4 AIRSIDE AND LANDSIDE INVENTORY

TABLES

FIGURES

CHAPTER FOUR

AIRPORT INVENTORY

One of the first steps in preparing the airport master plan update for Cedar City Regional Airport (CDC) is to identify the existing airport facilities and assets. Conducting a detailed inventory is a critical step in the airport master planning process because it helps to establish the current baseline for several elements of the planning process, and this information is used when conducting the analyses discussed in later chapters. This includes determining if the existing facilities are able to accommodate current and forecasted aviation demand and then determining the correct facility requirements.

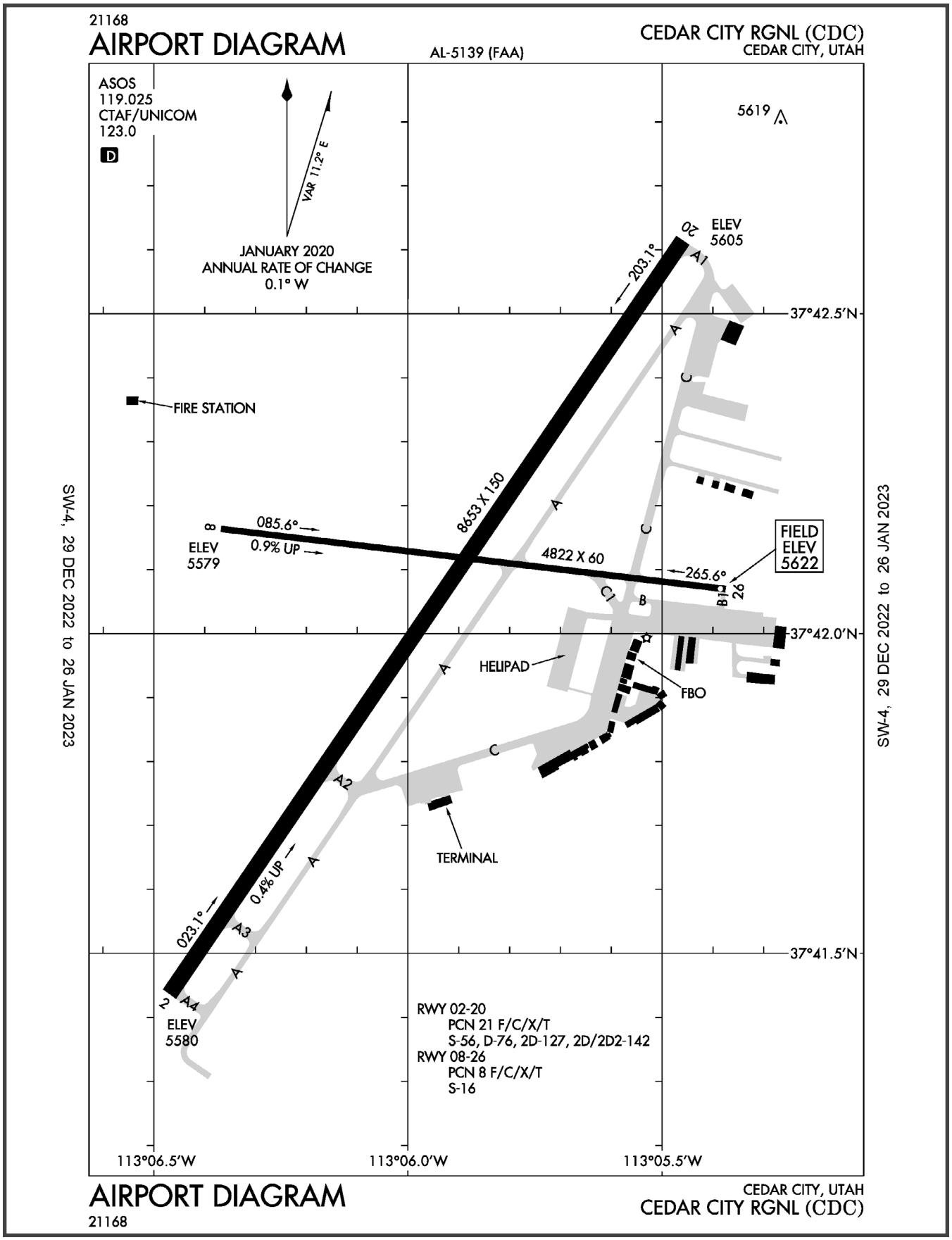
4.1. Introduction

This chapter provides a general description of the airspace surrounding the airport and the airport's aircraft operating procedures. It also includes an inventory and description of the airport's existing facilities and assets. These include airfield and airside facilities, general aviation (GA) facilities, support facilities, airport parking, utilities and stormwater infrastructure, and nonaeronautical uses as well as a description of the services offered at the airport. This information was obtained through on-site inspections, interviews with airport staff and tenants, public databases, the Federal Aviation Administration (FAA), and the aeronautics division of the Utah Department of Transportation (UDOT).

4.2. Airport Layout

The general layout of the airport is shown on the following page in Section Figure 4.1: Airport Diagram.

Figure 4.1: Airport Diagram



Source: FAA, Airport Data and Information Portal, CDC Airport Diagram.

4.3. Airspace

The FAA, which is responsible for the safe and efficient use of national airspace, created the National Airspace System (**NAS**) to "protect persons and property on the ground, and to establish a safe and efficient airspace environment for civil, commercial, and military aviation." The NAS is the network of air navigation facilities, air traffic control facilities, airports, and the related rules, regulations, and procedures, needed to operate the system.[1]

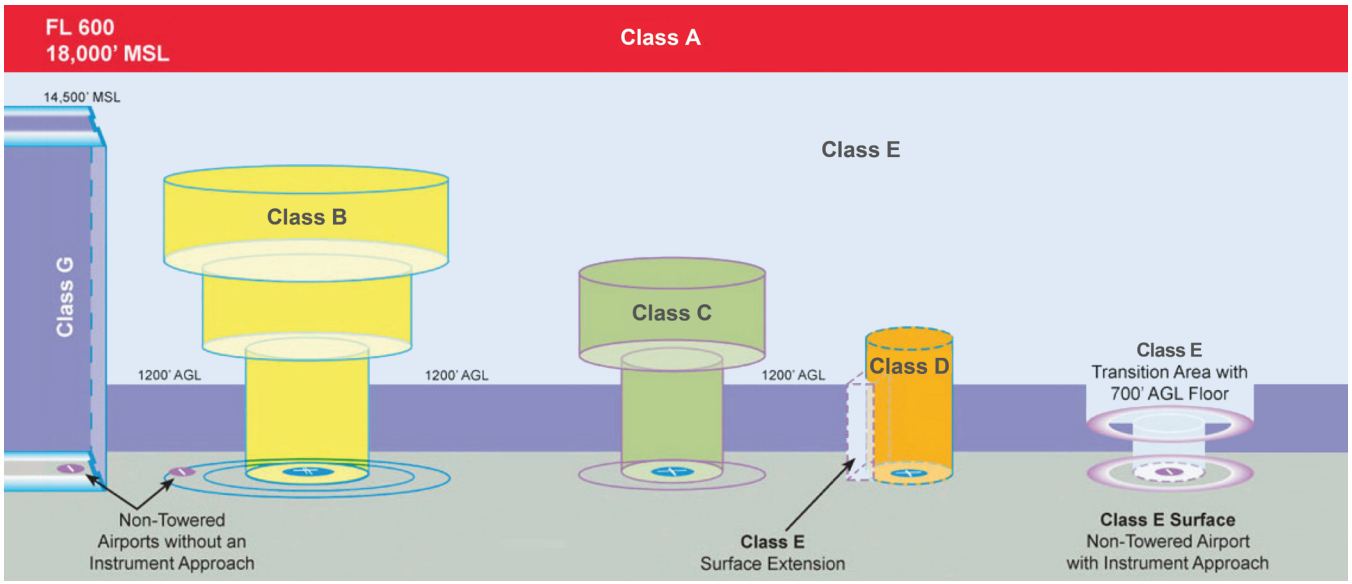
4.3.1. Federal Airspace Classifications

The FAA has established four types of airspace based on the complexity of aircraft movements or density of traffic, nature of the operations conducted, the level of safety required, and national and public interest. The four types of airspace are controlled, uncontrolled, special use, and other.[2]

Controlled Airspace: As shown in Figure 4.2, controlled airspace consists of five classifications of airspace within which air traffic control (**ATC**) service is provided.

- **Class A:** Airspace from 18,000 feet mean sea level (**MSL**) up to and including 60,000 feet MSL. This class of airspace is primarily used by aircraft during the cruise and transitioning phases as they travel from one airport to another. All aircraft in Class A airspace must operate under instrument flight rules (**IFR**).
- **Class B:** Airspace from the surface up to 10,000 feet MSL that surrounds the nation's busiest airports. This airspace has more restrictive operating rules than Class A airspace, and clearance is required for all aircraft to operate in the area.
- **Class C:** Airspace from the surface up to 4,000 feet above the airport elevation (charted in MSL) that surrounds airports with an operational control tower, is serviced by a radar approach control, and meets a minimum number of annual operations or passenger enplanements.
- **Class D:** Airspace from the surface up to 2,500 feet above the airport elevation (charted in MSL) that surrounds smaller airports with an operational control tower but is not serviced by a radar approach control. They do not have to meet a minimum number of annual operations or passenger enplanements.
- **Class E:** Controlled airspace not classified as Class A, B, C, or D. In most areas, this airspace begins at 1,200 feet above ground level (**AGL**) and extends up to 18,000 feet MSL.

