



Chapter One

INVENTORY

Grand Canyon

★ NATIONAL PARK AIRPORT ★
TERMINAL AREA PLAN

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INVENTORY

The Terminal Area Plan for Grand Canyon National Park Airport (GCN) was undertaken by the Arizona Department of Transportation Multimodal Planning Division (ADOT/MPD) Aeronautics Group to evaluate and recommend a terminal area layout to meet anticipated terminal area demands. This plan is intended to include, but not be limited to:

- Recommendations for the location of the terminal building and a general terminal building layout.
- A motor vehicle circulation plan that shows: 1) access to any new structures in the southern portion of the terminal area; 2) motor vehicle parking for buses and shuttles to the Grand Canyon National Park; and 3) general aviation fixed base operator traffic flow.

- Motor vehicle parking for the terminal area and terminal building, and pedestrian access to the terminal building that minimizes walking distance.
- A development plan that supports the airport's goal of maximizing revenue and maintaining the airport on a self-sustaining basis.
- Recommendations for future uses and modifications, if needed, of the existing terminal building.
- Identification of potential problems in the development of the terminal area.

The inventory of existing conditions and facilities is the first step in any facility planning process. This infor-



mation was collected through on-site staff, air traffic control, tenants, and others as well as online and literature searches.

AIRPORT SETTING

Grand Canyon National Park Airport is located immediately south of the unincorporated community of Tusayan in the Kaibab National Forest, and six miles south of the Grand Canyon National Park. The airport is accessible from Arizona Highway 64 which continues northward through Tusayan to the main gate of the park's South Rim. While the park hosts approximately 4.5 million visitors annually, this area of Coconino County is uniquely remote from incorporated cities and population centers. The population of Tusayan is just over 600. The city of Williams is the closest incorporated city at 60 miles to the south, while the county seat of Flagstaff is located 81 miles southeast. **Exhibit 1A** depicts the regional setting for GCN.

GCN is owned by the State of Arizona and operated by ADOT. It is classified in the Federal Aviation Administration's (FAA's) National Plan of Integrated Airport Systems (NPIAS) as a small hub commercial service airport. Small hub airports are defined as those commercial service airports enplaning between 0.05% and 0.25% of the total U.S. enplanements. In 2008, the airport's enplanement (commercial service boardings) totaled 366,890. Pulliam Airport in Flagstaff is the next closest commercial service airport. The next closest general aviation airport is Valle Airport located 18 miles to the south.

investigations, interviews with ADOT. The airport's commercial activity is currently dominated by commercial tour operations. In fact, these air taxi operators comprised 95 percent of the airport's operations (takeoffs and landings) in 2008. Some air tours originate at GCN while others come to the airport from locations such as Las Vegas and Phoenix. Some deplane and board buses and other vehicles for land tours of the park as well. **Exhibit 1B** depicts the area airspace and other area airports.

AIRFIELD FACILITIES

Exhibit 1C and **Table 1A** depict the existing airfield facilities at Grand Canyon National Park Airport. GCN has a single Runway 3-21 that is 8,999 feet long and 150 feet wide. The grooved asphalt runway has a pavement strength rating of 88,000 pounds single wheel gear loading (SWL), 108,000 pounds dual wheel gear loading (DWL), and 160,000 pounds dual tandem gear loading (DTL).

The runway has medium intensity runway edge lighting (MIRL). Runway 3 is equipped with an instrument landing system (ILS) with minimums down to ¾-mile. Runway 3 also has several nonprecision approach procedures available that are identified in **Table 1A**. Runway 3 is equipped with a 1,400-foot medium intensity approach light system (MALs). Runway 21 does not have any straight-in instrument approach procedures. Runway 21 is equipped with runway end identifier lights (REILs) as well as a four-box visual approach slope indicator (VASI-4).

