Preston Airport

Airport Master Plan

2026

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PRESTON, ID

2026 AIRPORT MASTER PLAN

FOR

PRESTON AIRPORT (U10)

FRANKLIN COUNTY & CITY OF PRESTON

SUBMITTED TO

FEDERAL AVIATION ADMINISTRATION

HELENA AIRPORTS DISTRICT OFFICE

AND

IDAHO TRANSPORTATION DEPARTMENT, DIVISION OF AERONAUTICS

PREPARED BY

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DRAFT

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2026 PRESTON AIRPORT MASTER PLAN

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Preston Airport

EXECUTIVE SUMMARY

2026 PRESTON AIRPORT MASTER PLAN

EXECUTIVE SUMMARY

The Federal Aviation Administration (FAA) recommends that public-use airports prepare a new airport master plan every five to ten years or as often as necessary to reflect significant changes in local aviation conditions. The previous airport master plan for Preston Airport (U10) was completed in 2011, with a base year of 2010. The 2026 Airport Master Plan is designed to evaluate the Airport's current role and capabilities, forecast future aviation demand, and plan for the timely development of any new or improved facilities that may be needed or required. The goal of this plan is to provide a clear strategy for accommodating future airport demand in a safe, cost-effective, efficient, and flexible manner.

The 2026 Airport Master Plan was prepared by Ardurra on behalf of the Airport Sponsors, Franklin County and the City of Preston, Idaho. This document was developed in accordance with FAA requirements, including Advisory Circular (AC) 150 / 5300-13B, *Airport Design*, AC 150 / 5070-6B, *Airport Master Plans*, and all other relevant rules, standards, and regulations.

OVERVIEW AND FINDINGS

The key findings of the 2026 Airport Master Plan are summarized as follows:

- The FAA-approved forecast for the 20-year planning period from 2023 to 2043 projects an increase in total aircraft operations from 6,813 to 8,856 by 2043 and a growth in based aircraft from 30 to 39.
- The critical aircraft was determined to have an aircraft approach category (AAC) of A and airplane design group (ADG) of I, which is best represented by the Cessna 172 Skyhawk. This aircraft has a maximum takeoff weight (MTOW) of 2,550 pounds, classifying the critical aircraft as an A-I (small).
- Runway 17 / 35 runway safety area (RSA) does not meet standards off of each end. Shortening the runway to 1,794 feet in the short term will remedy this situation. Ultimate decommissioning of this runway will produce more area for hangar development.
- Runway 4 / 22 will maintain its existing runway length of 3,557 feet and a displaced threshold of 384 feet. Declared distances provide adequate safety buffers to maintain compliance with design standards.
- A full parallel taxiway is recommended to connect to each end of Runway 4 / 22.
- A future instrument approach procedure to Runway 22 is feasible if certain conditions are met. The installation of an automated weather observing station (AWOS) on the Airport will support the future development of an instrument approach procedure.
- 25 hangars and 18 tiedowns are needed during the planning horizon. This need will be met in phases as Runway 17 / 35 is shortened, then decommissioned. An opportunity area for additional aviation development exists on a parcel of land adjacent to the southeast corner of the airport.

PUBLIC INVOLVEMENT

The project team developed a public involvement plan that provided opportunities for community members to engage in the planning process and offer feedback on key elements of the airport master plan. Public involvement included both in-person and virtual meeting options to allow as much community participation as possible. As shown in Table 1, these meetings included a series of public open house events and project advisory committee (PAC) workshops. The PAC was formed with help from the Airport Sponsors to gather feedback from informed stakeholders. This committee provided the project team with valuable insight into the needs of the local aviation community throughout the planning process.

Table 1 Public Involvement

Meeting	Date	Location
Project Advisory Committee Meeting	March 12, 2025	Franklin County Board Room
Public Open House	March 12, 2025	Franklin County Board Room
Project Advisory Committee Meeting	September 29, 2025	Franklin County Board Room
Public Open House	September 29, 2025	Franklin County Board Room

FACILITIES DEVELOPMENT PLAN

Implementation of the preferred alternative occurs in three phases during the 20-year planning period at a total estimated cost of approximately $14.8 million. Details of the development plan are discussed in Chapter 5, Facilities Implementation. Short-term projects are expected to occur within the first five years and shown in Table 2 and Figure 1. Medium-term projects are expected to occur within six to ten years and are shown in Table 3 and Figure 2. Long-term projects are planned for 11 to 20 years and shown in Table 4 and Figure 3. Much of the funding is expected to be eligible for reimbursement from FAA and Idaho Transportation Department (ITD) grant funding up to 95% of the project cost.

It is important to note that the estimated costs listed in the tables are in 2025 dollars and rounded to the nearest thousandth and include costs for construction contingency, engineering design, and construction administration. However, they do not include costs for completing the National Environmental Policy Act (NEPA) evaluation process. Land acquisition costs are based on $63,000 per acre.

Table 2 Preston Airport Facilities Development Plan-Short Term

No.	Project	Description	Estimated Cost
1	Shorten Runway 17 / 35	Shortens Runway 17 / 35 to 1,794 feet to bring the runway safety area (RSA) into compliance with design standards.	$104,000
2	Reconfigure and Expand Main Apron	Reconfigures and expands the main apron for approximately 20 ADG I aircraft tiedown positions.	$1,560,000
3	Relocate Segmented Circle and Realign Taxiway	Relocates the segmented circle and realigns an existing taxilane to support three additional 50′x50′ hangars and better accommodate existing aerial agricultural operations.	$682,500
4	Wildlife Hazard Fence and Entrance Gate	Installs a wildlife hazard fence and controlled entrance gate to reduce wildlife incursions and prevent unauthorized access from the adjacent highway.	$780,000
5	Northwest Development Area, Phase I	Constructs an ADG I taxilane and develops space for four 100′x100′ hangars and five 80′x80′ hangars.	$455,000
		Short-Term Total	$3,581,500

Figure 1 Preston Airport Facilities Development Plan-Short Term

#	Short-Term Improvements
1	Shorten Runway 17/35
2	Reconfigure and Expand Main Apron
3	Relocate Segmented Circle and Realign Taxiway
4	Wildlife Hazard Fence and Entrance Gate
5	Northwest Development Area, Phase I

Table 3 Preston Airport Facilities Development Plan-Medium Term

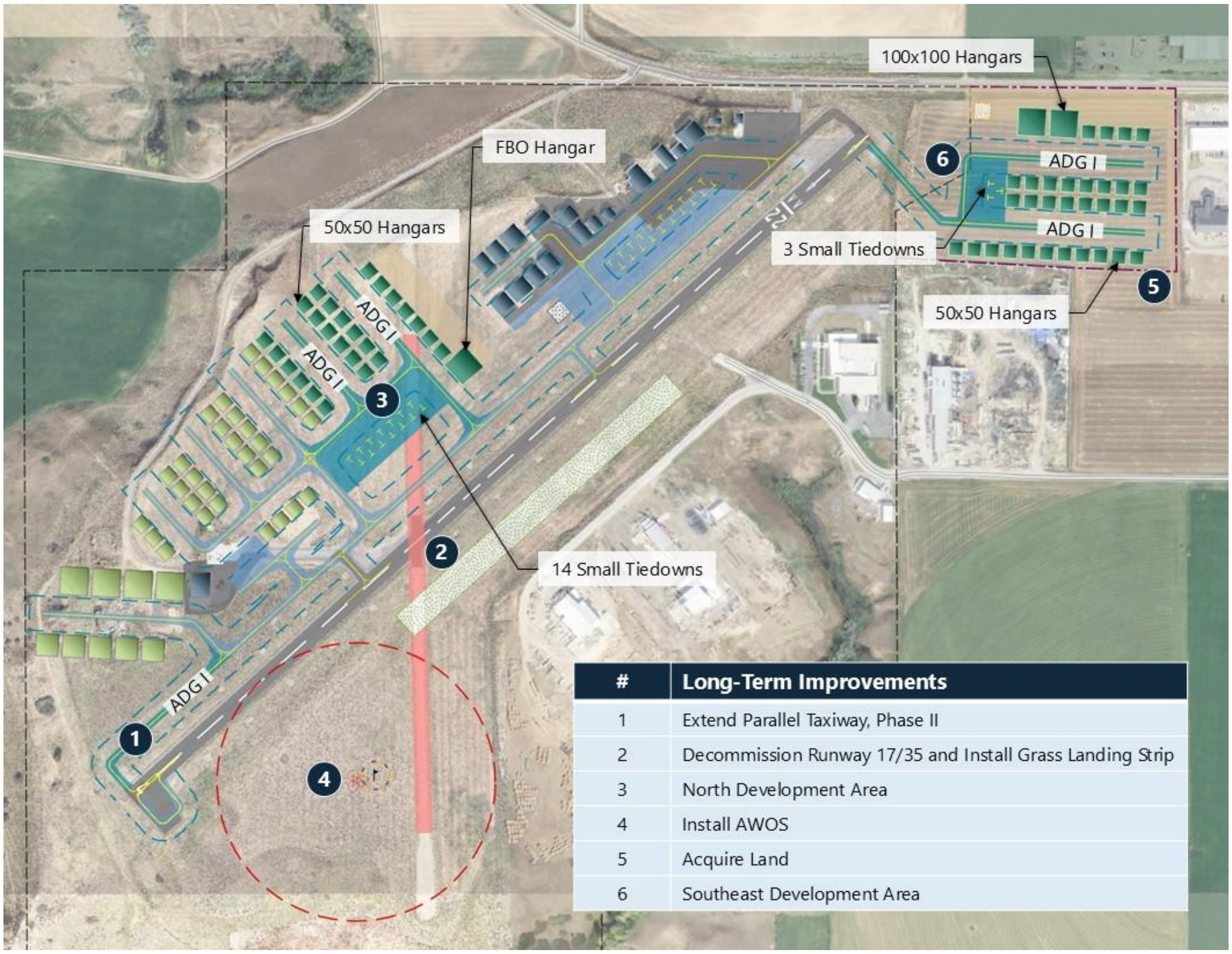
No.	Project	Description	Estimated Cost
1	Northwest Development Area, Phase II	Constructs additional ADG I taxilanes within the northwest development area to accommodate up to 28 additional 50′x50′ hangars while maintaining Runway 17/35 operations.	$1,105,000
2	Extend Parallel Taxiway, Phase I	Extends a taxiway parallel to Runway 4 / 22 between the main apron and the northwest development area.	$747,500
3	Relocate Fuel Farm	Prepares a new fuel storage site for above-ground tanks and an apron for self-serve aircraft fueling.	$2,600,000
4	Reconfigure Taxiway Turnaround	Reconfigures the existing taxiway turnaround for Runway 4 to meet updated airport design standards.	$520,000
		Medium-Term Total	**$4,972,500**

Figure 2 Preston Airport Facilities Development Plan-Medium Term

Table 4 Preston Airport Facilities Development Plan-Long Term

No.	Project	Description	Estimated Cost
1	Extend Parallel Taxiway, Phase II	Completes a full-length parallel taxiway serving Runway 4 / 22 to improve airfield circulation.	$487,500
2	Decommission Runway 17 / 35 and Install Grass Landing Area	Decommissions Runway 17 / 35 and installs a grass landing area to provide an alternative for users while freeing land for ultimate development opportunities.	$260,000
3	North Development Area	Constructs ADG I taxilanes for future hangar development, including an FBO facility with fuel farm access and vehicle parking.	$1,950,000
4	Install AWOS	Installs an automated weather observing system (AWOS) to improve airport access from the air.	$455,000
5	Acquire Land	Acquires additional land to support future development.	$1,430,000
6	Southeast Development Area	Develops ADG I taxilanes, hangars, and associated facilities on newly acquired southeast land parcels.	$1,690,000
		Long-Term Total	**$6,272,500**

Figure 3 Preston Airport Facilities Development Plan-Long Term



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EXISTING CONDITIONS

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CHAPTER ONE

EXISTING CONDITIONS

One of the first steps in preparing the airport master plan update for Preston Airport (U10) is to identify existing airport facilities. Conducting a comprehensive inventory is a critical step in the planning process because it helps to establish current baseline conditions at the Airport in order to evaluate future development needs.

This chapter provides an inventory and description of the existing facilities at the Airport, including airfield and airside facilities, support facilities, parking, utilities and stormwater infrastructure, and nonaeronautical uses. It also includes a general description of the Airport's surrounding airspace and aircraft operating procedures. This information was obtained through on-site inspections, airport staff and tenants, public databases, the *2011 Preston Airport Master Plan*, the Federal Aviation Administration (FAA), and the Idaho Transportation Department Division of Aeronautics (ITD Aeronautics).

1.1 AIRPORT OVERVIEW

Preston Airport is a general aviation (GA) airport situated in the south-central part of Idaho's Cache Valley, where it is surrounded by the Portneuf Range to the north, the Bannock Range to the west, and the Bear River Range to the east. The Airport straddles part of the border between unincorporated Franklin County and the City of Preston — Franklin County's seat and largest city — and is jointly owned and operated by the city and the county. As the only airport in Franklin County, Preston Airport serves a region in southeast Idaho that includes the cities of Preston, Franklin, Dayton, Clifton, Oxford, and Weston. In 2020, this census area had a population of approximately 14,194 people. [1]

Much of Franklin County's economy relies on agriculture, dairy production, transportation, manufacturing, and tourism. The Airport contributes to these industries by supporting recreational flying, aerial application, aerial firefighting, medical air transport, business and charter operations, and other GA activities.

In the 2020 Idaho Airport Economic Impact Analysis Update prepared by ITD Aeronautics, the Airport's total annual economic output from airport operations was $1.6 million. Approximately $470,000 of this economic activity can be attributed to GA visitor expenditures and $300,000 in wages to support 5 jobs.[2]

1.1.1 Regional Setting

Preston Airport is in southeast Idaho, as shown on the location map in Figure 1.1. The Airport extends across a section of the border between unincorporated Franklin County and the City of Preston.

Figure 1.1 Location and Vicinity Maps

Source: Ardurra, 2025

1.1.2 Meteorological Conditions

The northern region of the Cache Valley, where the Airport is located, has a cold semi-arid climate. U10 receives an average of 17.3 inches of precipitation and 52.4 inches of snowfall annually. July is the hottest month with an average maximum temperature of 89.2°F and January the coldest with an average minimum temperature of 15.3°F. [3]

1.1.3 Airport Role

The Airport is part of the National Plan of Integrated Airport Systems (NPIAS). The NPIAS has identified over 3,000 publicly owned airports that play a significant role in the national air transportation system. The latest NPIAS report has classified the Airport as a local GA airport. This classification is defined as an airport that supplements communities by providing access to primarily intrastate and some interstate markets.

The FAA's existing classifications are also used by ITD Aeronautics to describe the functions of Idaho's NPIAS airports. As such, Preston Airport is also classified as a local GA airport in the 2021 *Idaho Airport System Plan* (IASP).

1.1.4 Airport Development and Grant History

Table 1.1 summarizes Preston Airport's recent development and federal grant history.

Table 1.1 Preston Airport Development and Grant History

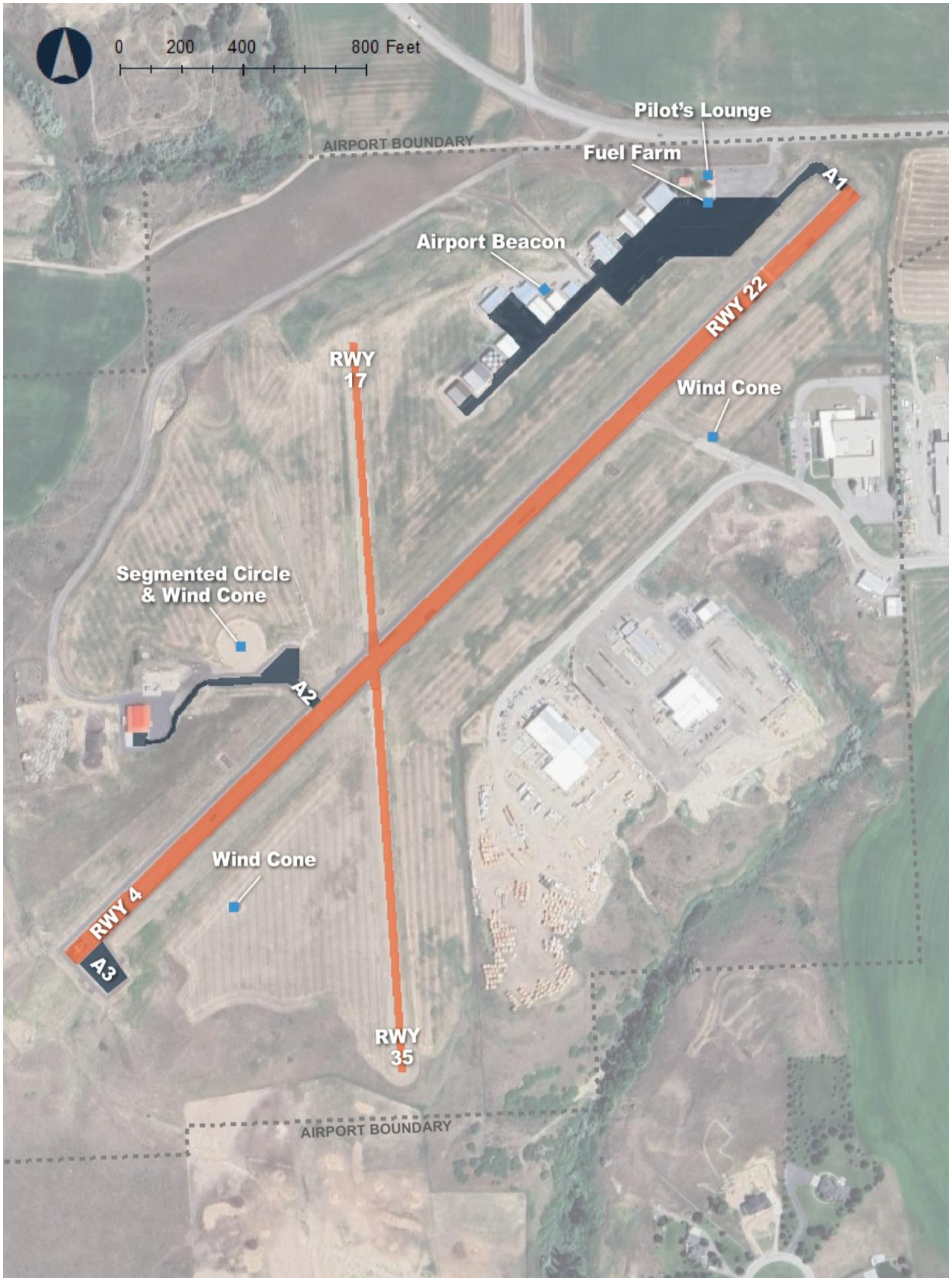
Year	Project Description	FAA Grant Amount
2014	Install Perimeter Fencing	$109,194
2015	Conduct Environmental Study	$179,982
2019	Reconstruct Runway	$74,728
2019	Construct Taxiway	$54,728
2019	Install Runway Lighting	$134,731
2019	Extend Runway	$54,728
2021	Extend Runway	$83,774
2021	Install Miscellaneous NAVAIDS	$51,930
2021	Construct Taxiway	$146,601
2021	Install Runway Lighting	$799,190
2021	Reconstruct Runway	$2,863,271
2021	Install Runway Vertical / Visual Guidance System	$167,195

Source: FAA, Helena Airports District Office

1.2 AIRFIELD FACILITIES

The airfield is the portion of an airport that contains the facilities necessary for aircraft operations. This includes the runways, taxiways, and other aircraft movement areas as well as the airside facilities that support aircraft operations. These support facilities generally include the airfield pavements, signage, lighting systems, navigational aids (NAVAIDS), and weather reporting equipment. The general layout of the Airport is shown below in Figure 1.2.

Figure 1.2 Airport Layout



Source: Ardurra, 2025

1.2.1 Runways

Preston Airport has two runways: Runway 4 / 22 and Runway 17 / 35. Runway 4 / 22 is paved and serves as the Airport's primary runway, and Runway 17 / 35 is a dirt crosswind runway. The existing runway conditions are summarized below with additional details described in later sections.

1.2.1.1 Runway 4 / 22

The primary runway, Runway 4 / 22, has a northeast-southwest orientation. The runway is 3,557 feet long and 60 feet wide; however, in order to meet obstacle clearance requirements, there is a displaced threshold on the Runway 22 End and declared distances are not all equal to the full length of the runway.

Runway Displaced Threshold

A displaced threshold is when a threshold is located at a point other than the designated beginning of the runway. While displacing a threshold reduces the length of runway available for landings in one direction, the displaced potion of runway is typically available for takeoffs and landings from the opposite direction. A runway threshold may be moved when additional clearance is needed between arriving aircraft and obstacles. In this instance, pavement markings and declared distances are used to communicate the displaced threshold to pilots.

At U10, the Runway 22 threshold is displaced 384 feet from the runway end.

Runway Declared Distances

Declared distances are published measurements used to identify the length of runway pavement that is available for use in aircraft operations. There are four types of declared distances defined by the FAA to indicate how much runway length is available for each phase of flight.

- Takeoff Run Available (TORA): This is the length of the runway available and suitable for the ground run of an aircraft taking off.
- Takeoff Distance Available (TODA): This includes the TORA plus any remaining runway or clearway beyond the TORA.
- Accelerate-Stop Distance Available (ASDA): This is the length of the runway plus any stopway available and suitable for the acceleration and deceleration of an aircraft aborting a takeoff.
- Landing Distance Available (LDA): This is the length of the runway available and suitable for an aircraft to land and come to a complete stop.

Table 1.2 summarizes the declared distances at U10 as they are shown on the updated Preston Airport Layout Plan.

Table 1.2 Runway 4 / 22 Declared Distances

Declared Distance	Runway 4	Runway 22
TORA	3,381′	3,557′
TODA	3,381′	3,557′
ASDA	3,381′	3,557′
LDA	3,381′	3,173′

Source: Ardurra, 2021 Preston Airport Layout Plan

Runway Lighting Systems

The runway is equipped with medium-intensity runway lights (MIRL), which run along the sides of the runway, and runway end identifier lighting (REIL) on the Runway 4 End. Each runway end is also equipped with a two-light precision approach path indicator (PAPI) to provide pilots visual approach slope guidance when landing.

Runway Markings

Both ends of Runway 4 / 22 have visual approach markings, including landing designators and a centerline. Runway 22 has additional markings to indicate a displaced threshold. The runway markings are currently in good condition.

Runway Pavement Strength

The asphalt surface is in good condition and has a published weight-bearing capacity of 12,500 pounds for single wheel gear (SWG) configurations.

Runway Pavement Gradient

The runway end data for Runway 4 / 22 acquired from a 2017 Franklin Bear Lidar survey indicates a longitudinal gradient (i.e., slope) of 0.03%, which means the runway is nearly flat.

1.2.1.2 Runway 17 / 35

Runway 17 / 35 has a north-south orientation and currently serves as a crosswind runway at the Airport. The runway is 2,375 feet long and 30 feet wide, and declared distances are all equal to the full runway length.

Runway Lighting Systems

Runway 17 / 35 is not lighted.

Runway Markings

Runway 17 / 35 does not have any distinguishable markings.

Runway Pavement Strength

The runway is constructed of dirt; as such, it does not have a published weight-bearing capacity.

Runway Pavement Gradient

The runway end data for Runway 17 / 35 acquired from a 2017 Franklin Bear Lidar survey indicates a longitudinal gradient (i.e., slope) of 0.01%, which means the runway is nearly flat.

1.2.2 Taxiways

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.

1.2.2.1 Taxiway A1

Taxiway A1 connects Runway 4 / 22 to the main GA apron and is 25 feet wide. The taxiway is equipped with blue medium intensity taxiway lights (MITL) between Runway 4 / 22 and the taxiway holdline; the remainder of the taxiway is lined with blue reflectors.

1.2.2.2 Taxiway A2

Taxiway A2 provides access between Runway 4 / 22 and an ariel agricultural outfit and a privately owned hangar adjacent to the segmented circle. It is 25 feet wide and is equipped with blue MITL between Runway 4 / 22 and the taxiway holdline and with blue reflectors along the remainder of the taxiway.

1.2.2.3 Taxiway A3

Taxiway A3 is a turnaround taxiway that connects to Runway 4. It is approximately 95 feet wide at the hold line and is equipped with reflectors.

1.2.3 Airfield Pavements

The Idaho Transportation Department, Division of Aeronautics (ITD Aeronautics) manages the condition of airfield pavements at public airports as part of its statewide airport pavement management program. This program assists with the development of recommendations for five-year major rehabilitation and global treatment plans for each airport. These recommendations are then incorporated into Idaho's Statewide Transportation Improvement Program (STIP). The pavement management program helps ITD Aeronautics, FAA, City of Preston, and Franklin County in planning and budgeting for pavement maintenance and construction projects. This process also helps airport sponsors fulfill FAA Grant Assurance 11: Pavement Preventative Maintenance, which requires airports accepting federal funds for pavement improvements to implement an effective airport pavement maintenance and management program.

The inspections are conducted using the Pavement Condition Index (PCI) survey procedures documented in FAA AC 150 / 5380-7B, *Airports Pavement Management Program (PMP)* and ASTM D5340-20, *Standard Test Method for Airport Pavement Condition Index Surveys*.[4]

The most recent inspection of the Airport's airfield pavements was conducted in August 2021. The results of this inspection were used to develop composite PCI ratings for each of the paved surfaces at the airfield, which are shown in Figure 1.3. The PCI is used to indicate the structural integrity and surface operational condition of a pavement in numerical terms, ranging from 0 (i.e., failed) to 100 (i.e., good). Typically, pavements with PCIs higher than 65 benefit from preventative maintenance, such as crack sealing. As the PCI drops between 40 and 65, the pavements may require major rehabilitation, such as an overlay. In situations where the PCI is lower than 40, pavement reconstruction is usually the last viable alternative.

Figure 1.3 Preston Airport Pavement Condition Index Map, 2021

Source: ITD Aeronautics, Network Pavement Management System, 2021

Overall, the Airport's pavements were determined to have an area-weighted network PCI of 84 and the average age of the airfield pavements was 11 years at the time of the 2021 inspection. The main apron pavement was determined to have a poor PCI rating of 43 that will require major rehabilitation within the next five years.[5]

1.2.4 Airfield Lighting

Airfield lighting systems extend an airport's usefulness during periods of darkness and reduced visibility. They also provide information and guidance to pilots while maneuvering at an airport. The airfield lighting systems at U10 are pilot activated using the common traffic advisory frequency (CTAF) 122.8 MHz.

1.2.4.1 Runway End Identifier Lights

Runway end identifier lights (REILs) provide rapid and positive identification of the approach end of a runway. They are especially helpful when the runway is near a large concentration of lights, lacks contrast with the surrounding terrain, or during periods of reduced visbility. The system consists of two synchronized flashing lights placed laterally on each side of the runway threshold. Runway 4 is equipped with a REIL system owned by the Airport.

1.2.4.2 Medium Intensity Runway Lights

Medium intensity runway lights (MIRLs) are a series of lights used to outline the edges of the runway during periods of darkness and reduced visibility. Runway 4 / 22 is equipped with a MIRL system with variable intensity controls. The lights used to define the lateral limits of the runway are white. The threshold lights marking the ends of the runway emit red light toward the runway to indicate the end of runway to a departing aircraft and emit green outward from the runway end to indicate the threshold to landing aircraft. This system is owned by the Airport.

1.2.4.3 Visual Glideslope Indicators

Runway 4 and Runway 22 are both equipped with a two-light precision approach path indicator (PAPI) located at the approximate touchdown point. These systems provide visual glideslope guidance during landing. A pilot on the correct glideslope path will see two white lights and two red lights. Both systems have a standard three-degree glide path angle and are owned by the Airport.