Figure 4.2: Controlled Airspace Diagram



Source: FAA, *Aeronautical Chart Users' Guide*, 2022

Uncontrolled Airspace: Uncontrolled, or Class G airspace, is the portion of airspace that has not been designated as Class A, B, C, D, or E. In general, Class G airspace extends from the ground surface to the base of Class E airspace. Even though this airspace is uncontrolled, and ATC has no authority or responsibility to control air traffic in Class G airspace, the FAA mandates that visual flight rules (VFR) still apply in this airspace.

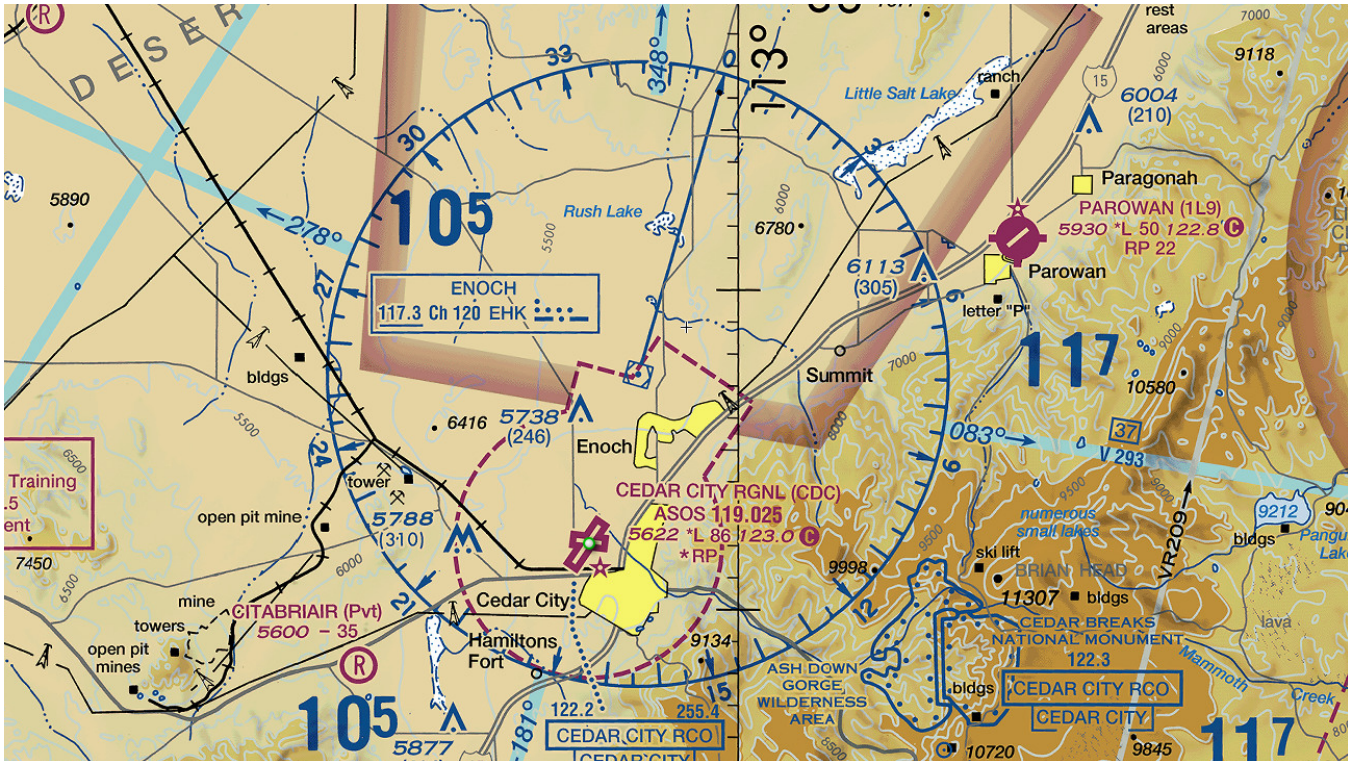
Special Use Airspace: Nonregulatory airspace includes several types of special use areas. Typically, these areas are used for military operations, restricted due to national security, or reserved for similar uses.

Other Airspace: This is a general term that refers to the majority of the remaining airspace and includes areas reserved for local airport advisories, military training routes, temporary flight restrictions, parachute jump aircraft operations, and similar uses.[3]

4.3.2. Airspace at Cedar City Regional Airport

The airport does not have a control tower which means that the airspace immediately surrounding CDC is designated as Class E. This Class E airspace begins at the surface and is depicted in Figure 4.3 by the dashed magenta outline around the airport.

Figure 4.3: Aeronautical Chart for Cedar City Regional Airport



Location Identifier → NAME (NAM)
AWOS 123.8
285 L 72 122.95 C
UNICOM

C - Follows the Common Traffic Advisory Frequency (CTAF)
ASOS/AWOS 135.42 - Automated Surface Weather Observing Systems

UNICOM - Aeronautical advisory station
285 - Elevation in feet
L - Lighting in operation Sunset to Sunrise
***L** - Lighting limitations exist; refer to Supplement
72 - Length of longest runway in hundreds of feet; usable length may be less

LEGEND

Airports having Control Towers are shown in Blue, all others in Magenta. Consult Chart Supplement for details involving airport lighting, navigation aids, and services.

Hard-surfaced runways greater than 8,069 ft. or some multiple runways less than 8,069 ft.

Non-Directional Beacon (NDB)

Rotating airport beacon in operation Sunset to Sunrise

Class E Airspace with floor 700 ft. above surface that laterally abuts 1,200 ft. or higher Class E Airspace

Source: FAA, Las Vegas Sectional Chart (effective November 3, 2022).

4.4. Instrument Approach Procedures

Instrument approach procedures (**IAP**) are a series of predetermined maneuvers published by the FAA that assist pilots in aligning an aircraft with the runway when flying under IFR. There are two categories of instrument approach procedures; precision and nonprecision approaches. A precision approach is one in which both horizontal and vertical guidance is provided, and a nonprecision approach is one in which only horizontal guidance is provided. An approach with vertical guidance (**APV**) is a type of nonprecision approach in which both horizontal and vertical guidance is provided but does not meet the requirements to be considered a precision approach.[4]

4.4.1. Approach Procedures for Cedar City Regional Airport

As shown in Table 4.1, there is one precision instrument approach and two nonprecision instrument approach procedures published for CDC. These approaches incorporate multiple types of navigational aids and equipment to provide pilots with several options for landing at the airport.

Table 4.1: Instrument Approach Procedures

Minimum Altitude* and Minimum Visibility** by Aircraft Approach Category***				
Approach	**Category A**	**Category B**	**Category C**	**Category D**
Runway 2: RNAV (GPS)				
LPV	5,867 ft & 7/8 mile			
LNAV/VNAV	6,394 ft & 2 1/2 mile			
LNAV	6,240 ft & 1 mile		6,240 ft & 1 7/8 mile	
CIRCLING	6,240 ft & 1 mile		6,240 ft & 1 7/8 mile	6,240 ft & 2 miles
Runway 20: RNAV (GPS)				
LPV	5,825 ft & 1/2 mile			
LNAV/VNAV	6,015 ft & 3/4 mile			
LNAV	6,180 ft & 1/2 mile		6,180 ft & 1 1/4 mile	
CIRCLING	6,180 ft & 1 mile		6,180 ft & 1 5/8 mile	6,180 ft & 2 miles
Runway 20: ILS or LOC				
S-ILS (higher gradient)	5,825 ft & 1/2 mile			
S-ILS (std gradient)	5,882 ft & 1/2 mile			
S-LOC 20	6,440 ft & 1/2 mile	6,440 ft & 3/4 mile	6,440 ft & 1 7/8 mile	
S-LOC (XOJPO mins)	6,100 ft & 1/2 mile		6,100 ft & 1 mile	
Runway 20: VOR				
S-20 Missed	6,020 ft & 1/2 mile		6,020 ft & 3/4 mile	
S-20	6,300 ft & 1/2 mile		6,300 ft & 1 1/2 mile	
Circling	6,300 ft & 1 mile		6,300 ft & 2 miles	6,300 ft & 2 1/4 miles

*Altitude shown in feet above mean sea level (**MSL**).
**Visibility shown in statute miles. (One statute mile is equal to 5,280 feet.)
***Aircraft approach categories (**AAC**) are based on the speed an aircraft travels when configured for landing. (Typically 1.3 times the stall speed.)

