 PERIMTER RD	PRIVATE	L-16	YES	1988
702 HELICOPTER, FLYRIGHT AVIATION, VGT AVIATION, APEX	2806 PERIMETER RD	PRIVATE	L-17	YES	1993
BUREAU OF LAND MANAGEMENT HELITACK BUILDING	2980 N RANCHO DR	PRIVATE	L-18	YES	1994
LAS VEGAS METROPOLITAN POLICE ARMOR DIVISION	2990 N RANCHO DR	PRIVATE	L-19	YES	1994
MISCELLANEOUS AGENCY HANGARS	4265 PERIMTER RD	PRIVATE	L-20	YES	1996
WEST AIR AVIATION	2726 PERIMTER RD	PRIVATE	L-21	YES	1964
HANGARS SKID ROW	4265 PERIMTER RD	DOA	L-22	YES	1994
CHEYENNE AIR CENTER	4511 W CHEYENNE AVE	PRIVATE	L-23	NO	1996
CHEYENNE AIR CENTER	4511 W CHEYENNE AVE	PRIVATE	L-23-1	NO	1998
STEELMAN AVIATION/AIRSMART	2715/2705 AIRPORT DR	PRIVATE	L-24	YES	1996
DESERT AVIATION CENTER	2722 PERIMTER RD	DOA	L-25	YES	1999
LONE MOUNTAIN AVIATION - SUNRISE AVIONICS	2830 N RANCHO DR.	PRIVATE	L-26	YES	2002
EGA, SKYLINE HELICOPTER TOURS	2642 AIRPORT DR	PRIVATE	L-27	YES	1994
LAS VEGAS METROPOLITAN POLICE AIR SUPPORT/RESCUE HANGAR	4265 PERIMTER RD	PRIVATE	L-28	YES	2009
LEASABLE OFFICE BUILDING	2580 N RANCHO DR	PRIVATE	L-29	YES	2007
METRO PAWN	2480 N RANCHO DR	PRIVATE	L-30	YES	2012
DEL TACO	2450 N RANCHO DR	PRIVATE	L-31	YES	2008
US BANK	2420 N RANCHO DR	PRIVATE	L-32	YES	2008
EXECUTIVE HANGARS	2814 PERIMETER RD	PRIVATE	L-33	YES	1997

* ESTIMATED DATE HISTORICAL GAP IN AERIALS

Note:
Highlighted buildings on the graphic and legend denote buildings 50 years or older.

This page intentionally left blank

Table 1.20 | U.S. Dept. of Transportation Section 4(f) Resources Within One Mile of Airport Boundaries

Place	Location	Distance from Airport (miles)	Direction from Airport
Public Recreational Facilities			
Ed Fountain Park	1400 N Decatur Boulevard	1.00	South
Desert Horizons Park	3750 Simmons Street	0.60	North
Cheyenne Ridge Park	3814 Scott Robinson Boulevard	1.00	Northeast
Public Schools (may or may not have protected Section 4(f) resources)			
100 School of Engineering and Technology	2341 Comstock Drive	0.70	Southeast
Gilbert Magnet Elementary School	2101 W Cartier Avenue	0.40	East
Ollie Detwiler Elementary School	1960 Ferrell Street	0.15	South
Doris M. Reed Elementary School	2501 Winwood Street	0.80	West
Theron L. Swainston Middle School	3500 W Gilmore Avenue	0.90	North
Twin Lakes Elementary School	1205 Silver Lake Drive	1.00	South
Advanced Technologies Academy	1411 Robin Street	0.80	Southeast
West Preparatory Academy	2050 Sapphire Stone Avenue	0.70	Southeast
Kermit R. Booker Elementary School	2277 N M.L.K. Boulevard	0.90	Southeast
Acelero Learning	2730 Airport Drive	0.90	Southeast

Sources: Google Earth Aerial Imagery, January 2023; U.S. Department of the Interior, National Park Service, National Register of Historic Places (https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466)

There are no National Register of Historic Places (NRHP)-listed Resources within one mile of the airport. The closest NRHP-listed resource is Berkley Square, a historic district located in Historic West (1.6 miles from the airport).

There are no waterfowl and wildlife refuges within one mile of the airport. The nearest wilderness and national recreation areas are listed below:

- Nearest wilderness area: Rainbow Mountain Wilderness (16 miles from the airport)
- Nearest national recreation area: Lake Mead National Recreation Area (15 miles from the airport)

1.10.5 AIR QUALITY

The concentration of various pollutants in the atmosphere determines the local air quality. The significance of a pollutant's concentration is determined by comparing it to the state and federal air quality standards. In 1971, the U.S. Environmental Protection Agency (EPA) established standards that specify the maximum permissible short- and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for criteria pollutants: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb).

