



**PLANNING
SUCCESSFUL
TOMORROWS**



2 –INVENTORY

2. INVENTORY

The airport master planning process for St. George Regional Airport (SGU or the Airport) requires the collection of baseline information relating to the Airport’s property, facilities, services, tenants, access, and utilities. The information presented in this chapter was obtained through a variety of sources including interviews with Airport management, staff, and members of the project steering committee organized specifically for this study. Also, information was gathered through site visits, a survey of tenants’ facilities and their future development plans, examination of Airport records, and review of other public documents. The inventory information presented in this chapter is organized as follows:

- Airport Property
- Airside Facilities
- Landside Facilities
- Terminal Area
- Support Facilities

I. AIRPORT PROPERTY

St. George Regional Airport is located approximately 5 miles southeast of the downtown area of the City of St. George and approximately 2 miles north of the Utah-Arizona border. Its location was chosen by the City due to its remote location from main residential areas, open landscape, and has been the site of an airport in the past. The Airport property can be easily access through Interstate 15 and State Route 7 and is within close proximity to residential areas in St. George. Although it is owned by and within the city limits of the City of St. George, the Airport property also shares a boundary with the City of Washington. In recent years, the City of Washington has been expanding its residential areas and constructing new development under the approach path of Runway 19.

The total land area of the Airport property is 1,206.91 acres. The Airport property includes the entirety of the existing RPZs for each runway end. Given the Airport’s relatively remote location, the only structure on Airport property that does not directly pertain to the Airport is a Sinclair gas station on South Airport Parkway at the passenger terminal entrance road.

II. AIRSIDE FACILITIES

Airside facilities at the Airport consist of airfield pavement and equipment in place to support the movement of aircraft such as taxiing, takeoff, and landing.

Runways

The Airport’s sole runway, Runway 1-19, measures 9,300 feet long by 150 feet wide with 20-foot paved shoulders. The runway is paved with grooved asphalt in good condition and supports loads of 75,000 pounds single-wheel and 150,000 pounds dual-wheel. The runway is equipped with HIRL. Runway 1 has REILs to support visual approaches while Runway 19 has a 1,440-foot MALSR to support precision approaches. Runway 1 has a four-box PAPI to the left of the runway with a standard three-degree glide path, while Runway 19 has a four-box PAPI to the left of the runway with a 3.10-degree glide path. Runway 1-19 has precision instrument markings in good condition. Declared distances are published for each end of Runway 1-19 and are equal to the length of the runway with the TORA, TODA, ASDA, and LDA for both runways being 9,300 feet. Runway 1 and Runway 19 are supported by RNAV (GPS) instrument approaches, and in addition, Runway 19 is also supported by an LDA approach. Runway 19 is the designated calm wind runway.

Table 1-1: Runway 1-19

	1	19
Surface	Grooved Asphalt	
Pavement Condition	Good Condition	
Dimensions	9,300’ by 150’	
Markings	Precision	
Lighting	HIRL	
End Elevation (MSL)	2,831.7’	2,883.6’
CFR Part 77 Approach Surface Slope	20:1	34:1
Approach Minima	1 SM	½ SM
Visual Approach Aids	PAPI-4, REIL	PAPI-4, MALSR
Instrument Approach Aids	GPS	LDA, GPS
CFR Part 77 Category	Non-Precision	Non-Precision
Declared Distances	TORA, TODA, ASDA, LDA: 9,300’	
Pavement Strength (lbs.)	Single Wheel: 75,000 lbs. Dual Wheel: 150,000 lbs.	

Source: Airnav.com, 2020.

Taxiways

Taxiway A

Taxiway A serves as a full parallel taxiway to Runway 1-19 on its east side and is 50 feet wide with 20-foot paved shoulders. The taxiway features two holding bays, one at each runway end, for aircraft that may need additional time before takeoff.

Taxiway A1

Taxiway A1 is a perpendicular entrance taxiway that connects the Runway 19 threshold to Taxiway A and is 50 feet wide with 20-foot paved shoulders.

Taxiway A2

Taxiway A2 is a perpendicular entrance taxiway that connects the Runway 1 threshold to Taxiway A and is 50 feet wide with 20-foot paved shoulders.

Taxiway A3

Taxiway A3 is a perpendicular entrance taxiway that connects Runway 1-19 threshold to Taxiway A and is 50 feet wide with 20-foot paved shoulders. Taxiway A3 intersects Runway 1-19 approximately 3,000 feet from the Runway 19 threshold.

Taxiway A4

Taxiway A4 is a perpendicular entrance taxiway that connects Runway 1-19 threshold to Taxiway A and is 50 feet wide with 20-foot paved shoulders. Taxiway A4 intersects Runway 1-19 approximately 2,800 feet from the Runway 1 threshold.