1.2.4.4 Airport Beacon

Airport beacons are a lighted navigation aid that indicate the location of an 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 beacon indicates the facility is a lighted land airport. Beacons marking public-use airports typically flash at a rate of 22-26 times per minute and are mounted on top of towering structures. The beacon at U10 is a standard green and white beacon positioned on the north side of the main hangar row. The beacon is situated approximately 435 feet to the north of Runway 4 / 22. It is owned by the Airport and is in good condition.

1.2.5 Navigational Aids

There are several types of navigation aids (NAVAIDs) with differing functions and sophistication levels available for use at airports. These can be simple devices that serve as visual markers, communication equipment that transmit radio signals, or sophisticated systems that provide navigational guidance with a high degree of accuracy.

1.2.5.1 Segmented Circle and Wind Indicator

A segmented circle is a visual indicator that provides traffic pattern information to pilots and a centralized location for wind indicators and signal devices. At U10, a lighted wind cone is located approximately 300 feet north of Runway 4 / 22 at the center of a segmented circle. There are no traffic pattern indicators because Runway 4 / 22 has a standard left-hand pattern. Additionally, there are supplemental wind cones south of Runway 4 / 22 near each runway end.

1.2.6 Airspace

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

Controlled Airspace: Controlled airspace consists of five classifications of airspace within which air traffic control (ATC) service is provided.

Uncontrolled Airspace: Uncontrolled, or Class G airspace, is the portion of the 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 (such as those around fire suppression activities), parachute jump aircraft operations, and similar uses.

At U10, where there is no control tower or weather observation and reporting capabilities, the airspace immediately surrounding the Airport is designated as Class G airspace. At 1,200 feet above ground level (AGL), this airspace transitions to controlled, Class E airspace. The Class E airspace extends well beyond the airspace immediately surrounding the Airport to protect the approaches to Runway 4/22 and 17/35.

1.2.7 Instrument Procedures

Instrument flight procedures (IFPs) provide departure, enroute, arrival, and approach guidance to pilots when flying under instrument flight rules (IFR). These procedures, which are published by the FAA, contain information that helps promote the safe and efficient operation of aircraft in the NAS, such as obstacle clearance criteria, minimum altitudes, navigation performance, and communication requirements.

There are no IFPs published for Preston Airport, which means the runways are classified as visual.

1.3 LANDSIDE AND SUPPORT FACILITIES

The landside and support facilities at U10 are overviewed in this section. The landside area consists of the general aviation (GA) apron, aircraft hangars, and tiedown areas. Supporting facilities include infrastructure and equipment used for aircraft fueling, snow removal, access control, automobile parking, and utility service.

1.3.1 Main General Aviation Apron

The utility of an apron typically defines its type. A GA apron, for example, serves civil aircraft activity. The main GA apron at U10 is approximately 90,690 square feet. It is located south of the main hangar area and is connected by a taxilane to Runway 4/22. The asphalt surface is in poor condition and will need to be reconstructed during the planning period.

1.3.2 Aircraft Hangars

Hangar facilities provide a wide range of benefits, including aircraft protection from weather damage, secure aircraft storage, shelter for aircraft maintenance, and the potential for shared office and hangar space. There are 13 hangars of various sizes located along the main hangar row. An additional hangar is located to the west of the main hangar row near the segmented circle. This does not include the two additional buildings east of the main hangar row that are owned by the Airport Sponsor, one of which houses the pilot's lounge.

1.3.3 Aircraft Tiedowns

An aircraft tiedown is a type of parking stand designed to accommodate a specific range of aircraft sizes. These T-shaped markings provide three anchor points—two along an aircraft's wing axis and one at its tail—to tiedown aircraft and reduce the risk of damage from wind. At U10, there are 9 small aircraft tiedown locations on the main GA apron.

1.3.4 Fixed Base Operator

There is no privately owned fixed base operator (FBO) or other service provider at U10. The Airport Sponsor provides self-serve 100LL fuel, a pilot's lounge, and a public restroom. There are no maintenance or training services available at the Airport.

1.3.5 Fuel Facilities

There is one underground 12,000-gallon 100LL avgas storage tank located on the north edge of the main GA apron near the pilot's lounge. The double walled fiberglass tank was installed in 2000. This tank and associated self-serve components are owned and operated by the Airport Sponsor. Fuel is available 24 hours a day via the self-serve fuel station.

1.3.6 Snow and Ice Control

There is no snow removal equipment (SRE) building at U10. A pick-up truck with a snowplow attachment is primarily used to remove snow at the Airport. When necessary, County-owned equipment is occasionally used to assist with snow removal efforts at the Airport.

1.3.7 Fencing and Vehicle Access Gates

The main entrance to the Airport is located off U.S. Highway 91and is not gated. There is an additional access gate located northwest of the main entrance that provides alternative access to all hangars at the Airport. The property boundary is not fully enclosed by fencing, but there is barbed wire or woven fencing around much of the airfield.

1.3.8 Automobile Parking

There is a paved, unmarked parking lot adjacent to the Airport entrance that can accommodate approximately 40 vehicles at U10. Additional unmarked parking is available on the north side of the main hangar row and west of the segmented circle.

1.3.9 Utilities

The developed areas of U10 are serviced by both public and private utility providers. Utilities are routed to the Airport along U.S. Highway 91. The City of Preston is the service provider for water at the Airport. County-owned buildings and some private hangars are on septic systems. The County septic system is serviced by different providers. Rocky Mountain Power provides the Airport with the electricity used at all airport buildings as well as for the airfield lighting systems and navigational aids. The pilot's lounge is heated using propane and cooled with an electrical, window-AC unit. There is no internet service available at the Airport.

1.3.9.1 Stormwater Drainage

Airfield stormwater drainage is collected by various storm drain systems and culverts throughout the Airport.

1.3.9.2 Lighting Vault

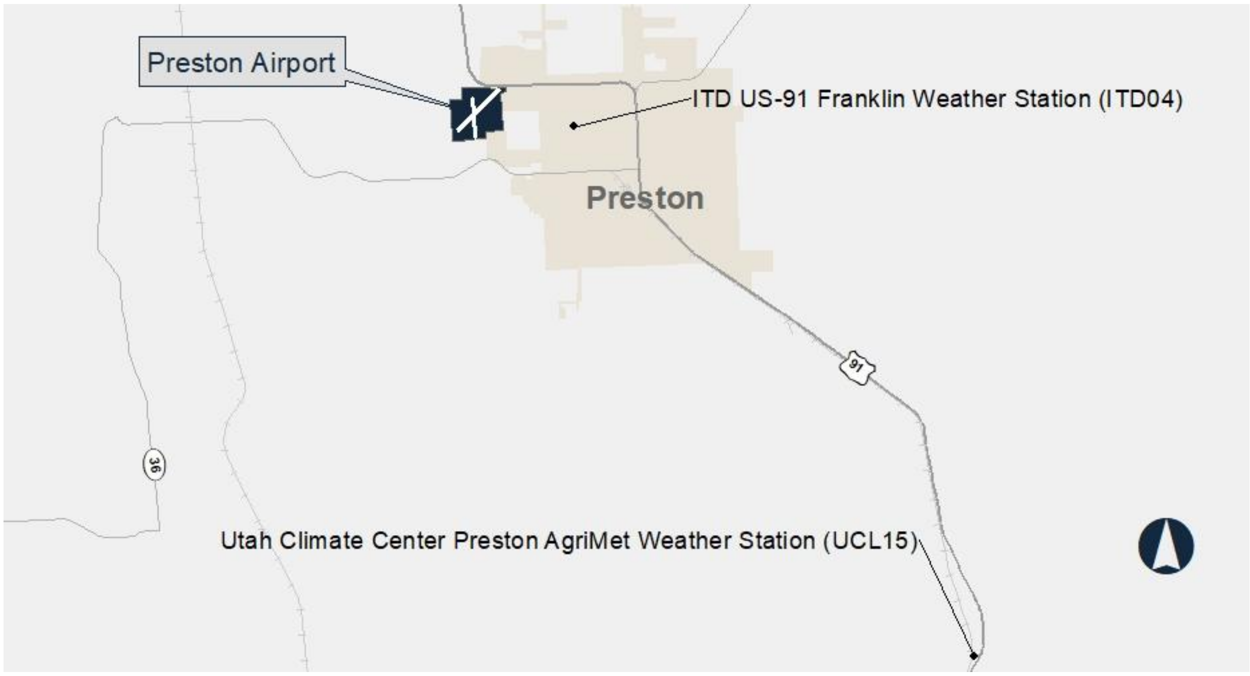
The airfield lighting vault is located east of the mid-hangar row access road.

1.4 WIND COVERAGE

Wind conditions can significantly impact an airport's operational safety and efficiency. Ideally, an airport's primary runway should be aligned with the prevailing wind and oriented in the direction that provides the most wind coverage possible and the least amount of crosswind (i.e., wind blowing at a right angle to the runway). The FAA recommends wind coverage of at least 95% at an airport. If a single runway cannot provide this level of coverage, then a crosswind runway is often warranted.

When analyzing the wind coverage of a runway system, the FAA suggests using at least ten consecutive years of weather observations. There is no weather reporting equipment at Preston Airport; therefore, wind data was collected from two nearby weather stations, the Utah Climate Center Preston AgriMet weather station (UCL15) and the ITD US-91 Franklin weather station (ITD04). The ITD04 weather station is less than a mile east of the airport property, while the UCL15 weather station is over 8 miles to the southeast (see Figure 1.4 Weather Stations Near Preston Airport).

Figure 1.4 Weather Stations Near Preston Airport



Source: Ardurra, 2025

While the data from each weather station produced similar wind coverage results, the ITD04 weather station was the only one with 10 consecutive years of weather observations available. As such, the wind analysis for U10 was conducted using data from this weather station, which includes observations for wind direction and speed from 2014 to 2024.[6] Table 1.3 summarizes the wind coverage provided by Runway 4 / 22, Runway 17 / 35, and the two runways combined in all weather conditions.

Table 1.3 All Weather Wind Analysis

Crosswind Component (Knots)	Runway 4 / 22	Runway 17 / 35	Combined
10.5	97.41%	98.79%	99.29%
13	98.56%	99.34%	99.68%
16	99.56%	99.73%	99.86%
20	99.86%	99.89%	99.95%

Source: FAA, Airport Data and Information Portal, and University of Utah, MesoWest, 2025

1.5 ENVIRONMENTAL OVERVIEW

The purpose of this environmental overview is to identify environmental conditions that could potentially be affected by future development at U10. Table 1.4 summarizes existing environmental conditions at or near the Airport, which are further detailed in Appendix B, for each of the environmental impact categories listed in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. The areas of potential impact identified in the environmental overview will be considered in development alternatives and used to guide long-term planning at Preston Airport.

Table 1.4 Summary of Environmental Resource Categories

Environmental Resource	Description
Air Quality	Franklin County is in attainment for all National Ambient Air Quality Standards (NAAQS).
Biological Resources (Including Fish, Wildlife, and Plants)	The U.S. Fish and Wildlife Service (USFWS) IPaC Report identified ESA-listed threatened Ute Ladies'-tresses (*Spiranthes diluvialis*) and ESA candidate monarch butterfly (*Danaus plexippus*) as species that may occur at U10 or in its vicinity. The Airport does not contain suitable habitat for Ute Ladies'-tresses. Two (2) vegetated intermittent drainages exist within U10 that have potential to contain milkweed, and therefore, may contain suitable habitat for the monarch butterfly. The Airport does not contain designated critical habitat for ESA-listed or candidate species, and there is no essential fish habitat protected under the Magnuson-Stevens Fishery Conservation and Management Act in Franklin County. The USFWS IPaC Report identified the American avocet (*Recurvirostra americana*), American white pelican (*Pelecanus erythrorhynchos*), California gull (*Larus californicus*), Franklin's gull (*Leucophaeus pipixcan),* northern harrier *(Circus hudsonius)* and willet (*Tringa semipalmata*) as migratory birds that may occur at the Airport or in its vicinity. Undeveloped land on U10 property, specifically in and around the drainage areas in the east and west portion of U10 and within the floodplain of the nearby Bear River, may provide habitat for American avocet, American white pelican, northern harrier and the willet. Suitable habitat does not exist for California gull and Franklin's gull. The FAA's Wildlife Strike Database was reviewed for reports of aircraft strikes by wildlife at U10. Available reports range from June 1993 to June 2024. During that time, one (1) incident was reported at U10, which occurred in 2015 involving a small bird. The aircraft was damaged, but the level of damage was undetermined at the time of the report. A Wildlife Hazard Site Visit is planned to occur near the end of October or beginning of November 2024. A summary report will document the findings of the visit, which will provide information on any wildlife hazards at the Airport.
Climate	Combustion of fossil fuels from aviation emissions and other Airport activities that require fuel or power are sources of greenhouse gases (GHGs) contributing to climate change.

Environmental Resource	Description
	However, the FAA 1050.1F Desk Reference on Climate states that a qualitative or quantitative assessment of GHG emissions should be performed where the proposed action or alternative(s) would result in an increase in GHG emissions. Additionally, the 2023 CEQ guidance requires that expected GHG emissions be put in the context of local considerations and existing emission reduction goals. In response to that CEQ requirement, the Franklin County Comprehensive Plan was reviewed, and it included no requirements or goals related to GHG or climate change. GHG emissions are not monitored by Franklin County nor Idaho DEQ.
Coastal Resources	The Airport is not within a coastal zone and there are no Coastal Barrier Resource System (CBRS) segments within Airport property. The closest coastal zone, the Pacific Ocean, is over 600 miles west of the Airport.
Department of Transportation Act, Section 4(f)	There are no known Section 4(f) resources on Airport property. The nearest National Register of Historic Places (NRHP)-listed property is the Franklin County Courthouse (Reference #0000641), approximately 2.3 miles southeast of the Airport. Cultural resource surveys that examined the U10 property in its entirely were completed in 2014 and 2020 to confirm the presence / absence of NRHP-eligible properties. Two (2) resources were found to be potentially eligible for listing on the NRHP: a T-Hangar (PA-06) and a Wind Tee (PA-07), both located within the otherwise ineligible Preston Airport (PA-01) property. No other resources at the Airport retain sufficient significance or integrity to be NRHP-eligible individually. With only two (2) NRHP-eligible resources present, there is no grouping of eligible resources present to warrant an NRHP-eligible historic district. No Section 4(f) recreational properties or waterfowl / wildlife refuges are located within or near U10. The nearest Section 4(f) recreational property is the Preston Pickleball Courts and Splash Pad, located approximately 1.5 miles southeast of the Airport. Other Section 4(f) properties in the vicinity of U10 include the Preston Community Park, located approximately 2 miles southeast of the Airport and the Preston City Craner Recreation Complex, located over 3 miles to the southeast of the Airport. The nearest waterfowl / wildlife refuge is Oxford Slough Waterfowl Production Area, which is located approximately 15 miles northwest, near Oxford, Idaho.
Land and Water Conservation Fund Act of 1965 6(f)	The nearest 6(f) property is the Land and Water Conservation Fund (LWCF) Preston Park, located over 2 miles southeast from the Airport.
Farmlands	According to the Natural Resource Conservation Service (NRCS), the Airport contains prime farmland, if irrigated (38.6%) and farmland of statewide importance, if irrigated (55.9%). Land inside the Airport is not irrigated; thus, these soils do not qualify as prime farmland or farmland of statewide importance.
Hazardous Materials, Solid Waste, and Pollution Prevention	The EPA'S NEPAssist Tool identifies the location and details of remediation sites and facilities managed by regulatory programs within the EPA's Waste Management and Remediation Division. The tool did not identify any Brownfields sites, Superfund sites, Toxic Release Inventory sites, or hazardous waste (RCRA) facilities within or directly adjacent to U10. The Franklin County Landfill, located approximately 6.5 miles northeast of the Airport, is licensed by the State of Idaho to accept both solid waste and various types of hazardous waste.

Environmental Resource	Description
Historical, Architectural, Archeological, and Cultural Resources	According to the NRHP Database, the nearest NRHP-listed property is the Franklin County Courthouse (Reference #0000641), approximately 2.3 miles southeast of the Airport. Cultural resource surveys that examined the U10 property in its entirely were completed in 2014 and 2020 to confirm the presence / absence of NRHP-eligible properties. Two (2) resources were found to be potentially eligible for listing on the NRHP: a T-Hangar (PA-06) and a Wind Tee (PA-07), both located within the otherwise ineligible Preston Airport (PA-01) property. No other resources within U10 retain sufficient significance or integrity to be NRHP-eligible individually. With only two (2) NRHP-eligible resources present, there is no grouping of eligible resources present to warrant an NRHP-eligible historic district. Correspondence between FAA and the Idaho SHPO resulted in the Idaho SHPO not concurring with FAA that the T-Hangar (PA-06) and Wind Tee (PA-07) were eligible for listing on the NRHP. In sum, according to the correspondence, none of the identified properties within U10 are eligible for listing on the NRHP.
Land Use	The Airport is located partially within unincorporated Franklin County and partially within the City of Preston, approximately 2.8 miles northwest of the City of Preston downtown core. Franklin County does not have countywide zoning. The County does have a localized Airport Overlay Zoning District, which is outlined in Franklin County Development Code Ordinance # 2007-8-13, adopted August 13, 2007. The district ensures that land development and construction activities in and around U10 are compatible with the safe and continued use of airport operations. It does this through the establishment of height limitation zones, use restrictions, and permits. City of Preston zoning identifies the portion of the Airport within city limits as heavy industrial. Surrounding areas are designated as heavy industrial, heavy commercial / light industry, and residential. The area surrounding U10 consists primarily of state- and county-owned land, grazed rangelands, agricultural and residential land uses. The closest residences are rural homesteads located approximately 1,000 feet north of U10, with a residential community consisting of ten (10) houses located approximately 1,000 feet south of U10.
Natural Resources and Energy Supply	Water is the primary natural resource used at the Airport on a daily basis. Asphalt, aggregate, and other natural resources have also been used in various construction projects at the Airport. None of the natural resources that the Airport uses, or has used, are in rare or short supply. Energy use at the Airport is primarily in the form of electricity required for the operation of Airport-related facilities (e.g., terminal building, hangars, airfield lighting) and fuel for aircraft, aircraft support vehicles / equipment, and Airport maintenance vehicles / equipment.
Noise and Compatible Land Use	With exception to rural residential properties, there are no other noise sensitive land uses near the Airport. Three (3) rural residences are located approximately 1,000 feet north of the Airport and are widely dispersed on agricultural land. Approximately ten (10) homes are in a residential development, located approximately 1,000 feet south of the Airport. Small aircraft flying in and out of the Airport are not predicted to expose these residences to a noise level exceeding 65 yearly DNL.
Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks	According to 2022 ACS 5-year Estimates Detailed Tables, Census Tract 9701 has a population of 7,657, with approximately 10.6% of the population belonging to a racial minority group. Approximately 1% of the population is unemployed and 29% are low-income. The nearest school to the Airport, Franklin County High School, is approximately 2 miles to the southeast. The school serves students in the ninth through twelfth grade. The

Environmental Resource	Description
	closest children's health care facility is Franklin County Medical Center, located approximately 2 miles southeast of U10.
Visual Effects (Including Light Emissions)	Various lighting features currently illuminate Airport facilities, such as the airfield (e.g., runways and taxiways), buildings, access roadways, automobile parking areas, and the apron area for the safe and secure movement of people and vehicles. Structures at the Airport include, but are not limited to, the fixed base operator office building, hangars, and maintenance buildings. The visual sight of aircraft, aircraft contrails, or aircraft lights at night are consistent with the visual character of an airport. The land surrounding the Airport is a combination of state and county land and agricultural lands with scattered residences. The closest residences reside approximately 1,000 feet south and north of the Airport. The residences do have a direct line of sight to the Airport; however, the lighting associated with the Airport is consistent with that of an airport. No known historic properties are located within U10 or the vicinity.
Water Resources (Including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)	The Airport is within the Bear River watershed. The National Wetlands Inventory identified four (4) wetlands, and / or portions of those wetlands within the boundary of U10: two (2) riverine features, one (1) freshwater emergent wetland, and one (1) forested / shrub wetland. Both riverine features appear to be filled, modified, piped, or rerouted from their historic route, and have no connectivity to the Bear River or other surface waters. The other two (2) wetlands are associated with vegetated, intermittent drainage channels within U10 on its east and west side. Both channels appear to have a hydrologic connection to the Bear River, as tributaries. The Bear River is a perennial river that flows west of U10 in a general north to south direction. According to the current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 1600600400A, U10 is located within Zone C (unshaded), an area of minimal flooding. The Airport is not located over any sole source aquifers. The closest sole source aquifer, the Eastern Snake River Plain Aquifer, is approximately 15.5 miles northwest of the Airport. According to the Wild and Scenic Rivers interactive map provided by the National Parks Service (NPS), the nearest Wild and Scenic River is the Snake River Headwaters, located approximately 86 miles northeast of U10.

Source: Ardurra, 2025

ENDNOTES

[1] U.S. Census Bureau. (n.d.). *2020 Census Data Profile: Franklin County, Idaho*. Retrieved July 2024, from https://data.census.gov/profile/Franklin_County,_Idaho?g=050XX00US16041

[2] Idaho Transportation Department, Division of Aeronautics. (2020, July). *2020 Idaho Airport Economic Impact Analysis (AEIA) Update*. Retrieved July 2024, from https://itd.idaho.gov/wp-content/uploads/2022/01/ITD-Aero_AEIA_Report.pdf

[3] National Centers for Environmental Information. (n.d.). *U.S. Climate Normals: Preston, Idaho*. Retrieved July 2024, from https://www.ncei.noaa.gov/access/us-climate-normals/#dataset=normals-monthly&timeframe=30&location=ID&station=USC00107346

[4] Idaho Transportation Department, Division of Aeronautics. (2021, August). *Interactive Pavement Management Tool: Preston Airport*. Retrieved July 2024, from https://experience.arcgis.com/experience/d44a6169b2714d5ebcc3134a3333e49d/page/Preston-Airport

[5] Idaho Transportation Department, Division of Aeronautics. (2021, August). *Interactive Pavement Management Tool: Preston Airport*.

[6] The University of Utah. (n.d.). MesoWest: ITD04 Data. Retrieved July 2024, from https://mesowest.utah.edu/cgi-bin/droman/download_api2.cgi?stn=ITD04&hour1=18&min1=15&timetype=GMT&unit=0&graph=0

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AVIATION FORECASTS

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CHAPTER TWO

AVIATION FORECASTS

Forecasting future aviation activity at an airport is a critical component of the master planning process. The projections developed during this step are used to better understand and anticipate the future demands likely to be placed on an airport's facilities. Developing a forecast for this demand provides a basis for effective airport facility planning that helps prepare an airport to support the critical design aircraft and future aviation activity. As such, a forecast should be realistic, based on defensible current data, and developed using appropriate methods.

While there are a variety of factors that can impact an aviation forecast, such as the size and location of an airport or the type of aircraft that use it, each one is developed using the same basic steps. These steps are outlined in FAA Advisory Circular (AC) 150 / 5070-6B, *Airport Master Plans*, and include: identifying existing aviation activity, reviewing historical activity levels and previous forecasts, examining industry trends and regional socioeconomic data, selecting the appropriate forecast method, and then applying the methodology and evaluating the results.

The forecast developed for Preston Airport projects the nature and magnitude of aviation demand expected to occur at the Airport during the 20-year planning period of 2023-2043. It uses 2023 as the base year and includes projections for a short-term planning horizon of five years, a medium-term planning horizon of ten years, and a long-term planning horizon of twenty years.

2.1 FORECAST SUMMARY

Table 2.1 Forecast Summary summarizes the forecast of aviation activity created as part of this planning effort. It is important to understand that actual activity may differ from these forecasts because aviation activity can be affected by a wide range of unforeseen events at the local, regional, and national levels. A summary of the findings is presented here, with further information presented in the following sections to justify the numbers presented in the summary.

Table 2.1 Forecast Summary

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2023	2028	2033	2043	5-Year	10-Year	20-Year
Aircraft Operations							
Itinerant	4,870	5,194	5,519	6,330	1.3%	1.3%	1.3%
Local	1,943	2,073	2,202	2,526	1.3%	1.3%	1.3%
Total Operations	**6,813**	**7,267**	**7,721**	**8,856**	**1.3%**	**1.3%**	**1.3%**
Based Aircraft							
Single-Engine	29	31	32	37	1.3%	1.1%	1.2%
Multi-Engine	0	0	1	1	0.0%	-	-
Helicopter	1	1	1	1	1.3%	1.3%	1.3%
Total Based Aircraft	**30**	**32**	**34**	**39**	**1.3%**	**1.3%**	**1.3%**

Source: Ardurra, 2025

2.2 HISTORICAL AVIATION ACTIVITY AND FORECASTS

It is important to examine historical aviation activity at the Airport and previous forecasts developed for U10 to identify past trends before preparing the forecast. Understanding the Airport's historical usage patterns and demand for aviation services is useful in analyzing the accuracy of previous forecasts, as well as developing and evaluating the current forecast. Analyzing these forecasts can help identify past trends and changes in the aviation industry that have affected the Airport's usage patterns. For U10, this includes reviewing historical data and forecasts from the prior airport master plan, the 2020 Idaho Airport System Plan Update (IASP), and the FAA's Terminal Area Forecast (TAF).

2.2.1 2011 Preston Airport Master Plan Forecast

The previous airport master plan for Preston Airport was completed in 2011. The based aircraft forecast developed as part of that previous planning effort applied the 2010 TAF projection for itinerant operations, which had a compound annual growth rate (CAGR) of 0.37%. The itinerant operations forecast was developed using that same growth rate; however, the local operations forecast used an operations per based aircraft (OPBA) calculation of 192 annual operations per year for each forecasted based aircraft. The resulting projections expected based aircraft to increase from 12 in 2010, the master plan's baseline year, to 13 in 2030. For operations, the forecast projected an increase in local operations from 2,000 in 2010 to 2,384 in 2030 and, in itinerant operations, from 5,000 in 2010 to 5,383 in 2030. Table 2.2 summarizes the aircraft operations and based aircraft forecasts from the 2011 Preston Airport Master Plan.

Table 2.2 2011 Preston Airport Master Plan Forecast

Year	Itinerant Operations	Local Operations	Total Operations	Total Based Aircraft
2010	5,000	2,000	7,000	12
2015	5,093	2,192	7,285	13
2020	5,188	2,192	7,380	13
2030	5,383	2,384	7,767	13
5-Year CAGR	0.37%	1.85%	0.80%	1.61%
10-Year CAGR	0.37%	0.92%	0.53%	0.80%
20-Year CAGR	0.37%	0.88%	0.52%	0.40%

Source: 2011 Preston Airport Master Plan

2.2.2 Idaho Airport System Plan Forecast for Preston Airport

The Idaho Transportation Department, Division of Aeronautics (ITD Aeronautics) prepares a forecast for each of the state's public-use airports as part of its statewide aviation plan. The preferred forecast for based aircraft in the IASP used the 2019-2039 FAA Aerospace Forecast projections of the active fleet by aircraft type. In the case of Preston Airport, a 0.8% annual growth rate was applied. For the preferred operation forecast, the IASP used airport reference codes, which are the most demanding aircraft approach category and airplane design group at an airport, and designated specific growth rates to them. For Preston Airport, the growth rate was held at 0.0% throughout the forecast period. Table 2.3 presents the 2020 IASP aircraft operations and based aircraft forecasts for U10.