Based on federal air quality standards, a specific geographic area can be classified as an "attainment," "maintenance," or "nonattainment" area for each pollutant. The threshold for nonattainment designation varies by pollutant.

The airport is in Clark County, Nevada, in the City of North Las Vegas, three miles northwest of the Las Vegas city center. The portion of Clark County that contains the airport is in moderate nonattainment for ozone (8-hour, 2015).[14] Clark County was redesignated as a maintenance area for CO in 2010 and PM_{10} in 2014.

1.10.6 HAZARDOUS MATERIALS

Federal, state, and local laws regulate hazardous materials use, storage, transport, and disposal. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous materials or contaminants may cause significant impacts to soil, surface water, groundwater, air quality, and the organisms using these resources. According to the EPA's *EJScreen* online tool, there are no Superfunds[15] within one mile of the airport; however, there is one brownfield[16] located southeast of the airport boundary.

Nevada has three solid waste management authorities – the Southern Nevada Health District (covering Las Vegas and Clark County), the Washoe County Health District (covering the Reno area), and the Nevada Division of Environmental Protection (NDEP) – each of which administers state solid waste management regulations, including permitting and enforcing.[17] The NDEP's solid waste branch includes staff responsible for permitting and inspecting solid waste disposal sites, as well as staff responsible for waste reduction, reuse, and recycling programs.

There are several recycling centers within North Las Vegas, Nevada. The closest recycling center is Southern Nevada Recycling Center, located two miles east of the airport on the western side of Interstate 15. The closest solid waste landfill is the Cheyenne Transfer Station two miles east of the airport.

1.10.7 CLIMATE

Increasing concentrations of greenhouse gases (GHGs) can affect global climate by trapping heat in Earth's atmosphere. Scientific measurements have shown that Earth's climate is warming with concurrent impacts, including warmer air temperatures, rising sea levels, increased storm activity, and greater intensity in precipitation events. Climate change is a global phenomenon that can also have local impacts. GHGs, such as water vapor (H_2O), carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and O_3, are both naturally occurring and anthropogenic (human-made). Research has established a direct correlation between fuel combustion and GHG emissions. GHGs from anthropogenic sources include CO_2, CH_4, N_2O, hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). CO_2 is the most important anthropogenic GHG because it is a long-lived gas that remains in the atmosphere for up to 100 years.

[14] Nevada Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants (https://www3.epa.gov/airquality/greenbook/anayo_nv.html)
[15] A location that has been contaminated by hazardous waste and has been designated by the U.S. EPA for management.
[16] A property, expansion, redevelopment, or reuse of a location that has the potential presence of a hazardous substance, pollutant, or contaminant.
[17] Nevada Division of Environmental Protection, Solid Waste (https://ndep.nv.gov/land/waste/solid-waste)

The EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2021* shows total U.S. emissions have decreased by two percent from 1990 to 2021, down from a high 15.8 percent above 1990 levels in 2007. During 2020 to 2021, the U.S. saw an increase in economic activity driven by businesses and persons rebounding after the COVID-19 pandemic. This resulted in an increase in total U.S. GHG emissions, of which CO_2 emissions accounted for the majority.

In 2021, the transportation sector and power generation accounted for 79.3 percent of total CO_2 emissions; however, the overall aviation industry has shown a decrease in CO_2 emissions by 18 percent between 1990 and 2021.[18] Commercial aircraft emissions have highly fluctuated over the past 30 years, with a 27 percent increase between 1990 and 2007, a two percent decrease from 2007 to 2019, and a 33 percent decrease from 2019 to 2020, followed by a 23 percent increase from 2020 to 2021. Overall, this represents an eight percent difference between 1990 and 2021 commercial aircraft emissions. Between 1990 and 2021, emissions from military aircraft decreased by 65 percent.

Information regarding the climate for the airport and surrounding environments – including wind, temperature, and precipitation – is found earlier in this airport master plan.

Currently, the State of Nevada has a State Climate Strategy document, which was released in December 2020 and is recognized by the U.S. Center for Climate and Energy Solutions. The plan recommends reducing state GHG emissions 28 percent by 2025, 45 percent by 2030, and reaching net-zero emissions by 2050. Key aspects of the plan include a framework for reducing GHG emissions across all economic sectors, establishing the state's groundwork for climate adaptation and resilience, and creating a structure for ongoing climate action across the state. Previously, Nevada released a climate action plan in 2008.[19]

1.10.8 FARMLANDS

Under the *Farmland Protection Policy Act* (FPPA), federal agencies are directed to identify and consider the adverse effects of federal programs on the preservation of farmland, to consider appropriate alternative actions that could lessen adverse effects, and to assure that such federal programs are, to the extent practicable, compatible with state or local government programs and policies to protect farmland. The FPPA guidelines, developed by the U.S. Department of Agriculture (USDA), apply to farmland classified as prime, unique, or of state or local importance as determined by the appropriate government agency, with concurrence by the Secretary of Agriculture.