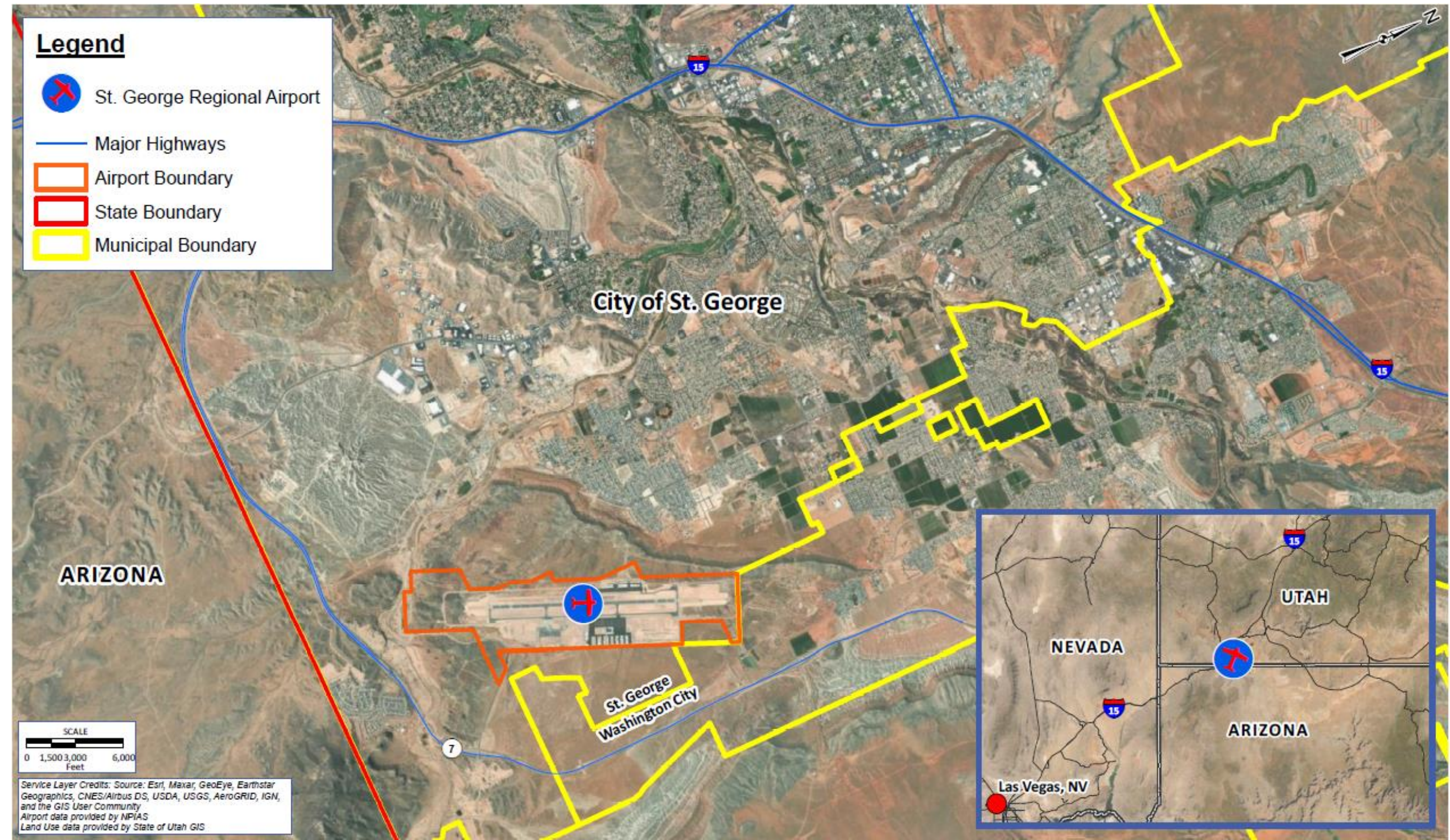
Taxiway B

Taxiway B serves as a partial parallel taxiway to Runway 1-19 on its west side and is 50 feet wide. The taxiway provides access to Taxiway B1 from the West Ramp and features a holding bay for aircraft.

Taxiway B1

Taxiway B1 is a perpendicular entrance taxiway that connects the Runway 19 threshold to Taxiway B and is 70 feet wide.

Figure 2-1: Local Area Property Map



Source: McFarland Johnson analysis, 2021

Visual & Navigational Aids

Many devices are used at airports to assist pilots with visual and electronic navigation. The following list of equipment can be identified with a corresponding picture shown on the right and its location on Airport property shown in the map on the following page.

Precision Approach Path Indicator

For visual guidance, Runway 1 is equipped with a four-light PAPI (1) to the left of the runway with a standard three-degree glide path and Runway 19 is equipped with a four-light PAPI to the left of the runway with a nonstandard 3.10-degree glide path.

Runway End Identifier Lights

The approach end of Runway 1 is equipped with REILs (2). REILs provide a rapid and positive identification of the approach end of a runway and give landing pilots a visual queue as to where the end of the runway is. These lights consist of a pair of synchronized flashing lights, one located on each side of the runway threshold facing the approach path.

Wind Cone/Segmented Circle

The primary wind cone located on the airfield is lighted and located within a segmented circle (3) across from the east apron area in between Taxiway A and Runway 1-19. The segmented circle does not feature traffic pattern indicators.

Airport Beacon

The Airport's rotating beacon (4) is located north of the ARFF and maintenance building and provides a visual navigation aid to assist pilots in locating the airport. The beacon is equipped with an optical rotating system that projects two beams of light, one green and one white, 180 degrees apart, in accordance with FAA criteria. These colors indicate that the Airport is a civil airport. The rotating beacon is operational when the Airport is open and turned off when the Airport is closed to traffic.