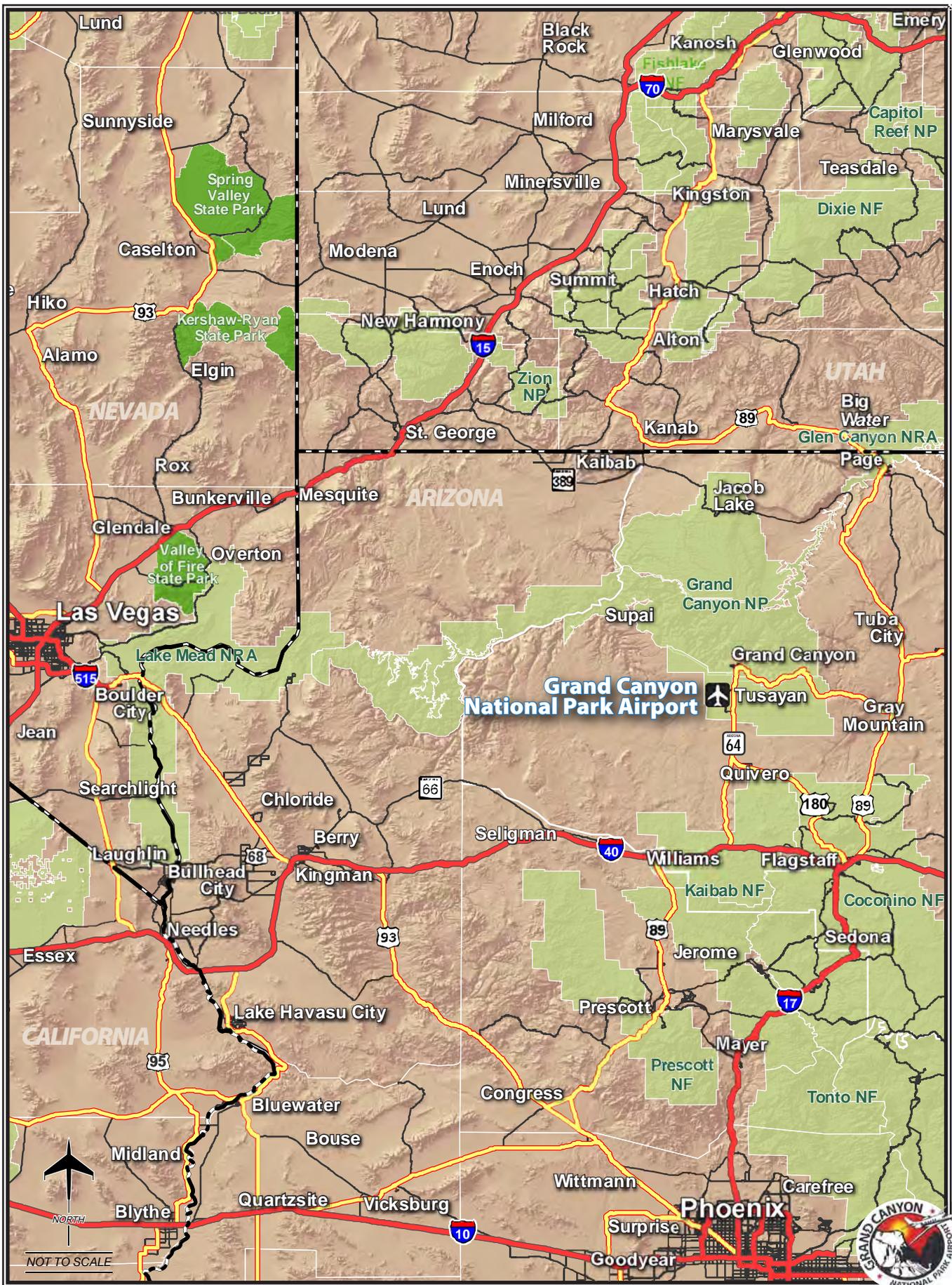