The USDA Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey shows the types of soils and their farmland classification on and adjacent to the airport. The airport is within urbanized area boundaries.[20] In addition, the entire airport area is classified as "not prime farmland." Therefore, the FPPA would not be applicable to the airport property.

Table 1.21 describes the farmland classifications based on the types of soil within the airport's boundaries.

[18] U.S. EPA, Inventory of U.S. Greenhouse Gases, Chapter 3, Energy (https://www.epa.gov/ghgemissions/draft-inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021)
[19] U.S. State Climate Action Plans (https://www.c2es.org/document/climate-action-plans/), accessed January 2023
[20] U.S. EPA, EJScreen (https://ejscreen.epa.gov/mapper/), January 2023

Table 1.21 | Summary by Map Unit – Las Vegas Valley Area, Nevada, Part of Clark County (NV788)

Soil Type	Farmland Rating
Glencarb very fine sandy loam, saline	Not prime farmland
Las Vegas gravelly fine sandy loam, 0 to 2 percent slopes	Not prime farmland
Las Vegas-McCarran-Grapevine complex, 0 to 4 percent slopes	Not prime farmland
Las Vegas-DeStazo complex, 0 to 2 percent slopes	Not prime farmland
Skyhaven very fine sandy loam, 0 to 4 percent slopes	Not prime farmland
Urban land	Not prime farmland

1.10.9 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Determination of a project's environmental impact to historic and cultural resources is made under guidance in the *National Historic Preservation Act* (NHPA) *of 1966*, as amended, the *Archaeological and Historic Preservation Act* (AHPA) *of 1974*, the *Archaeological Resources Protection Act* (ARPA), and the *Native American Graves Protection and Repatriation Act* (NAGPRA) *of 1990*. In addition, the *Antiquities Act of 1906*, the *Historic Sites Act of 1935*, and the *American Indian Religious Freedom Act of 1978* also protect historic, architectural, archaeological, and cultural resources. Impacts may occur when a proposed project causes an adverse effect on a resource that has been identified (or is unearthed during construction) as having historic, architectural, archaeological, or cultural significance.

There are no NRHP-listed historic buildings, districts, or neighborhoods within airport property boundaries or within one mile of the airport;[21] however, there are buildings over 50 years old at the airport that were evaluated and determined to have no historic significance. **Table 1.22** and **Figure 1.24** depict these buildings, which are primarily on the west and southwest portion of the airport and include Horton Avionics, Civil Air Patrol, shade hangars, West Air Aviation, and a vacant building. In addition, intact prehistoric resources may be present in undisturbed areas of the airport.

Table 1.22 | 50+ Year Old Buildings on the Airport

Name	Location	Construction Year
Horton Avionics	2732 Perimeter Rd	1963
Vacant DOA	4265 Perimeter Rd	1964
Civil Air Patrol	4265 Perimeter Rd	1969
Shade Hangars	4265 Perimeter Rd	1967
City of North Las Vegas Water Well	4265 Perimeter Rd	1964
West Air Aviation	2726 Perimeter Rd	1964

The nearest tribal land to the airport is the Las Vegas Paiute Tribe Reservation, located more than two miles southeast of the airport on the eastern border of Interstate 15.[22]

1.10.10 NATURAL RESOURCES AND ENERGY SUPPLY

It is the policy of FAA Order 1053.1C, *Energy and Water Management Program for FAA Buildings and Facilities*, to encourage the development of facilities that exemplify the highest standards of design,

[21] U.S. Department of the Interior, National Park Service, National Register of Historic Places (https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466)

[22] U.S. EPA, EJScreen (https://ejscreen.epa.gov/mapper/)

including principles of sustainability. Additionally, EO 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, establishes goals to create climate resilient infrastructure and operations and reduce energy use.

The NDEP is ultimately tasked with the stewardship of the natural resources of the state, including air, water, and land.[23] The NDEP works with a variety of federal and state organizations to preserve and enhance the environment of Nevada in order to protect public health, sustain ecosystems, and contribute to the state's economy. Furthermore, the NDEP is responsible for a series of core functions: outreach, cleanups, permitting, monitoring, and compliance management.

The City of North Las Vegas obtains its water from two sources: surface water (from the Colorado River at Lake Mead) and groundwater pumped from a deep carbonate aquifer.