Approach Lighting System

The approach end of Runway 19 is equipped with a 2,440-foot MALSR approach lighting system (5). Typically, MASLR approach lights have a total length of 2,400 feet, however the MALSR at SGU is extended, given the unique LDA approach to Runway 19. The approach requires pilots to transition from instrument to visual flight, and the approach lighting system at the Airport needs to accommodate the unique approach. Beginning at the Runway 19 threshold, the MASLR at SGU has 18 lamps spaced 10 feet apart running along the runway threshold. Beginning 200 feet from the runway threshold along the extended runway centerline, there are four light bars, each with five lamps,

spaced 210 feet apart. 210 feet from the fourth light bar and 1,040 feet from the runway threshold is a set of three light bars, each with five lamps, that are in tandem and parallel to the runway threshold. The remaining light bars are spaced 200 feet apart. The first two light bars have five lamps, and the remaining five light bars have a single lamp.

Instrument Approach Systems

The LDA approach to Runway 19 at SGU comprises two physical components, a localizer (6), and a glideslope (7), each located near the Runway 19 end. The localizer provides horizontal guidance to the runway, while the glideslope provides vertical guidance. The two systems operate in conjunction to perform the LDA approach. Although the approach provides vertical guidance, an LDA approach is not considered a precision approach. Typically, instrument approaches comprise of a localizer set at the opposite runway end of the approach and in-line with the runway direction, however at SGU, the localizer is located approximately 450 feet to the right of the runway extended centerline and before the landing threshold. Given the nature of the LDA approach, it is also offset at an angle of 7.16° from the runway heading. The glideslope is located approximately 1,100 feet beyond the Runway 19 landing threshold and 300 feet to the east of the runway centerline.

Automated Weather Observing System

Weather reporting equipment at SGU consists of an AWOS-3PT. The AWOS provides continuous, real-time weather conditions at the Airport. A typical AWOS provides information such as altimeter setting, wind data, temperature, dew point, and density altitude. The AWOS-3PT at SGU can also provide visibility, cloud and ceiling data, precipitation identification, and the ability to report thunder and lightning.

St. George VOR/DME

Approximately one-half statute mile south of the Runway 1 end is the St. George VOR (8). The VOR allows aircraft equipped with a VHF frequency receiver to determine a bearing to a VHF omnidirectional radio range and is used for instrument navigation. The St. George DME (9) is located directly adjacent to the west of the localizer. A DME provides slant-range distance using a UHF frequency paired with the VOR's VHF frequency.