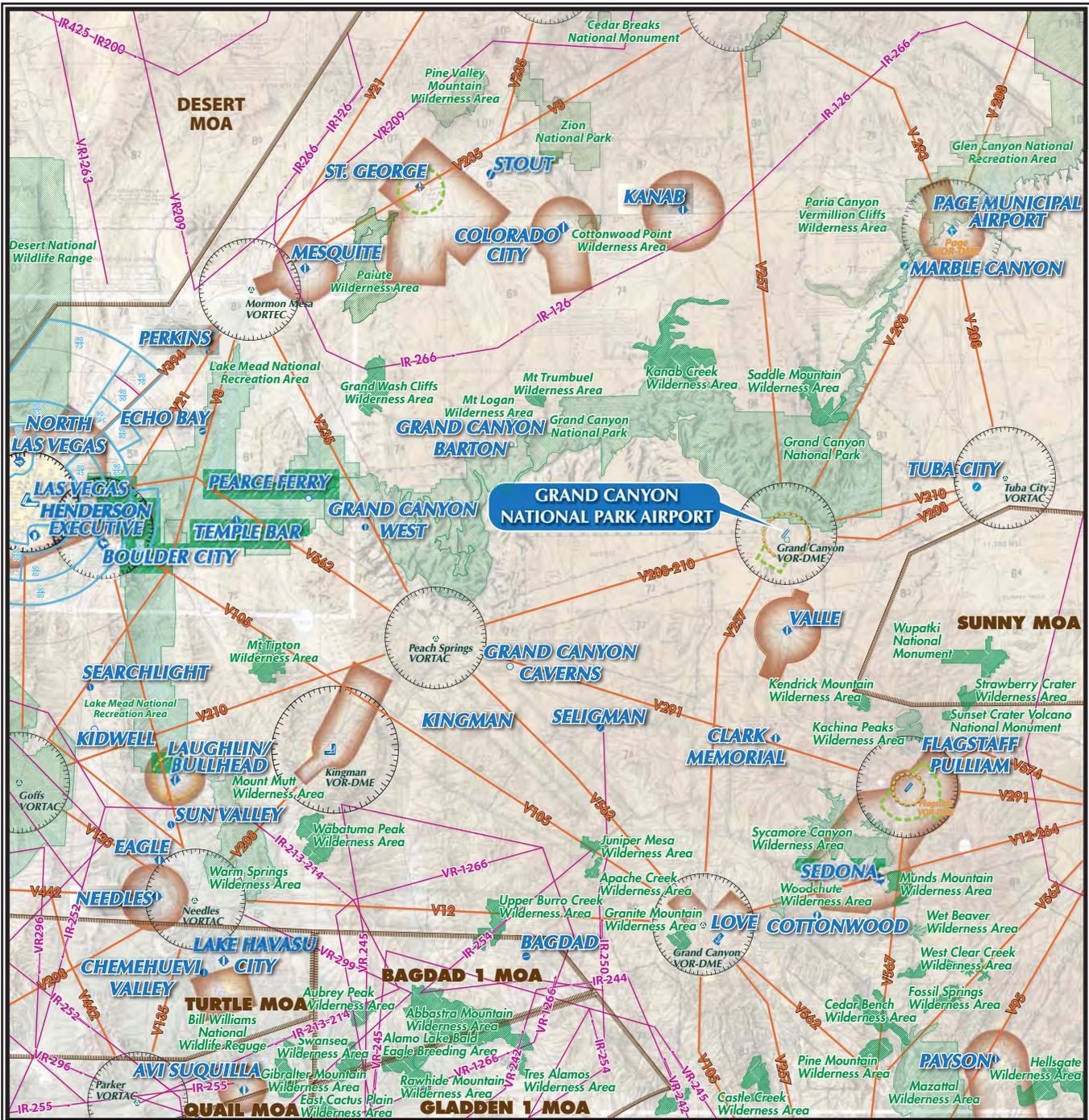