Table 2.3 2020 Idaho Airport System Plan Forecast, Preston Airport

Year	Total Operations	Total Based Aircraft
2017	7,040	16
2022	7,040	17
2027	7,040	17
2037	7,040	19
20-Year CAGR	0.0%	0.8%

Source: ITD Aeronautics, 2020 IASP

2.2.3 Terminal Area Forecast for Preston Airport

The Terminal Area Forecast (TAF) is the official FAA forecast of aviation activity for airports included in the NPIAS. This forecast is published annually and contains historical and forecast data for enplanements, based aircraft, and itinerant and local operations at each NPIAS airport. At airports without an airport traffic control tower, the historical data in the TAF is typically informed by the airport's master record (FAA Form 5010-1). This report includes airport aviation activity as estimated by FAA inspectors or information provided by airport managers, state aviation activity surveys, and other sources. This often results in discrepancies between historical TAF data and actual levels of aviation activity, especially for smaller GA airports.

The projections included in the TAF are based on demand driven by local and national economic conditions and conditions within the aviation industry. This means each airport's forecast is developed independent of its ability to meet demand. As shown in Table 2.4, the TAF projects aviation activity will grow at the Airport at CAGRs ranging from 0.00% to 0.93%. Table 2.4 summarizes the Airport's historical data for 2013-2022, baseline data for 2023, and forecasted data for 2028, 2033, and 2043 as reported in the 2024 TAF.

Table 2.4 Terminal Area Forecast, 2013-2043

Data Type	Year	Itinerant Operations	Local Operations	Total Operations	Total Based Aircraft
Historical	2013	5,056	2,053	7,109	1
	2014	5,040	2,000	7,040	1
	2015	5,040	2,000	7,040	14
	2016	5,040	2,000	7,040	15
	2017	5,040	2,000	7,040	17
	2018	5,040	2,000	7,040	17
	2019	5,040	2,000	7,040	17
	2020	5,040	2,000	7,040	15
	2021	5,040	2,000	7,040	15
	2022	5,059	2,018	7,077	15
Baseline	2023	5,060	2,019	7,079	15
Forecasted	2028	5,157	2,114	7,271	15
	2033	5,257	2,215	7,472	15
	2043	5,459	2,430	7,889	15
CAGR	10-Year Historical	0.01%	-0.17%	-0.04%	31.10%
	20-Year Forecasted	0.38%	0.93%	0.54%	0.00%

Source: FAA, 2024 TAF and Ardurra, 2025

2.3 FACTORS AFFECTING AVIATION ACTIVITY

This section identifies the national, statewide, and local forecasts, trends, and other factors that can influence aviation activity. It also identifies the geographic area served by U10 and the regional characteristics that affect aviation demand at the Airport.

2.3.1 Demographic and Socioeconomic Characteristics

Sometimes there is a correlation between socioeconomic trends and aviation demand. Local socioeconomic conditions, especially population, employment, and income, can have either an upward or downward influence on local aviation activity levels. In addition to providing a general understanding of the socioeconomic conditions within the airport's service area, local and regional socioeconomic trends typically serve as an important indicator of future demand for aviation services.

The service area for Preston Airport, which is the geographic area from which most airport users would be expected to reside, is congruous with the Franklin County boundary. Table 2.5 summarizes the socioeconomic history for Franklin County according to the U.S. Bureau of Economic Analysis.[1] A regression analysis determined there is no strong correlation between historic socioeconomic trends and historical operational trends at Preston Airport. Population projections for the southeastern region of Idaho, which includes Franklin County, as reported by the Idaho Department of Labor is expected to grow at a 0.5% annual growth rate.[2] Total employment for the southeastern region is projected to grow at a rate of 1.3% annually.[3]

Table 2.5 Historic Socioeconomic Activity for Franklin County

Year	Population	Employment	Per Capita Income ($2012)
2012	12,813	5,940	$28,949
2017	13,540	6,700	$33,091
2022	15,189	7,671	$44,275
5-Year CAGR	1.1%	2.4%	3.1%
10-Year CAGR	1.7%	2.6%	4.3%

Source: Bureau of Economic Analysis, 2025

2.3.2 Statewide General Aviation Trends

Approximately 40% of Idaho's land is covered by national forests, making it the highest percentage of any state in the U.S. With this comes the many backcountry and sportsman activities that drive much of the tourism for the state. Idaho's general aviation (GA) airports provide access to the many national forests and backcountry areas that attract tourists to the state and are, therefore, a critical part of the state's economy. In fact, Idaho's network of backcountry airstrips is famous for its extensive reach and unparalleled access to some of the state's most pristine and remote wilderness areas. In addition to recreational flying, Idaho's GA airports provide essential medical access for doctor and patient transport, especially in areas that are not accessible by ground travel. Because of this, development of the GA system of airports is intended to increase connectivity between regions, provide communities with more accessible medical care, and support local economic activities.

There are 75 airports in Idaho's aviation system, over three-quarters of which are a GA service level. Of the 68 GA airports in Idaho, 30 are designated by the FAA as part of its National Plan of Integrated Airport Systems (NPIAS); combined, these airports comprise 74% of the state's annual operations.

The 2020 Idaho Airport System Plan Update (IASP) includes the current and future demands of the state airport system and outlines a plan ensuring its role in the statewide transportation system is effective, recognized, and supported. Between 2017 and 2037, the IASP forecasted total operations for the state's GA airports would grow by 0.66% and based aircraft by 1.0%.

2.3.3 National General Aviation Trends

Local aviation trends can sometimes reflect larger national trends. As such, it's important to review the industry from a broad perspective before applying local socioeconomic factors to refine the forecast. The current version of the FAA's annual national aviation forecast is the *FAA Aerospace Forecast, Fiscal Years 2024-2044*. The forecasts in this report are prepared to meet the budget and planning needs of the FAA by using statistical models to explain and incorporate emerging trends for each segment of the aviation industry. This section provides an overview of those forecasts relevant to GA airports.

The FAA Aerospace Forecast includes projections for fleet mix and hours flown for GA aircraft, such as fixed wing piston, fixed wing turbine, rotorcraft, light sport aircraft (LSA), experimental aircraft, and others. These forecasts use the results of the agency's annual surveys to establish a baseline and, in addition to assumptions for retirement rates, include data for new aircraft deliveries provided by the General Aviation Manufacturers Association (GAMA). It is important to note that these forecasts are only for active aircraft with active aircraft defined as one that has been flown at least one hour per year.

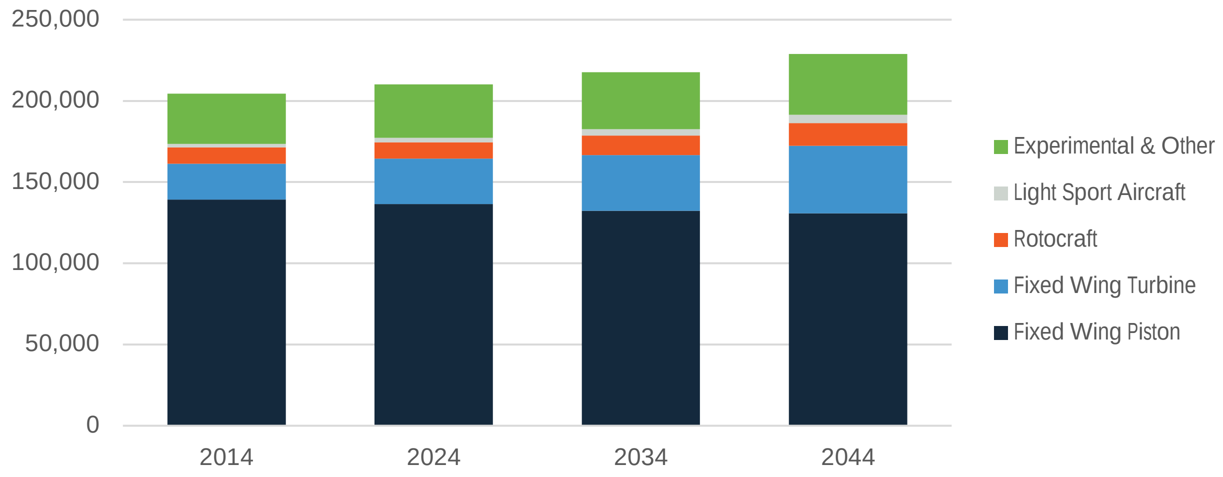
Recovery of the GA sector from the impact of the COVID-19 pandemic was faster than the airlines. The GA industry continued its growth in 2023 increasing 7.7% in deliveries of U.S. manufactured aircraft between 20233 and 2023, with pistons up by 10.7% and turbines up by 4.3%. The long-term outlook for GA, driven by turbine aircraft activity, remains stable as growth at the higher end offsets continuing retirements at the low end, consisting mostly of pistons. GA operations are forecast to increase an average of 0.7% per year as growth in turbine activity offsets a decline in piston activity.

2.3.3.1 National Forecast for the General Aviation Fleet Mix

The active GA fleet is projected to increase by 0.4% annually between 2024 and 2044 as declines in the fixed-wing piston fleet are offset by increases in turbine, rotorcraft, experimental, and light sport fleets. The turbine fleet, including rotorcraft, is projected to grow at an average annual growth rate of 2.0% and the turbojet fleet by 2.6% annually. Growth in U.S. GDP and corporate profits are the main drivers for the increase in the turbine fleet.

The largest segment of the fleet, fixed wing piston aircraft, is projected to shrink at an average rate of 0.2% annually due to unfavorable pilot demographics, increased cost of aircraft ownership, more cost-effective alternatives, and new aircraft deliveries not keeping up with retirements of the aging fleet. The smallest segment of the GA fleet, light sport aircraft (LSA), is forecast to grow by 3.0% annually. The national forecast for active GA aircraft is shown in Figure 2.1.

Figure 2.1 National Forecast for GA Fleet Mix

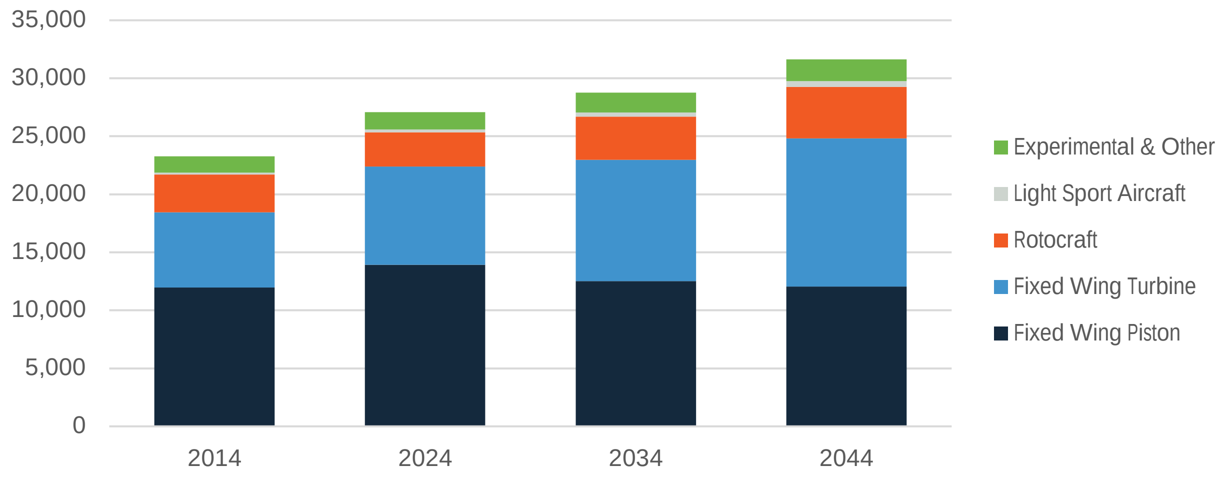


Source: FAA Aerospace Forecast Fiscal Years 2024-2044

2.3.3.2 National Forecast for General Aviation Hours Flown

The number of GA hours flown is expected to increase by an average of 0.7% annually as newer aircraft fly more hours. Fixed wing piston hours are forecast to decrease by 0.8% while turbine aircraft hours, including rotorcraft, are forecast to increase by 2.1% annually. Jets are expected to account for most of the turbine increase with an average annual increase of 2.5% due to the increasing size of the business jet fleet. Rotorcraft hours are projected to increase by 2.2% annually, and LSA hours are forecast to increase by 3.6% annually, both driven by fleet growth. The national forecast for GA hours flown is shown in Figure 2.2.

Figure 2.2 National Forecast for GA Hours Flown



Source: FAA Aerospace Forecast Fiscal Years 2024-2044

2.4 AVIATION FORECASTS

There are several methods for forecasting aviation activity. Selecting the most appropriate method is typically a matter of professional judgement and experience based on the analysist's industry knowledge and assessment of local conditions. Quite often, the most reliable approach for generating a reasonable estimate involves using multiple methods. The projections developed for the different indicators of aviation activity at U10, and the relative baseline data and methodologies used are described in the following sections.

2.4.1 Based Aircraft Forecast

This section presents the forecast for based aircraft at U10.

2.4.1.1 2023 Based Aircraft Baseline Data

The Airport provides the FAA with an annual inventory of based aircraft that lists the number of each type of aircraft currently based at U10. According to the airport master record (FAA Form 5010-1), in August 2023, there were 30 aircraft based at the Airport, including 29 single-engine aircraft and 1 helicopter. This information will be used as the baseline for this forecast.

2.4.1.2 Based Aircraft Forecast Methodologies

Three methodologies were reviewed to determine the most appropriate projection of based aircraft for Preston Airport. Table 2.6 shows the result of the forecast methodologies applied to the 2023 baseline of 30 aircraft.

Methodology 1: Southeastern Idaho, Projected Employment Growth Rate (1.3%)

This method assumes the growth rate associated with projected employment in Idaho's southeastern region would equate to roughly the same growth of based aircraft.

Methodology 2: IASP, Projected Idaho GA Based Aircraft Growth Rate (1.0%)

This method assumes the aircraft based at Preston Airport will experience the same trend as ITD Aero forecasts for the state's GA based aircraft.

Methodology 3: IASP Preston Airport Forecast, Projected Based Aircraft Growth Rate (0.8%)

This method assumes that Preston Airport's based aircraft will grow at the same rate forecasted by IASP.

Table 2.6 Based Aircraft Forecast Methodologies

Year	Southeastern Idaho Employment	IASP Idaho GA Based Aircraft	IASP Preston Airport
2023	30	30	30
2028	32	32	31
2033	34	33	32
2043	39	37	35
20-Year CAGR	1.3%	1.0%	0.8%

Source: FAA, 2024 TAF and Ardurra, 2025

2.4.1.3 Based Aircraft Preferred Forecast

The projected growth rate for employment in southeastern Idaho was determined to be the most appropriate forecast for based aircraft at Preston Airport given the ongoing migration trends in the region that have expanded the workforce and increased economic activity. These trends have already been realized at the Airport, where hangar development demand remains high.

A helicopter is expected to be based at the Airport throughout the 20-year planning period; however, a slight shift from single engine pistons to include a multi-engine turbine is forecasted in the next ten years. This shift better reflects national trends and is supported by historical use at the Airport. Table 2.7 summarizes the fleet mix breakdown for the planning period.

Table 2.7 Based Aircraft Fleet Mix Forecast

Year	Single-Engine	Multi-Engine	Jet	Helicopter	Total
2023	29	0	0	1	30
2028	31	0	0	1	32
2033	32	1	0	1	34
2043	37	1	0	1	39

Source: Ardurra, 2025

2.4.2 Aircraft Operations Forecast

This section presents the forecast for aircraft operations at U10.

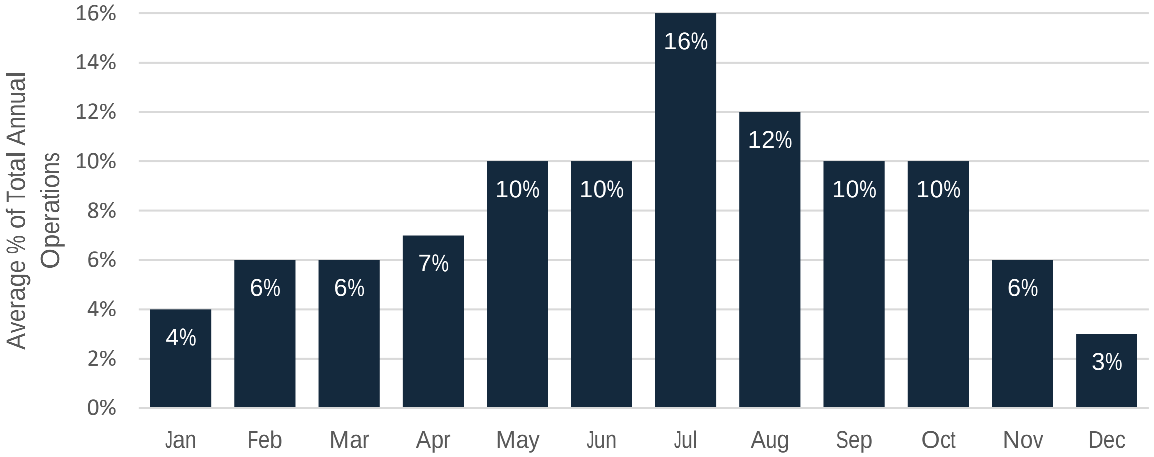
2.4.2.1 2023 Aircraft Operations Baseline Data

Three motion-activated cameras were placed at the Airport for 42 days to record aircraft operations from the end of June to early August. During this time, the cameras captured 1,090 operations, or approximately 26 operations per day. While the camera data helps to provide a snapshot of activity at U10, additional resources are needed to establish a baseline of annual operations at the Airport. The FAA's Traffic Flow Management System Count (TFMSC) was one such resource used to establish average monthly operations at the Airport.

Traffic Flow Management System Counts

The TFMSC is a database maintained by the FAA that provides information on traffic counts. TFMSC data is generated when pilots file a flight plan. As a result, it captures most flights operating under instrument flight rules (IFR), which are required to file a flight plan. However, it generally only includes a portion of GA activity because many GA pilots will operate under visual flight rules (VFR), which does not require a filed flight plan. Despite this limitation, TFMSC data is helpful in identifying general trends in airport activity and providing a good estimation of the more demanding aircraft types using the Airport. Figure 2.3 shows the average monthly percent of total annual operations recorded by the TFMSC between 2013 and 2023.

Figure 2.3 Average Monthly % of Total Annual Operations, 2013-2023



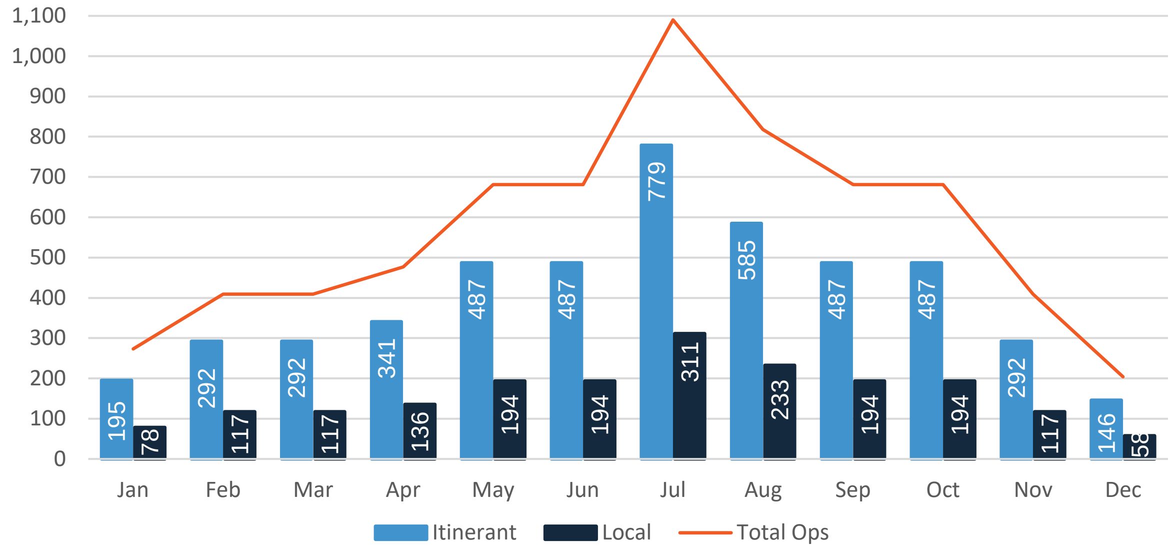
Source: FAA, TFMSC, and Ardurra, 2025

2023 Aircraft Operations Baseline

Once the number of operations for July 2024 was established using data captured by the motion activated cameras, the average monthly operations observed by the TFMSC from 2013 to 2023, as shown in Figure 2.3, were used to determine the number of operations for the remainder of the year. The results of this analysis, shown in Figure 2.4, determined there was an estimated 6,813 annual aircraft operations at U10. This estimate will serve as the baseline for the aircraft operations forecast of aircraft operations.

Aircraft are considered itinerant when they arrive from outside an airport's area or are departing from and leaving that airport's area. An operation is local when an aircraft remains in the local traffic pattern. Aircraft typically remain local for flight training operations. In addition to the Murray Aviation flight school based out of U10, there is also a Utah State training program in Logan, Utah that often uses the Airport for training exercises. Many of these exercises can be attributed to touch-and-go operations, which, when performed recurrently, keep the the aircraft in the local traffic pattern. As such, it was estimated that approximately 71% of total annual operations are itinerant and 29% are local. The resulting monthly itinerant to local split is shown in Figure 2.4.

Figure 2.4 2023 Aircraft Operations Baseline



Source: Ardurra, 2025

2.4.2.2 Aircraft Operations Forecast Methodologies

Three methodologies were analyzed to determine the most appropriate projection of aircraft operations (takeoffs and landings) at Preston Airport. Table 2.8 shows the result of the forecast methodologies applied to the 2023 baseline of 6,813 operations.

Methodology 1: Franklin County, Projected Population Growth Rate (0.5%)

This method applies the projected population growth rate of Franklin County to the total operations baseline through the forecast horizon.

Methodology 2: FAA Aerospace Forecast, Projected GA Hours Flown Growth Rate (0.7%)

This method assumes Preston Airport operations will mimic the national growth rate for GA hours flow, as detailed in the FAA Aerospace Forecast.

Methodology 3: Operations Per Based Aircraft (OPBA)

This method examines the growth of operations if the existing 227 OPBA (6,813 operations per 30 based aircraft) was maintained through the planning period in correlation with the preferred based aircraft forecast.

Table 2.8 Aircraft Operations Forecast Methodologies

Year	Franklin County Population	FAA GA Hours Flown	Constant OPBA
2023	6,813	6,813	6,813
2028	6,985	7,054	7,267
2033	7,161	7,305	7,721
2043	7,527	7,832	8,856
20-Year CAGR	0.5%	0.7%	1.3%

Source: FAA, 2024 TAF and Ardurra, 2025

2.4.2.3 Aircraft Operations Preferred Forecast

Ultimately, the constant OPBA growth rate was selected as the preferred forecast methodology for annual operations at U10. In 2023, there was an average of 227 operations per based aircraft. The OPBA forecast method assumes the based aircraft to aircraft operations ratio will remain constant throughout the planning period and grow at the same 1.3% CAGR. Table 2.12 summarizes the preferred aircraft operations forecast for U10, including projections for itinerant and local operations.

Table 2.9 Preferred Aircraft Operations Forecast

Year	Local Operations	Itinerant Operations	Total Operations
2023	1,943	4,870	6,813
2028	2,073	5,194	7,267
2033	2,202	5,519	7,721
2043	2,526	6,330	8,856
20-Year CAGR	1.3%	1.3%	1.3%

Source: FAA, 2024 TAF and Ardurra, 2025

2.4.3 Preferred Forecast and TAF Comparison

According to FAA AC 150 / 5070B, *Airport Master Plans*, the general requirement for FAA approval of the forecast is that it must be supported by an acceptable forecasting analysis and be consistent with the TAF. For GA airports, the master plan forecast is considered consistent with the TAF if it differs from the TAF by less than 10% in the 5-year forecast and by less than 15% in the 10-year period. That being said, when the forecast is for fewer than 100,000 annual operations or fewer than 100 based aircraft, the forecast does not need to be reviewed by FAA headquarters, but the data should be provided to the FAA for the annual update of the TAF. The comparison of the preferred forecasts for Preston Airport to the TAF are shown in Table 2.10 and Table 2.11. While aircraft operations are forecasted to be consistent with the TAF, based aircraft are not. This is due to a higher baseline and forecasted growth rate. If the 0.0% growth rate from the TAF is applied to the 2023 based aircraft baseline, the based aircraft forecast would be consistent with the TAF.

Table 2.10 Preferred Based Aircraft Forecast Versus FAA TAF

Year	Preferred Forecast	TAF	% Difference	Adjusted TAF	% Difference
2023	30	15	66.7%	30	0.0%
2028	32	15	72.3%	30	6.5%
2033	34	15	77.6%	30	12.5%
2043	39	15	88.9%	30	26.1%

Source: FAA, 2024 TAF and Ardurra, 2025

Table 2.11 Preferred Aircraft Operations Forecast Versus FAA TAF

Year	Preferred Forecast	TAF	% Difference
2023	6,813	7,079	3.8%
2028	7,267	7,271	0.1%
2033	7,721	7,472	3.3%
2043	8,856	7,889	11.6%

Source: FAA, 2024 TAF, and Ardurra

2.5 CRITICAL AIRCRAFT

Determining the fleet mix is particularly important because it is used to help identify the critical aircraft, which is an essential step in identifying the correct FAA design criteria for an airport. The FAA has developed a coding system that allows airport planners and engineers to identify airport design criteria based on the operational and physical characteristics of the types of aircraft that typically operate at an airport. The aircraft approach category (AAC) is designated by a letter and is based on the speed of an aircraft as it approaches a runway when landing. It is generally used to help determine dimensional standards for runway safety areas. The airplane design group (ADG) is designated by a Roman numeral and is based on an aircraft's wingspan or tail height, depending on which is most restrictive. ADG is typically used to establish dimensional standards needed for taxiway clearance.

The critical aircraft is the most demanding type of aircraft, or group of aircraft with similar characteristics, that regularly use an airport. Regular use, as defined by the FAA, equates to a minimum of 500 total annual operations. The 2011 Preston Airport Master Plan identified the Cessna 210 Centurion, a B-1(small) aircraft, as the critical aircraft. The small is used to denote aircraft with a max takeoff weight (MTOW) under 12,500 pounds.

As previously discussed in 2.4.2 Aircraft Operations Forecast, the types of aircraft that currently operate at the Airport were identified using a combination of TFMSC data and motion activated camera recordings. The AAC and ADG of these aircraft were used to determine the most demanding type of aircraft, or group of aircraft with similar characteristics, that regularly use the Airport. However, because the cameras were placed at the Airport during a period of heavy aerial application use, a larger number of B-II operations were captured than is typical at the U10 throughout the year. After further discussion with airport staff, slight adjustments were made to the percent of total operations for each AAC and ADG grouping of aircraft represented in 2023. As shown in Table 2.12, these percentages were then applied to the annual aircraft operations forecast to determine the fleet mix forecast. This analysis indicates the Airport has an existing and future A-I(small) critical aircraft.

Table 2.12 Aircraft Operations Fleet Mix Forecast

AAC / ADG	% of Total Annual Operations	Base Year	Forecast Years		
		2023	2028	2033	2043
A-I	95.3%	6,493	6,925	7,358	8,440
A-II	0.0%	0	0	0	0
B-I	0.4%	27	29	31	35
B-II	4.3%	293	313	332	381

Source: FAA, TFMSC, and Ardurra, 2025

As shown in Table 2.12, the most demanding category of aircraft that has made at least 500 annual operations at U10 in 2023 has an AAC of A and an ADG of I. The Cessna 172 Skyhawk represented the largest percent of total A-I operations observed in July 2023, and is, therefore, selected as the representative critical aircraft. The Cessna172 Skyhawk has a MTOW under 12,500 pounds, further classifying the critical aircraft as A-I(small). The specifications for the Cessna 172 Skyhawk are summarized in Table 2.13.