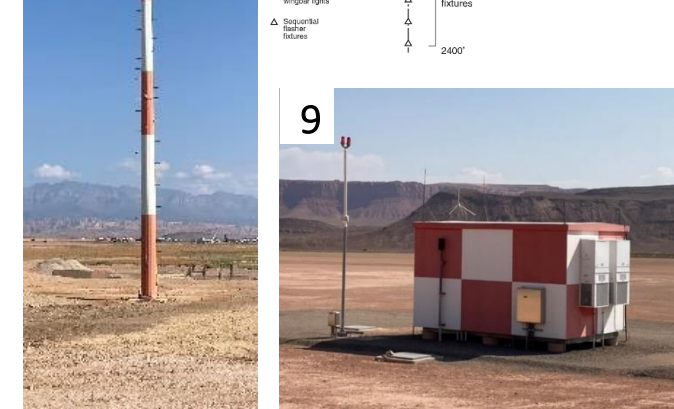
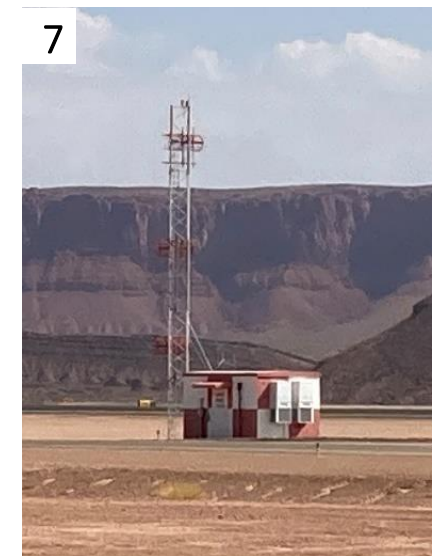
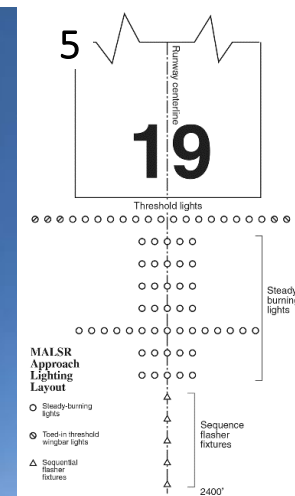
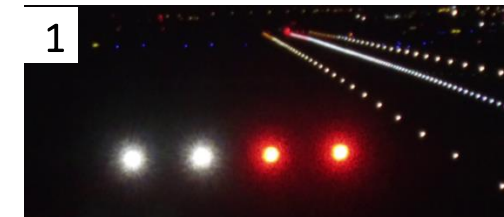
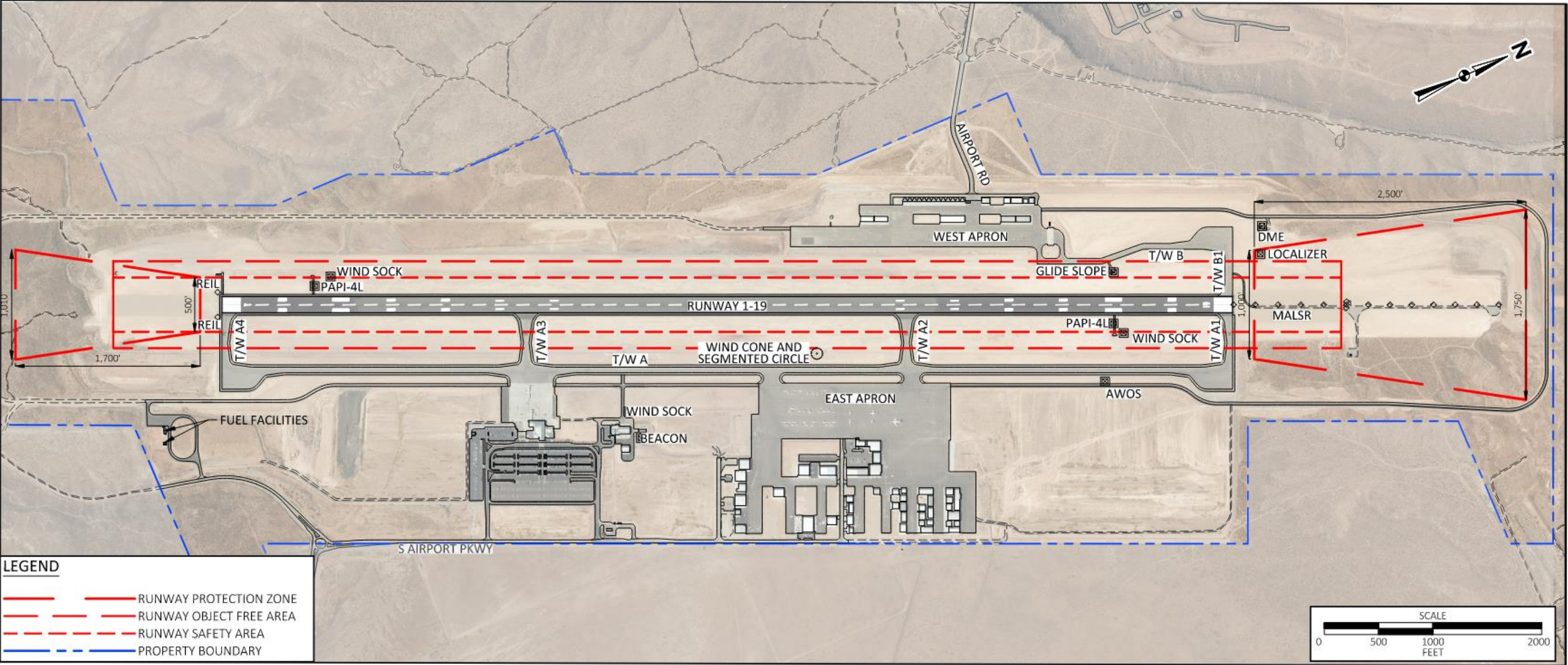


Figure 2-2: SGU Existing Conditions - Airside



Source: McFarland Johnson analysis, 2021

III. CLIMATE/WEATHER

Ceiling and Visibility

FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*, identifies three categories of ceiling and visibility minimums. These categories include visual flight rules (VFR), instrument flight rules (IFR), and poor visibility conditions (PVC). Utilizing data obtained through the FAA’s Airport Data and Information Portal, analysis was conducted to explore ceiling, visibility, and wind conditions at the Airport. According to a detailed review of the information obtained, the following can be reasonably expected at SGU:

- VFR conditions, when the ceiling is equal to or greater than 1,000 feet above ground level (AGL) and when visibility is equal to or greater than three (3) statute miles, occur at SGU approximately 99.49% of the time.
- IFR conditions, when the ceiling is less than 1,000 feet AGL and/or when visibility is less than three (3) statute miles, occur at SGU approximately 0.51% of the time.

Wind Coverage

The orientation of runways for takeoff and landing operations is primarily a function of wind velocity and direction taken together with the ability of aircraft to operate under adverse conditions. Generally, the primary runway at an airport is oriented as closely as practical in the direction of the prevailing winds. The most desirable runway configuration will provide the largest wind coverage for a given maximum crosswind component. The crosswind component is the vector of wind velocity and direction, which acts at a right angle to the runway. Further, runway wind coverage is that percentage of time in which operations can safely occur because of acceptable crosswind components. The FAA has set the criterion for desirable wind coverage for a runway system at 95 percent based on different allowable crosswind components based on the RDC for each runway.

Presently, Runway 1-19 at SGU is classified as RDC C-II-2400. Based on FAA guidance, wind coverage for an airport should be calculated using a 16-knot crosswind component for RDC C-III runways. Utilizing wind data from 2011-2020 obtained from the FAA’s Airport Data and Information Portal, wind coverages based on crosswind speed and weather conditions are depicted in **Table 1-2**. Based on the analysis of winds and wind coverage at SGU, the 16-knot allowable crosswind component meets the required 95% wind coverage for Runway 1-19.