- Category A: 0–90 knots
- Category B: 91–120 knots
- Category C: 121–140 knots
- Category D: 141–166 knots

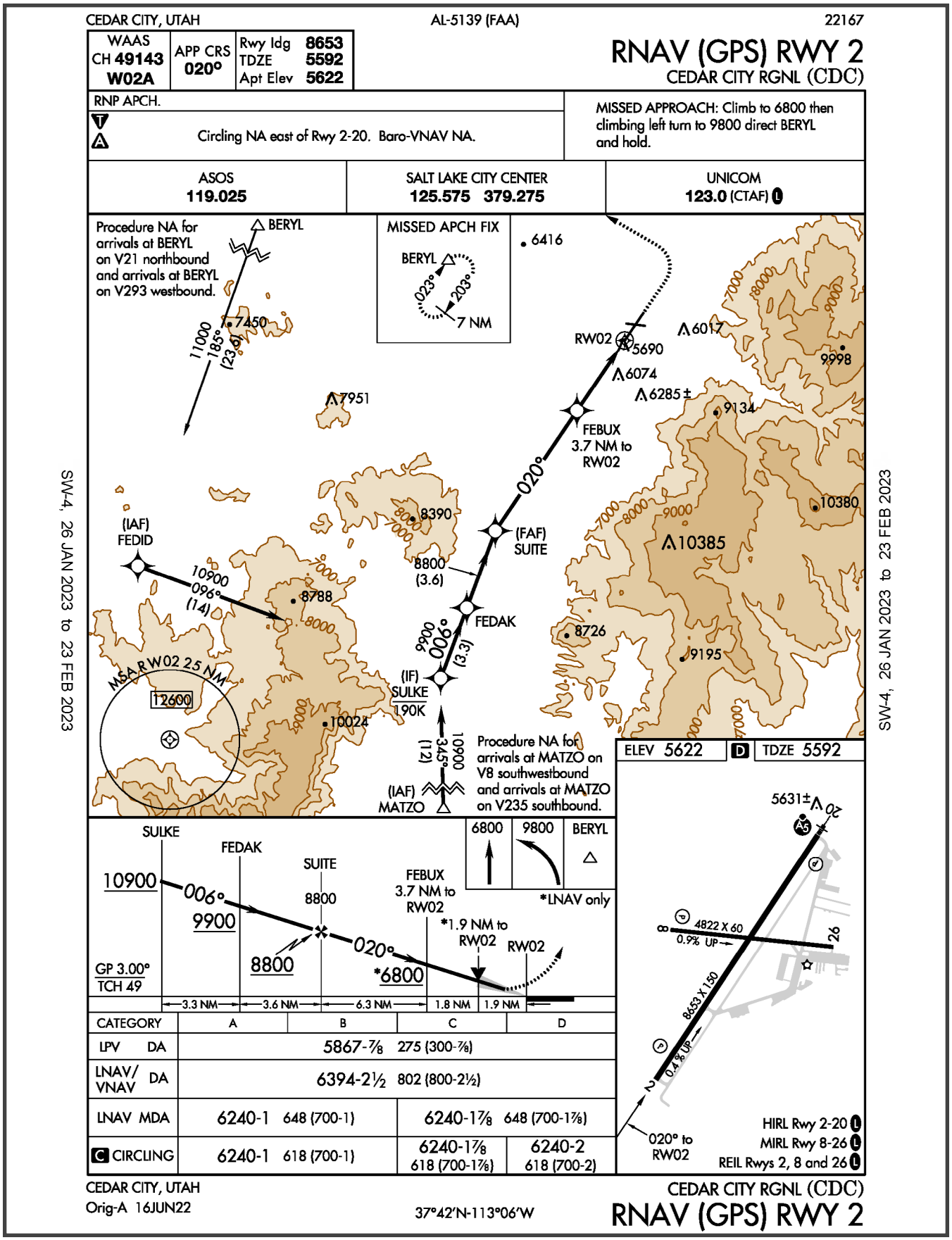
Source: FAA, Instrument Approach Procedure (IAP) Charts for CDC (effective January 26–February 23, 2023)

The minimum altitude, known as the minimum descent altitude (**MDA**) or decision altitude (**DA**), is the lowest altitude a pilot may descend to until visual reference is obtained (i.e., visually identify the runway) when executing a nonprecision approach. If the pilot cannot see the runway at that altitude or from that distance, due to clouds or other visibility restrictions, they cannot complete the approach. The visibility minimums refer to the horizontal distance the pilot must be able to see in order to complete the approach. If the minimum visibility prescribed for the approach is not met, the pilot cannot complete the approach.

The most sophisticated instrument approach procedures available at the airport are the approaches associated with area navigation (**RNAV**) or the instrument landing system (**ILS**). Instrument approaches using RNAV are quite common; especially now that GPS (i.e., global positioning system) is so widely used. The sophistication of RNAV approaches varies based on the capabilities of the system used. For example, localizer performance with vertical guidance (**LPV**) systems typically provide the lowest minimums of all RNAV approaches because the lateral sensitivity increases as the aircraft gets closer to the runway. On the other hand, lateral and vertical navigation (**LNAV/VNAV**) systems do not have increased lateral sensitivity while lateral navigation (**LNAV**) systems only provide lateral guidance.

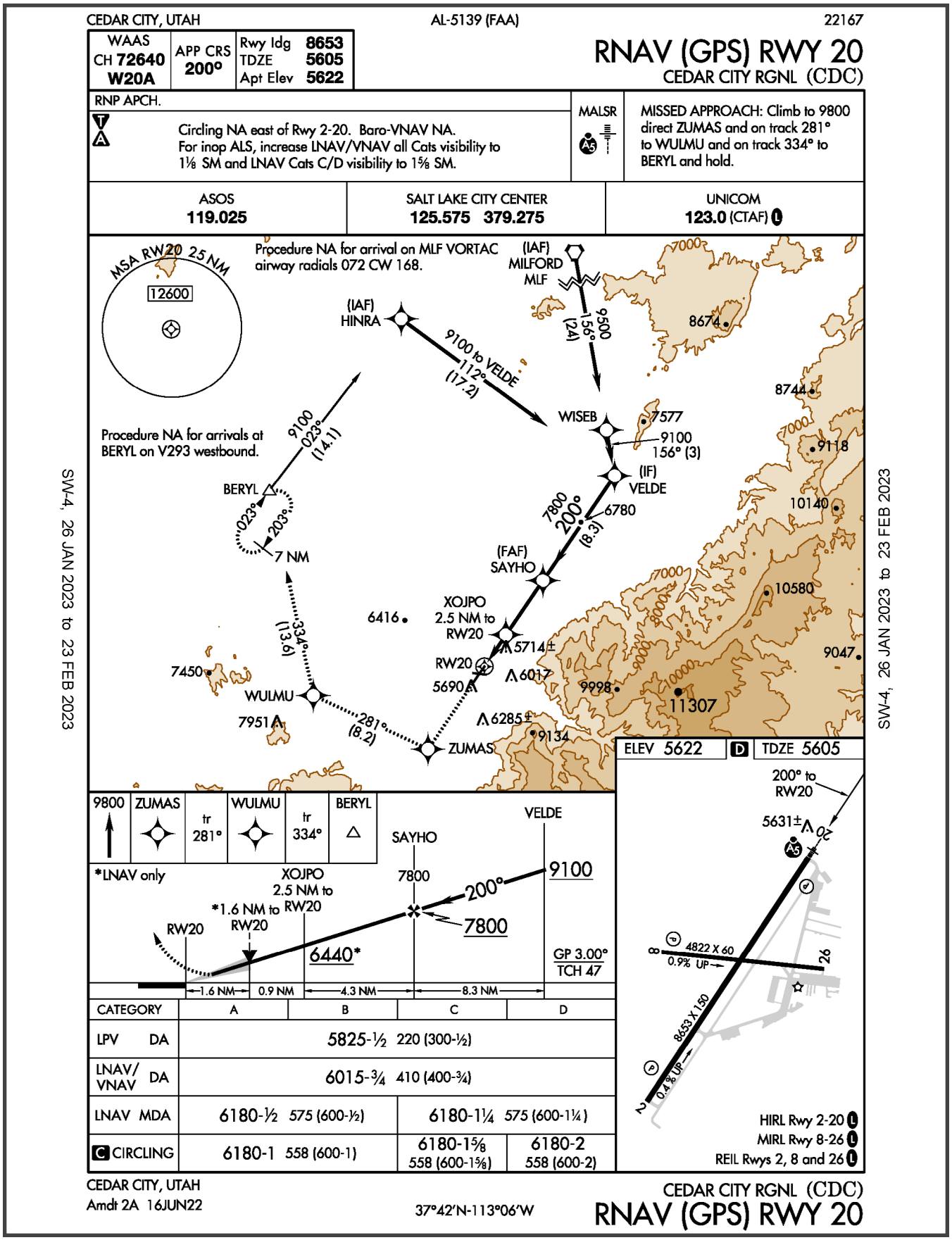
The approach plates, which are the graphical representation of these approach procedures, are shown in Figure 4.4, Figure 4.5, Figure 4.6, and Figure 4.7. The navigational aids (**NAVAIDS**) used for the approach phase are discussed in additional detail in Section 4.5.6. Navigational Aids.