Table 2.13 Representative Critical Aircraft: Cessna 172 Skyhawk Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	A
Airport Design Group (ADG)	I
Taxiway Design Group (TDG)	1A
Approach Speed	62 knots
Wingspan	36.1 feet
Length	27.2 feet
Tail Height	8.9 feet
Cockpit to Main Gear (CMG)	5.4 feet
Outer to Outer Main Gear Width (MGW)	8.4 feet
Main Gear Configuration	Single Wheel (SW)
Maximum Takeoff Weight (MTOW)	2,550 pounds

Source: FAA, Aircraft Characteristics Database

ENDNOTES

[1] U.S. Bureau of Economic Analysis. (2022). *Personal Income by County and Metropolitan Area*. Retrieved October 2024, from https://www.bea.gov/data/employment/employment-county-metro-and-other-areas

[2] Idaho Department of Labor. (n.d.). *Population Projections.* Retrieved October 2024, from https://lmi.idaho.gov/data-tools/population-projections/

[3] Idaho Department of Labor. (n.d.). *Industry Projections*. Retrieved October 2024, from https://lmi.idaho.gov/data-tools/occupational-industry-projections/

3

FACILITY REQUIREMENTS

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CHAPTER THREE

FACILITY REQUIREMENTS

To properly plan for the future of Preston Airport (U10), it is necessary to determine if the existing airport facilities can safely and efficiently accommodate current and forecasted levels of activity. Each of the facilities described in Chapter 1, Existing Conditions, must be analyzed to determine if any improvements are needed to meet new or updated standards developed and adopted by the Federal Aviation Administration (FAA) or other regulatory agencies.

The main goal of this analysis will be to identify if improvements are needed, when they will be needed, and the purpose for these improvements. Each facility will be analyzed to determine its ability to safely and efficiently accommodate the forecasted activity levels discussed in Chapter 2, Aviation Forecasts. Facilities will also be examined to determine if they meet current FAA design standards, recommendations, requirements, and design considerations. Alternative methods of addressing these potential development projects will be discussed and evaluated in Chapter 4, Development Alternatives.

3.1 FACILITY REQUIREMENTS SUMMARY

Table 3.1 summarizes the airport facilities that were examined in this evaluation as well as the conclusions and recommendations that are discussed in this chapter.

Table 3.1 Summary of U10 Facility Assessment

Facility	Findings
Airfield Capacity	• No capacity improvement planning is required; the Airport's capacity will not exceed 3.9% of the annual service volume for the 20-year planning period.
Approach Procedures	• An RNAV (GPS) approach with LNAV landing minimums is recommended on Runway 4, and an RNAV (GPS) approach with LNAV / VNAV landing minimums is recommended on Runway 22. • Departure procedures are recommended on Runway 22.
Runway Requirements	• The RSA beyond both Runway 17 / 35 ends does not meet standard. • The RSA and ROFA beyond Runway 35 are not fully within airport-controlled property. • Runway 17 / 35 is 30 feet wide, which does not meet the design standard of 60 feet. • Runway 4 / 22 will need to continue to implement declared distances due to nonstandard RSA and ROFA conditions. • Both runways meet line-of-sight standards. • Both runways will not require redesignation in the next 20 years. • Runway 4 / 22 meets the 95% wind coverage requirement for all crosswind components. • Runway 22 and Runway 17 RPZs have a highway, which is a historical condition. The Airport does not have full land control over portions of each RPZ at U10.
Taxiways and Taxilanes	• Taxiways A1, A2, and A3 meet or exceed safety area and object free area standards. • Portions of the main GA apron taxilanes do not meet dimensional, safety area, and object free area standards.
Airfield Pavements	• Runway 4 / 22 weight bearing capacity is adequate to support the existing and future critical aircraft. • Runway 4 / 22 pavement will require maintenance in the next 5 years.

Facility	Findings
	• Airfield markings are in good condition but will need to be updated to non-precision instrument runway markings for IFP implementation.
Airfield Signage	• Airfield signage is consistent with FAA standards for color and configuration.
Navigational Aids	• All navigational aid critical areas meet siting clearance standards. • Installation of weather sensing equipment is recommended for IFP development.
Airspace Requirements	• All Part 77 surfaces, approach surfaces, and departure surfaces should continue to be protected to the maximum extent possible in order to prevent new obstructions. • Vehicles on U.S. Highway 91 penetrate the Runway 4/22 primary and transitional surfaces and the Runway 22 Part 77 approach surface.
Landside Facilities	• A minimum of 25 new hangars will need to be planned for. • An additional 18 tiedowns will be needed by 2043.
Support Facilities	• Wi-Fi should be installed to meet requirements. • An above ground fuel storage option should be planned for when the below grade 100LL storage tank reaches its useful life. • A vehicle access gate is needed between the Airport main entrance and main GA apron. • A Wildlife Hazard Site Visit determined a wildlife exclusion fence is needed around the perimeter of the property. • Existing automobile parking meets requirements.

Source: Ardurra, 2025

3.2 AIRPORT DESIGN AND FEDERAL AVIATION ADMINISTRATION STANDARDS

Effective airport design and planning helps to ensure airport facilities can meet current and future aviation demand and comply with necessary environmental considerations, while maintaining acceptable levels of safety, efficiency, and capacity. The airport design process involves a series of steps to identify aviation demand at an airport and apply applicable FAA standards to each airport facility. This generally includes the following steps:

1. Identify the size, approach category, and airplane and taxiway design groups of the critical aircraft.
2. Identify reasonably attainable visibility minimums.
3. Identify the design code for each runway.
4. Apply the appropriate design standards from FAA-issued guidance.

3.2.1 Aircraft Classes, Categories, and Groups

The FAA has developed a coding system that allows airport planners and engineers to identify airport design criteria based on the operational and physical characteristics of the critical aircraft. As previously discussed in Section 2.5, Critical Aircraft, the critical aircraft is the most demanding type of aircraft, or group of aircraft with similar characteristics, that regularly use an airport. It can be a single aircraft or a composite of the most demanding characteristics from different aircraft. Incorporating these characteristics as part of the coding system in this way helps airport planners and engineers design an airport to meet both current and future needs, while also ensuring the correct design standards are applied.

The approach speed, tail height, wingspan, weight, and landing gear dimensions of the critical aircraft defines the design parameters of an airport. The corresponding coding systems include the aircraft approach category (AAC), airplane design group (ADG), and taxiway design group (TDG).

The AAC is designated by a letter and is based on the speed of an aircraft as it approaches a runway for landing (Table 3.2). It is generally used to help ensure an airport's runway safety areas can safely accommodate the critical aircraft.

Table 3.2 Aircraft Approach Categories

Category	Approach Speed
A	Less than 91 knots
B	91 knots or more but less than 121 knots
C	121 knots or more but less than 141 knots
D	141 knots or more but less than 166 knots
E	166 knots or more

Source: FAA, AC 150/5300-13B, *Airport Design*

The ADG is designated by a Roman numeral and is based on an aircraft's wingspan or tail height, depending on which is most restrictive (Table 3.3). It is typically used to establish dimensional standards for adequate aircraft clearance.

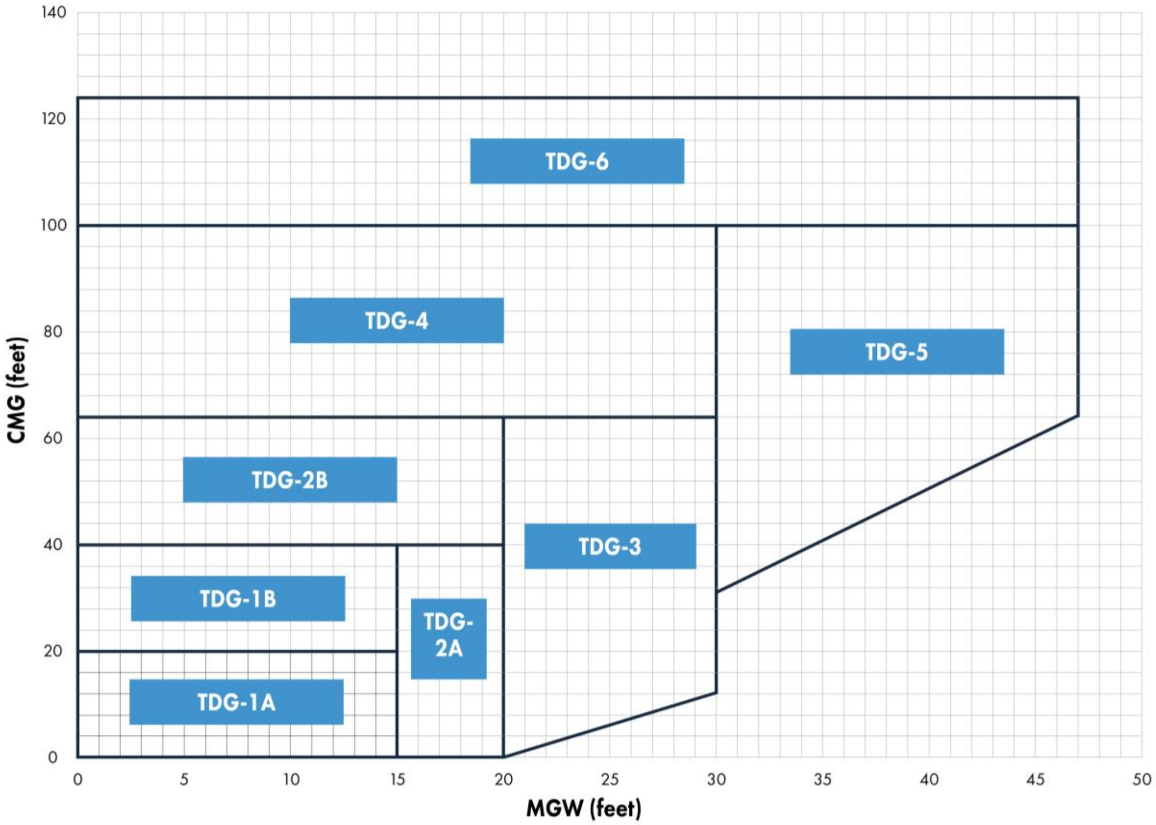
Table 3.3 Airplane Design Groups

Group	Tail Height	Wingspan
I	< 20 feet	< 49 feet
II	20 feet ≤ 30 feet	49 feet ≤ 79 feet
III	30 feet ≤ 45 feet	79 feet ≤ 118 feet
IV	45 feet ≤ 60 feet	118 feet ≤ 171 feet
V	60 feet ≤ 66 feet	171 feet ≤ 214 feet
VI	66 feet ≤ 80 feet	214 feet ≤ 262 feet

Source: FAA, AC 150/5300-13B, *Airport Design*

The TDG is used to establish the correct dimensions for taxiway and taxilane widths. As shown in Figure 3.1, it is based on an aircraft's landing gear dimensions from cockpit to main gear (CMG) and main gear width (MGW).

Figure 3.1 Taxiway Design Groups



Source: FAA, AC 150/5300-13B, *Airport Design*

3.2.2 Visibility Minimums and Runway Visual Range Values

A runway's lowest minimum visibility published on an instrument approach chart is used to determine its runway visual range (RVR) value. As shown in Table 3.4, a runway that does not have an instrument approach is classified as a visual runway and does not have a runway visual range value.

Table 3.4 Visibility Minimums and Runway Visual Range Values

Runway Visual Range Value	Instrument Flight Visibility (Statute Miles)
VIS	Visual Approach Only
5,000 feet	Not lower than 1 mile
4,000 feet	Lower than 1 mile but not lower than ¾ mile
2,400 feet	Lower than ¾ mile but not lower than ½ mile
1,600 feet	Lower than ½ mile but not lower than ¼ mile
1,200 feet	Lower than ¼ mile

Source: FAA, AC 150/5300-13B, *Airport Design*

3.2.3 Runway Design Code

The runway design code (RDC) is comprised of the airport approach category, airplane design group, and runway visual range. The RDC is used to establish design criteria for a specific runway, which can vary per runway depending on the type of aircraft expected to use each runway.

3.2.4 Critical Aircraft and Airfield Design Criteria

As previously discussed in Chapter 2, Aviation Forecasts, the existing and future critical aircraft has an aircraft approach category of A, an airplane design group of I, and a taxiway design group of 1A. This critical aircraft is best represented by the Cessna 172 Skyhawk, which has a MTOW under 12,500 pounds, further classifying the critical aircraft as A-I(small).

3.3 AIRFIELD FACILITIES

An assessment of the airfield facilities was conducted to determine their ability to safely and efficiently accommodate the activity forecasted for the 20-year planning period. This included evaluating the runways, taxiways, and navigational aids at U10 for FAA design and safety standard compliance. The resulting airside facility requirement determinations are then used to help identify the improvements needed to meet specific operational demands.

3.3.1 Airfield Capacity

The purpose of an airfield capacity analysis is to assess the Airport's ability to efficiently accommodate its day-to-day and long-term demands without undue delays or compromises to safety. The analysis also assists in determining when improvements would be needed to meet operational demands.

Determining an airport's hourly capacity and its annual service volume is part of the methodology used for estimating an airfield's annual capacity, which is outlined in FAA AC 150/5060-5, *Airport Capacity and Delay*. This methodology accounts for differences in runway use, aircraft mix, and annual weather conditions. The aircraft mix index at U10, which is a mathematical expression of the percent of aircraft with a max takeoff weight exceeding 12,500 pounds that use an airport, was determined to be between 0 and 20. The Airport's annual service volume was estimated to be approximately 230,000 aircraft operations with 98 operations per hour conducted under visual flight rules (VFR) and 59 operations per hour under instrument flight rules (IFR).

As previously discussed in Chapter 2, Aviation Forecasts, there were approximately 6,813 total aircraft operations at U10 in 2023, which are forecasted to reach 8,856 operations by 2043. This indicates the Airport was at 3.0% capacity in 2023 and is expected to reach 3.9% capacity by 2043. According to the AC, an airport should begin planning airfield capacity improvements when capacity reaches 60% of its annual service volume. At 80% capacity, plans should be complete, and construction should begin. At 100%, an airport has reached capacity, and improvements should be completed to avoid delays.

Airfield Capacity Recommendation

With demand expected to remain below the 60% threshold for the 20-year planning period, there is no need to begin planning airfield capacity improvements at this time.

3.3.2 Runways

It is important to analyze the separation criteria, orientation, length, width, and pavement design strength of an airport's existing runways to determine their ability to meet both current and forecasted demand. The design standards, recommendations, design considerations, and requirements for a runway to safely accommodate its design aircraft are outlined in FAA AC 150/5300-13B, *Airport Design*. The following section analyzes specific runway criteria and makes recommendations based on the forecast.

3.3.2.1 Runway Approach Procedures

During periods of low clouds and reduced visibility, an airport can only be used with the aid of instruments. These instruments allow flight during poor weather conditions, allowing pilots to safely fly an aircraft using instrument flight rules (IFR). IFR capability enables pilots to descend to minimum safe altitudes providing greater potential to see the airport environment before needing to break off the approach. The higher these minimums, the more frequently a runway cannot be used during periods of adverse weather conditions.

There are no instrument flight procedures (IFPs) published for U10, which classifies both runways as visual. LEAN Technology Corporation (LEAN) completed an airspace and instrument procedure analysis in 2025 as part of this master plan update to evaluate the feasibility and benefits of introducing RNAV (GPS) instrument approach procedures at U10 (see Appendix D). The report findings indicate RNAV (GPS) approaches to Runway 4 and Runway 22 are feasible and would significantly enhance operational reliability at the Airport. The proposed approaches would require offset final approach courses and increased glidepath angles to mitigate the mountainous terrain in the area. As such, the RNAV (GPS) approaches would only be capable of offering Category A through C aircraft improved minimums compared to current VFR standards. The proposed approach procedures for Runway 4 and Runway 22 are summarized in Table 3.5 along with minimum altitude and minimum visibility requirements associated with each approach.

Table 3.5 Proposed Runway 4 / 22 Instrument Approach Procedures

Minimum Altitude[1] and Minimum Visibility[2] by Aircraft Approach Category[3]				
Approach	**Category A**	**Category B**	**Category C**	**Category D**
Runway 4: RNAV (GPS)				
LNAV[4]	5,180 ft & 1 mile		5,180 ft & 1⅜ mile	N/A
LNAV	5,260 ft & 1 mile		5,260 ft & 1½ mile	N/A
Circling	5,260 ft & 1 mile	5,320 ft & 1 mile	5,580 ft & 2½ mile	N/A
Runway 22: RNAV (GPS)				
LNAV/VNAV[5]	5,189 ft & 1⅜ mile			N/A
LNAV[5]	5,300 ft & 1 mile		5,300 ft & 1⅝ mile	N/A
LNAV/VNAV	5,413 ft & 2 miles			N/A
LNAV	5,620 ft & 1¼ mile		5,620 ft & 2½ mile	N/A
Circling	5,260 ft & 1 mile	5,320 ft & 1 mile	5,580 ft & 2½ mile	N/A

Source: LEAN Technology Corp, U10 Airspace and Instrument Procedure Analysis (see Appendix D)

Notes: [1]Altitude shown in feet above mean sea level (MSL).

[2]Visibility shown in statute miles (1 statute mile equals 5,280 feet).

[3]Aircraft approach categories 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

[4]Lines of minima are contingent on a non-standard missed approach climb gradient of 210 feet per nautical mile (NM) to 7,360 feet MSL.

[5]Lines of minima are contingent on a non-standard missed approach climb gradient of 250 feet per nautical mile (NM) to 8,000 feet MSL.

The most precise instrument approach procedure possible for Runway 4 is a lateral navigation (LNAV) approach with a 1-mile visibility requirement and a non-standard missed approach climb gradient of 210 feet per nautical mile (NM) to 7,360 feet MSL. Unlike Runway 4, the proposed approach to Runway 22 is clear of vertical guidance surface (VGS) penetrations and could support vertical navigation (VNAV) lines of minima. This makes the vertically guided LNAV/VNAV approach with a 1⅜-mile visibility requirement the most precise instrument approach procedure possible for Runway 22; however, these minimums are contingent on a non-standard missed approach climb gradient of 250 feet per NM to 8,000 feet MSL.

The proposed instrument approaches to Runway 4/22 include circling approach procedures, which would provide electronic course guidance to the runway environment rather than to a specific runway end. This type of procedure can be accommodated on a visual runway, such as Runway 17/35, because the pilot must maintain visual contact with the runway environment once they reach the missed approach point, prior to landing on a runway end.

Runway Approach Procedures Recommendation

The U10 Airspace and Instrument Procedure Analysis, prepared by LEAN, assessed the feasibility of RNAV (GPS) procedures for Runway 4 and Runway 22 at U10. If implemented, these approach procedures would reduce the overall minimums for both runway ends, potentially increase the Airport's overall usability, and reduce pilot workloads.

Therefore, it is recommended that the Airport move forward with the development of the proposed instrument procedures through the FAA IFP request process. A singular approach option could also be pursued, in which case the RNAV (GPS) to Runway 4 provides the most overall benefit to the Airport. Any facility improvements needed to support IFPs at U10, such as updating runway markings to those consistent with a non-precision instrument (NPI) approach, are described in the relevant sections below.

3.3.2.2 Runway Departure Procedures

The airspace and instrument procedure analysis completed by LEAN in 2025 also evaluated the feasibility of implementing RNAV departure procedures at U10. The Airport currently has no published departure procedures, which means runway departures are conducted under visual flight rules. The report findings indicate that there are feasible departure procedure options to all runways at the Airport. These proposed procedures allow for standard departure minimums; however, only a Visual Climb Over Airport (VCOA) procedure to all runways would allow for a standard climb gradient to achieve those minimums.

Runway Departure Procedures Recommendation

If implemented, the departure procedures developed by LEAN would provide obstacle-clear, predictable routes for departing aircraft, thereby improving safety and increasing the Airport's operational reliability in low visibility or marginal weather conditions. As such, it is recommended that the Airport work with the FAA to develop and examine opportunities to introduce the proposed departure procedures through the 7100.41A process.

3.3.2.3 Runway Design

Runway dimensional criteria, protection areas, and separation standards for U10 were applied according to AC 150/5300-13B, *Airport Design*. Examining these runway features for design conformance is essential for the safe and efficient operation of aircraft on the airfield. The current performance of each runway at U10 and their compliance with existing and future critical aircraft design standards is summarized in Table 3.6 and Table 3.7.

Runway 4 / 22

The existing RDC for Runway 4 / 22 is A-I(small)-VIS with a future RVR upgrade to A-I(small)-5000. While this is a downgrade from the B-I(small) critical aircraft identified in the previous airport master plan, these two categories of aircraft share the same design standards. As shown in Table 3.6, the current performance and design standards for Runway 4 / 22 are based on visual minimums, while the future design standards reflect visibility minimums that are greater than or equal to 1 mile.

Table 3.6 Runway 4 / 22 Design Standards

Design Criteria	**Current Performance**	**FAA Standards**		**Compliance RWY 4 / RWY 22**
	RWY 4 / RWY 22 B-I(Small)-VIS	**Existing A-I(Small)-VIS**	**Future A-I(Small)-5000**	
Runway Design				
Runway Width	60′	60′	60′	Y
Shoulder Width	15′	10′	10′	Exceeds
Blast Pad Width / Length	None	Not Required	Not Required	Not Required
Crosswind Component	10.5 knots	10.5 knots	10.5 knots	Y
Runway Safety Area (RSA)				
RSA Length Beyond Departure End	240′	240′	240′	Y / Y[1]
RSA Length Prior to Threshold	240′	240′	240′	Y / Y[1]
RSA Width	120′	120′	120′	Y / Y[1]
Runway Object Free Area (ROFA)				
ROFA Length Beyond Rwy End	240′	240′	240′	Y / Y[1]
ROFA Length Prior to Threshold	240′	240′	240′	Y / Y[1]
ROFA Width	250′	250′	250′	Y / Y[1]
Runway Obstacle Free Zone (OFZ)				
ROFZ Length Beyond Rwy End	200′	200′	200′	Y / Y
ROFZ Width	250′	250′	250′	Y / Y
Runway Separation				
Rwy Centerline to Holding Position	125′	125′	125′	Y / Y

Source: FAA, AC 150 / 5300-13B, *Airport Design*, and Ardurra, 2025

Notes: [1] The Runway 22 threshold has been displaced and declared distances are needed to comply with RSA and ROFA design standards.

Runway 4 / 22 Design Recommendation

Runway 4 / 22 meets FAA design standards, and no adjustments are needed. Runway 4 / 22 will be designed to A-I(small) standards on the Airport Layout Plan and should be maintained to ensure compliance with these standards through the planning period.

Runway 17 / 35

The existing and future RDC for Runway 17 / 35 is A-I(small)-VIS. The RDC aligns with the previous airport master plan and is not expected to change over the 20-year planning horizon. As shown in Table 3.7, the existing and future design standards for Runway 17 / 35 are based on visual minimums.

Table 3.7 Runway 17 / 35 Design Standards

Design Criteria	Current Performance	FAA Standards	Compliance RWY 17 / RWY 35
	RWY 17 / RWY 35 A-I(Small)-VIS	Existing / Future A-I(Small)-VIS	
Runway Width	30′	60′	N
Shoulder Width	10′	10′	Y
Blast Pad Width / Length	None	Not Required	Not Required
Crosswind Component	10.5 knots	10.5 knots	Y
Runway Safety Area (RSA)			
RSA Length Beyond Departure End	62′ / 45′	240′	N / N[1]
RSA Length Prior to Threshold	62′ / 45′	240′	N / N[1]
RSA Width	120′	120′	N / N[1]
Runway Object Free Area (ROFA)			
ROFA Length Beyond Rwy End	240′	240′	Y / Y[2]
ROFA Length Prior to Threshold	240′	240′	Y / Y[2]
ROFA Width	250′	250′	Y / Y
Runway Obstacle Free Zone (OFZ)			
ROFZ Length Beyond Rwy End	200′	200′	Y / Y
ROFZ Width	250′	250′	Y / Y

Source: FAA, AC 150 / 5300-13B, *Airport Design*, and Ardurra, 2025

Notes: [1] A portion of RSA beyond the Runway 35 end falls outside the airport boundary.

[2] A portion of ROFA beyond the Runway 35 end extends outside the airport boundary.

Runway 17 / 35 Design Recommendation

Runway 17 / 35 has nonstandard conditions that do not comply with current FAA design standards. Alternative solutions to address these conditions will be considered in Chapter 4, Development Alternatives.

3.3.2.4 Runway Length

The FAA provides recommendations for runway length, rather than design standards, to provide safe landing conditions based on the aircraft that regularly operate at an airport. FAA AC 150 / 5325-4B, *Runway Length Requirements for Airport Design*, provides the standards and guidelines used to determine the recommended runway lengths at U10. According to this AC, a variety of factors must be considered to determine the suitability of a given runway length. These factors include the Airport's elevation above mean sea level, average temperature, wind velocity, airplane operating weights, takeoff and landing flap settings, runway surface condition (i.e., dry or wet), runway gradient, presence of obstructions in the vicinity of the Airport, and any locally imposed noise abatement restrictions.

Table 3.8 lists the runway length recommendations based on the formulas included in the AC for aircraft with a maximum certified takeoff weight of 12,500 pounds or less. These were calculated using conditions approximating the average temperature of the hottest month (89.2°F) and the Airport's elevation (4,727 feet) to account for the decline in aircraft performance as elevation and temperature increase.

Table 3.8 Recommended Runway Lengths

AC 150/5325-4B Design Approach	Runway Length
Small, approach speeds between 30-50 kts	1,178′
Small, approach speeds of 50 kts or more, less than 10 seats, 95% of fleet	6,000′
Small, approach speeds of 50 kts or more, less than 10 seats, 100% of fleet	6,200′
Airport Planning Manual	**Minimum Runway Length**
Cessna 172 Skyhawk	
Takeoff Performance Total Distance Over 50′ Obstacle	1,630′
Takeoff Performance MTOW, 86°F, and 5,000′ Elevation	2,975′

Source: FAA, AC 150/5325-4B, *Runway Length Requirements for Airport Design,* and Cessna, *172S Skyhawk Information Manual Revision 5*

Runway Length Recommendation

Currently, Runway 4/22 is 3,557 feet long. According to the runway length analysis, Runway 4/22 falls short of the 6,000 feet needed to accommodate 95% of the national small airplane fleet. The findings of this analysis align with those from the previous airport master plan; however, following a runway alternative analysis in 2018, Runway 4/22 has since undergone a reconstruction and lengthening project to achieve the maximum possible length in its current configuration. The runway is currently constrained by U.S. Highway 91 to the north and steeply downward sloping terrain to the southwest. Alternatives for achieving additional runway length, including the option to maintain the current length, will be further examined in Chapter 4, Development Alternatives.

Runway 17/35 is 2,375 feet in length and is primarily used by agricultural, recreational, and training aircraft. User need and safety will guide the future length of this runway, which will be further analyzed in Chapter 4, Development Alternatives.

3.3.2.5 Displaced Thresholds and Declared Distances

A runway threshold may be displaced or located at a point other than the designated beginning of a runway to address specific nonstandard conditions at an airport. When a runway threshold is moved, the protective airspace associated with that end of the runway is also moved. As a result, implementing a displaced threshold provides a means of obtaining additional runway safety area (RSA) and runway object free area (ROFA); relocating the runway protection zone (RPZ) to eliminate incompatible land uses; or increasing obstacle clearance prior to the threshold.