Table 1-2: Wind Coverage

RWY	All-weather			IFR		
	10.5	13	16	10.5	13	16
1-19	94.73%	97.28%	99.34%	94.14%	96.98%	98.71%
1	51.07%	51.68%	52.29%	52.19%	52.83%	53.26%
19	71.75%	73.7%	75.17%	69.67%	71.87%	73.17%

Source: FAA Airport Data and Information Portal, 2021.

Magnetic Declination

Magnetic declination, sometimes called magnetic variation, is the angle between magnetic north and true north. This angle varies relative to one's position on the earth's surface and changes over time. Current magnetic declination information was derived from NOAA’s NCEI database in September 2020. Being that airport runway numbers are designated based on their magnetic bearing to the nearest unit of ten, this information will be used in subsequent chapters to validate the accuracy of the current runway designations at SGU or determine which runway designations are most appropriate at the airfield.

Using the airport reference point coordinates, the calculated magnetic declination of SGU is 11°13’00” east ± 0°36’ changing by 0°09’ west per year.

Temperature

The mean maximum temperature of the hottest month is an important element in the determination of required runway length for the Airport. This is found by taking the average daily high temperature of the hottest month, which in St. George is July, and is 101.4° F. This data is taken from the 1981-2010 Normals from the NOAA’s National Centers for Environmental Information.

IV. LANDSIDE FACILITIES

The existing landside facilities at SGU include the general location of buildings, hangars, and other airport and tenant facilities. Landside facilities are discussed under the following headings:

- Access
- Fuel Farm
- Aprons & Hangars

Access

The Airport is located southeast of Interstate 15 (I-15). I-15 runs southwest to northeast and is the primary highway connecting Las Vegas and Salt Lake City, and more broadly, runs from San Diego through northern Montana before reaching the Canadian border. I-15

also runs directly through the downtown area of the City of St. George. The Airport’s local roads can be accessed from Exit 2 on I-15 through Utah State Route 7, also known as Southern Parkway. From Exit 7 on Southern Parkway, the Airport can be accessed to the north through Airport Parkway. Airport Parkway leads to a roundabout, which directs traffic to either the northeast (South Airport Parkway) or to the southwest (Desert Canyons Parkway). Currently, Desert Canyons Parkway, in the vicinity of the Airport, only extends as far as the fuel farm, but can be paved in the future to connect to Exit 6 on Southern Parkway, where Desert Canyons Parkway continues south. South Airport Parkway leads directly to the Airport’s passenger terminal roadway and east hangar apron area.

The Airport’s west hangar apron area can be accessed through Airport Road, which begins as Banded Hills Drive as part of a growing neighborhood within the City of St. George. There is no direct highway access to the west side of the Airport.

Fuel Farm

The Airport’s fuel farm is in the vicinity of the Runway 1 end, southeast of Taxiway A and can be accessed via the vehicle service road or through a secured gate from Desert Canyons Parkway. In total, there are three Jet-A tanks, one 100LL tank, and one diesel tank. SkyWest Airlines owns a 20,000-gallon Jet-A tank and a 24,000-gallon Jet-A tank, and Above View FBO and Jet Center owns a 12,000-gallon Jet-A tank, bring the total Jet-A capacity to 56,000 gallons. Above View also owns a 12,000-gallon 100LL tank. Additionally, there is an empty 10,000-gallon tank primarily used to store fuel sludge. The Airport owns the 10,000-gallon diesel tank for shared use by fueling trucks. SkyWest Airlines owns two 5,000-gallon Jet-A trucks and Above View owns a 3,000-gallon Jet-A truck and a 1,000-gallon 100LL truck.



Above-ground Fuel Storage Tanks

Aprons & Hangars

SGU has two based/itinerant general aviation aircraft apron areas known as the West Apron and the East Apron. Each apron is described below along with their respective location on Airport property, as well as a detailed figure highlighting the important aspects of each.

West Apron

Located on the west side of the Airport, the West Apron provides hangar and tiedown parking space for based aircraft. The apron includes multiple small aircraft hangars and a self-service 100LL fueling station with a 10,000-gallon 100LL tank. There are 15 small box hangars, 8 medium-large hangars, and 82 marked small aircraft tiedown spots. The apron also includes a restroom/lounge facility with three vehicle parking spots, including 1 handicap spot.