Figure 4.4: Runway 2 RNAV Approach Plate



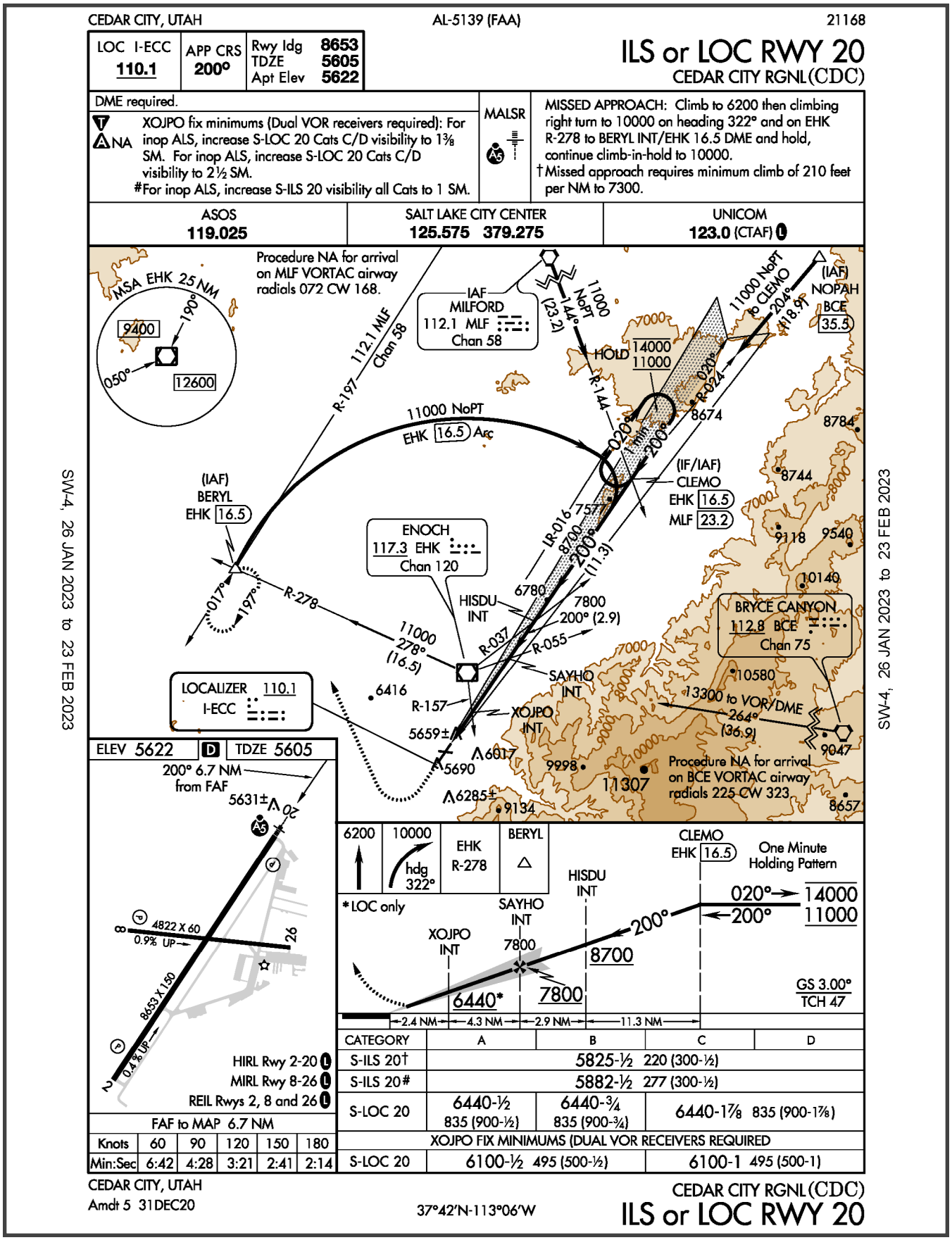
Source: FAA, Airport Data and Information Portal (ADIP)

Figure 4.5: Runway 20 RNAV Approach Plate



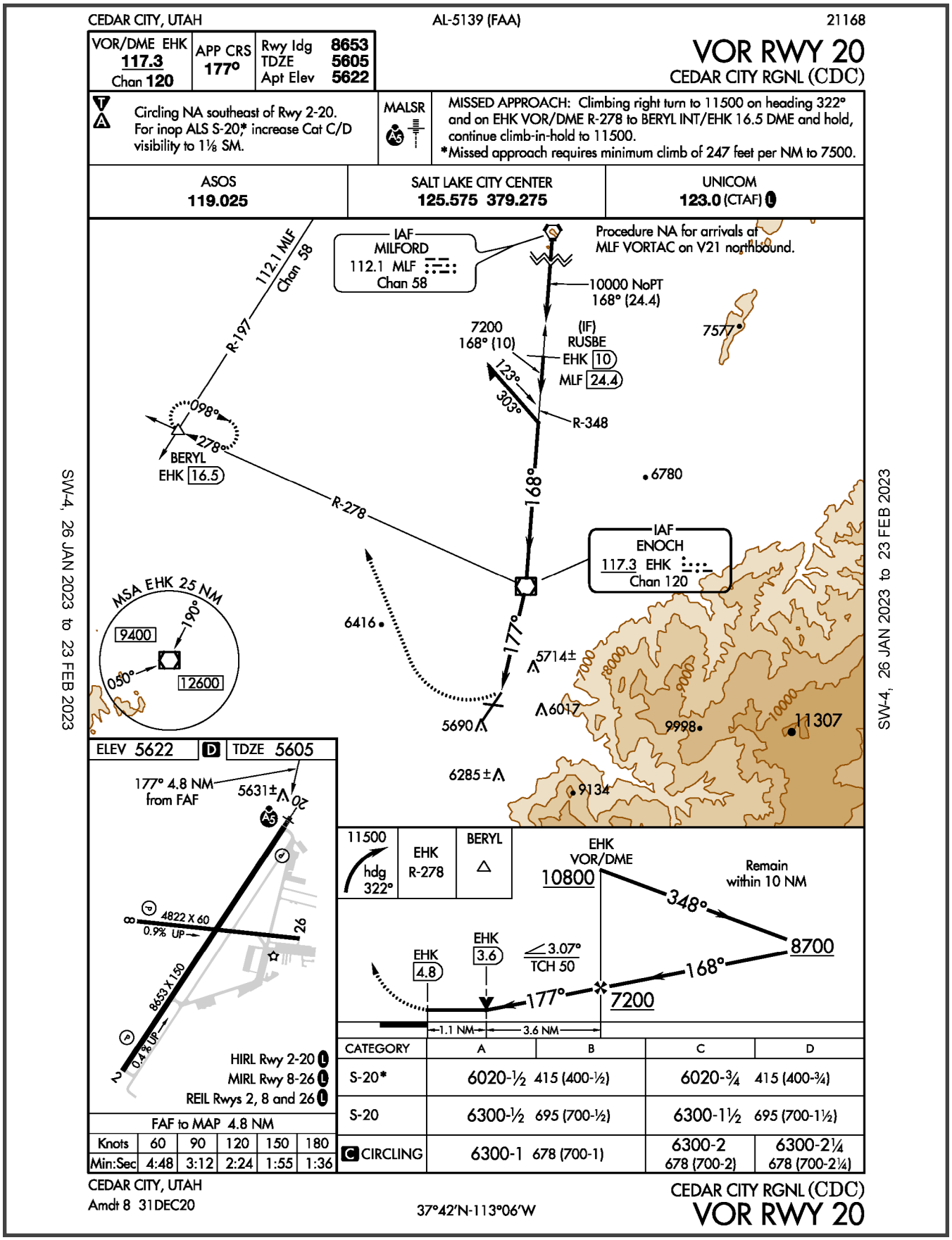
Source: FAA, Airport Data and Information Portal (ADIP)

Figure 4.6: Runway 20 ILS or LOC Approach Plate



Source: FAA, Airport Data and Information Portal (ADIP)

Figure 4.7: Runway 20 VOR Approach Plate



Source: FAA, Airport Data and Information Portal (ADIP)

4.5. Airfield and Airside Facilities

The airfield is the portion of an airport that contains the facilities necessary for aircraft operations. At CDC, this includes the runways, taxiways and taxiway connectors, and other aircraft movement areas as well as the airside facilities that support aircraft operations.