Exhibit 1A
VICINITY MAP



LEGEND

-  Other than hard surfaced runway
-  Airport 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'
-  VOR-DME
-  VORTAC
-  Compass Rose
-  Class D Airspace
-  Class E Airspace
-  Class E Airspace with floor 700 ft. above surface
-  Victor Airways
-  Military Training Route
-  Military Operations Area
-  Wilderness Area



NOT TO SCALE

Source: Las Vegas South and Phoenix North Sectional Charts, Federal Aviation Administration, National Charting Office 7/3/08





Exhibit 1C
AIRFIELD FACILITIES

TABLE 1A Airfield Facilities Grand Canyon National Park Airport		Runway 3-21	
Length (feet)	8,999		
Width (feet)	150		
Surface Material	Asphalt/Grooved		
Load Bearing Strength			
Single Wheel Loading (SWL)	88,000 lbs.		
Dual Wheel Loading (DWL)	108,000 lbs.		
Dual Tandem Loading (DTL)	160,000 lbs.		
Instrument Approach Procedures	ILS; LOC/DME; RNAV(GPS); VOR (all Runway 3)		
Approach Aids	<u>RW 3</u> MALS	<u>RW 21</u> VASI-4L REILS	
Pavement Markings	Precision	Non-Precision	
Runway Lighting	MIRL		
Weather Reporting	ASOS		
Air Traffic Control Tower	FAA 0600-2000, Oct.-May 0700-1900, Jan. Sep.		
Abbreviations:			
ASOS: Automated Surface Observation Station	MALS: Medium Intensity Approach Lighting System		
DME: Distance Measuring Equipment	REILS: Runway End Identifier Lights		
GPS: Global Positioning System	RNAV: Area Navigation		
ILS: Instrument Landing System	VASI-4: Visual Approach Slope Indicators – 4-box		
LOC: Localizer	VOR: Very High Frequency Omni-Directional Range		

The runway is accessed by a full length parallel taxiway on its east side along with five exit taxiways. A large apron and all terminal area facilities are located along the east side of the northern half of the runway. The following sections discuss the terminal area facilities.

TERMINAL AREA FACILITIES

Exhibit 1D depicts the existing terminal area facilities at Grand Canyon National Park Airport. The large apron noted previously encompasses approximately 65,600 square yards and fronts most of the terminal area. It is essentially subdivided into three

areas. The northern 14,600 square yards is utilized for general aviation. The airport's FBO facilities are located in this area along the east side. The next 30,000 square yards to the south are used for commercial service operations associated with the airport terminal building. The southernmost 51,000 square yards is currently designated as transient apron. There are currently no buildings along this section of ramp.

Immediately to the east of the general aviation facilities and the terminal are the terminal access road and an 83,000 square foot vehicle parking lot. There are also three separate helicopter facilities located north and east of the general aviation facilities and the

terminal. Each has its own buildings, apron, vehicle parking, and touchdown and lift-off (TLOF) facilities.

South of the parking lot are the airport administration and maintenance facilities. There is an airport housing area immediately to the east of this area. Further south is the airport traffic control tower (ATCT) as well as the new airport rescue and firefighting (ARFF) building. At the far southern end of the terminal area is a hangar used by the National Park Service. The following subsections discuss each of these areas more specifically.

AIRLINE TERMINAL

Exhibit 1E depicts the general floor plan of the main airline terminal building at Grand Canyon National Park Airport. The building was constructed in 1968 and expanded to its current footprint in 1972. The terminal building encompasses approximately 8,500 square feet. The building is approximately 220 feet long and 38 feet deep. There are five gates distributed along this linear terminal. Gate Two is in the north wing, Gates Three and Four operate out of the central foyer, while Gates Five and Six are in the south wing.

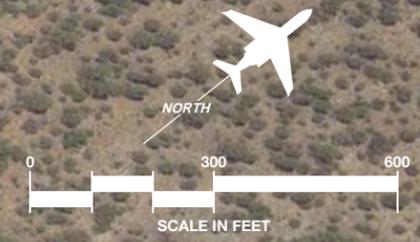
The area included in the terminal square footage does not include the airport's utility building which is attached at the north end and a garage at the south end. The utility building includes the main electrical vault, generator, water treatment, and water pump.

Three tour operators, Vision Airlines, Westwind Air Service, and Grand Canyon Airlines currently operate out of the airline terminal.