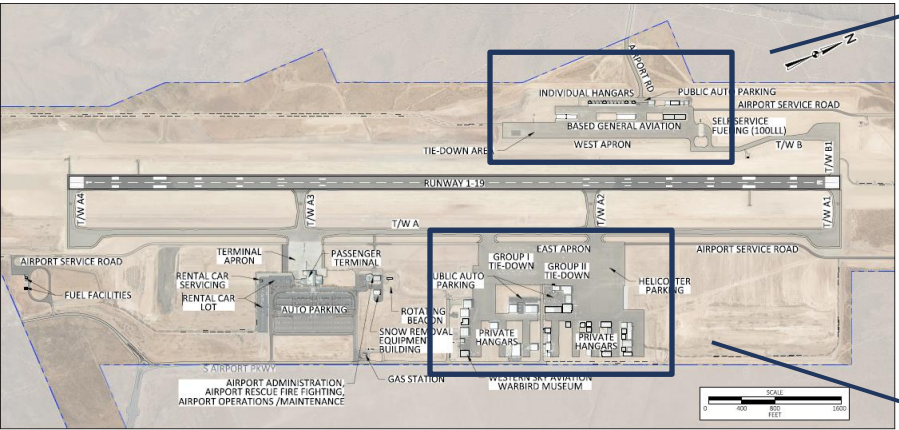


Figure 2-3: SGU West Apron



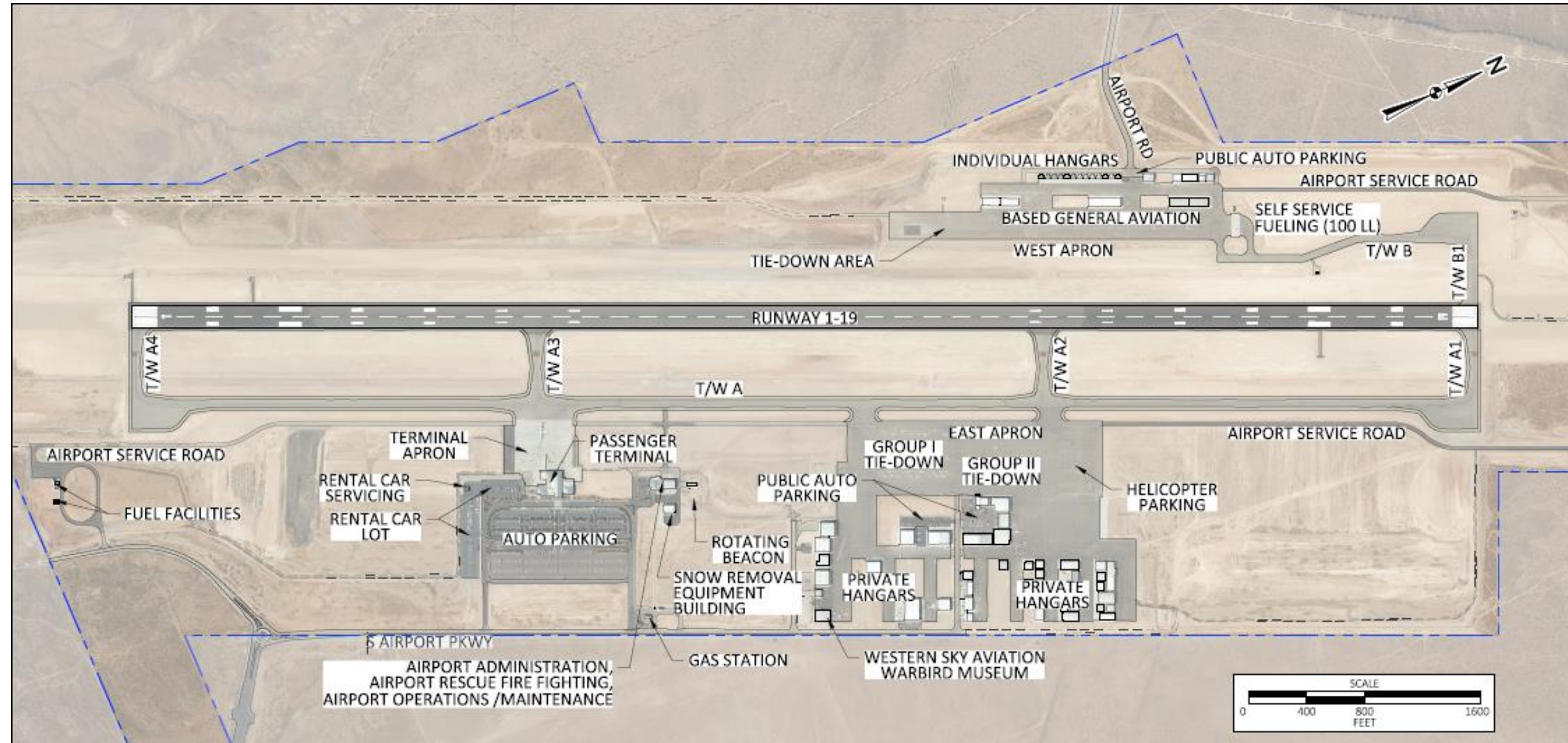
Figure 2-4: SGU East Apron



East Apron

Located on the east side of the Airport, the East Apron provides hangar and tiedown parking space for transient and based aircraft. The apron features a large open parking area with 62 marked small aircraft tiedown spots, 13 marked medium-large aircraft parking spots, 2 marked cargo tiedown spots and 5 marked rotorcraft tiedown spots. There are also 43 medium-large aircraft hangars that can be accessed through 8 separate taxilanes. The apron is home to the Airport's FBO, Above View Jet Center, the Western Sky Aviation Warbird Museum, and a few other aviation businesses.

Figure 2-5: SGU Existing Conditions - Landside



Source: McFarland Johnson analysis, 2021

V. TERMINAL AREA

Since SGU is a commercial service airport as well as a general aviation airport, there is a terminal area dedicated for use by airlines, their passengers, and other services that are typically paired with commercial airline service.