4.5.1. Runways

The airport has two runways; a primary runway, Runway 2/20, and a crosswind runway, Runway 8/26.

a. Runway 2/20

The primary runway, Runway 2/20, is oriented in a northeast-southwest direction. As shown in Figure 4.8, it has a full-length parallel taxiway, Taxiway A, that runs along its east side. The runway is 8,653 feet long and 150 feet wide, and declared distances are all equal to the full runway length.[5]

Runway Lighting Systems and NAVAIDS

The runway is equipped with high-intensity runway lights (**HIRL**) which run along the sides of the runway. Runway 2 is equipped with runway end identifier lights (**REIL**) and precision approach path indicators (**PAPI**). Runway 20 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (**MALSR**) and precision approach path indicators (**PAPI**).[6]

Runway Markings

Runway 2 has nonprecision instrument markings consisting of threshold markers with 12 stripes, designation markings, aiming points, and a centerline stripe. Runway 20 has precision markings consisting of threshold markers with 12 stripes, designation markings, aiming points, touchdown zone markings, side stripes, and a centerline stripe. All runway markings are noted to be in good condition.[7]

Runway Pavement Strength and Gradient

The grooved asphalt surface is in good condition and has a published weight bearing capacity of 56,000 pounds for single wheel landing gear (**S**), 76,000 pounds dual wheel landing gear (**D**), 127,000 for dual tandem landing gear (**2D**), and 142,000 for double dual tandem wheel landing gear (**2D/2D2**). It has a published pavement classification number (**PCN**) of 21/F/C/X/T.[8] This classification indicates the load-carrying capacity of the pavement with F specifying flexible pavement, C denoting the subgrade category is low strength, X indicating the tire pressure (medium, limited to 218 psi), and T indicating the method used to determine the PCN value (technical evaluation). The 2017 airport layout plan indicates it has a gradient of 0.25%.[9]

Figure 4.8: Runway 2/20

Source: Google Earth

b. Runway 8/26

The secondary or crosswind runway, Runway 8/26, has an east-west orientation (Figure 4.9). The runway is 4, 822 feet long and 60 feet wide. Declared distances are all equal to the full runway length.[10]

Runway Lighting Systems and NAVAIDS

The runway is equipped with medium intensity runway lights (MIRL), which run along the sides of the runway, and both runway ends are equipped with a runway end indicator light system. Runway 8 is equipped with precision approach path indicators.[11]

Runway Markings

Both ends of the runway have visual (i.e. basic) runway markings consisting of designation markings and a centerline stripe. The runway markings are currently in good condition.[12]

Runway Pavement Strength

The runway is paved with asphalt and is in fair condition. It has a published pavement classification number of 8/F/C/X/T. This classification is a relative indication of the load-carrying capacity of the pavement; F is pavement type (flexible), C is the subgrade category (low strength), X indicates tire pressure (medium, limited to 218 psi), and T is the method used to determine the PCN value (technical evaluation). It has a published weight bearing capacity of 16,000 pounds for single wheel landing gear (S) configurations.[13]

Runway Pavement Gradient

According to the 2017 airport layout plan, Runway 8/26 has a gradient of 0.89%.[14]

Figure 4.9: Runway 8/26

Source: Google Earth

4.5.2. Taxiways and Taxiway Connectors

Taxiways and taxiway connectors are used by aircraft to get to and from the runway without interfering with takeoffs or landings. Taxiways are designated with a letter or a letter and number combination. As shown in Section Figure 4.1: Airport Diagram, the airport has three taxiways, six connecting taxiways, and an undesignated taxiway connector at the southwest end of Taxiway A that was constructed to provide access to a previous airport tenant. It is equipped with taxiway edge reflectors.

a. Taxiway Alpha

Taxiway Alpha (**A**) is a full-length parallel taxiway for Runway 2/20. It is 8,653 feet long and 50 feet wide. The northeast end of Taxiway A connects directly to Runway 20 via Taxiway Connector A-1, and the southwest end connects to Runway 20 via Taxiway Connector A-4. Taxiway A is equipped with medium intensity taxiway lights (**MITL**).

b. Taxiway Bravo

Taxiway Bravo (**B**) is 35 feet wide and connects the 26 end of Runway 8/26 to the general aviation apron via Taxiway Connector B-1. Taxiway B is equipped with medium intensity taxiway lights.

c. Taxiway Charlie

Taxiway Charlie (**C**) is 75 feet wide. It extends northeast from the intersection of Taxiway A and connector A-2 to provide access to the commercial apron and continues to the GA apron where it then turns to the north. It continues north until it once again connects with Taxiway A. Taxiway C is equipped with medium intensity taxiway lights.

d. Connecting Taxiways

There are six connecting taxiways. All six are equipped with medium intensity taxiway lights. Taxiway connectors A-1, A-2, A-3, and A-4 run perpendicular to Taxiway A and Runway 2/20, B-1 runs perpendicular to Taxiway B and Runway 8/26, and C-1 runs diagonally from Runway 8/26 to Taxiway C.

4.5.3. Airfield Pavements

The aeronautics division of the Utah Department of Transportation (**UDOT**) routinely inspects the condition of airfield pavements at Utah's airports as part of an ongoing Pavement Management Program (**PMP**). These inspections are conducted using criteria from ASTM D-5340, *Standard Test Method for Airport Condition Index Surveys*. This program helps the airport, UDOT, and the FAA to identify and prioritize pavements requiring maintenance, rehabilitation, or replacement as well as planning and budgeting for pavement maintenance and construction projects. This process also assists the Cedar City Corporation, as the airport sponsor, to comply with FAA grant assurance #11 which requires airports that accept federal funds for pavement improvement projects to implement an effective airport pavement maintenance and management program.[15]

The most recent inspection of the airport's airfield pavements was completed May 31, 2016. The inspection report includes the pavement condition index (**PCI**) rating for each section of airfield pavement. PCI uses a rating system to gauge the condition of each pavement surface that indicates the surface's functional performance. Standard PCI values range from 0 (i.e., failed) to 100 (i.e., good). Typically, scores of 71 or more only require preventative maintenance, such as crack sealing, while scores between 51–70 require major rehabilitation. Pavements with a PCI rating of 50 or less require reconstruction.

The airport has 3,663,761 square feet of paved airfield surfaces consisting of aprons, runways, and taxiways. The average PCI rating ranged from 75 to 99 with an overall area-weighted average for all airfield pavements of 88.3. In general, these ratings are considered good to satisfactory which means the majority of the airfield pavements require only routine maintenance. However, a section of the north general aviation apron was determined to have a PCI rating of 49 and will require reconstruction in the near term.

4.5.4. Airfield Signage

An airport's runway and taxiway signage is essential to the safe and efficient use of the airfield for both aircraft and ground vehicles. The airfield is equipped with a variety of signs such as destination signs, direction signs, information signs, location signs, and mandatory instruction signs. These signs provide pilots with visual cues and useful information that is important during takeoff, landing, and taxiing. Airports typically use standard sign types and formats to help avoid confusion for pilots and ground crews (Figure 4.10).[16]

a. Destination Signs

Destination signs have a black inscription on a yellow background. These signs always have an arrow indicating the direction of the taxiing route to a remote location. Destinations commonly shown on these types of signs include runways, aprons, terminals, and fixed base operators.

b. Direction Signs

Direction signs indicate directions of other taxiways leading out of an intersection. These signs may also be used to indicate a taxiway exit from a runway. Direction signs have a black inscription on a yellow background and always contain arrows.

c. Information Signs

Information signs are installed on the airside of an airport and provide information other than mandatory holding positions, taxiway guidance, and runway distance remaining signs. An information sign has a black inscription on a yellow background.

d. Location Signs

Location signs identify the taxiway or runway where an aircraft is located. These signs have yellow lettering with a yellow border on a black background.

e. Mandatory Instruction Signs

These signs have white lettering with a black outline on a red background. They are used to indicate an entrance to a runway or other critical area. At uncontrolled airports (i.e., airports without air traffic control), like CDC, vehicles and aircraft may proceed beyond these signs only after taking appropriate precautions.

Figure 4.10: Airfield Signage

Source: Ardurra

4.5.5. Airfield Lighting

Airfield lighting systems extend an airport's usefulness during nighttime hours or when visibility is reduced due to inclement weather. They help pilots identify the airport from the air and aid pilots and airport staff in maneuvering safely while on the airfield. The airfield lighting systems at CDC are pilot activated using the common traffic advisory frequency (**CTAF**) of 123.0 MHz.

a. Emergency Power

To ensure airfield lighting systems have a constant source of power, the airport maintains a propane generator as a secondary source of power. In the event of a power outage, this generator is used to power the runway and taxiway lights, airport beacon, and the airport-owned NAVAIDS and visual aids.[17]

b. Airport Beacon

Airport beacons are lighted navigation aids that indicate the location of the airport. In the United States, different types of airports, such as land, water, or military are represented by specific color combinations. A white and green (or green only) beacon indicates the facility is a lighted land airport. Airport beacons typically flash at a rate of 24–30 per minute and are mounted on top of towering structures.

The beacon at CDC is a standard green and white beacon positioned atop a standard orange and white striped beacon pole located at the GA apron near the fueling station.

c. Approach Lights

Approach lights help pilots locate the runway as they transition from instrument flight to visual flight. The sophistication and configuration of the approach light system (**ALS**) can vary based on the type of approach required for each runway.

Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights

Runway 20 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (**MALSR**). This system provides visual information regarding runway alignment, height perception, roll guidance, and horizon references. As shown in Figure 4.11, it consists of a series of lights mounted on poles of various heights that extend 2,000 feet from the end of the runway along the runway centerline. The MALSR is owned by the FAA.

Figure 4.11: Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights

Source: Ardurra

Runway End Identifier Lights

Runway end identifier lights (**REIL**) provide rapid and positive identification of the approach end of a runway. They are especially helpful if the runway is surrounded by a multitude of other lighting, lacks contrast with the surrounding terrain, or during periods of reduced visibility. These systems typically consist of a pair of synchronized flashing lights placed laterally on each side of the runway threshold facing the approach area. Runway 2 is equipped with a REIL system as well as both ends of Runway 8/26 (Figure 4.12).

Figure 4.12: Runway End Identifier Lights

Source: Ardurra

d. Runway Edge Lighting

Runway edge lighting systems improve safety and visibility by defining pavement edges. Runway 2/20 is equipped with high intensity runway lights, and Runway 8/26 is equipped with medium intensity runway lights (Figure 4.13). These systems have variable intensity control settings.

Figure 4.13: Runway Edge Lighting

Source: Ardurra

e. Taxiway Lighting Systems and Reflectors

Taxiway lighting systems and reflectors improve safety and visibility by helping to define the edge of taxiway pavements. These systems are essential, especially at night or during periods of reduced visibility, to help maintain safe and efficient access between the runways and aprons. Taxiway edge lights and reflectors are typically blue to help distinguish these lights from other airfield lighting systems. Each of the three taxiways and all six designated taxiway connectors are equipped with medium intensity taxiway lights (Figure 4.14).

Figure 4.14: Medium Intensity Taxiway Lights

Source: Ardurra

Taxiway Edge Reflectors

Taxiway edge reflectors are permitted instead of, or to enhance, taxiway edge lights for short sections, curves, and intersections.[18] The undesignated taxiway connector at the southwest end of Taxiway A is equipped with taxiway edge reflectors.

Figure 4.15: Taxiway Edge Reflectors

Source: Ardurra

f. Visual Glideslope Indicators

Visual glideslope indicators aid pilots in judging the correct slope as the aircraft approaches the touchdown zone of the runway. The airport is equipped with the type of visual glideslope indicator known as a precision approach path indicator.

Precision Approach Path Indicators

Precision approach path indicators (**PAPI**) aid pilots by providing visual guidance during landing. These systems display a combination of red and white lights which indicate the slope at which the aircraft is descending toward the touchdown point. A pilot on the correct slope for landing will see two white lights and two red lights. Runways 2, 20, and 8 are all equipped with a four-light PAPI located at the left side of the landing runway at the approximate touchdown point. They each have a standard three-degree glide path angle. These systems are owned by the FAA.

Figure 4.16: Precision Approach Path Indicator

Source: Ardurra

4.5.6. Navigational Aids

There are several different types of navigation aids (**NAVAIDS**) available for use at airports that can vary widely in function and level of sophistication. These can be simple devices that serve as visual markers, communication equipment that transmits radio signals, or sophisticated systems that provide navigational guidance with a high degree of accuracy. The sophistication and configuration of the systems used at a particular airport varies based on the type of approach required. At CDC, they include both and visual electronic navigational aids.

a. Visual Navigational Aids

Visual navigational aids provide pilots with important visual cues when operating at the airport.

Segmented Circle and Wind Indicator

A segmented circle is used to identify the aerial traffic pattern when flying under visual flight rules (**VFR**). Traffic patterns are established to help pilots avoid obstacles like mountains, towers, or densely populated areas. The legs extending from the circle indicate the direction a pilot should turn when making the final approach to a given runway end.

At CDC, the segmented circle is located to the east of Taxiway A just south of where it intersects with Runway 8/26 (Figure 4.17). The primary wind indicator, which is located in the center of the segmented circle (37° 42' 0.72"N and 113° 5' 45.05"W), is lighted for improved visibility.

As required for compliance with Title 14 CFR Part 91, *General Operating and Flight Rules*, L-shaped indicators are used to show that Runways 20 and 26 have right-hand turns while Runways 2 and 8 have left-hand turns.

Additionally, Title 14 CFR Part 139, *Certification of Airports*, requires commercial service airports to have a supplemental wind indicator located at the end of each runway suitable for air carrier use. Runway 2/20 is the only runway at CDC suitable for use by an air carrier. As such, it has a supplemental wind indicator located at each end.

Figure 4.17: Segmented Circle and Wind Indicator

Source: Ardurra

b. Electronic Navigational Aids

Electronic navigational aids use a combination of ground-based transmission facilities and onboard receiving instruments to help pilots navigate with a high degree of accuracy.

Instrument Landing System

An instrument landing system (**ILS**) is a ground-based electronic NAVAID that enables pilots to execute a precision instrument approach procedure. Runway 2/20 is equipped with an ILS that consists of a localizer (**LOC**) and glideslope (**GS**) that supports the ILS or localizer approach to Runway 20 (Figure 4.6).

The localizer provides horizontal (i.e., left/right) guidance along the extended runway centerline, and the glideslope provides vertical (i.e., up/down) guidance to the runway touchdown point at the typical three-degree glide path angle.

The localizer, which is located just beyond the approach end of Runway 2, is powered through a neighboring electrical vault. The glideslope, which is located just to the west of Runway 20 near the touchdown point, is also powered through a neighboring electrical vault (Figure 4.18). This system is owned by the FAA.

Figure 4.18: Glideslope

Source: Ardurra

Very High Frequency Omnidirectional Range with Distance Measuring Equipment

A very high frequency omnidirectional range (**VOR**) is a ground-based NAVAID that is widely used within the National Airspace System (**NAS**). It is aligned with magnetic north and transmits azimuth information for high and low altitude routes and airport approaches. When the VOR is located alongside distance measuring equipment (**DME**), it is referred to as a VOR-DME. Together, they transmit both azimuth and distance information to aircraft. There is a federally-owned VOR-DME located approximately six miles north of the airfield which has the identifier EHK. This VOR-DME supports the VOR approach to Runway 20 (Figure 4.7).

4.5.7. Weather Reporting Equipment

a. Automated Surface Observing System

An automated surface observing system (ASOS) is a weather sensing station designed to assist pilots and flight planners by automatically providing up-to-date meteorological observations. These systems, which can have a variety of sensors, typically measure wind direction and speed, cloud ceiling height, visibility, air temperature, precipitation, dew point, barometric pressure, and humidity. The weather reports can be accessed via telephone, online, radio, or local computer terminal.

The ASOS is at CDC located at the north end of Runway 20 (Figure 4.19). People can receive these weather reports via radio at 119.025 or by calling (435) 867-0278. This system is owned by the National Oceanic and Atmospheric Administration (NOAA).

Figure 4.19: Automated Surface Observing System

Source: Ardurra

4.6. Landside and Landside Facilities

The landside is the portion of an airport that contains the facilities used for processing passengers and cargo as well as ground transportation. At CDC, this includes the commercial service apron, passenger terminal building, general aviation facilities, and air cargo facilities as well as additional support facilities and equipment.

4.6.1. Commercial Service Terminal Complex

The commercial service terminal complex is located just to the south of Taxiway C near where it intersects with Taxiway Connector A-2. The major elements of the terminal complex include the commercial service apron, the passenger terminal building, and the terminal parking lots.

a. Commercial Service Terminal Apron

The terminal apron, which is constructed of asphalt and concrete, is approximately 125,000 square feet. The apron has a hardstand parking location for a single regional jet aircraft next to the commercial terminal building. It is marked with a red line that indicates the security identification display area (SIDA) boundary. Ground service equipment is stored near the terminal building at the edge of the commercial apron.

b. Passenger Terminal Building

The passenger terminal building was constructed in 2005 and is approximately 15,000 square feet. The two-story building houses the airport administration offices; baggage claim area; check-in, ticketing, and baggage screening area; rental car counters; security screening area; and a waiting area. There is one passenger gate that allows walk-on ramp access when boarding and disembarking aircraft (Figure 4.20).

Figure 4.20: Passenger Terminal Building

Source: Ardurra

Airport Administration Offices

The airport administration offices are located on the second floor. This includes office space used by the Transportation Security Administration (TSA).

Baggage Claim Area

The baggage claim area is located on the first floor in the south wing (Figure 4.21).

Figure 4.21: Baggage Claim Area

Source: Ardurra

Check-In, Ticketing, and Baggage Screening Area

The passenger check-in, airline ticketing, and baggage screening area is located on the first floor in the north wing (Figure 4.22). As of December 2022, there is one airline operating at CDC. Delta Connection, which is operated by SkyWest Airlines, offers daily nonstop service to Salt Lake City.

Figure 4.22: Ticketing and Baggage Screening

Source: Ardurra

Rental Car Counters

The rental car counters are located on the first floor in the south wing of the terminal building. The are three rental car agencies at CDC which include Enterprise, Avis, and Budget (Figure 4.23).