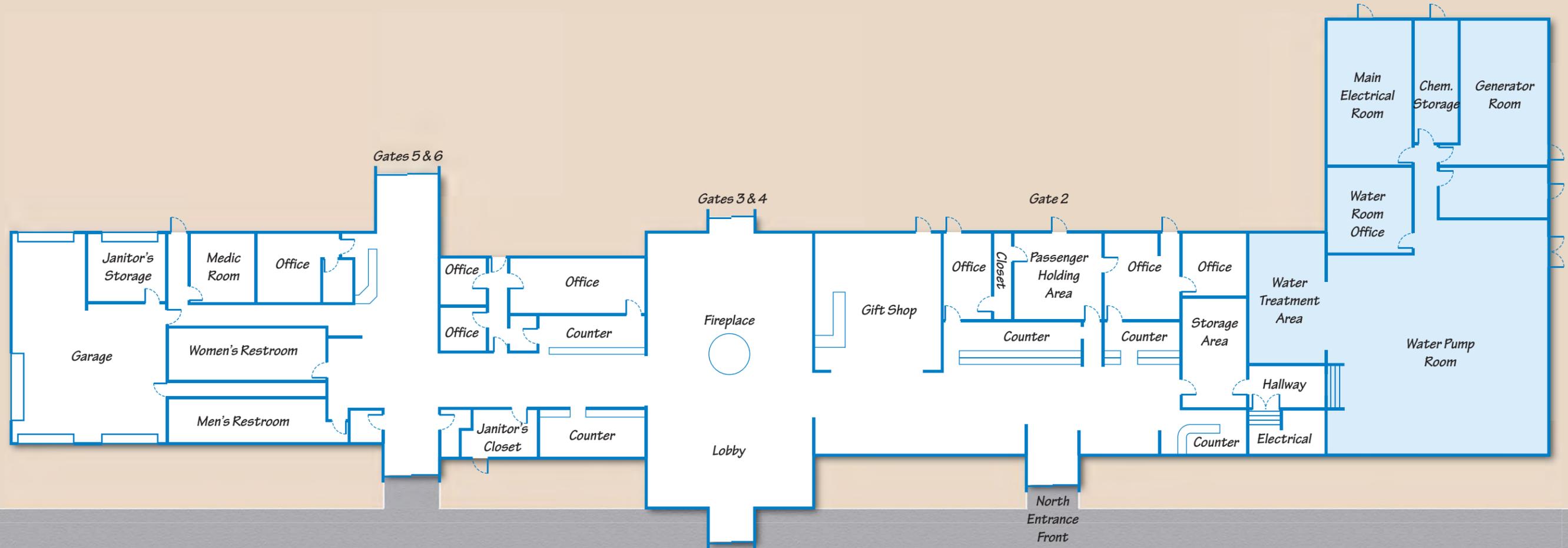
Vision Airlines specializes in on-demand charter and tour operations. Through its subsidiary, Vision Holidays, it offers scenic flights from Las Vegas to the Grand Canyon on 30-seat Dornier 328 and 19-seat Dornier 228 turboprop aircraft. Upon landing at GCN, passengers are loaded on Vision Motor Coach tour buses for a ground tour of the south rim.

Westwind Air Service operates a fleet of nine-passenger Cessna Grand Caravans and six-passenger Cessna 207s. Westwind provides air tours from GCN, as well as Grand Canyon tours that begin in Phoenix, Page, or Monument Valley and either stop or terminate at GCN. Some packages provide ground bus tours of the south rim as well.

Grand Canyon Airlines has merged with Scenic Airlines and Air Grand Canyon in the last two years. They primarily operate the 17-passenger Dehavilland Twin Otter "Vistaliners," as well as single engine Cessna 207 and 182 aircraft on their Grand Canyon air tours. Various tour packages are available from the GCN terminal. In addition, flights are available from Las Vegas with stops at GCN. Now under the same ownership, Grand Canyon Airlines/Scenic Airlines and Papillon also provide tour packages that include both fixed wing and helicopter flights.



Apron



Arrival/Departure Curb

LEGEND

Non-Terminal Facilities



Vision Airlines and Westwind Air Service are located in the north wing of the building. The area includes ticket counters as well as a waiting area with 49 seats. Space in the north wing next to the central foyer has previously been utilized for concessionaires, but is currently unoccupied.

The central foyer provides a large waiting area with vaulted ceiling and a wood-burning fireplace located in the center. There are 51 seats in the central foyer, as well as vending machines and advertising along the walls.