Displaced thresholds are communicated to pilots through pavement markings and through declared distances. Declared distances help to identify the length of runway pavement available for use in aircraft operations. The FAA publishes these distances on an airport's master record and airport diagram. The four types of declared distances defined by the FAA, which were previously described in Chapter 1, Existing Conditions, can be adjusted for the following reasons:

- Takeoff Run Available (TORA): The length of runway available and suitable for satisfying takeoff run requirements may be reduced to resolve incompatible land uses in the departure RPZ or prevent objects from penetrating the 40:1 instrument departure surface.
- Takeoff Distance Available (TODA): The takeoff run available plus any remaining runway or clearway length beyond the TORA may be reduced to prevent objects from penetrating the 40:1 instrument departure surface.

- Accelerate-Stop Distance Available (ASDA): The runway length plus any stopway length available and suitable for the acceleration and deceleration of a rejected aircraft takeoff may be reduced to resolve nonstandard RSA or ROFA conditions.
- Landing Distance Available (LDA): The runway length available and suitable for landing may be reduced to prevent objects from penetrating an approach surface, resolve incompatible land uses in the approach RPZ, or mitigate nonstandard RSA or ROFA conditions prior to the threshold.

For aircraft landing on Runway 22, the LDA is reduced to maintain compliance with ROFA requirements prior to the runway threshold. The controlling object is the U.S. Highway 91 right-of-way fencing located within the ROFA. This condition has been mitigated by displacing the Runway 22 threshold by 384 feet. For aircraft departing Runway 22, the ASDA, TORA, and TODA utilize the full runway length, as no controlling conditions exist beyond the Runway 4 end.

For aircraft landing on Runway 4, the LDA is reduced to maintain ROFA compliance beyond the Runway 22 end due to the presence of U.S. Highway 91 and its associated right-of-way fencing. For aircraft departing Runway 4, the ASDA is reduced to the same length as the LDA to maintain ROFA compliance beyond the departure end. There are no additional constraints on Runway 4 departures that impact the TORA or TODA; therefore, they utilize the full runway length.

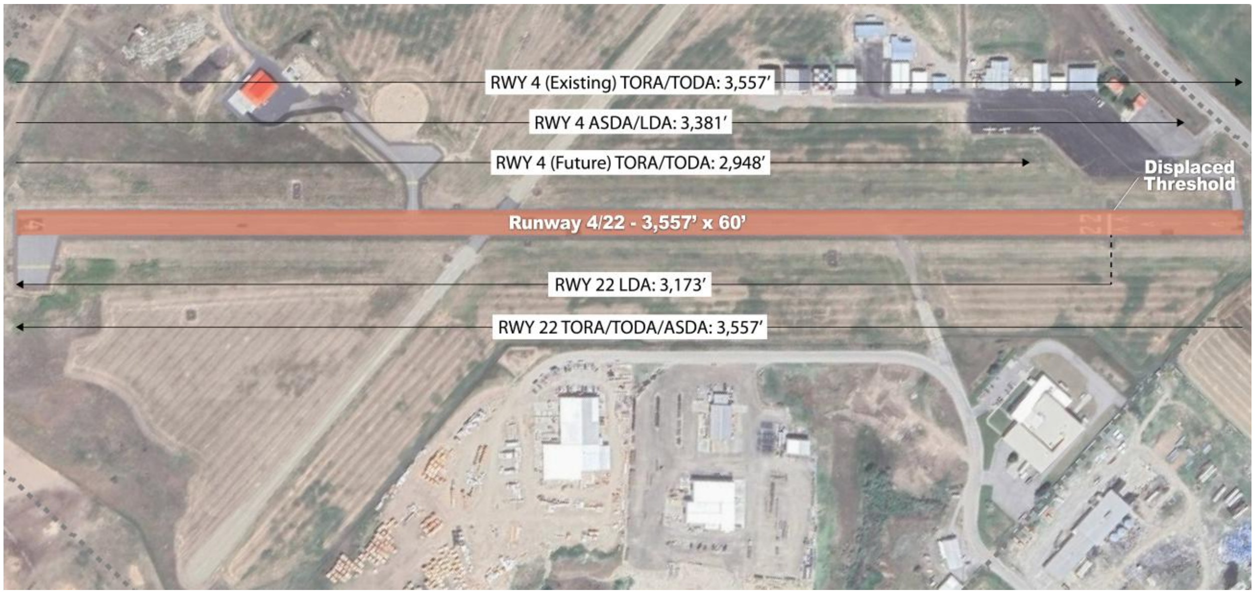
The declared distances for Runway 4 / 22 are summarized in Table 3.9 and shown in Figure 3.2.

Table 3.9 Runway 4 / 22 Declared Distances

Declared Distance	Runway 4	Runway 22
TORA	3,557′	3,557′
TODA	3,557′	3,557′
ASDA	3,381′	3,557′
LDA	3,381′	3,173′

Source: Ardurra, 2025

Figure 3.2 Runway 4 / 22 Declared Distances



Source: Ardurra, 2025

Displaced Thresholds and Declared Distances Recommendation

The declared distances for U10, which are shown on the 2021 Preston Airport Layout Plan, should be updated to align with those listed in Table 3.9. Prior FAA coordination and approval will be required before the corrected declared distances can be implemented. The declared distances should be published on the Airport's master record and on the airport diagram to enhance airport safety and operational awareness.

If the Airport were to move forward with the development of the proposed departure procedures for Runway 4 / 22, the Runway 4 TODA and TORA would need to be adjusted to 2,948 feet for the 40:1 instrument departure surface to clear vehicles on U.S. Highway 91 (see Figure 3.2).

3.3.2.6 Runway Line of Sight and Runway Visibility Zone

A runway with a clear line of sight (LOS) allows pilots to visually verify the location and actions of other aircraft and vehicles operating along active runways. When runways meet LOS standards, it reduces the potential for accidents. For interesting runways, the runway visibility zone (RVZ) is an area formed by imaginary lines that connect the LOS points of both runways. A clear LOS in this instance, prevents objects located within the RVZ from blocking a pilot's view of the intersecting runway.

The LOS standard for airports without an air traffic control tower, like U10, states that within the RVZ, any point five feet above the runway centerline must be mutually visible with any other point five feet above the centerline of the crossing runway. For non-perpendicular intersecting runways, as is the case at U10, the LOS points are dependent on the distance between the runway intersection and each runway end.

LOS and RVZ Recommendation

Runway 4 / 22 and Runway 17 / 35 currently meet the clear LOS requirement. The RVZ should remain free of objects not fixed-by-function to maintain a clear LOS for each runway.

3.3.2.7 Runway Designation

The normal shifting of the magnetic poles can result in the need to renumber, or redesignate, airport runways. A review of the geodetic and magnetic headings for the two runways at U10 indicate redesignation is not required for Runway 4 / 22 or Runway 17 / 35 during the 20-year planning horizon.

3.3.2.8 Runway Orientation and Wind Coverage

Runway orientation is primarily a function of wind coverage requirements for the existing and projected aircraft fleet mix. The FAA recommends wind coverage of at least 95% because wind speed and direction can significantly impact the operational safety and efficiency of an airport. As shown in Table 3.10, the runway design code determines the allowable crosswind component of a runway, which helps to ensure conditions are appropriate for the type of aircraft that typically use that runway. If a single runway cannot provide this level of coverage, then a crosswind runway is often warranted.

Table 3.10 Allowable Crosswind Component by Runway Design Code

Runway Design Code	Allowable Crosswind Component
A / B-I (includes small aircraft)	10.5 knots
A / B-II	13 knots
A / B-III and C / D-I through C / D-III	16 knots
A / B-IV, and C / D-IV through C / D-VI	20 knots

Source: FAA, AC 150 / 5300-13B, *Airport Design*

Runway 4 / 22 has an existing and future RDC of A-I(small), which means, ideally, crosswinds should not exceed 10.5 knots more than 95% of the time. There is no on-airport weather observation system; therefore, the wind analysis for U10 relied on data from the ITD US-91 Franklin weather station, located approximately 1 mile east of the Airport. Based on information collected from this station, which included wind direction and speed data from 2014 to 2024, Runway 4 / 22 meets the wind coverage requirement of 95% for all crosswind components in all weather conditions. The all-weather wind coverage performance for each runway at U10 is summarized in Table 3.11.

Table 3.11 U10 Runway Wind Coverage Analysis

Allowable Crosswind Component	Runway 4 / 22	Runway 17 / 35	Combined
10.5 knots	97.41%	98.79%	99.29%
13 knots	98.56%	99.34%	99.68%
16 knots	99.56%	99.73%	99.86%
20 knots	99.86%	99.89%	99.95%

Source: FAA, Airport Data and Information Portal, and University of Utah, MesoWest, 2025

Runway Orientation Recommendation

Runway 4 / 22 provides over 95% wind coverage in all weather conditions for the 10.5 knot crosswind component. This coverage indicates the primary runway at U10 is adequately orientated for typical use by the Airport's existing and future A-I(small) critical aircraft.

3.3.2.9 Runway Protection Zones

The runway protection zone (RPZ) is a portion of the inner approach zone projected onto the ground surface. Its function is to enhance the protection of people and property on the ground. It is strongly recommended by the FAA that the Airport own the RPZ in fee or have land use control of the area. Alternatives to ownership include avigation easements and land use control measures to ensure an RPZ remains free of incompatible development. The dimensions of an RPZ are determined by the design aircraft characteristics, visual approaches, and the lowest instrument approach visibility minimum for a runway. The RPZ dimensions for each runway at U10 are summarized in Table 3.12.

Table 3.12 Runway Protection Zone Design Standards

RPZ[1] Design Criteria	RWY 4/22			RWY 17/35	
	Existing A-I(Small)-VIS	Future A-I(Small)-5000	Compliance	Existing / Future A-I(Small)-VIS	Compliance
RPZ Length	1,000′	1,000′	Y/N[2]	1,000′	N[3]/Y
RPZ Inner Width	250′	250′	Y/Y	250′	Y/Y
RPZ Outer Width	450′	450′	Y/Y	450′	Y/Y

Source: FAA, AC 150/5300-13B, *Airport Design*, and Ardurra, 2025

Notes: [1] The dimensional values summarized in the table apply to both the approach and departure RPZs.

[2] The RPZs beyond Runway 22 contain U.S. Highway 91, which is an incompatible land use.

[3] The RPZs beyond Runway 17 contain incompatible land uses, including private roads and U.S. Highway 91.

Runway Protection Zones Recommendation

Incompatible land uses exist in the Runway 17 and Runway 22 RPZs. U.S. Highway 91 crosses through a portion of both RPZs, in addition to two private roads in the Runway 17 RPZ. The private roads are less traveled and pose a low risk to people and property on the ground, whereas the well-traveled U.S. Highway 91 presents a more elevated risk. Although U.S. Highway 91 is a historical condition in the RPZ, the Airport should make every effort to relocate U.S. Highway 91 outside of the Runway 17 and Runway 22 RPZs if the roadway undergoes realignment in the future.

Portions of each runway RPZ at U10 are not under airport owner control. The Exhibit A Property Map included in the 2021 Preston Airport Layout Plan identified these areas for either future acquisition in fee or avigation easement. The Airport should continue to protect these areas from incompatible land uses to the maximum extent possible while attempting ownership in fee, avigation easements, or land use control measures where feasible in the RPZs.

3.3.3 Taxiway and Taxilane System

FAA AC 150/5300-13B, *Airport Design*, was used to determine the design standards, recommended practices, and design considerations for taxiways and taxilanes. This AC provides guidance to enhance safety and efficiency based on the taxiway design group and airplane design group of the critical aircraft associated with each taxiway. This includes taxiway dimensions, configuration, and separation standards; taxiway turns and intersection design; and surface gradients. Taxiway design includes standards for safety and object free areas that provide a protective buffer around taxiways and other aircraft movement areas.

3.3.3.1 Taxiway Design

As previously discussed, the existing and future critical aircraft associated with all taxiways serving Runway 4/22 is the Cessna 172 Skyhawk, which has an ADG of I and a TDG of 1A. The existing conditions for Taxiways A1, A2, and A3 are listed in Table 3.13 alongside the associated dimensional standards.

Table 3.13 Taxiway Design Standards

Design Criteria	Design Standard	Current Performance			Compliance
		Taxiway A1	Taxiway A2	Taxiway A3	
ADG I Standards					
Taxiway Safety Area (TSA) Width	49′	49′	49′	49′	Y/Y/Y
Taxiway Object Free Area (TOFA) Width	89′	89′	89′	89′	Y/Y/Y
Taxiway Centerline to Fixed or Movable Object	44.5′	44.5′	>50′	NA	Y/Y
TDG 1A Standards					
Taxiway Width	25′	25′	25′	>90′	Y/Y/N
Taxiway Edge Safety Margin	5′	5′	5′	>5′	Y/Y/Y
Taxiway Shoulder Width	10′	10′	10′	10′	Y/Y/Y

Source: FAA, AC 150/5300-13B, *Airport Design,* and Ardurra, 2025

Taxiway Design Recommendation

Taxiway A1 and A2 at U10 meet the appropriate dimensional standards for all taxiway design criteria. Although Taxiway A3 meets or exceeds the dimensional standards listed in Table 3.14, it does not have a standard taxiway turnaround design. Alternative solutions to address this condition will be considered in Chapter 4, Development Alternatives.

3.3.3.2 Taxilane Design

Taxilanes are defined paths designed for low speeds and precise maneuvering of aircraft. In general, taxilanes allow aircraft to safely access taxiways and taxiway connectors from aircraft parking positions and other areas on the airfield. Unlike taxiways, where speeds will typically range from 15 to 35 mph, speeds on taxilanes don't generally exceed 15 mph. While most design standards and recommended practices are the same for both taxiways and taxilanes, some design standards for taxilanes are different given the different aircraft speeds and uses of taxiways versus taxilanes. This includes standards for the width of the object free area (OFA) and the distance from the centerline to a fixed or moveable object. The existing conditions of the Airport's taxilanes are listed in Table 3.14 alongside the corresponding dimensional standards.

Table 3.14 Taxilane Design Standards

Design Criteria	Design Standard	Current Performance	Compliance
		Main Apron Taxilanes	
ADG I Standards			
Taxilane Object Free Area (TLOFA) Width	79′	≥72′	Y/N
Taxilane Centerline to Fixed or Movable Object	39.5′	≥32′	Y/N
TDG 1A Standards			
Taxilane Width	25′	≥20′	Y/N

Source: FAA, AC 150/5300-13B, *Airport Design*, and Ardurra, 2025
*Some areas of GA hangar are designed specifically for ADG I according to hangar size specifications.

Taxilane Design Recommendation

Portions of the main general aviation apron taxilanes meet or exceed the appropriate dimensional standards for taxilane design criteria. However, the taxilane in front of the hangar row does not meet design standards. Alternative solutions to address these conditions will be considered in Chapter 4, Development Alternatives.

3.3.3.3 Runway and Taxiway Intersection Design

The FAA provides design guidelines for runway and taxiway intersections in AC 150/5300-13B, *Airport Design*, to reduce the potential for runway incursions and improve the safe maneuverability of aircraft on the airfield. These guidelines outline several concepts that should be considered when designing aircraft movement areas, including the three-path concept and 90-degree turns at runway entrances and crossing points. The three-path concept limits pilots to a maximum of three choices at an intersection to decrease the possibility of pilot error and confusion. Taxiways that connect apron areas to a runway should also require at least one turn prior to the runway hold line to increase pilot visibility and situational awareness.

Runway and Taxiway Intersection Design Recommendation

The aircraft movement areas at U10 meet design standards and no changes are recommended at this time.

3.3.4 Airfield Pavement Strength

FAA AC 150/5320-6G, *Airport Pavement Design and Evaluation*, was used to determine guidelines for required pavement design strength of airfield surfaces. To meet the needs of the Airport, runway pavements need to be able to accommodate the maximum takeoff weight of the existing critical aircraft as well as other types of aircraft expected to operate at U10. They should be able to physically withstand the weight of aircraft frequently arriving, taxiing, and departing, as well as sufficiently withstand the abrasive action of adverse weather conditions and other deteriorating factors. Runway pavement strength is typically expressed in terms of aircraft weight and landing gear configuration as this determines how its weight is distributed on the pavement and how the pavement will respond to the load.

Runway 4/22 at U10 has a published weight bearing capacity of 12,500 pounds for single wheel gear (SWG) configurations. Runway 17/35 is a dirt runway and does not have a published weight-bearing capacity.

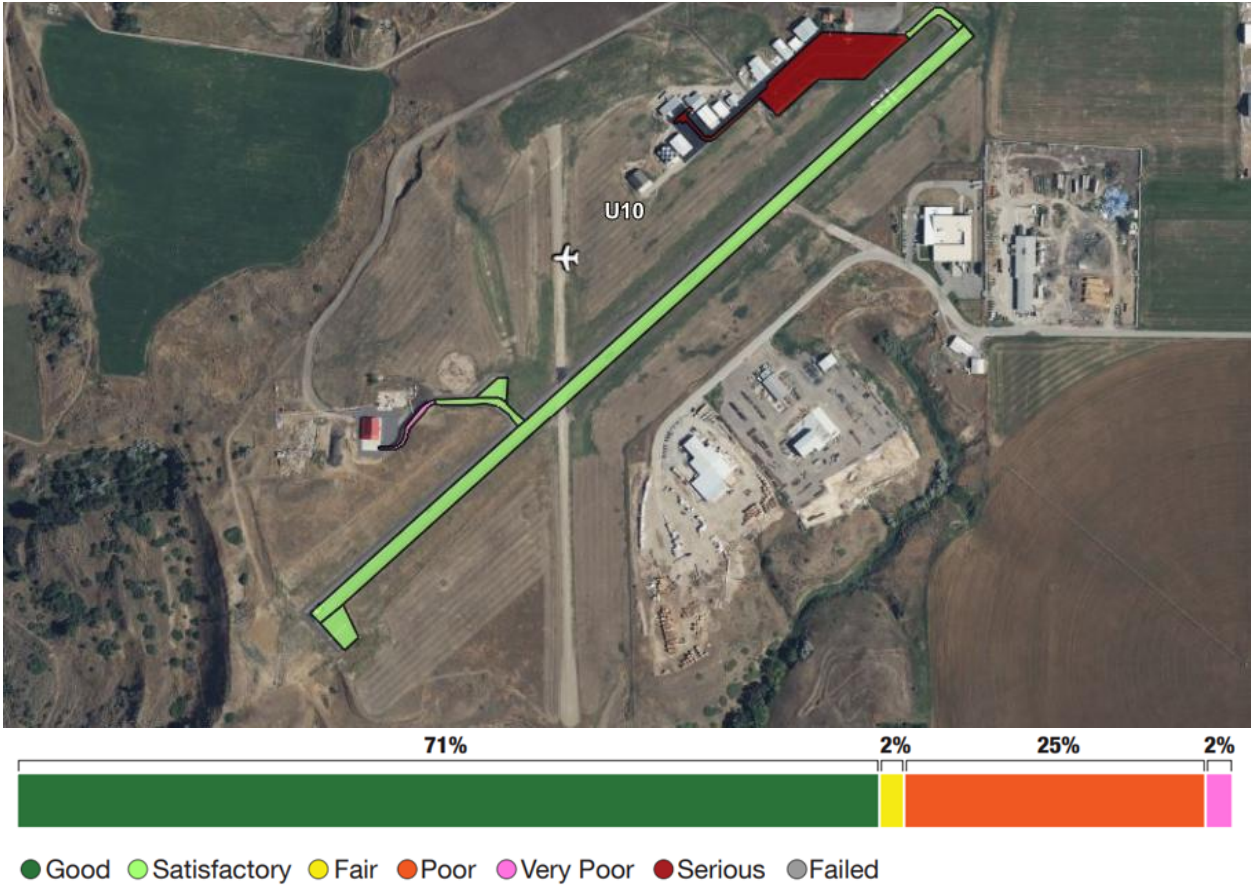
Pavement Strength Recommendation

The Cessna 172 Skyhawk, which represents the existing and future A-I(small) critical aircraft, has a single wheel gear configuration and a maximum takeoff weight of 2,550 pounds. As such, Runway 4/22 has sufficient weight bearing capacity to accommodate the existing and future critical aircraft.

3.3.5 Airfield Pavement Condition

The most recent inspection of the Airport's airfield pavements was completed in August 2021 as part of the Idaho Transportation Department, Division of Aeronautics' statewide airport pavement management program. The results of this inspection were used to develop existing and future composite PCI ratings for each of the paved surfaces at the airfield; the predicted pavement conditions in 2031 are depicted in Figure 3.3.

Figure 3.3 U10 Projected Pavement Condition Index Map, 2032



Source: ITD Aeronautics, Network Pavement Management System, 2021

If no maintenance were to occur over the next five years, the Airport's pavements would have an average PCI rating of 67. A five-year maintenance and rehabilitation plan was produced by the Idaho Transportation Department, Division of Aeronautics (ITD Aeronautics) to prevent the Airport's pavements from deteriorating to the level depicted in Figure 3.3. The plan is summarized in Table 3.15.

Table 3.15 U10 5-Year Recommended CIP Summary

Recommended Treatment Year	Recommended Treatment	Total Cost
2023	Main Apron and Taxilane Complete Reconstruction	$785,838
2023	Taxilane Mill and Overlay	$13,709
2024	Runway and Taxiway Pavement Surface Treatment	$170,087
2026	Apron and Taxilane Pavement Surface Treatment	$68,751

Source: ITD Aeronautics, Network Pavement Management System, 2021

Pavement Maintenance and Rehabilitation Recommendation

Airfield pavements should be maintained and rehabilitated according to the five-year maintenance plan outlined in Table 3.15. Outside of this plan, pavement at the Airport should continue to receive routine periodic maintenance, such as slurry seal treatment and crack sealing, to extend the life of the pavement.

3.3.6 Airfield Pavement Markings

FAA AC 150/5340-1M, *Standards for Airport Markings*, was used to determine standards for markings on the Airport's runways, taxiways, and aprons. Runway markings are specified according to the type of instrument approach available on the runway.

Runway 4/22 at U10 has markings consistent with a visual approach. The runway marking requirements are summarized in Table 3.16.

Table 3.16 U10 Runway Marking Requirements and Performance

Runway Markings	Existing Standard / Performance	Future Condition
	Visual Approach	Non-Precision Approach
Landing Designators	✓	✓
Centerline	✓	✓
Threshold Markings	Not Required / None	4 Symmetrical Stripes
Aiming Points	Not Required / None	Not Required (runway length less than 4,200 ft)
Edge Markings	Not Required / None	Not Required (full width available for use)

Source: FAA, AC 150-5340-1M, *Standards for Airport Markings,* and Ardurra, 2025

Pavement Marking Recommendation

The pavement markings for Runway 4/22 are in good condition and should be re-marked during the next routine pavement maintenance project. If the Airport were to move forward with the development of the proposed instrument procedures for Runway 4/22, threshold markings would need to be added to the Runway 4 and Runway 22 ends to meet non-precision approach marking requirements.

3.3.7 Airfield Signage

FAA AC 150/5340-18H, *Standards for Airport Sign Systems*, was used to determine standards for the siting and installation of signs on airport runways and taxiways. The Airport's runway and taxiway signage is consistent with FAA standards for coloring and configuration and are in good condition.

Airfield Signage Recommendation

All airfield signage should be maintained throughout the 20-year planning period.

3.3.8 Electronic, Visual, Satellite, and Metrological Aids

The Airport is equipped with several types of navigational aids (NAVAIDs) that enhance safety for airport operations. These include the airport beacon, medium intensity runway lights (MIRL), precision approach path indicators (PAPIs), runway end identifier lights (REILs), and a segmented circle and lighted wind cone. Each of these facilities has criteria that must be met for the device to function properly, such as requirements for where it is located and object and obstruction clearances in the critical area surrounding the equipment. Each of these navigational aids are listed in Table 3.17, along with any critical area requirements.

Table 3.17 U10 Navigational Aid Requirements

Navigational Aid	Requirement	Compliance
REIL	N / A	N / A
MIRL	N / A	N / A
PAPI	Must be sited and aimed so that it defines an approach path with adequate clearance over obstacles and a minimum threshold crossing height (TCH).	Y
Airport Beacon	Positioned high enough for bottom edge of light beam to clear all obstructions.	Y
Segmented Circle & Wind Cone	Readily visible to pilots and located outside RSA and ROFA.	Y

Sources: FAA, AC 150 / 5340-30J, Order 6850.2B, and Order 6560.20C

Navigational and Metrological Aid Recommendation

These facilities and the associated critical areas should be maintained throughout the 20-year planning period. Additionally, it is recommended that weather sensing equipment, such as an automated weather observing system (AWOS), be installed to enhance the accuracy of local weather reporting for procedural use if the proposed instrument procedures for Runway 4 / 22 are implemented.

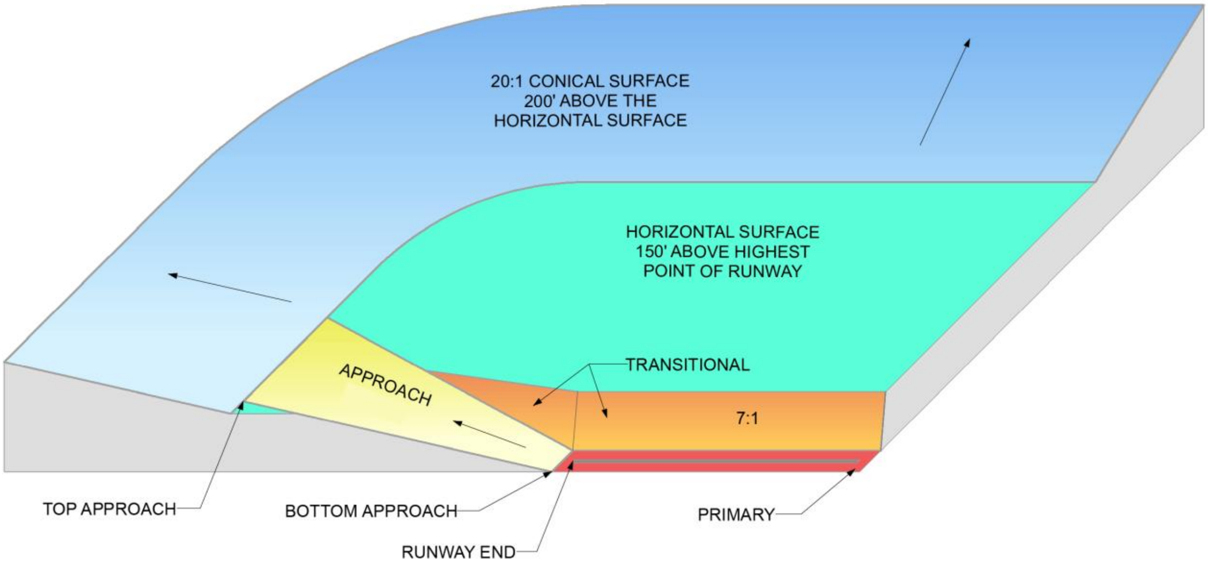
3.4 AIRPORT AIRSPACE

It is important to evaluate the Airport's airspace to plan for and protect both existing and future approaches. This includes determining if there are any obstructions of the imaginary surfaces as defined in Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, or any of the approach and departure surfaces defined in FAA AC 150 / 5300-13B, *Airport Design*.

3.4.1 Part 77: Safe, Efficient Use, and Preservation of the Navigable Airspace

The standards for evaluating the Airport's airspace were established using Title 14 of CFR Part 77. This Federal Aviation Regulation (FAR), which is simply referred to as Part 77, describes the imaginary surfaces surrounding airports that are to be protected from natural and man-made obstructions considered to be aeronautical hazards. The Part 77 surfaces associated with civil airports are the primary, approach, transitional, horizontal, and conical surfaces shown in Figure 3.4.