Figure 4.23: Rental Car Counters

Source: Ardurra

Security Screening Area

The Transportation Security Administration (**TSA**) screening area is also on the first floor (Figure 4.24). Passengers are retained in a secure waiting area after they have completed the TSA screening process.

Figure 4.24: Security Screening Area

Source: Ardurra

Passenger Waiting Area

The passenger waiting area is also located on the first floor in the center of the terminal building.

Figure 4.25: Passenger Waiting Area

Source: Ardurra

Passenger amenities in the waiting area include vending machines, free Wi-Fi, and electronic charging stations (Figure 4.26).

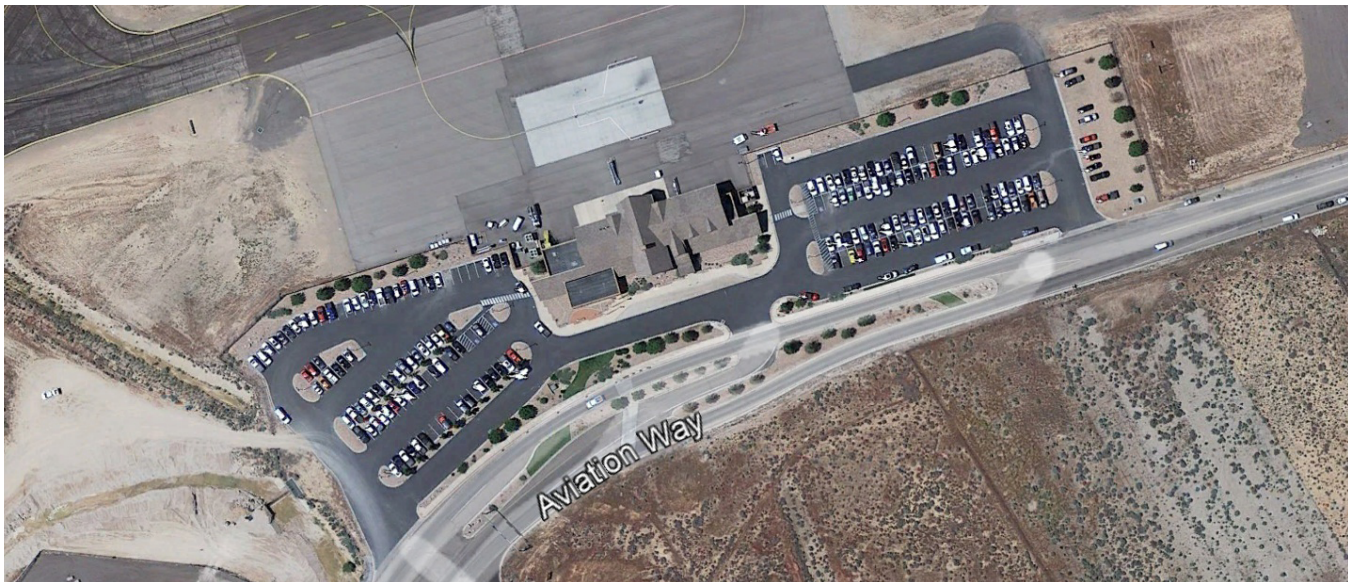
Figure 4.26: Passengers Amenities

Source: Ardurra

c. Airport Parking

The airport offers free parking to both short-term and long-term passengers. There are approximately 204 spaces available in the two parking areas located alongside the terminal building with additional space available in an adjacent unpaved parking area. These parking areas, which are also used by the car rental companies and airport employees, are accessed via Aviation Way (Figure 4.27).

Figure 4.27: Terminal Parking



Source: Ardurra

4.6.2. General Aviation Facilities

General aviation includes all flights that are not scheduled commercial service or military operations. It typically includes charter flights, privately owned aircraft used for business or personal travel, flight training, recreation, aerial firefighting, and medical transport or other types of emergency services. At CDC, these facilities include the general aviation apron, aircraft hangars, aircraft tiedowns, helicopter parking, the fixed base operator, and automobile parking.

a. General Aviation Apron

The general aviation (GA) apron has been paved with asphalt and encompasses approximately 15 acres. The north section, which is approximately 8.5 acres, begins just beyond the east end of Taxiway B and extends west until it meets Taxiway C. The south section, which is approximately 6.5 acres, follows Taxiway C as it extends to the south and ends just before Taxiway C reaches the access road to the snow removal building. The north section provides access to the self-serve fueling station, the north tiedown area, and the air cargo facility. The south section provides access to the fixed base operator (FBO), the main hangar area, and the south tiedown area. The GA apron is used by both local and itinerant traffic.

b. Aircraft Hangars

The main hangar area is located at the south end of the GA apron. There is a wide assortment of hangar types and sizes at the airport which range in size from a large 20,000-square-foot building to small nested T-hangars (Figure 4.28). This includes a row of T- hangars with nine individual spaces owned by the airport. Nearly all of the hangars at the airport are currently occupied by local organizations, businesses, or privately owned aircraft. Several of these airport tenants are discussed later in Section Section 4.8. Airport Tenants.

Figure 4.28: Main Hangar Area

Source: Ardurra

c. Aircraft Tiedowns

There are a total of 76 aircraft tiedowns located on the GA apron; 58 tiedowns are located at the north tiedown area and 18 tiedowns are located at the south tiedown area.

d. Helicopter Parking

There is a helicopter parking area just west of the general aviation apron which is accessed via Taxiway C. It is marked with four parking spots for large helicopters and four spots for small helicopters (Figure 4.29).

Figure 4.29: Helicopter Parking

Source: Ardurra

e. Fixed Base Operator

A fixed base operator (**FBO**) is a business that operates at an airport and provides services to airport users. Typically, these services are related to the operation and maintenance of aircraft but they can also extend to services and amenities like flight instruction, charters, rentals, pilots lounges, conference rooms, and car rentals. The FBO building at CDC is located at the GA apron near the end of Kitty Hawk Drive (Figure 4.30).

GateOne, which acquired Sphere One Aviation in 2016, is the sole FBO at CDC.[19] The company provides a full range of services including aircraft maintenance, aircraft parking (hangar, ramp, or tiedowns), aircraft rental, aviation fuel, on-site catering service, flight training, oxygen service, passenger terminal and lounge, pilot lounge, rental cars, courtesy transportation, and more (Figure 4.30).[20]

Figure 4.30: Fixed Base Operator

Source: Ardurra

f. Automobile Parking

There is a small paved parking lot located at the FBO building which is accessed via Kitty Hawk Drive. The lot, which was repainted and restriped in 2022, has 106 parking spaces. This parking lot is outside the security fence, and the airfield is accessed from a vehicle security gate or a locked pedestrian gate as well as through the FBO building. Additional parking is available at a small paved parking lot (approximately 4,000 square feet) located at the main hangar area, and another small parking lot (approximately 5,000 square feet) is located next to the snow removal equipment building. Both lots are accessed via Aviation Way. When needed, additional space is available for airport tenants in several unmarked areas adjacent to the various hangars and buildings.

4.6.3. Air Cargo Facilities

The airport is serviced by two dedicated air cargo operators; FedEx and Alpine Air Express. Both use a FedEx-owned cargo hangar for cargo handling. The cargo hangar is approximately 5,100 square feet and is located on the east side of the airfield located near the north section of the GA apron. It is currently being used as a cargo sort building, to load and unload cargo, and as temporary storage for equipment used to move heavy cargo and large pallets.

4.7. Support Facilities

An airport's support facilities help the airport to run smoothly and efficiently. At CDC, these facilities include infrastructure and equipment used for aircraft fuel storage; aircraft rescue and fire fighting; a flight service station; snow removal and ice control facilities; and security fencing and access gates.

4.7.1. Aircraft Fuel Facilities

Fuel services at CDC are provided by the FBO which also owns and operates all of the fuel tanks, trucks, and equipment. There is a self-serve fueling station that dispenses 100LL aviation gasoline (**avgas**) located at the north GA apron next to the airport beacon (Figure 4.31). The company also operates four, full-service, 5,000-gallon, fuel trucks where Jet A and 100LL avgas can be purchased.

Figure 4.31: Fueling Station

Source: Ardurra

The fuel storage tanks are located near the interagency fire center. There are three 10,000-gallon above-ground fuel storage tanks. One is used to store 100LL avgas and two are used to store Jet-A fuel. There are two 12,000-gallon above-ground fuel storage tanks. One is used to store 100LL avgas, and one is used to store Jet-A fuel. There is also a 500-gallon tank where 100LL avgas can be purchased via self service.

4.7.2. Aircraft Rescue and Fire Fighting

According to Title 14 Code of Federal Regulations (**CFR**) 139.315, an airport's aircraft rescue and fire fighting (**ARFF**) index is determined based on the length of the longest passenger aircraft serving the airport. If the aircraft makes, on average, five or more daily departures from the airport, this aircraft is used to determine the ARFF index for the airport. If the aircraft makes less than five average daily departures, the airport's ARFF index will be the next lower ARFF index with Index A being the minimum designated ARFF index for a commercial service airport.