1.10.11 SOCIOECONOMICS AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

1.10.11.1 Socioeconomics

Socioeconomics is an umbrella term used to describe aspects of a project that are either social or economic in nature. A socioeconomic analysis evaluates how elements of the human environment, such as population, employment, housing, and public services, might be affected by the proposed action and alternative(s).

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, specifically requires that a federal action causing disproportionate impacts to an environmental justice population (i.e., a low-income or minority population) be considered, as well as an evaluation of environmental health and safety risks to children. The FAA has identified factors to consider when evaluating the context and intensity of potential environmental impact.

Would the proposed action:

- Induce substantial economic growth in an area, either directly or indirectly?
- Disrupt or divide the physical arrangement of an established community?
- Cause extensive relocation when sufficient replacement housing is unavailable?
- Cause extensive relocation of community business which would cause severe economic hardship for affected communities?
- Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities? Or
- Produce a substantial change in the community tax base?

[23] Nevada Division of Environmental Protection (https://ndep.nv.gov/air)

1.10.11.2 Children's Environmental Health and Safety

Federal agencies are directed, per EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, to make it a high priority to identify and assess the environmental health and safety risks that may disproportionately impact children. Such risks include those that are attributable to products or substances that a child is likely to encounter or ingest (e.g., air, food, and water, including drinking water) or to which they may be exposed.

According to the 2016-2020 ACS estimates, 26 percent of the population within one mile of the airport are aged 17 or under. This equates to 11,827 persons. See **Tables 1.19** and **1.20** for lists of schools and recreational facilities that are used by children within one mile of the airport.

1.10.12 VISUAL EFFECTS

Visual effects deal broadly with the extent to which a proposed action or alternative(s) would either (1) produce light emissions that create an annoyance or interfere with activities, or (2) contrast with or detract from the visual resources and/or the visual character of the existing environment. Each jurisdiction will typically address outdoor lighting, scenic vistas, and scenic corridors in its zoning ordinances and general plan.

1.10.12.1 Light Emissions

These impacts typically relate to the extent to which any source results in light or glare that could create an annoyance for people or would interfere with normal activities. Generally, local jurisdictions will include ordinances in the local code addressing outdoor illumination to reduce the impact of light on surrounding properties.

Airfield lighting at the airport includes a rotating beacon, medium intensity runway lighting (MIRL) at each runway, blue medium intensity taxiway lighting (MITL), runway guard lights (RGL), four-box precision approach path indicator (PAPI) lights at each runway, and runway end identification lights (REILs) at each side of the runway end. The airfield lights utilize pilot-controlled lighting (PCL); thus, the airfield lights are only lit when activated by pilots using the airport. For further information, see the discussion of the types of airfield lighting and visual approach aids earlier in the inventory.

1.10.12.2 Visual Resources and Visual Character

Visual character refers to the overall visual makeup of the existing environment where a proposed action or its alternative(s) would be located. For example, areas near densely populated areas generally have a visual character that could be defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscape features, such as open grass fields, forests, mountains, deserts, etc.

Visual resources include buildings, sites, traditional cultural properties, and other natural or human-made landscape features that are visually important or have unique characteristics. Visual resources

may include structures or objects that obscure or block other landscape features. In addition, visual resources can include the cohesive collection of various individual visual resources that can be viewed at once or in concert from the area surrounding the site of the proposed action or alternative(s).

The airport environment is located within an urban area. Visually, it is characterized by an arid landscape that is surrounded by a mixture of new and old buildings and streets. Views of the airport are accessible from all surrounding roadways due to the vegetation being spread out rather than densely put together. In addition to this, long-range views are not readily available due to the relatively flat topography of the airport environs.

Along the eastern portion of Rancho Drive, which lies near the western portion of the airport boundary, there are primarily residential communities with commercial land uses sprawled out along the roadway. Similarly, near the eastern portion of the airport boundary, there are primarily residential land uses with some commercial use. East of the airport lies Interstate 15. On the southern portion of the airport boundary, the airport is bounded by commercial land uses. North of the airport property line, the airport is surrounded by office and commercial space on the southern side of State Route 574.

The State of Nevada has a designated department called the Nevada Department of Transportation (NDOT) that administers the state-designated scenic roads program, while the Federal Highway Administration (FHWA) administers the national byways program.[24]

At present, there are a total of 11 state-designated scenic byways in Clark County. Of these 11, only two are also national scenic byways.[25] Of the two national scenic byways, the closest one, Las Vegas Boulevard National Scenic Byway, is located less than three miles away from the airport.

[24] U.S. Department of Transportation, Federal Highway Administration, National Scenic Byways and All-American Roads (https://fhwaapps.fhwa.dot.gov/bywaysp/byway/39538/map)
[25] Nevada DOT, Scenic Byways (https://www.dot.nv.gov/travel-info/travel-nevada/scenic-byways)