Figure 3.4 Part 77 Surfaces



Source: 14 CFR Part 77 and Ardurra, 2025

The standards for Part 77 surface dimensions are applied individually to each runway end based on the type of approach available or planned (i.e., visual, non-precision, or precision). The most precise instrument approach associated with a runway end is also used when determining the slope and dimensions of the approach surface to that runway.

Part 77 Surface Recommendation

The 2021 Preston Airport Layout Plan identified points along U.S. Highway 91 that fail to meet the 17-foot vertical buffer required for Part 77 surfaces to clear the highway and, therefore, penetrate the primary, transitional, and approach surfaces. Although no actions were required to mitigate or remove these penetrations, the Part 77 imaginary surfaces should be protected and new obstructions prevented to the maximum extent possible. An obstruction survey and analysis of Part 77 imaginary surfaces is included in the Airport Layout Plan.

3.4.2 Approach and Departure Surfaces

FAA AC 150/5300-13B, *Airport Design*, was used to determine the dimensional standards for the runway approach and departure surfaces. It is important to note that the approach and departure surfaces defined in this AC are different from the surfaces defined in 14 CFR Part 77. However, like the Part 77 surfaces, these surfaces also need to be protected and kept free from proposed development or natural vegetation growth that could penetrate these surfaces. Maintaining clear approach and departure surfaces allows pilots to follow standard instrument approach and departure procedures and helps to protect the usability of the Airport's runways.

3.4.2.1 Runway 4/22 and Runway 17/35 Approach Surface Analysis

As discussed previously in Section 3.3.2.1, Runway Approach Procedures, there are no published approach procedures at U10, and all runways are classified as visual. The three visual approach surfaces defined in Table 3-2 and Figure 3-5 of FAA AC 150/5300-13B, *Airport Design*, have varying dimensions depending on the max takeoff weight (MTOW) and approach speeds of the critical aircraft. At U10, each runway is designed to serve small aircraft (MTOW less than 12,500 pounds) with approach speeds of 50 knots or more. As such, "Surface 2" from Table 3-2 and Figure 3-5 of the referenced AC applies to Runway 4 / 22 and Runway 17 / 35 at U10.

If the RNAV (GPS) instrument approach procedures to Runway 4 / 22 are implemented, different approach surfaces to Runway 4 and Runway 22 will apply. If Runway 4 were to implement an LNAV approach with visibility minimums greater than ¾ statute mile, the dimensional standards for approach "Surface 4" from Table 3-3 and Figure 3-6 in the same AC would apply. The proposed LNAV approach to Runway 22 includes vertical guidance; therefore, approach "Surface 5" and "Surface 6" from Table 3-4 and Figure 3-7 would apply.

3.4.2.2 Runway 4 / 22 and Runway 17 / 35 Departure Surface Analysis

The instrument departure surface – identified as "Surface 7" in Table 3-5 and Figure 3-9 of FAA AC 150 / 5300-13B, *Airport Design* – applies to runways providing instrument departure operations. There are no runways that currently meet this qualification at U10; however, if departure procedures are implemented at the Airport, the surface criteria will apply.

Approach and Departure Surfaces Recommendation

There are no existing obstructions penetrating the approach surfaces on Runway 4 / 22 or Runway 17 / 35. If the proposed instrument approach procedures are implemented on Runway 4 and Runway 22, the applicable approach surfaces are similarly free of obstructions.

As stated previously, if departure procedures to Runway 4 / 22 are implemented, vehicles traveling on U.S. Highway 91 will penetrate the Runway 4 instrument departure surface. Declared distances will need to be updated to alert pilots that the full runway length is not available for takeoffs due to departure surface clearance.

3.5 LANDSIDE FACILITIES

As previously discussed in Section 1.1.3, Airport Role, U10 is categorized in the 2021 *Idaho Airport System Plan* (IASP) as a local airport. The 2021 IASP includes several facility and service objectives for local airports that were used to determine requirements for each of the landside facilities listed in this section.

3.5.1 Aircraft Hangars

There are 14 hangars currently at U10, which are used to store most of the 30 aircraft based at the Airport. Based on the 2021 IASP local airport objective, the Airport should have enough hangar space to meet the needs of 50% of their based aircraft. The demand for hangar space at U10 has been growing steadily since the previous master plan and is anticipated to exceed the IASP requirement over the planning period. As such, a scenario assuming all new based aircraft will be hangered was also considered. The hangar facility analysis evaluated the Airport's ability to meet both objectives based on the existing and forecasted number of based aircraft at U10 (Table 3.18).

Table 3.18 U10 Aircraft Hangar Requirements

Year	Based Aircraft	IASP Required (50%)	Forecasted Demand (100%)	Current Need Met	Needed*
2023	30	15	30	14	16
2028	32	16	32	14	18
2033	34	17	34	14	20
2043	39	20	39	14	25

Source: ITD Aeronautics, 2021 IASP, and Ardurra, 2025

*Future need assumes one hangar for every new based aircraft.

Aircraft Hangar Recommendation

In addition to falling short of the 2021 IASP objective, the Airport does not have enough hangar space to adequately house the full potential of forecasted based aircraft. Therefore, hangar development at U10 is needed to meet this objective for both existing and future based aircraft. Potential sites for new hangars will be discussed in Chapter 4, Development Alternatives.

3.5.2 Aircraft Tiedowns

There are 9 small aircraft tiedown locations on the main general aviation apron. According to the 2021 IASP, as a local airport, U10 should provide enough apron parking space to accommodate 50% of the based aircraft fleet and 50% of transient operations.

The number of tiedowns required to meet this objective was determined using the based aircraft and itinerant aircraft operations forecasts, in addition to conversations with Airport management regarding current use. Transient aircraft demand was estimated to account for approximately 70% of itinerant aircraft operations on an average day during the peak month. Peak month operations were an estimated 11% of annual operations at U10. To prevent a shortage of aircraft tiedowns, the Airport needs to have enough aircraft parking positions to accommodate half of the peak month, average day (PMAD) transient operations and half of the based aircraft fleet (Table 3.19).

Table 3.19 U10 Aircraft Tiedown Requirements

Year	PMAD Transient Operations Forecast	Based Aircraft Forecast	Required (50% of Total)	Current Need Met	Needed
2023	12	30	21	9	12
2028	13	32	22	9	13
2033	14	34	24	9	15
2043	16	39	27	9	18

Source: ITD Aeronautics, 2021 IASP, and Ardurra, 2025

Aircraft Tiedown Recommendation

The Airport does not meet the 2021 IASP objective for aircraft tiedowns. Therefore, additional apron area is needed at U10 to meet this objective for both existing and future demand. Additional capacity solutions will be considered in Chapter 4, Development Alternatives.

3.6 SUPPORT FACILITIES

The 2021 IASP includes several facility and service objectives for local airports that were used to determine requirements for the support facilities listed in this section.

3.6.1 General Aviation Facility

The Airport has a pilot's lounge with a public restroom and vending machines, as well as a courtesy car for airport users. According to the 2021 IASP, U10 should have a courtesy car and general aviation facility with public restrooms, a pilot's lounge, and Wi-Fi.

General Aviation Facility Recommendation

The Airport meets the 2021 IASP objectives for general aviation facilities and rental car access; however, U10 does not currently have Wi-Fi. Therefore, it is recommended that the Airport move forward with Wi-Fi installation based on available broadband options in the area.

3.6.2 Fuel Facilities

According to the 2021 IASP, U10 should provide 100LL fuel. The Airport has an underground 12,000-gallon 100LL avgas storage tank and a self-serve fuel station available 24 hours a day. Therefore, U10 currently meets the 2021 IASP objective.

Fuel Facility Recommendation

The Airport currently meets the 2021 IASP objective for fuel facilities; however, the underground fuel tank should be regularly inspected for corrosion, wear, and leaks. When the fuel storage tank reaches its useful life, an above ground storage pad should be constructed to enhance safety, environmental protection, and operational flexibility.

3.6.3 Snow Removal and Ice Control

As previously discussed in Section 1.3.6, Snow and Ice Control, the Airport currently has a pick-up truck with a snowplow attachment. According to the 2021 IASP, local airports do not need to have SRE equipment.

SRE Equipment Recommendation

The Airport's current snow removal equipment is insufficient for airport staff to effectively clear Runway 4/22 and other critical areas, compromising the safety and operational capabilities of the airfield during winter months. Although it is not a 2021 IASP requirement, a snowplow is recommended at U10 to maintain a safe airfield environment during periods of heavy snow.

3.6.4 Airport Security, Fencing, and Vehicle Access Gates

Airport perimeter fences keep an airport secure and prevent people or wildlife from entering the aircraft operation areas. As previously discussed in Section 1.3.7, Fencing and Vehicle Access Gates, the Airport is not fully enclosed by fencing, but there is barbed wire or woven fencing around much of the airfield.

Fencing and Vehicle Access Recommendation

A wildlife hazard site visit (WHSV) was conducted in November 2024 as part of this master plan update to evaluate the potential risks posed by wildlife on or near the Airport that could threaten aircraft operations at U10 (see Appendix C). The WHSV report confirmed the presence of hazardous wildlife, such as deer, coyotes, and European starlings, near U10, which pose potential risks to operations both on and around the Airport grounds.

Therefore, it is recommended that the Airport install a wildlife exclusion fence around the perimeter of the property. The fence should be constructed at a sufficient height to deter deer and designed with a buried skirt to prevent burrowing by coyotes and other mammals.

Additionally, the installation of a vehicle access gate is recommended between the Airport's main entrance and the main GA apron to protect the runway environment from direct vehicle access.

3.6.5 Automobile Parking

As previously discussed in Section 1.3.8, Automobile Parking, there is a paved, unmarked parking lot adjacent to the Airport entrance. This area can accommodate approximately 40 vehicles. According to the 2021 IASP, local airports should have automobile parking available to airport users.

Automobile Parking Recommendation

The Airport currently meets the 2021 IASP objective for automobile parking, and no additional accommodation is required at this time.

4

DEVELOPMENT ALTERNATIVES

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CHAPTER FOUR

DEVELOPMENT ALTERNATIVES

This chapter presents a series of potential development strategies to address the short and long-term needs of Preston Airport (U10) over the next 20 years. Building on the findings of the inventory, forecast, and facility requirements analyses, this chapter identifies, evaluates, and refines various development options to ensure that the Airport continues to safely and efficiently accommodate projected demand. The goal is to provide a sound basis for selecting a preferred development alternative that aligns with the Airport's long-term vision and strategic objectives.

4.1 PRIMARY AND SECONDARY DEVELOPMENT ELEMENTS

When developing alternatives, it is important to distinguish between primary and secondary development elements to establish a logical framework for evaluating and sequencing proposed improvements at U10. Primary elements represent the critical infrastructure components that define the Airport's long-term configuration and operational capabilities. These features typically influence the location, design, and feasibility of subsequent improvements; therefore, they generally serve as the foundation for future improvements. For U10, the primary elements include:

- Runway 4/22 Length
- Runway 4/22 Parallel Taxiway and Runway Separation
- Runway 17/35 Length and Decommissioning

Secondary elements consist of facilities and improvements that depend on or are shaped by the primary components. Once the primary elements are established, secondary elements—such as apron expansions, hangar development, support facilities, and landside improvements—can be evaluated and phased appropriately to ensure compatibility with the Airport's long-term layout and operational needs. This approach provides a structured basis for developing alternatives and, later, for sequencing improvements as part of the implementation plan.

4.2 EVALUATION OF ALTERNATIVES

Each alternative was evaluated against a set of criteria designed to assess its safety, operational efficiency, financial feasibility, and compatibility with U10's long-term development goals.

1. **FAA Airport Design Standards:** Alternatives were reviewed for compliance with FAA design standards, safety requirements, and industry best practices.
2. **Operational Performance:** Each option was assessed for how well it integrates with the existing airfield, supports efficient operations, and accommodates forecast demand.
3. **Supports Short/Long-Term Needs:** The evaluation considered whether the alternatives meet near-term needs while remaining consistent with U10's long-term vision and allowing for future expansion.
4. **Fiscal Considerations:** Financial factors included cost feasibility, alignment with budget realities, and potential to generate or enhance Airport revenue.
5. **Land Development Strategies:** Alternatives were examined for their compatibility with surrounding land uses and their ability to support the highest and best use of on- and off- airport property.

6. **Environmental Impacts:** Alternatives were reviewed for potential environmental impacts and their potential to trigger NEPA review requirements, recognizing that these are planning-level assessments and not FAA determinations.

4.3 RUNWAY 4 / 22 ALTERNATIVES

Although Runway 4 / 22 meets the performance requirements of the Airport's critical aircraft, consideration of a potential extension alternative was explored. The alternative was developed with consideration of long-term planning and the Airport's ability to accommodate possible future changes in aircraft use or demand.

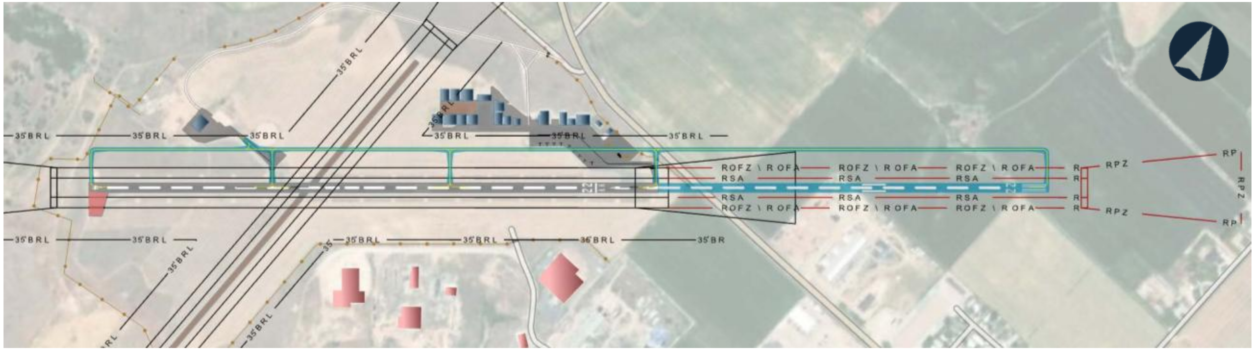
4.3.1 Alternative 1: No Action

If no action was taken to extend Runway 4 / 22, the existing length would remain adequate for the representative critical aircraft operating at U10 and would continue to support safe operations consistent with the Airport's role and activity levels. However, the current runway length may limit accommodation of some aircraft types. This alternative avoids the construction, environmental, and financial impacts associated with a runway extension and represents the most cost-effective option for maintaining existing service levels.

4.3.2 Alternative 2: Runway Extension to 6,000 Feet

This alternative considers extending Runway 4 / 22 from 3,557 feet to a total length of 6,000 feet to accommodate a broader range of aircraft and potential future demand, as shown in Figure 4.1. While this length aligns with FAA-recommended planning guidance for certain aircraft categories, the current airport footprint constrains expansion. As such, implementation of this alternative would require land acquisition, realignment of U.S. Highway 91, and significant earthwork, resulting in high construction costs and property impacts. Given the scale of these improvements, the project would likely require an Environmental Assessment (EA), pending FAA review.

Figure 4.1 Runway 4 / 22 Extension



Source: Ardurra, 2025

4.3.3 Runway 4 / 22 Alternative Evaluation

Evaluation of the runway alternatives, in coordination with Airport Sponsors and stakeholders, determined that Alternative 1 best meets current and projected operational needs, as shown in Table 4.1.

Table 4.1 Runway 4 / 22 Alternative Evaluation

Evaluation Criteria	Alternative 1	Alternative 2
FAA Airport Design Standards	🟩	🟩
Operational Performance	🟨	🟩
Supports Short / Long-Term Needs	🟨	🟩
Fiscal Considerations	🟩	🟥
Land Development Strategies	🟩	🟥
Environmental Impacts	🟩	🟥

Source: Ardurra, 2025
Note: Green indicates strong performance, yellow fair performance, and red poor performance.

4.3.4 Runway 4 / 22 Recommendation

While Runway 4 / 22 does not currently meet the FAA recommended length for aircraft with more demanding performance requirements, aircraft performance data for the Cessna 172 Skyhawk indicates that the existing runway length can safely accommodate the Airport's existing and future critical aircraft operating at maximum takeoff weight. Airport users are also satisfied with the current runway length. In contrast, pursuing Alternative 2 would result in significant cost, as well as environmental and logistical impacts. As such, maintaining the existing runway length is the recommended alternative.

4.4 RUNWAY 17 / 35 ALTERNATIVES

Alternatives for Runway 17 / 35 were developed to evaluate ways to address nonstandard runway safety area (RSA) conditions, maintain compliance with FAA design standards, and consider opportunities to optimize the Airport's overall footprint for future development. Although the runway provides operational flexibility under certain wind conditions, the RSA beyond the runway ends is inadequate. Evaluating the future condition of this runway allows the Airport to identify a feasible near-term solution for improving safety while exploring options for long-term airfield and landside development needs.

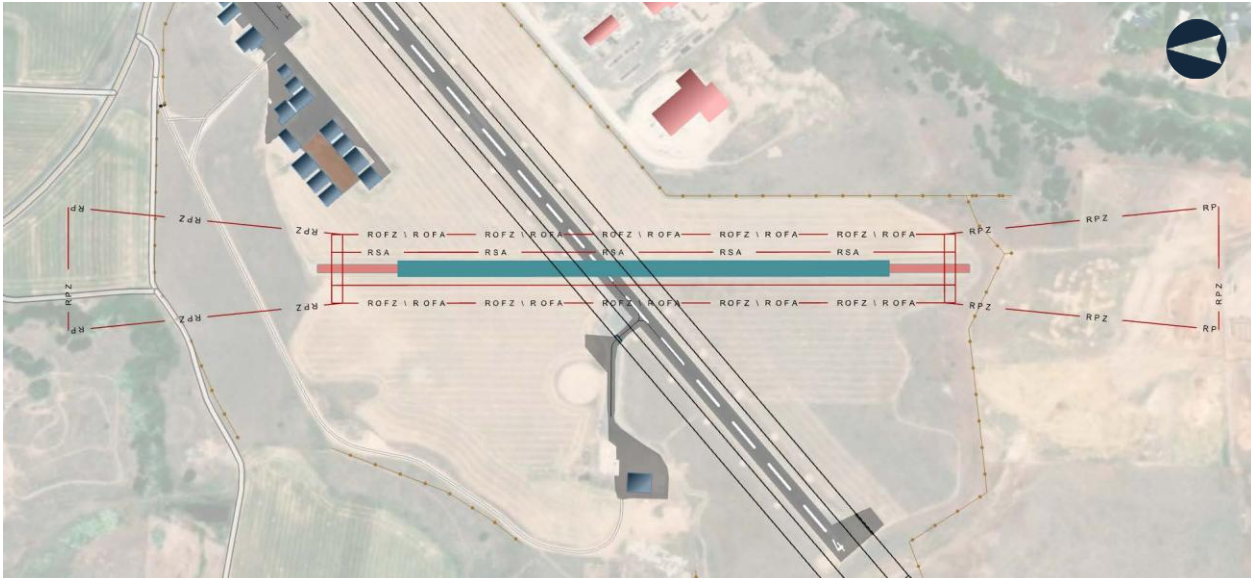
4.4.1 Alternative 1: No Action

If no action was taken to shorten or widen Runway 17 / 35, the existing substandard RSA conditions and runway width would not be addressed, and the runway would continue to operate below current FAA design standards. While this option avoids construction costs and maintains crosswind capability for small aircraft, it does not resolve the identified safety and compliance deficiencies. In addition, maintaining the existing runway configuration would continue to constrain landside development opportunities and limit the Airport's ability to meet forecasted hangar demand.

4.4.2 Alternative 2: Runway Shortening to 1,794 Feet

This alternative considers shortening Runway 17 / 35 from 2,375 feet to 1,794 feet to bring both runway ends into compliance with FAA design standards, as shown in Figure 4.2. The resulting runway length would continue to accommodate small aircraft with approach speeds between 30 and 50 knots, consistent with the FAA-recommended runway operating length of 1,178 feet. The runway surface would also be widened from 30 to 60 feet to meet FAA design standards. These improvements enhance safety and correct existing design deficiencies while retaining limited crosswind capability for small aircraft. However, this alternative would continue to prevent future hangar development potential north of Runway 4 / 22, limiting the Airport's ability to accommodate forecasted hangar demand within the existing footprint. This alternative represents a practical near-term solution that corrects known design deficiencies without significantly alternating the airfield layout. As such, shortening Runway 17 / 35 could qualify for a Categorical Exclusion (CATEX), pending an FAA determination.

Figure 4.2 Runway 17 / 35 Shortening

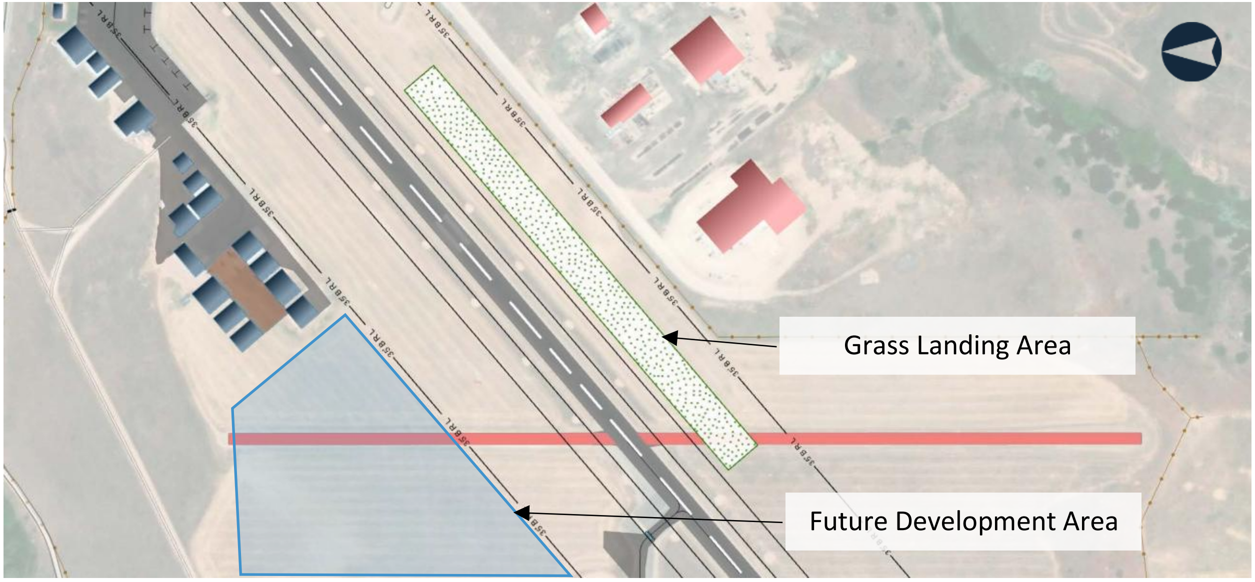


Source: Ardurra, 2025

4.4.3 Alternative 3: Decommission Runway and Grass Landing Area Addition

This alternative proposes decommissioning Runway 17 / 35 and establishing a grass landing area parallel to Runway 4 / 22 to maintain an unpaved surface option for light aircraft and recreational operations. The grass landing area would be designed based on user aircraft performance needs rather than standard runway length criteria. Removal of the dirt crosswind runway would open the central portion of the landside area for future development, maximizing the use of available airport property. Establishing a grass landing area would require surface preparation, which could result in environmental impacts subject to FAA review. An EA may be required for this development, subject to an FAA environmental screening determination.

Figure 4.3 Runway 17 / 35 Decommissioning



Source: Ardurra, 2025

4.4.4 Runway 17 / 35 Alternative Evaluation

An evaluation of the Runway 17 / 35 alternatives determined that Alternatives 2 and 3 best meet the established planning parameters used for evaluation, as shown in Table 4.2.

Table 4.2 Runway 17 / 35 Alternative Evaluation

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3
FAA Airport Design Standards	🟥	🟩	🟩
Operational Performance	🟩	🟩	🟩
Supports Short / Long-Term Needs	🟥	🟥	🟩
Fiscal Considerations	🟩	🟩	🟩
Land Development Strategies	🟥	🟥	🟩
Environmental Impacts	🟩	🟩	🟨

Source: Ardurra, 2025
Note: Green indicates strong performance, yellow fair performance, and red poor performance.

4.4.5 Runway 17 / 35 Recommendation

A phased approach is recommended, with Alternative 2 identified as future development and Alternative 3 as ultimate development. This provides a near-term solution that resolves nonstandard RSA conditions and brings the runway into compliance with FAA design requirements, while allowing the Airport time to strategically phase out the crosswind runway as operational demand and needs evolve. This phased approach supports immediate safety improvements while preserving long-term flexibility to expand landside facilities and optimize use of the Airport's existing footprint.

4.5 PARALLEL TAXIWAY ALTERNATIVES

Alternatives for a parallel taxiway serving Runway 4 / 22 were developed to explore ways to improve airfield safety and operational efficiency at the Airport. In the current configuration, aircraft must back-taxi on Runway

4/22, which increases runway occupancy time and the potential for runway incursions or conflicts. A parallel taxiway would allow aircraft to exit the runway more efficiently, reducing potential interactions between arriving and departing traffic and enhancing overall airfield circulation.

The Airport's existing and future critical aircraft has an aircraft approach category of A, an airplane design group of I, and a maximum takeoff weight under 12,500 pounds. All current approaches are visual, and any future instrument approach is not planned to have visibility minimums lower than 1 mile within the planning horizon. Design of the parallel taxiway is driven by these factors, in accordance with FAA standards for A/B-I aircraft.

While the critical aircraft is not forecasted to change to a B-II designation within the planning horizon, approximately 350 annual operations were attributed to B-II aircraft in 2023. As such, the parallel taxiway alternatives consider maintaining existing conditions, constructing a taxiway meeting A/B-I (small) separation standards, and protecting for a future B-II runway-to-taxiway separation of 240 feet. Except for the 'No Action' alternative, which has no environmental impacts, all parallel taxiway options presented below would likely qualify for a Categorical Exclusion (CATEX), pending an FAA determination.

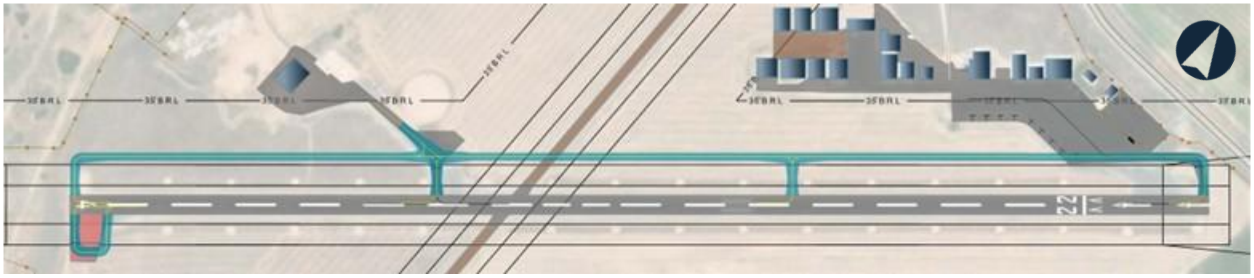
4.5.1 Alternative 1: No Action

If no action were taken to construct a parallel taxiway, aircraft would continue to use Runway 4/22 for takeoff, landing, and taxiing operations. This alternative would result in continued inefficiencies during peak operations and increased potential for runway incursions due to aircraft back-taxiing on an active runway. While this alternative would avoid near-term construction costs and environmental impacts, it would not address existing operational limitations or enhance airfield safety.