Grand Canyon Airlines/Scenic Airline's ticket counter is located in the south wing ticket counter space immediately adjacent to the central foyer. There is additional counter space across the hall from the ticket counter that is currently unoccupied. The restrooms are located at the south end of the hall and next to Gates Five and Six. The gate area includes additional ticket counter space that is currently unoccupied as well as seating for 32. **Table 1B** summarizes the current terminal space.

TABLE 1B Existing Passenger Terminal Grand Canyon National Park Airport	
	Area (s.f.)
Leasable Tenant Areas	2,823
Lobby & Waiting Area	990
Baggage Claim Area	972
Open Corridor Space	2,026
Public Restrooms	668
Management/Admin. Area	594
Mechanical/Equipment Area	413
Total Building Area	8,486

GENERAL AVIATION FACILITIES

There is currently one fixed base operator (FBO) on the airport. Grand Canyon Airlines (GCA) is located at the north end of the ramp on the east side of the general aviation apron area. The services provided include:

- Aerial sightseeing tours
- Aircraft charter flights
- Aircraft tie-downs
- Fueling and line services
- Aircraft service/repair
- Airframe maintenance
- Ground transportation

Their facilities front the general aviation ramp and include the 5,473 square foot GCA terminal building that houses the company's administrative offices, ticket counter, waiting area, and concessions for aerial tour operations.

Immediately to the north of the GCA terminal building is a 10,000 square foot hangar that houses their FBO and maintenance operations. The 14,600 square yard general aviation apron includes 21 marked tie-downs.

Further to the north is the FBO's fuel farm. This includes two 20,000 gallon tanks, one each for Avgas and Jet A, plus a 6,000 gallon tank for diesel fuel and a 2,000 gallon tank for unleaded mogas. Fuel is available daily from 7 a.m. to 7 p.m. with on-call service available during off-hours.

HELICOPTER FACILITIES

There are three separate helicopter facilities located on the airport. They are all located east of the terminal and airport access road, and are operated by helicopter tour operators. Each has its own touchdown and lift-off area as well as helicopter parking and private terminal facilities. They are depicted on **Exhibit 1D**.

Papillon Helicopters operates from the northernmost helicopter facility. There are three TLOFs as well as 12 helicopter pads for loading passengers in front of their terminal facility. There are eight additional pads for parking on the east side of the leasehold.

At the terminal building, there is parking for approximately 60 autos and nine tour buses. There is a covered, drive-up entrance to the terminal as well. Besides the terminal facility, Papillon has a large maintenance and storage hangar; a second, smaller hangar; and an above ground fuel tank.

Papillon offers a variety of tour packages as well as helicopter charters from GCN. They also offer flights from Vegas with stops at GCN with transfer to buses for ground tours of the South Rim. Their association with Grand Canyon Airlines also provides options for combined fixed wing and helicopter tour packages. They operate six-to-seven passenger AStar, Eco-Star, and Bell Long Ranger helicopters.

Directly east of the main passenger terminal and parking lot are the helicopter facilities of Grand Canyon Helicopters. This facility includes six helipads on the west edge of a 400-foot by 150-foot ramp that serves as the TLOF. Immediately to the west of the ramp are the private terminal and two vehicle parking lots. An above ground fuel storage tank is located at the north end of the north parking lot.

Grand Canyon Helicopters operates seven passenger Eco-Star helicopters on its tours of the Grand Canyon, and offers several packages from both GCN and Las Vegas.

Maverick Helicopters is located near the south airport entrance. Their leasehold includes three helipads and a private terminal with an adjacent maintenance hangar. An above ground fuel storage tank is located north of the hangar. Auto parking is provided to the east and is shared with a gift shop building that is currently unoccupied.

Maverick Helicopters is a part of the Maverick Aviation Group. Tour packages are available from GCN as well as Las Vegas and Phoenix. Some packages include a flight from Las Vegas to GCN on Maverick Airlines 19-seat Beech 1900B aircraft, then a helicopter tour on Maverick Helicopters seven-seat Eco-Star.