Passenger Terminal

The SGU passenger terminal, completed in 2011, serves as the main facility for the arrival and departure of commercial airline passengers. The terminal has two floors, however screened passengers have access to only the first floor, where all arrival and departure-related services are located. The areas of the first floor that are accessible to commercial airline passengers include an airline ticketing counter and check-in area, a garden lounge, restrooms, security screening, one secure passenger hold room with restrooms, four rental car counters, and a baggage claim area. The second floor consists of a conference room, multiple offices, an observation area, and restrooms. The first floor has an area of 29,963 square feet, and the second floor has an area of 3,594 square feet, bringing the total area of the terminal to 33,557 square feet. A floor plan of the first floor of the terminal building is shown on the following page.

Airline Ticketing

The airline ticketing section of the terminal features four check-in counters and three self-service check-in kiosks. As of 2020, SkyWest Airlines provides all commercial service flights to and from SGU. SkyWest operates as a regional carrier for American Airlines, Delta Air Lines, and United Airlines. The three self-service check-in kiosks each pertain to the specific airline that passengers have booked their flight with.

Security

As a commercial service terminal building, it is required by law to have an area dedicated for TSA screening of commercial airline passengers and crew. Located in the middle section of the terminal, the TSA screening area is the sole connection between the sterile area and the rest of the terminal.

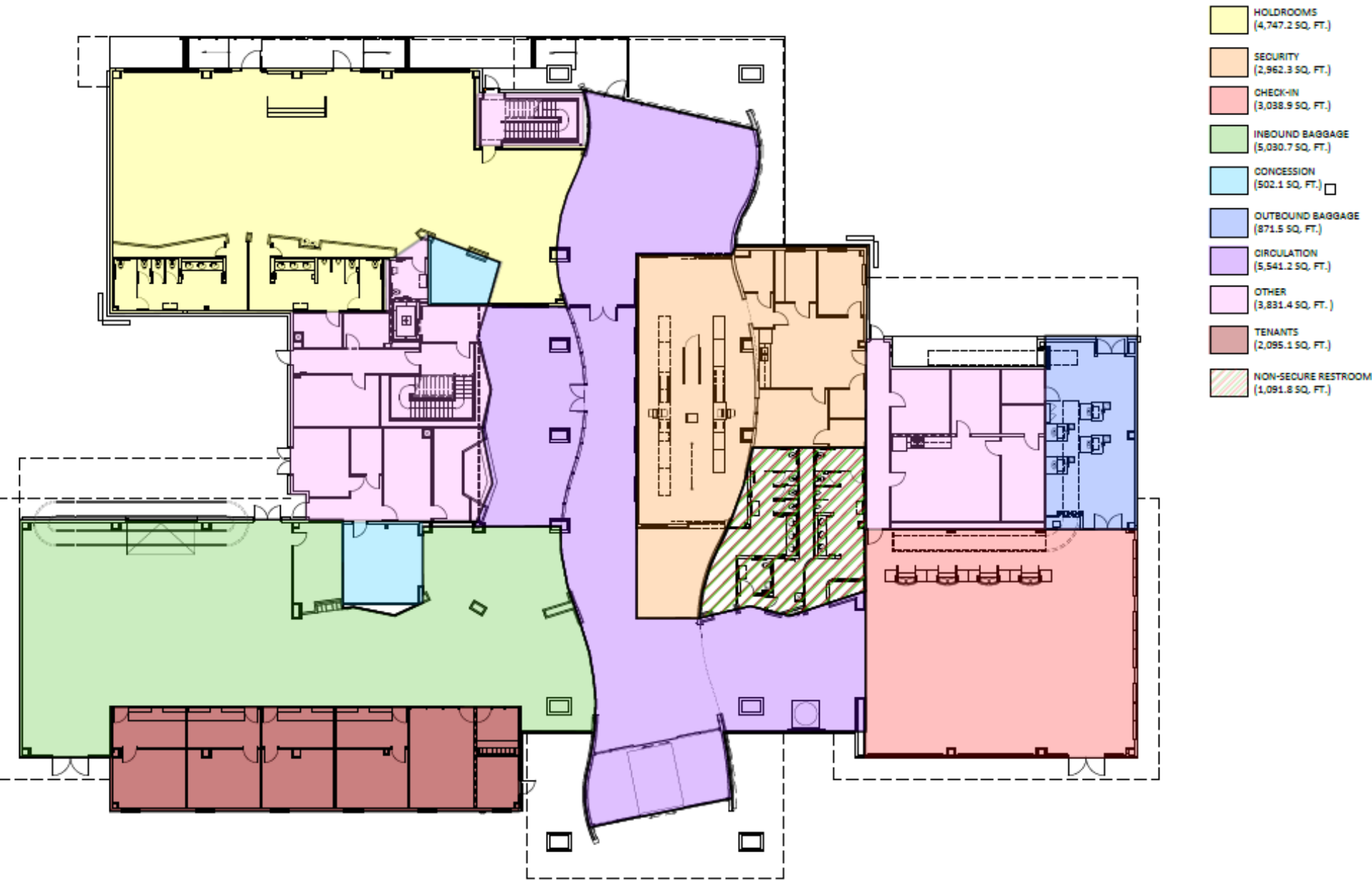
Sterile Area

The post-security area of the terminal is considered the sterile area, as departing passengers and crew have been screened by the TSA. This area includes a small waiting area, as well as one large hold room with restrooms. Departing passengers may lounge in the hold room while waiting to board a flight, while arriving passengers enter the terminal through the hold room before leaving the sterile area.