4.5.2 Alternative 2: 150-Foot Separation

This alternative provides a runway-to-taxiway separation of 150 feet, consistent with FAA standards for a runway serving an A/B-I (small) critical aircraft with visibility minimums not less than ¾ mile. This configuration meets current operational needs, improves safety by eliminating back-taxi operations, and can be accommodated without significant impacts to existing landside facilities.

Figure 4.4 Parallel Taxiway with 150-Foot Separation

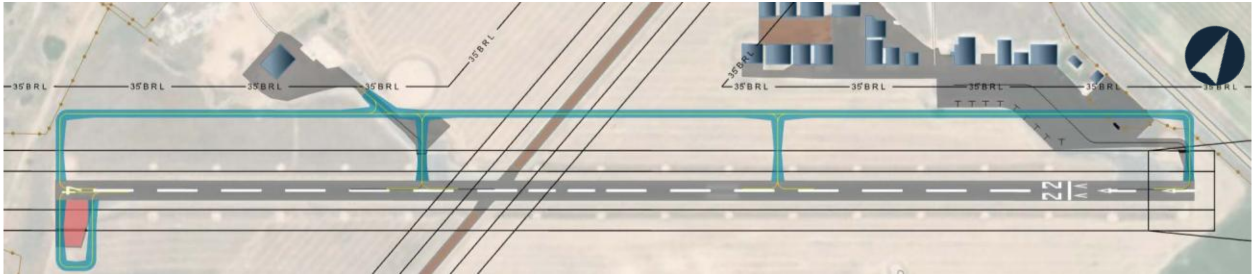


Source: Ardurra, 2025

4.5.3 Alternative 3: Protected 240-Foot Separation

This alternative preserves sufficient space to accommodate a future runway-to-taxiway separation of 240 feet. While construction to this standard is not currently justified based on the critical aircraft, protecting for this separation provides long-term flexibility to accommodate larger aircraft if operational needs change. However, this alternative would constrain adjacent landside areas and limit future hangar development.

Figure 4.5 Parallel Taxiway with 240-Foot Separation



Source: Ardurra, 2025

4.5.4 Parallel Taxiway Alternative Evaluation

An analysis of the parallel taxiway alternatives, supported by input from Airport Sponsors and stakeholders, found that Alternative 3 best meets the established planning parameters used for evaluation, as shown in Table 4.3.

Table 4.3 Parallel Taxiway Alternative Evaluation

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3
FAA Airport Design Standards	🟨	🟩	🟩
Operational Performance	🟥	🟩	🟩
Supports Short / Long-Term Needs	🟥	🟨	🟩
Fiscal Considerations	🟩	🟩	🟩
Land Development Strategies	🟨	🟩	🟨
Environmental Impacts	🟩	🟩	🟩

Source: Ardurra, 2025

Note: Green indicates strong performance, yellow fair performance, and red poor performance.

4.5.5 Parallel Taxiway Recommendation

While a 150-foot separation meets FAA design standards for the Airport's existing and forecasted critical aircraft, protecting for a 240-foot separation provides greater long-term flexibility to accommodate larger aircraft should operational needs change. As such, Alternative 3 is recommended for future development. The Airport Layout Plan (ALP) will reflect the 240-foot separation standard to ensure compatibility with potential future airfield development.

4.6 LANDSIDE DEVELOPMENT ALTERNATIVES

Alternatives for landside development were evaluated to accommodate forecasted demand for additional hangars and tiedown spaces, upgrade fueling infrastructure, and optimize use of the existing airport property. The Facility Requirements chapter identified a need for an additional 25 hangars and 18 tiedown spaces by 2043, which informed the development and evaluation of these alternatives. The analysis also considered the long-term transition of Runway 17 / 35 and how its potential decommissioning could support expanded landside development opportunities. Except for the 'No Action' alternative, which has no environmental impacts, all landside development options presented below would likely qualify for a Categorical Exclusion (CATEX), pending an FAA determination.

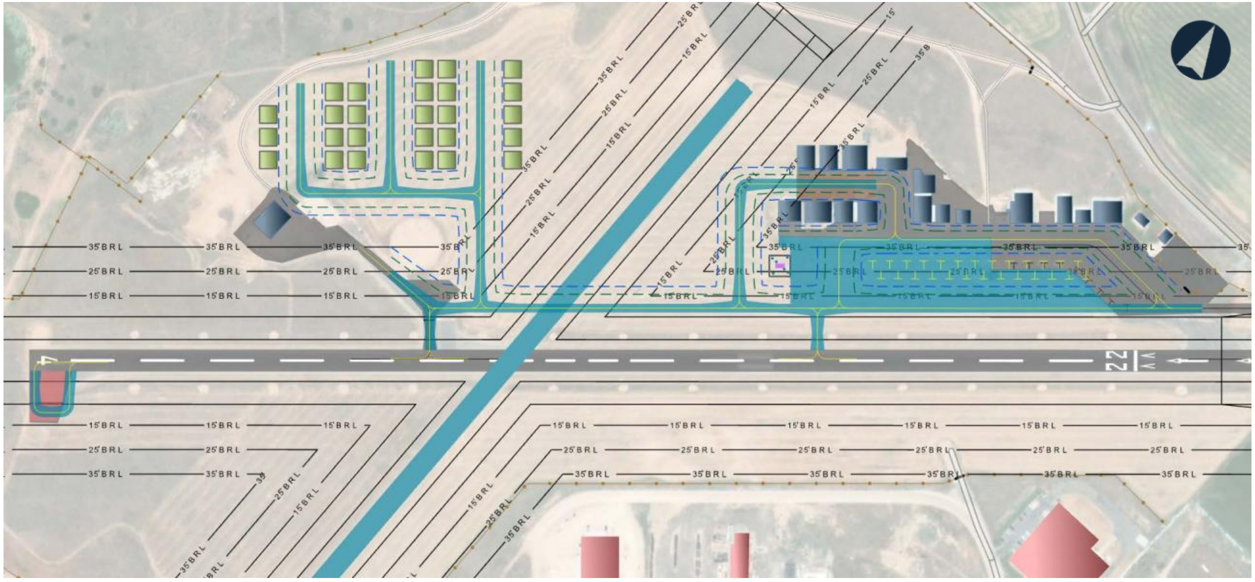
4.6.1 Alternative 1: No Action

If no action were taken, hangar and aircraft parking shortages would worsen, and the aging below-grade fuel tank would face increasing risk of failure. This alternative would not meet forecasted landside demand, adequately plan for future facility replacement or expansion, or allow the Airport to capitalize on additional development opportunities, resulting in lost potential revenue from new leases.

4.6.2 Alternative 2: Existing Footprint with Runway 17 / 35 Active

This alternative introduces new hangar lots, reconfigures the main apron to maximize tiedown capacity, and centrally locates the fuel farm for convenient access by aircraft and fuel trucks. While it makes the most of the existing airport footprint with Runway 17 / 35 remaining active, it provides the fewest hangar development opportunities among the landside alternatives and limits the Airport's ability to accommodate forecasted demand due to spatial constraints. See Figure 4.6.

Figure 4.6 Alternative 2 Landside Development with Runway 17 / 35 Active

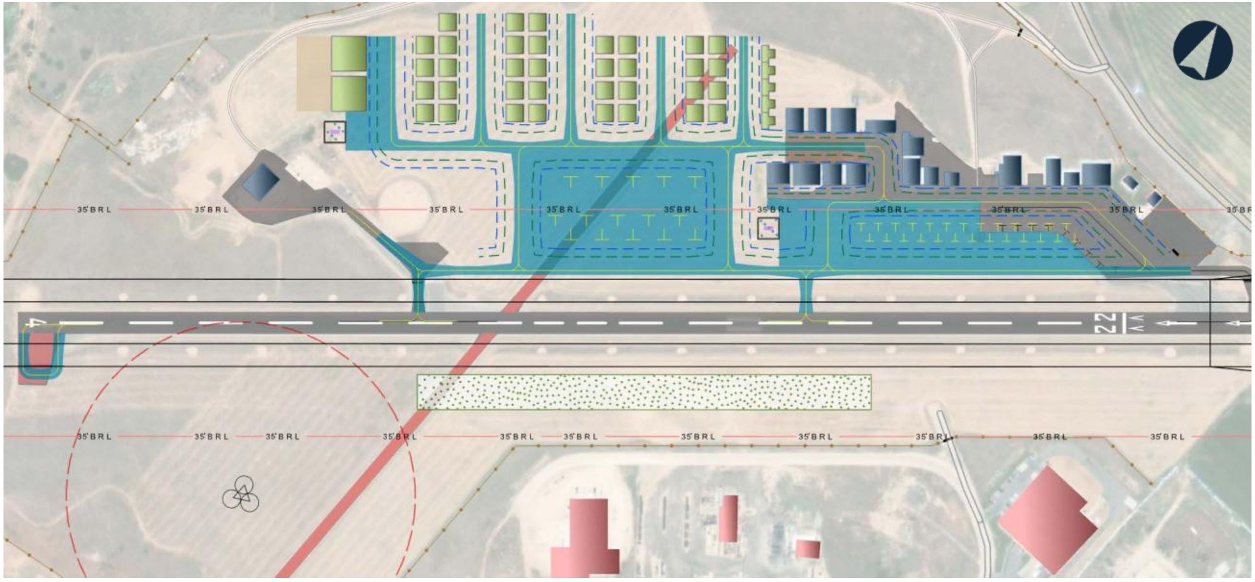


Source: Ardurra, 2025

4.6.3 Alternative 3: Existing Footprint with Runway 17 / 35 Inactive

With this alternative, Runway 17 / 35 would be decommissioned, creating additional space for hangar and tiedown development. Similar to Alternative 2, a centrally located fuel farm is proposed for convenient access and visibility. Decommissioning the crosswind runway allows for the maximum number of new hangars and tiedowns within the existing airport property, significantly improving the Airport's ability to accommodate forecasted demand. See Figure 4.7.

Figure 4.7 Landside Development with Runway 17 / 35 Inactive

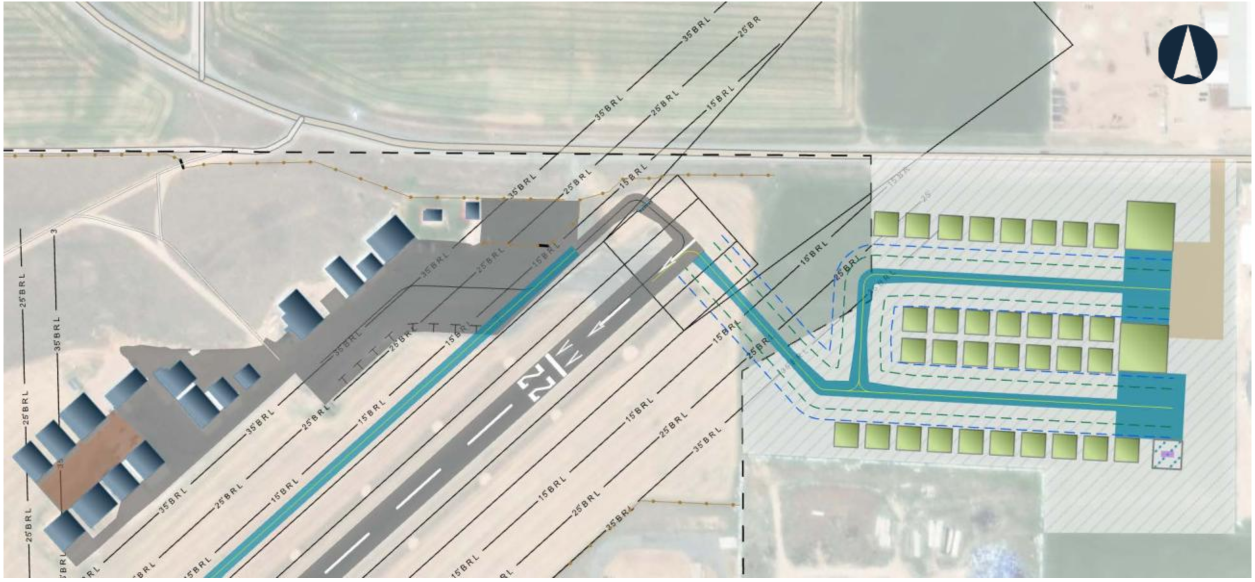


Source: Ardurra, 2025

4.6.4 Alternative 4: Land Acquisition

This alternative involves the acquisition of approximately 14 acres of land southeast of the Airport to create additional development space. The parcel has been identified by the Airport as a potential future acquisition opportunity, making it a feasible long-term option for expansion. While this alternative carries the highest cost due to land acquisition, it would support future development if Runway 17 / 35 remains active or if existing landside areas become constrained by demand. This alternative was evaluated as a long-term planning option to preserve flexibility should future conditions limit development within the existing airport footprint. See Figure 4.8.

Figure 4.8 Landside Development with Land Acquisition



Source: Ardurra, 2025

4.6.5 Landside Development Alternative Evaluation

The evaluation of landside development alternatives determined that a combination of Alternatives 2, 3, and 4 provides the most balanced approach to meeting near- and long-term needs, as shown in Table 4.4.

Table 4.4 Landside Development Alternative Evaluation

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4
FAA Airport Design Standards	🟨	🟩	🟩	🟩
Operational Performance	🟨	🟩	🟩	🟩
Supports Short / Long-Term Needs	🟥	🟨	🟩	🟩
Fiscal Considerations	🟨	🟩	🟩	🟨
Land Development Strategies	🟥	🟨	🟩	🟩
Environmental Impacts	🟩	🟩	🟩	🟩

Source: Ardurra, 2025

Note: Green indicates strong performance, yellow fair performance, and red poor performance.

4.6.6 Landside Development Recommendation

Alternatives 2 and 4 are recommended for future development, with the land acquisition in Alternative 3 identified as ultimate development. This approach supports incremental facility expansion and fuel system improvements as need arises, while giving the Airport the flexibility to pursue land acquisition or decommissioning of Runway 17 / 35 as operational demand, needs, and available funds dictate. As part of this future development, the segmented circle and wind cone would be relocated to free up additional land for landside development and an AWOS installed southwest of Runway 4 / 22. This phased strategy enhances safety, improves operational efficiency, and provides the Airport with flexibility to respond to evolving demand and development conditions.

4.7 PREFERRED ALTERNATIVE

Based on the results of the alternatives evaluation and the feedback gathered from stakeholders throughout the planning process, the Airport Sponsors determined that the recommended improvements best support the Airport's long-term operational, fiscal, and development needs. After reviewing how each concept performed against the established evaluation criteria and considering compatibility with community and user input, the Sponsors expressed support for the proposed improvements and agreed to advance the concept as the preferred alternative for future planning and implementation.

The preferred alternative maintains Runway 4 / 22 at its existing 3,557-foot length and introduces a parallel taxiway with a 150-foot separation, constructed in phases—beginning with a partial-length section and ultimately extending to full length. Runway 17 / 35 will be shortened to 1,794 feet and eventually decommissioned, the timing of which will be dependent on demand, operational needs, and available funding. The preferred landside development concepts offer short-term facility expansion options that work around Runway 17 / 35, giving the Airport flexibility to either phase out the crosswind runway or pursue additional land acquisition to support long-term development needs. Much of the proposed development included in the preferred alternative may be eligible for a CATEX; however, the eventual decommissioning of Runway 17 / 35 and grass landing area addition could require an EA. Together, these improvements provide a flexible, fiscally responsible development path that positions the Airport to meet future demand while preserving long-term strategic options.

5

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CHAPTER FIVE

FACILITIES IMPLEMENTATION

This chapter reviews planned capital improvement projects for Preston Airport (U10) in conjunction with the Federal Aviation Administration (FAA) Airports Capital Improvement Plan (ACIP) and improvements recommended based on the analysis presented in this airport master plan. This implementation includes a planning-level cost estimate of the financial commitment necessary to complete each project. This will help the Airport Sponsor plan for adequate funds, staff, and other necessary resources prior to project implementation. However, it is important to know the cost estimates included in this chapter are based on general estimates and are developed using unit costs and planning assumptions.

Projects identified through this airport master plan are depicted in the airport layout plan (ALP), which makes them eligible for FAA funding. Implementation of these proposed projects is at the Airport Sponsor's discretion and is contingent on the outcome of any required environmental reviews and funding commitments made at the time of project implementation.

5.1 CAPITAL IMPROVEMENT PLAN

CIP projects differ from operating and maintenance (O&M) projects in that they often require substantial funding, can take multiple years to complete, and are typically planned several years in advance. O&M projects consist of short-term expenses normally related to routine maintenance, operation, and management of the Airport. CIP projects are typically large infrastructure improvements involving runways, runway extensions, taxiways, and aprons. Certain types of equipment, such as snow removal equipment (SRE), and their associated storage buildings may also be eligible for FAA and state funding assistance.

Airport master plans and airport layout plan updates are typically completed every seven to ten years for general aviation (GA) airports. Larger development needs are justified through these planning efforts and added to the airport's CIP by the Airport Sponsors. The CIP is reviewed annually by the state and FAA, at which time completed projects are removed, pending projects are refined, and future projects are added. Once a project has been added, it may take years to schedule and secure funding depending upon the priority of the project. Projects related to safety and security are the highest priority for federal funding.

5.2 FACILITIES DEVELOPMENT PLAN

The facilities development plan outlines a series of projects based on the analyses completed in Chapter 4, Development Alternatives. These projects are organized into development scenarios that correspond to the forecast periods in this airport master plan, including a short-term (0-5 year), medium-term (6-10 year), and long-term (10+ year) planning horizon.

The project numbers do not necessarily represent the order in which the projects will take place. Land acquisition is expected to occur when properties become available for sale. Rough order of magnitude cost estimates for these projects were prepared using 2025 dollars and are an approximation designed to provide a general starting point. Many factors, including inflation and changes in the price of construction materials and land value, can affect these costs. The CIP should be reviewed annually, and these cost estimates should be updated prior to project implementation.

5.2.1 Short-Term Development (0-5 Year)

The short-term development program represents the airport's highest-priority projects and focuses on addressing immediate facility needs, maintaining compliance with applicable design standards, and supporting near-term operational and based-aircraft demand. Collectively, these improvements establish a foundation for future development while enhancing safety, efficiency, and overall airport functionality. Table 5.1 details the short-term projects shown in Figure 5.1. The numbers provided for each project in the table correspond to those in the graphic.

Table 5.1 Short-Term Facilities Development Plan

No.	Project	Description	Estimated Cost
1	Shorten Runway 17 / 35	Shortens Runway 17 / 35 to 1,794 feet to bring the runway safety area (RSA) into compliance with design standards.	$104,000
2	Reconfigure and Expand Main Apron	Reconfigures and expands the main apron for approximately 20 ADG I aircraft tiedown positions.	$1,560,000
3	Relocate Segmented Circle and Realign Taxiway	Relocates the segmented circle and realigns an existing taxilane to support three additional 50′x50′ hangars and better accommodate existing aerial agricultural operations.	$682,500
4	Wildlife Hazard Fence and Entrance Gate	Installs a wildlife hazard fence and controlled entrance gate to reduce wildlife incursions and prevent unauthorized access from the adjacent highway.	$780,000
5	Northwest Development Area, Phase I	Constructs an ADG I taxilane and develops space for four 100′x100′ hangars and five 80′x80′ hangars.	$455,000
		Short-Term Total	**$3,581,500**

Source: Ardurra, 2026

Notes: Project numbers do not reflect priority levels. Material quantities rounded to the nearest thousandth. Cost estimates include design and construction administration, but do not include environmental review.

Figure 5.1 Short-Term Facilities Development Plan

#	Short-Term Improvements
1	Shorten Runway 17/35
2	Reconfigure and Expand Main Apron
3	Relocate Segmented Circle and Realign Taxiway
4	Wildlife Hazard Fence and Entrance Gate
5	Northwest Development Area, Phase I

Source: Ardurra, 2026

5.2.2 Medium-Term Development (6-10 Year)

The medium-term facility improvements build on those outlined in the short-term plan and are intended to accommodate continued growth in aircraft activity and facility demand identified in the aviation forecasts. Projects in this phase focus on expanding or enhancing existing facilities to maintain adequate levels of service. Implementation of these projects is anticipated as demand warrants and funding becomes available. Table 5.2 details the medium-term projects shown in Figure 5.2. The numbers provided for each project in the table correspond to those in the graphic.

Table 5.2 Medium-Term Facilities Development Plan

No.	Project	Description	Estimated Cost
1	Northwest Development Area, Phase II	Constructs additional ADG I taxilanes within the northwest development area to accommodate up to 28 additional 50′x50′ hangars while maintaining Runway 17/35 operations.	$1,105,000
2	Extend Parallel Taxiway, Phase I	Extends a taxiway parallel to Runway 4/22 between the main apron and the northwest development area.	$747,500
3	Relocate Fuel Farm	Prepares a new fuel storage site for above-ground tanks and an apron for self-serve aircraft fueling.	$2,600,000
4	Reconfigure Taxiway Turnaround	Reconfigures the existing taxiway turnaround for Runway 4 to meet updated airport design standards.	$520,000
		Medium-Term Total	**$4,972,500**

Source: Ardurra, 2026

Notes: Project numbers do not reflect priority levels. Material quantities rounded to the nearest thousandth. Cost estimates include design and construction administration, but do not include environmental review.

Figure 5.2 Medium-Term Facilities Development Plan

Source: Ardurra, 2026

5.2.3 Long-Term Development (10+ Year)

The long-term development plan outlines potential future improvements necessary to support the Airport's ultimate role and capacity beyond 10 years. Implementation of these projects is dependent on several key factors, including the future configuration and use of Runway 17 / 35, land acquisition efforts, and long-term demand trends. Table 5.3 details the medium-term projects shown in Figure 5.3. The numbers provided for each project in the table correspond to those in the graphic.

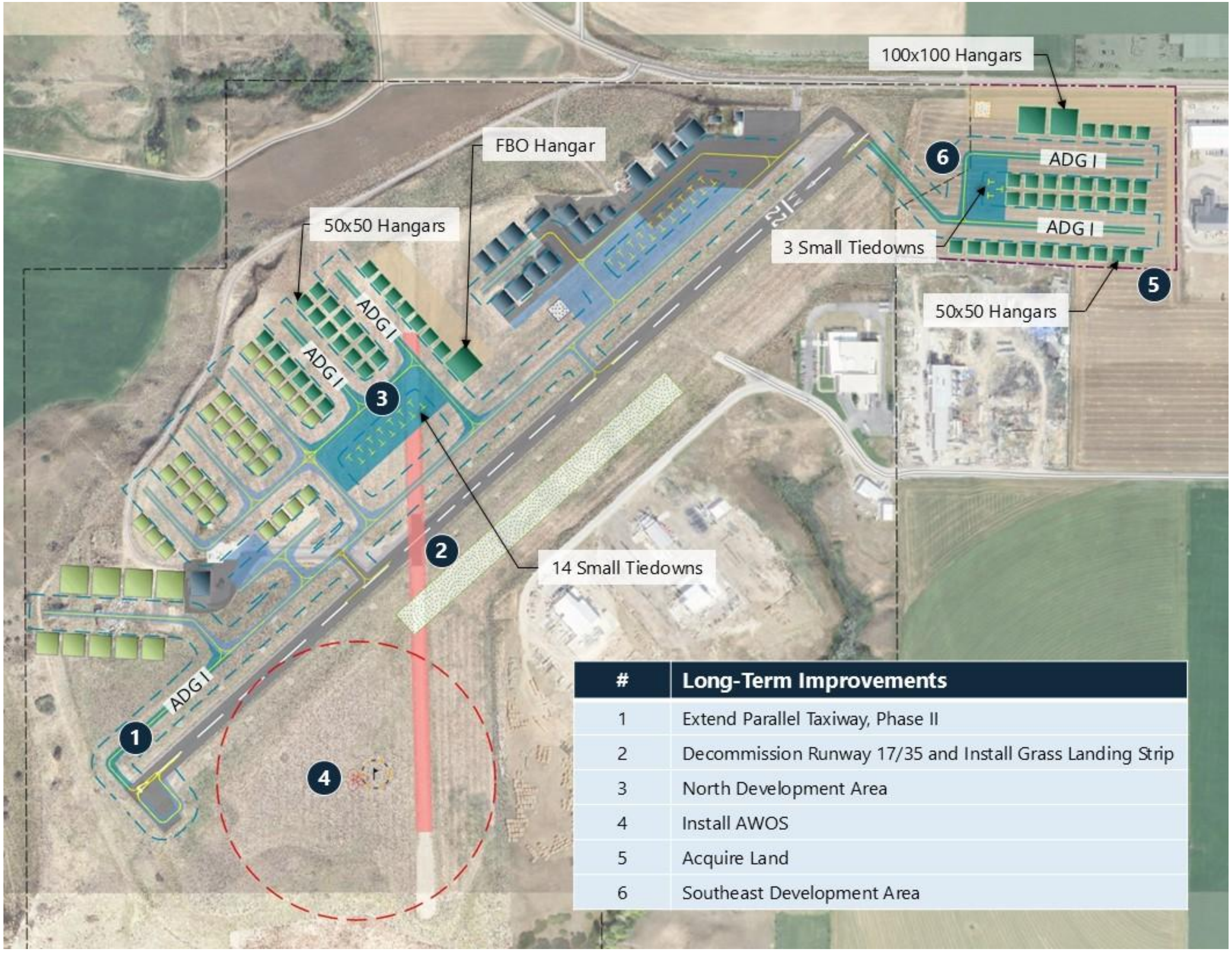
Table 5.3 Long-Term Facilities Development Plan

No.	Project	Description	Estimated Cost
1	Extend Parallel Taxiway, Phase II	Completes a full-length parallel taxiway serving Runway 4 / 22 to improve airfield circulation.	$487,500
2	Decommission Runway 17 / 35 and Install Grass Landing Area	Decommissions Runway 17 / 35 and installs a grass landing area to provide an alternative for users while freeing land for ultimate development opportunities.	$260,000
3	North Development Area	Constructs ADG I taxilanes for future hangar development, including an FBO facility with fuel farm access and vehicle parking.	$1,950,000
4	Install AWOS	Installs an automated weather observing system (AWOS) to improve airport access from the air.	$455,000
5	Acquire Land	Acquires additional land to support future development.	$1,430,000
6	Southeast Development Area	Develops ADG I taxilanes, hangars, and associated facilities on newly acquired southeast land parcels.	$1,690,000
		Long-Term Total	**$6,272,500**

Source: Ardurra, 2026

Notes: Project numbers do not reflect priority levels. Material quantities rounded to the nearest thousandth. Cost estimates include design and construction administration, but do not include environmental review.

Figure 5.3 Long-Term Facilities Development Plan



#	Long-Term Improvements
1	Extend Parallel Taxiway, Phase II
2	Decommission Runway 17/35 and Install Grass Landing Strip
3	North Development Area
4	Install AWOS
5	Acquire Land
6	Southeast Development Area

Source: Ardurra, 2026

5.3 POTENTIAL AIRPORT FUNDING SOURCES

Funding sources for airport projects typically include federal, state, local, and private sources. Most often, federal grants from the FAA are used to fund federally eligible projects. Some of the eligible projects may not compete well enough to receive discretionary funding, leaving the Airport to seek alternative funding sources or self-fund the projects. This section identifies some of the more common funding sources for airport projects.

5.3.1 Airport Improvement Program

The Airport Improvement Program (AIP) provides grants for eligible planning and development projects at airports included in the National Plan of Integrated Airport Systems (NPIAS). Eligible projects include those related to airport safety, capacity, security, and environmental. AIP grants may come in the form of nonprimary entitlements (NPE), which is currently set at $150,000 per year for U10; discretionary, which U10 competes with other airports for in the FAA's Northwest Mountain Region; and state apportionment, which is money set aside for the state through the AIP. Local matches are required for AIP grants; for general aviation airports, like U10, the federal match is 90%, requiring 10% of the total project cost be provided by the airport sponsor.