Air carrier aircraft are grouped into the following five categories used to determine the AARF index:

- Index A includes aircraft less than 90 feet in length.[21]
- Index B includes aircraft at least 90 feet but less than 126 feet in length.
- Index C includes aircraft at least 126 feet but less than 159 feet in length.
- Index D includes aircraft at least 159 feet but less than 200 feet in length.
- Index E includes aircraft at least 200 feet in length.

a. Aircraft Rescue and Fire Fighting Index and Equipment

Cedar City Regional Airport is currently classified as an Index A airport. To meet Index A requirements, the airport must have a vehicle capable of carrying a minimum of either:

- 500 pounds of sodium-based dry chemical, halon 1211, or clean agent; or
- 450 pounds of potassium-based dry chemical and water with a commensurate quantity of aqueous film foaming foam (**AFFF**) to total 100 gallons of simultaneous dry chemical and AFFF application.[22]

The airport uses an Oshkosh Striker 1500 fire engine as the primary ARFF response vehicle. The Striker is equipped to carry 1,500 gallons of water, 500 pounds of dry chemical, and 210 gallons of AFFF. This truck is also equipped with three portable fire extinguishers: 20-pound BC, 30-pound D METL/X, and 25-pound Halotron (Figure 4.32). Table 4.2 summarizes the ARFF equipment available at the airport.

Figure 4.32: Aircraft Rescue and Fire Fighting Truck

Source: Ardurra

Table 4.2: Aircraft Rescue and Fire Fighting Equipment

Year	Make	Equipment Type
2007	Oshkosh	Striker 1500 ARFF Vehicle
1994	E-ONE	1500-GPM Pumper Truck with 750-gallon Water Tank (Engine 12)
1995	Freightliner	Tender Truck with 4000-Gallon Water Tank (Tender 11)
1985		75-foot Aerial Truck with 1500-GPM Pump, 250-Gallon Water Tank (Ladder 31)
2014	Pierce	1500-GPM Pumper Truck with 1000-Gallon Water Tank (Engine 11)
2000	Pierce	1500-GPM Pumper Truck with 1000-Gallon Water Tank (Engine 21)
2005	Pierce	1500-GPM Pumper Truck with 1000-Gallon Water Tank (Engine 31)
2014	Pierce	2000-GPM Aerial Truck with 300-Gallon Water Tank (Ladder 11)
2006	Pierce	Hazardous Material and Heavy Rescue Truck (Rescue 12)
2017	Chevrolet	4X4 Quick Response Light Rescue Truck (Rescue 11)

Source: Cedar City Regional Airport, 2019 Airport Certification Manual

b. Cedar City Fire Station #3

The ARFF equipment is housed at Cedar City Fire Station #3. This station is located at 3013 W 1600 N which is just northwest of the airport near the intersection of W 1600 N and N 3100 W (Figure 4.33). There are two additional buildings used as a training facility. There is an access road from the station to the west end of Runway 8/26 which allows for quick access to the airfield.

Figure 4.33: Cedar City Fire Station #3

Source: Ardurra

4.7.3. Flight Service Station

Flight service stations (**FSS**) are air traffic facilities that provide pilots with weather and aeronautical information through pilot briefings, flight planning, inflight advisory services, weather cameras, search and rescue initiation, aircraft emergency response, and notices to air missions (**NOTAMs**). The Cedar City Flight Service Station is located on Kitty Hawk Drive near the FBO building.

Figure 4.34: Flight Service Station

Source: Ardurra

4.7.4. Snow Removal and Ice Control

The snow removal equipment (**SRE**) building is 4,961 square feet, is located just west of the commercial apron, and is accessed via Taxiway C. All SRE is stored and maintained in the SRE building. No chemicals are used on the runways for snow and ice control. Table 4.3 lists the SRE available at the airport.

Table 4.3: Snow Removal Equipment

Year	Make and Model	Equipment Type
2021	MB3	18-foot Front Mount Power Sweeper
2016	MB3	18-foot Front Mount Power Sweeper
2005	New Holland TV145	Tractor with 14-foot Plow, Snow Bucket, Snow Thrower, and Spreader
1991	Chevy 3500	8-foot V-Blade Plow
1990	Ford 9000	Dump Truck with 20-foot Wausau Plow
1983	Oshkosh	9-foot Snow Blower

Source: Cedar City Regional Airport, Snow and Ice Control Plan

a. Priority Snow Removal Areas

Priority snow removal areas have been identified as part of the airport's Snow and Ice Control Plan. These include Runway 2/20, Taxiway A, connectors A1, A2, and A4, Taxiway C (from Taxiway A to terminal apron), terminal apron, ARFF access road, and Runway 8/26 (from fire station to Runway 2/20). Areas that are noted in the plan as second priority are Runway 8/26, Taxiway C, connector C1, the vehicle access gate at Kitty Hawk Drive, the vehicle access gate at the north GA apron, and the GA apron. The areas listed as third priority include Taxiway B, connectors B1 and A3, the helipad, and the fuel farm access road.[23]

b. Aircraft Deicing

The aircraft deicing area is located at the commercial service apron. The deicing system, which is owned and operated by SkyWest Airlines, uses a truck with a lift and bucket to apply propylene glycol (Figure 4.35). The FBO provides limited deicing services for GA aircraft.

Figure 4.35: Deicing Truck

Source: Ardurra

4.7.5. Security Fencing and Access Gates

An eight-foot-tall wrought iron fence surrounds the commercial terminal building and most of the adjacent parking lot. An eight-foot-tall chain-link security fence runs along the remainder of the airport property. In 2017, additional fencing was added as a barrier to help reduce the number of prairie dogs on airport property. All fencing is maintained by airport staff (Figure 4.36). There are 18 vehicle access gates operated by keypads (Figure 4.37). One is a dedicated ARFF access gate, and one is a dedicated SRE gate. There are multiple pedestrian gates located around the commercial terminal building and tenant hangars.

Figure 4.36: Security Fence

Source: Ardurra

Figure 4.37: Vehicle Security Gate

Source: Ardurra

4.8. Airport Tenants

A variety of tenants own, lease, or operate facilities at the airport.

4.8.1. Color Country Interagency Fire Center

The airport is home to the Color Country Interagency Fire Center (**CCIFC**). This interagency dispatch center is a cooperative effort between the U.S. Bureau of Land Management (**BLM**), U.S. Forest Service (**USFS**), National Park Service (**NPS**), Bureau of Indian Affairs, and the Utah Division of Forestry, Fire and State Lands (**FFSL**).[24] CCIFC is responsible for dispatching and coordination of approximately 400 wildfires and incidents per year for approximately 16.5 million acres located in southern Utah and northern Arizona. Currently, 15 units are dispatched through the Color Country Interagency Fire Center.

The CCIFC base is located at the northeast end of Taxiway C near where it intersects with Taxiway A. The organization occupies a 6,595-square-foot building which includes housing for on-duty pilots and staff. The CCIFC operates the apron immediately adjacent to this building. The apron is approximately 2.5 acres, includes three dedicated wash pads capable of servicing large firefighting aircraft (e.g., Boeing 747, MD-88, C-10, P-2 Neptune, BAe-146, and Shorts Sherpa C-23), and is capable of accommodating up to seven AT-802 single engine air tankers (**SEAT**).

The CCIFC also operates five storage tanks used for slurry, which are located just to the east of the apron, and a retention pond located just north of the apron.[1] There is also a helicopter parking area with three helicopter parking positions and one helipad.

4.8.2. Utah National Guard

The Utah National Guard trains at the airport with a fleet of fixed wing aircraft and helicopters. The organization is in the process of signing a ten-year lease on a large box hangar recently constructed by the FBO. Additionally, the Utah National Guard is looking to construct an army aviation facility and readiness center adjacent to the airport to enhance its domestic aviation response capabilities.[25]

4.8.3. Southern Utah University

Southern Utah University (**SUU**) currently occupies six buildings located at the airport. This includes the large maintenance hangar next to the snow removal building, the two adjacent hangars, and two buildings located at the north end of the main hangar area. SUU's flight school trains both fixed wing and rotor pilots and currently offers the only FAA certified aerobatic helicopter in the country.[26]

4.8.4. Civil Air Patrol

The Civil Air Patrol (**CAP**) is a federally chartered non-profit corporation. Its mission is to support America's communities with emergency response, diverse aviation and ground services, youth development, and promotion of air, space, and cyber power through aerospace education. CAP flies a wide range of operational missions including search and rescue and disaster response operations. They also execute aerial target missions to maintain combat readiness of air defense assets, conduct special-use airspace surveys, and fly orientation flights for teachers, Air Force Reserve Officer Training Corps (**ROTC**), and Air Force Junior Reserve Officer Training Corps (**JROTC**) cadets.[27] The Cedar Mustangs Squadron Civil Air Patrol occupies a large, 3,268-square-foot hangar located next to the small parking lot at the main hangar area.

1. Slurry is a mixture of water and fertilizer designed to protect trees and other flammable materials. The mixture clings to these materials and insulates them from the approaching fire while the fertilizer helps the damaged areas regrow in the wake of the blaze.

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