Baggage Claim

The baggage claim area of the terminal functions as an area for arriving passengers to retrieve baggage that was stored in the cargo hold of the aircraft during their flight. The baggage claim area features a single conveyer belt that is loaded from the outside of the terminal building. The baggage claim area also features office and counter space for car rental companies to operate.

Figure 2-6: SGU Passenger Terminal First Floor Layout



Source: McFarland Johnson analysis, 2021

Terminal Apron

Located on the east side of the Airport, the Terminal Apron provides access to Taxiway A from the passenger terminal facility and includes approximately 183,020 square feet of pavement space for commercial aircraft parking. The apron includes five regional airline parking positions. One parking position includes a covered jet bridge connected to the terminal for arriving and departing passengers, while the other four parking positions require passengers to walk outside on the apron.

Automobile Parking

Terminal parking is available for airline passengers and employees in the parking lot located directly across from the terminal building. The parking lot has approximately 1,000 marked parking spaces including 18 handicap spaces and can be accessed through the terminal roadway. The design of the roadway will allow for easy expansion of the parking lot, if necessary, as passenger enplanements rise in the future.

Rental Car Facilities

The passenger terminal building features four separate counters and offices in the baggage claim area for use by rental car agencies. Enterprise, Avis, Hertz, Alamo, National, and Budget provide rental car services to passengers at SGU. Each of the rental car agencies share a parking lot with a total approximately 300 parking spots. The parking lot is located south and adjacent to the passenger terminal building and can be accessed via the terminal roadway.

Roadway

The passenger terminal area can be accessed from South Airport Parkway via a one-way counterclockwise-circulating roadway. The roadway begins with three lanes perpendicular to South Airport Parkway and leads traffic toward the passenger terminal area. The roadway becomes two lanes after giving traffic an option to turn into the terminal parking lot or continue towards the terminal building. The roadway turns 90° to become parallel with South Airport Parkway and adds a lane to become three lanes and provide frontage for traffic picking up or dropping off passengers at the terminal building. Beyond the terminal building, the roadway briefly becomes two lanes and gives an option to turn into the rental car parking lot before turning 90° to again become perpendicular with South Airport Parkway. The roadway again briefly becomes two lanes after an option to turn into the terminal parking lot, then adds a lane for traffic exiting the terminal parking lot and goes back to two lanes after a merge. The two-lane roadway leads traffic back to South Airport Parkway, but also gives an option to circulate back to rejoin the roadway from the beginning.

Figure 2-7: SGU Terminal Area



Source: McFarland Johnson analysis, 2021

VI. SUPPORT FACILITIES

A variety of supporting infrastructure and equipment is employed at SGU to provide for safe, efficient, and reliable aeronautical operations. The services provided via the on-site ARFF station and airfield maintenance facility ensure the Airport operates at the highest degree of safety. The following section will further discuss each of these facilities.

ARFF & Maintenance Building

The St. George Aircraft Rescue and Fire Fighting Facility, located at 4508 South Airport Parkway, houses all ARFF and maintenance equipment, as well as airport administration offices. The 10,336 square-foot facility is located north-northeast of the passenger terminal, can be accessed through the terminal roadway, and has 24 parking spots and two (2) handicap parking spots. Vehicles and other equipment are stored in a garage with three bays that have garage door access from both the front and the back.

The ARFF facility is considered an Index B facility. FAR Part 139 regulations determine the ARFF index based upon air carrier aircraft length and number of daily departures.

SGU ARFF equipment includes one ARFF truck which is stored in the three-bay facility, along with other support and maintenance vehicles and equipment.



The maintenance and support equipment owned by SGU includes:

- 2005 Oshkosh Striker
- 2014 Ford F-150
- 2019 Chevy Traverse
- 2008 Ford Escape
- 2016 Ford F-150
- 1994 Chevy 2500 PU
- 2020 John Deere Backhoe
- 12’ Henke Snow Box
- (2) Runway closure X-trailers
- 2017 Broom Truck
- 2009 Buffalo Turbine Pavement Blower
- 2015 Graco Paint Sprayer
- Weed Bush Hog Bat Wing Mower
- 2016 10’ Karavan Utility Trailer with ramp
- 10’ Detachable Snowplow

SRE Building

The recently completed (2019) Snow Removal Equipment building at SGU is a 3,700 square-foot facility located directly east of the ARFF and maintenance building. The building primarily houses vehicles and equipment used for snow removal purposes and features three garage bays. The construction of the building included additional asphalt and concrete pavement connected to the existing ARFF building pavement to allow for vehicle access.

Utilities

Electric power to the St. George Regional Airport is provided by Dixie Power. The Airport has made no indication of capacity issues. The airfield electrical vault is located adjacent to the ARFF building and the rotating beacon, as shown in **Figure 2-7**.

Natural gas is provided by Dominion Energy. All existing service needs are being met and the company would expand services as necessary to meet future demand.

As property of the City of St. George, water services are provided to SGU by the City of St. George Water Division. The St. George Water Division collects water from springs and wells through the Washington County Water Conservancy District, which provides much of the infrastructure necessary for water utility services.