OTHER TERMINAL AREA FACILITIES

Other facilities in the terminal area include the National Park Service

(NPS) hangar, air traffic control tower (ATCT), airport rescue and firefighting (ARFF) facility, the airport administration building, the airport maintenance facilities, and airport housing.

National Park Service Hangar - The NPS maintains a hangar at the south end of the terminal area. The 60-foot by 60-foot hangar has access to the airfield via a loop taxiway. Ground access is currently controlled within the airport security gate.

ATCT - The airfield is served by an ATCT located approximately midfield on a hill on the east side of the airfield. Classified as a Level 5 ATC facility, the tower is owned and operated by the FAA. The tower's hours of operation are 6:00 a.m. to 8:00 p.m. from June 1 through September 30, and 7:00 a.m. to 7:00 p.m. the remainder of the year.

The tower extends 121 feet above ground level (AGL) with a 530 square foot cab at the top. A 5,000 square foot base building houses office, utility, and conference room space. There is parking for 30 vehicles. The ATCT complex has its own gated security.

ARFF Facility - The airport ARFF equipment has been located in a 2,150 square foot building northeast of the airline terminal. The airport is classified as an Index A facility, but has the capability to respond to Index B standards. A new ARFF facility is currently under construction near midfield, just west of the ATCT.

Airport Administration - The airport administration offices are housed

in a 3,264 square foot modular facility southeast of the passenger terminal. The building includes offices for management and operations, conference room, restrooms, and the FAA field offices. There is unmarked gravel parking for approximately 30 vehicles.

Airport Maintenance Facilities - The airport maintenance facilities are located immediately south of the administration building. The facility houses snow removal equipment (SRE) as well as maintenance equipment. There are four buildings in the maintenance complex totaling approximately 5,000 square feet.

Airport Housing - To the immediate east of the administration building is the airport employee residential housing area. The airport currently has 14 employees, most of which are housed in this area. The houses are currently being replaced with more modern modular facilities. When the renovation is complete, there will be 20 residential units on the airport.

AIRPORT ACCESS AND PARKING

Besides the airport, Tusayan and the South Rim of Grand Canyon can be accessed by both rail and highway. The Grand Canyon Railways track runs 65 miles from Williams to its station in the Grand Canyon Village near the South Rim. The line passes approximately 1.5 miles west and southwest of the airport. The historic railroad has been in operation since 1901 and runs twice daily between the

Village and its headquarters in Williams.

Exhibit 1A depicts the major roadways serving the airport and the Grand Canyon. Arizona Highway 64 is the main access to the area. The two-lane highway extends from Interstate 40 near Williams to the south gate of Grand Canyon National Park. It provides direct access to the airport as well as the main arterial route through Tusayan. Besides rental cars and private vehicles, tour and shuttle buses provide ground access between the airport, Tusayan, and the Grand Canyon.

As depicted on **Exhibit 1D**, on-airport access is provided via an interior road system. There are two entrances to the airport from Highway 64. The north entrance is a four-lane, divided median roadway. Proceeding south into the airport, it provides access to Papillon Helicopters on the left. Another intersection slightly further south connects with a two-lane access road that proceeds south and east past Grand Canyon Helicopters.

At this point, the north and southbound lanes split to opposite sides of the terminal parking lot. There is parking lot access from the easternmost southbound lane. The roadway then continues south to pass in front of the general aviation area as well as

in front of the terminal. A curb lane provides access for passengers to both facilities. Just south of the terminal, the north access road intersects with the south access road at a four-way stop. The road continues as a two-way two-lane road south past the airport administration and maintenance buildings to the security gate at the ATCT complex. A second security gate to the right protects access to the airfield, the new ARFF, and the NPS hangar.

Vehicles wishing to return to the terminal or the south entrance turn left at the four-way stop, then left again onto the two-lane, one-way road on the east side of the terminal parking lot. There are two access points to the parking lot from this roadway as well as a return to the southbound lanes at the north end of the parking lot. The roadway continues north to become the northbound lanes of the divided access road.

The south entrance is a two-lane roadway that provides access to Maverick Helicopters on the right and the airport housing and administration offices on the left. The road then intersects with virtually every other roadway on the airport before terminating at the security fence along the aircraft apron south of the passenger terminal.