5.3.2 Other Federal Funding Programs

The Infrastructure Investment and Jobs Act (IIJA), signed into law in 2021, provides significant funding for nationwide infrastructure modernization projects, including those at airports. These funds are paid from the U.S. General Treasury, and the local match for airport infrastructure grants (AIG) is the same as the airport sponsor's AIP grant match.

Other sources of funding can be applied for through the U.S Department of Agriculture (USDA) and the U.S. Economic Development Administration (USEDA). The USDA Rural Development program provides financial assistance to rural communities with populations of fewer than 20,000 people. The program's mission is to create economic prosperity and improve the quality of life in rural areas where access to financing is more challenging. Rural Development funding can be used for projects that enhance community infrastructure and spur economic growth by providing quality jobs and attracting new businesses.

Under the Rural Development program is the Community Facilities Program, which issues loans specifically for transportation infrastructure projects. This includes airport development projects such as terminals, hangars, runways, parking areas, roadways, curbside, and administrative facilities. Additionally, USDA Community Facility loans may be used as the local match for FAA funding. The average direct loan size is $4 million, though much larger loans are available. The Community Facilities Program has funded projects costing more than $100 million. The interest rates may be fixed to variable and are determined quarterly and posted publicly. The repayment period is limited to the useful life of the facility or any statutory limitation on the applicant's borrowing authority.

5.3.3 Local Funding

Local funds are those generated by the Airport through leases and user fees, or contributions by the sponsoring agency from general or other funds. Local funds are used to match grants that do not cover 100% of project costs and to fund operating and maintenance costs and administration of the Airport.

5.3.4 Bond Proceeds

Airports can also obtain financing for airport infrastructure projects by issuing bonds. Airport bonds entail leveraging future funding to pay for projects. This financing mechanism enables airport authorities to borrow money up front to finance infrastructure projects. That money can be paid back with interest over a longer period. Airports may qualify for tax-exempt bonds to support airport projects for federal tax purposes because most airports in the U.S. are owned by government agencies. The tax-exempt status enables airports to issue bonds at lower interest rates than taxable bonds, thus reducing a project's financing costs.

5.3.5 Idaho State Grant Programs

The Idaho Airport Aid Program (IAAP) provides discretionary grant funding to Idaho airport owners. Only public entities are eligible to participate, including any county, city, village, or agency designated as such in Idaho Code. IAAP funds are generated through Idaho's aviation fuel taxes—$0.07 per gallon for aviation gasoline and $0.06 per gallon for jet fuel—and are distributed through a Trustee and Benefit program that offers matching funds to municipal governments for public airport improvements.

IAAP allocations are prioritized to address high-need projects and to ensure the most effective use of limited funding. The program's primary goal is to support the orderly development of a statewide airport system and ensure the fair distribution of aviation tax revenue. The IAAP is administered in accordance with Idaho Administrative Code IDAPA 39.04.01, which requires participating airport owners to have a state-approved airport plan (Section 701.01) and protective zoning (Idaho Code Title 67, Chapter 6508, Section q). If these requirements are not met or need updating, IAAP funds may be used to complete or revise them.

In addition to the IAAP, ITD Aeronautics administers two supplementary programs to assist airports. The Airport Maintenance and Safety Supplies Program provides maintenance items such as lamps, light fixtures, and wind cones. The Small Projects Program offers funding—up to $2,000—for emergency needs or unscheduled minor improvements.

The Idaho Department of Commerce also administers several programs that may support airport-related or community economic development projects, including the Idaho Gem Grant (IGG), Community Development Block Grant (CDBG), and Rural Community Investment Fund (RCIF) programs. The IGG program assists rural communities with populations of 10,000 or fewer and must be sponsored by a city, county, or tribal government. Grants of up to $50,000 can be used for private-sector job creation and economic development, including infrastructure to support new businesses and matching funds for eligible projects. The CDBG program is available to Idaho cities and counties with population under 50,000 and supports public facility improvements that enable business expansion and job creation. Finally, the RCIP program provides grants ranging from $50,000 to $500,000 to rural areas with populations under 25,000. Projects must demonstrate a measurable rural benefit and commonly include extending utilities to new business sites or industrial parks. A local match is required, though the amount is flexible.

5.3.6 Private Funding

Private funding for airport improvements typically comes in the form of investors that are intending to make extensive use of the Airport as an airport business or through the development of hangars. Such endeavors may require substantial infrastructure improvements that ultimately benefit the public use portions of the Airport but obligate the investor with a large financial commitment. Financial commitments of this magnitude require long-term agreements between the private entity and the Sponsor to make it attractive for investors.

5.4 REVENUE ENHANCEMENT

Under FAA Grant Assurance 24, Fee and Rental Structure, the Airport Sponsor is required to maintain a fee and rental structure that makes the Airport as self-sustaining as possible under existing circumstances. According to FAA Order 5190.6B, Airport Compliance Manual, fees for aeronautical uses should be fair and reasonable, while fees for non-aeronautical uses should be at fair market value. Charges for non-aeronautical uses at less than fair market value constitute a subsidy of local government and is a prohibited use of airport revenue under Grant Assurance 25, Airport Revenue. Airport sponsors are expected by the FAA to charge police or fire fighting units that operate an aircraft at their airport reasonable fees for aeronautical use; however, airports may offset the value of those services against airport fees (in-kind services). Airport sponsors may reduce rates for certain tenants based on the extent to which they provide benefits to civil aviation, including military tenants, aviation museums, Civil Air Patrol units that operate an aircraft at the airport, and aeronautical education programs by accredited institutions.

Preston Airport's primary revenue sources currently consist of hangar leases and fuel sales from the self-serve Avgas system. The projects identified in the facilities implementation plan will expand revenue potential by adding new hangar lease opportunities. The planned improvements will also include additional local and itinerant tiedown spaces, which offers the Airport an opportunity to establish future aircraft parking fee revenues.

5.5 SUMMARY

The facilities implementation plan provides a phased roadmap for advancing Preston Airport's airside and landside development in alignment with forecast demand, operational needs, and funding availability. Alternative funding sources—along with increased revenue-generating capacity at the Airport—will be essential to the successful implementation of this development program. The projects identified in this plan are intended for planning and programming purposes and do not commit the Airport Sponsors or FAA to construct or fund them; projects that are not financially feasible or justified will not be pursued. By organizing projects into short-, medium-, and long-term horizons, the plan offers a practical framework for prioritizing improvements, maintaining safety and compliance, and supporting the Airport's strategic growth over time.

6

SUSTAINABILITY AND RECYCLING

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CHAPTER SIX

SUSTAINABILITY AND RECYCLING

The purpose of this section is to provide a general overview of sustainability and define the Airport Recycling, Reuse, and Waste Reduction Plan for Preston Airport (U10). This plan is intended to enhance airport recycling and waste minimization efforts and to comply with FAA requirements.

6.1 SUSTAINABILITY

The United Nations established the Brundtland Commission to address the growing concern about the deterioration of natural resources. In its 1987 report, the commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The Airports Council International-North America (ACI-NA) took this approach one step further by stating that sustainability means taking "a holistic approach to managing an airport so as to ensure the integrity of the economic viability, operational efficiency, natural resource conservation, and social responsibility (EONS) of the airport."

Figure 6.1 EONS Approach to Sustainability

Source: Ardurra, 2025

6.1.1 Reasons for Sustainability

Based on these definitions, airports should evaluate how programs and initiatives impact airport users, the surrounding community, and the natural environment and then identify how to best integrate sustainable practices as part of the airport master planning process.

This process will require each airport to consider its particular circumstances and its role in the community as it relates to sustainability in order to set the groundwork for future planning and implementation. Along with improving the community and the natural environment, sustainability makes good business sense. Airports that have adopted sustainable practices have reported tangible benefits that include:

- Greater use of assets.
- Reduced operating and maintenance costs.
- Improved work environment for employees.
- Reduced energy consumption, waste, and emissions.
- Improved water quality.
- Positive community relationships.

6.2 LEGISLATIVE BACKGROUND

The FAA Modernization and Reform Act of 2012 (FMRA) amended Title 49 of United States Code (USC) to include several changes to the Airport Improvement Program (AIP). The two changes related to recycling, reuse, and waste reduction at airports are as follows:

- FMRA Section 132(b) expanded the definition of airport planning to include "developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit."
- FRMA Section 133 added a provision requiring airports that have a master plan, and receive AIP funding, to ensure that the master plan addresses solid waste recycling at the airport. This includes addressing the following issues:
    - The feasibility of solid waste recycling at the airport.
    - Minimizing the generation of solid waste at the airport.
    - Operation and maintenance requirements.
    - Review of waste management contracts.
    - The potential for cost savings or the generation of revenue.

6.2.1 Types of Waste and Landfill Regulations

Landfills and waste are regulated under the Resource Conservation and Recovery Act (RCRA) which defines two main types of waste: solid waste (Subtitle D) and hazardous waste (Subtitle C).[1]

Subtitle D landfills are typically permitted by state and local governments to allow for the management of nonhazardous solid waste such as garbage, refuse, and discarded materials resulting from household and community activities or industrial and commercial operations while Subtitle C landfills are specifically designed to handle hazardous waste.

6.3 TYPES OF AIRPORT WASTE

In general, solid waste from airports can be divided into the following categories:

Municipal Solid Waste

Municipal Solid Waste (MSW) consists of everyday items that are used and then discarded. It includes product packaging, furniture, clothing, bottles, newspapers, and similar items.

Construction and Demolition Waste

Construction and Demolition Waste (C&D) is any non-hazardous materials generated by excavation, construction, demolition, renovation, or repair of structures, roads, and utilities. C&D waste commonly includes concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components. In some instances, C&D waste may be subject to special requirements (e.g., materials containing asbestos).

Compostable Waste

Compostable Waste includes both green waste and food waste. Green waste is also referred to as yard waste and generally consists of trees, shrubs, grass clippings, leaves, weeds, seeds, and similar debris generated by landscaping activities. Food waste is any food that is not consumed and includes food scraps discarded during meal preparation.

Deplaned Waste

Deplaned Waste is trash removed from passenger aircraft and can include bottles, cans, newspapers, magazines, plastic cups and utensils, food waste, and paper towels.

6.3.1 Sources and Pathways of Airport Waste

Each activity has its own set of waste streams that must be considered when implementing a sustainability and recycling program. The following waste streams are typically associated with smaller commercial and GA airports like Preston Airport.[2]

Aircraft

Maintenance of aircraft and ground support equipment produces a variety of waste products that can include grease, oil, universal waste (e.g., batteries), wastewater, plastics, and vehicle waste such as tires and fluids (e.g., brake, transmission, coolant).

Airfield

The airfield, which includes the runways, taxiways, and the infields, generally only produces a few types of waste products. They can include waste produced from aircraft operations, such as rubber from aircraft tires, and green waste from mowing as well as miscellaneous debris from sweeping and plowing.

Airport Construction

Construction activities have the potential to create a large amount of waste. The types of waste products produced typically include concrete, asphalt, building materials, wood, soil, construction equipment waste, miscellaneous debris, and regular trash.

Airport Offices and Pilot Lounges

The types of waste products generated can include paper, toner cartridges, universal waste (e.g., electronics), food, paper, plastics, aluminum cans, and general trash.

Cargo Facilities

Cargo being transported by air is typically loaded and offloaded at the air cargo facility and is often stored temporarily in the warehouse. Waste can include tires, fluids from equipment, universal waste, wooden pallets, plastics, and packing materials.

Terminals

As the heart of any airport complex, the terminal normally has the largest concentration of people, and this usually translates into the biggest concentration of waste. The terminal houses ticket counters, gates, and car rental counters as well as restaurants and restrooms that are frequented by both passengers and people employed at the airport. In addition, the terminal also houses office space and break areas for airline and airport personnel. The types of waste produced at a terminal are just as varied as the types of actives that take place there. Waste products can include food, paper, plastics, bottles and cans, restaurant grease and oil, universal wastes (e.g., batteries and fluorescent bulbs), green waste (e.g., landscaping), general trash, and deplaned waste.

6.4 AIRPORT RECYCLING, REUSE, AND WASTE REDUCTION PLAN

6.4.1 Scope

The content and scope of an airport recycling, reuse, and waste reduction plan varies depending on the unique conditions at each airport. For airports that already have recycling programs, certain tasks (such as a new waste audit) may not be needed.

Document scope is governed by the extent and accuracy of available information. This includes information on the airport's current recycling program, the types and amounts of airport waste, and factors that influence the scope of the program. Plans for small, low activity airports may also be less detailed. Though certain tasks may not need to be completed to prepare a plan, review and documentation of each of the five elements listed in the FMRA is required in airport master plans and master plan updates (including sustainability master plans) (see also 49 U.S.C. § 47106(a) (6)).

This plan only addresses municipal solid waste (MSW), construction and demolition (C&D) materials, and other waste materials that can be legally disposed of in a Subtitle D landfill. It does not address hazardous waste or universal waste (e.g., batteries, fluorescent bulbs, pesticides) because these materials are often subject to federal, state, and local laws with specific disposal and recycling requirements.

In this plan, recycling refers to reducing the amount of solid waste disposed of in a landfill through sustainable practices that include source reduction, reusing materials, or converting waste into reusable material (e.g., mulching, or composting).

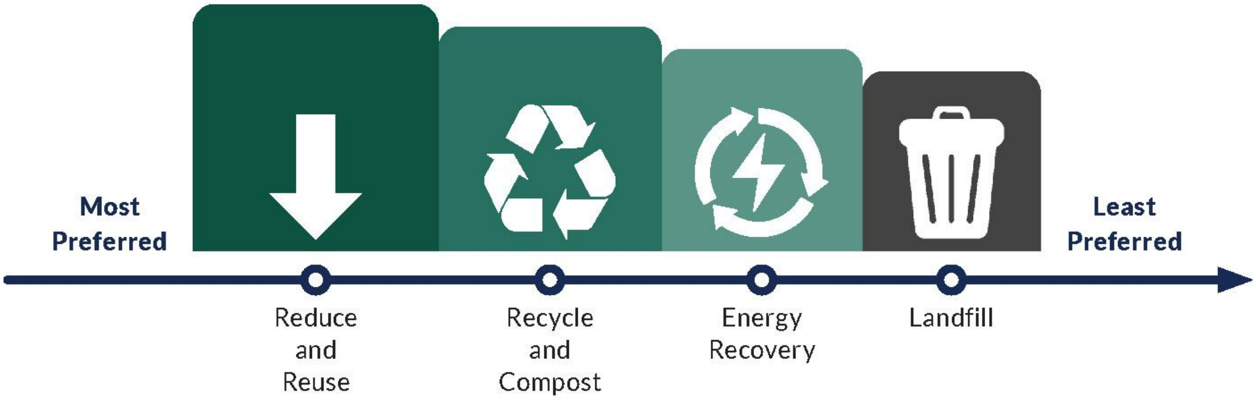
6.4.2 Recycling Feasibility

Preston Airport does not currently generate enough recyclable materials to justify a standalone recycling program. Franklin County is responsible for solid waste collection in the City of Preston. Franklin County Landfill, located approximately 6.5 miles northeast of U10, has a recycling program that accepts cardboard and number one and two plastics.

6.4.3 Plan to Minimize Solid Waste Generation at Preston Airport

The U.S. Environmental Protection Agency (EPA) developed the non-hazardous materials and waste management hierarchy to recognize that no single waste management approach is suitable for managing all materials sand waste streams in all circumstances. This hierarchy ranks the various management strategies from most to least environmentally preferred and places an emphasis on reducing, reusing, recycling, and composting as being vital for sustainable materials management (see Figure 6.2**Error! Reference source not found.**). These strategies reduce greenhouse gas emissions that contribute to climate change.[3]

Figure 6.2 Waste Management Hierarchy



Source: Ardurra, 2025

While effective recycling and waste minimization is a problem faced by every airport, each airport has a unique set of conditions that must be considered as part of its individual recycling and waste minimization program. With this in mind, the FAA compiled a list of ten steps airports can take to design and implement an effective airport recycling and waste minimization program (Table 6.1).

Table 6.1 Effective Airport Recycling and Waste Minimization Programs

Step	Description
1	Commitment from Management
2	Program Leadership
3	Waste Identification
4	Waste Collection and Hauler
5	Waste Management Plan Development
6	Education and Outreach
7	Monitor and Refine
8	Performance Monitoring
9	Promote Success
10	Continuous Improvement

Source: FAA, Recycling, Reuse and Waste Reduction at Airports: A Synthesis Document

Preston Airport will explore the following steps to help minimize solid waste generation:

1. Establish a commitment from management to support a recycling and waste minimization program.
2. Include lease and contract language that supports recycling and waste minimization.
3. Provide containers and space for recycling.
4. Educate airport staff and users about the importance of recycling and waste minimization.

6.4.4 Airport Operations and Maintenance Requirements

The Airport's operations and maintenance requirements were examined in relation to sustainability and how waste is handled at U10.

Aircraft

The amount of aircraft waste usually correlates with the number of operations at the Airport. The person responsible for aircraft and ground support equipment waste varies depending on the owner and who performs the maintenance. Maintenance services are not offered at U10; therefore, airport users are responsible for minor aircraft maintenance and waste. Some waste associated with maintenance is considered hazardous waste and is handled accordingly.

Airfield

This waste stream usually consists of rubber from aircraft tires and green waste from mowing. All airfield maintenance occurs as needed at U10. Between spring and fall, the infields are mowed and bailed every two to three months. Grass near airfield light fixtures is mowed separately, and clippings are left in-place to decompose. Some dirt and grit are removed when snow is plowed from airfield pavements. The snow, along with any accompanying dirt and grit, is pushed, swept, or blown to the infield and other undeveloped areas of the Airport and left to melt. The Airport does not typically need to remove rubber debris from airfield pavements; however, in the rare case pavements need to be swept, the debris is left on the edge of pavement.

Airport Construction

This waste stream increases during warmer months when construction usually occurs. The contractor is contractually responsible for waste associated with airport construction. Contractors are encouraged to reuse materials when possible.

Airport Offices and Pilot Lounges

These waste streams usually consist of solid waste or compostables and are steady throughout the year.

6.4.5 Review of Waste Management Contracts

There are several trash bins located at U10. Waste is collected from the bins and consolidated into a single dumpster where it is picked up weekly by Franklin County and taken to the Franklin County Landfill.

6.4.6 Potential for Cost Savings or Revenue Generation

Currently, there is not enough recyclable material generated at the Airport to produce any significant revenue generation or cost savings.

6.5 SUMMARY

Preston Airport has opportunities to enhance airport sustainability, recycling, and waste minimization at the Airport by establishing formal policies and procedures. One opportunity to enhance sustainability is to reuse C&D materials as much as possible and use locally sourced materials for construction projects.

Any program established at the Airport should include a commitment from management to support sustainability, recycling, education and outreach, setting performance targets, monitoring progress, and seeking continuous improvement. Benefits gained from establishing a recycling and waste minimization program include reduced operating costs, prolonged use of limited landfill space, reduced environmental liability, and improved public perception of the Airport.

ENDNOTES

[1] U.S. Environmental Protection Agency. (2025, June). *Basic Information about Landfills*. Retrieved November 2025, from https://www.epa.gov/landfills/basic-information-about-landfills#whattypes

[2] U.S. Department of Transportation, Federal Aviation Administration: Office of Airports. (2013, April). *Recycling, Reuse and Waste Reduction at Airports: A Synthesis Document*. Retrieved November 2025, from https://www.faa.gov/sites/faa.gov/files/airports/resources/publications/reports/RecyclingSynthesis2013.pdf

[3] U.S. Environmental Protection Agency. (2025, August). *Sustainable Materials Management: Non-Hazardous Materials and Waste Management Hierarchy*. Retrieved November 2025, from https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy

GLOSSARY

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2026 PRESTON AIRPORT MASTER PLAN

GLOSSARY

ABBREVIATIONS, ACRONYMS, AND INITIALISMS

This glossary of was compiled using a variety of sources such as the *Pilot / Controller Glossary*, the *Pilot's Handbook of Aeronautical Knowledge*, and several advisory circulars published by the FAA as well as relevant laws and regulations. It is intended to provide the public with a general understanding of these common aviation terms and is not meant to include the exact technical or legal definition.

A

AAC see aircraft approach category

AAGR average annual growth rate

AATF Airport and Airway Trust Fund

above ground level (AGL) The elevation of a point or surface above the underlying surface.

AC see advisory circular

access road Small airport roads typically used for maintenance, delivery, rescue, and aircraft service vehicles.

ACHP Advisory Council on Historic Preservation

ACIP see Airports Capital Improvement Plan

ACR see aircraft classification rating

ACS see American Community Survey

active aircraft An aircraft registered with the FAA that has been flown at least one hour during the year.

ADAP Airport Development Aid Program

ADG see airplane design group

ADO see airports district office

ADS–B see automatic dependent surveillance–broadcast

advisory circular (AC) Publications issued by the FAA to help explain regulations, best practices, or other information useful to the aviation community.

AEDT see Aviation Environmental Design Tool

AGL see above ground level

AIP see Airport Improvement Program

air taxi On-demand, unscheduled flights typically offered for sightseeing purposes or on a chartered basis as well as mail or cargo delivery. (see Part 135)

air traffic control (ATC) A service provided by ground-based personnel to help guide pilots and provide for the safe and orderly flow of aircraft in congested airspace.

aircraft Any device intended to be used for flight such as an airplane, airship, drone, glider, or helicopter.

aircraft approach category (AAC) A method of grouping aircraft based on the speed they travel when configured for landing, typically 1.3 times the stall speed. The AAC of the critical aircraft is often used to determine design standards. In general, aircraft with slower approach speeds require smaller facilities and those with faster approach speeds require larger facilities.

aircraft classification rating (ACR) A number that expresses the effect an aircraft has on a given configuration of pavement and the underlying components based on its weight and configuration (e.g., tire pressure and type of landing gear).

aircraft operation A landing, takeoff, or touch-and-go procedure conducted by an aircraft on a runway.

aircraft rescue and fire fighting (ARFF) A special category of fire fighting that involves incident response, hazard mitigation, evacuation, and rescue of passengers and crew of an aircraft involved in aviation accidents and incidents.

airfield The portion of an airport that contains the facilities necessary for aircraft operations such as runways and taxiways.

airline transport pilot (ATP) The type of certification required to fly chartered and commercial flights.

airplane design group (ADG) A method of classifying aircraft based on wingspan and tail height.

airport beacon A lighted navigation aid indicating the location of the airport. Also referred to as a rotating beacon.

airport elevation The highest point of an airport's usable runways. Typically measured in feet above mean sea level (MSL).

Airport Improvement Program (AIP) The program used by the FAA to provide grants for the planning and development of public-use airports included in the National Plan of Integrated Airport Systems (NPIAS).

airport layout plan (ALP) A scaled drawing or set of drawings of both current and planned airport facilities.

airport master plan A comprehensive study of an airport that usually describes the short-term, medium-term, and long-term development plans for meeting future aviation demand.

airport obstruction chart (AOC) A scaled drawing showing airport obstruction information, Federal Aviation Regulation (FAR) Part 77 surfaces, runways, taxiways, navigation facilities, buildings, roads, and other details in the vicinity of an airport. It provides data necessary for computing maximum takeoff and landing weights, establishing instrument approach and departure procedures, and planning airport facility improvements.

airport operations area (AOA) All areas of the airport located inside the airport security perimeter fence.

airport reference code (ARC) A designation that indicates the preferred design criteria based on the approach speed and wingspan or tail height of the critical design aircraft. It is essentially a combination of two components. The first component is the aircraft approach category (AAC) which is depicted by a letter. The second component is the airplane design group (ADG) which is depicted by a Roman numeral.

airport reference point (ARP) The approximate center of all usable runways at the airport.

airport sponsor The entity that is legally and financially responsible for the management and operation of an airport. An airport sponsor is typically a public agency such as a city or county.

Airports Capital Improvement Plan (ACIP) The primary planning tool used by the FAA for identifying and prioritizing critical airport development for the National Airspace System. It also serves as the basis for the distribution of grant funds under the Airport Improvement Program (AIP).

airports district office (ADO) The local office of the FAA that coordinates planning and construction projects.

airside Facilities and areas located at an airport that support aircraft activities (e.g., runways, hangars, NAVAIDS).

ALP see airport layout plan

ALS see approach light system

American Community Survey (ACS) An ongoing survey conducted by the U.S. Census Bureau that includes a variety of socioeconomic data.

annual service volume (ASV) The maximum number of annual operations an airport could reasonably accommodate with an acceptable level of delay.

AOA see airport operations area

AOC see airport obstruction chart

approach light system (ALS) A type of visual navigation aid that helps pilots locate the runway as they transition from instrument flight to visual flight. The sophistication and configuration of the approach light system varies based on the type of runway and approach available.

approach surface An imaginary three-dimensional surface, which is longitudinally centered on the extended runway centerline, that begins 200 feet from the approach-end of the runway and extends outward and upward. The slope and size vary based on the type of runway and approach available. (see Part 77)

apron An area at an airport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. Also referred to as a ramp.

ARC see airport reference code

area navigation (RNAV) A method of navigation that permits aircraft operations on any flight path within the coverage area of ground-based or space-based navigation aids or within the limits of self-contained navigation aids.

ARFF see aircraft rescue and fire fighting

ARP see airport reference point

ARPA American Rescue Plan Act

ASOS see automated surface / weather observing system

ASV see annual service volume

ATC see air traffic control

ATCT airport traffic control tower

ATP see airline transport pilot

automated surface / weather observing system (ASOS / AWOS) Weather reporting system that provides surface weather observations every minute via digitized voice broadcasts and printed reports.

Automatic Dependent Surveillance–Broadcast (ADS–B) Equipment on an aircraft that determines its position via satellite navigation or other sensors and periodically broadcasts it so can be tracked by air traffic control.

avgas see aviation gasoline

Aviation Environmental Design Tool (AEDT) A software system used by the FAA to estimate aircraft fuel consumption, emissions, noise, and impacts to air quality.

aviation gasoline (avgas) The type of fuel used in small aircraft within the general aviation community. The two main types are avgas 100 and a low-lead version called avgas 100LL.

avigation easement An easement that permits the operation of aircraft in the airspace above a property and restricts the height of structures, trees, and other objects that could affect the safe movement of aircraft above the easement area.

AWOS see automated surface / weather observing system

B

based aircraft Operational and airworthy aircraft based at an airport for the majority of the year.

BGEPA Bald and Golden Eagle Protection Act

BLM Bureau of Land Management

BMP best management practices

building restriction line (BRL) A line on the airport layout plan identifying suitable building area locations at airports.

BVLOS beyond visual line of sight

C

C & D construction and demolition

CAA Clean Air Act

CAGR compound annual growth rate

capital improvement plan (CIP) A community planning and fiscal management tool used to coordinate the timing and financing of capital improvement projects for a multi-year period.

CARES Coronavirus Aid, Relief, and Economic Security Act

categorical exclusion (CATEX) Documents when a proposed action can be categorically excluded from a detailed environmental analysis because it meets certain criteria that a federal agency has previously determined as normally having no significant environmental impact. (see NEPA)

CDBG Community Development Block Grant Program

CEQ Council on Environmental Quality

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

CFI certified flight instructor

CFR Code of Federal Regulations

CIP see capital improvement plan

cockpit to main gear distance (CMG) The distance from the pilot's eye to the main gear turn center.

commercial service airport Publicly owned airports with scheduled passenger service that have at least 2,500 passenger enplanements per calendar year.

common traffic advisory frequency (CTAF) The VHF radio frequency used for air-to-air communications at non-towered airports or at airports when the control tower is not operating.

commuter operations Typically shorter flights provided by small, boutique airlines offered on a limited schedule basis. Commuter airlines operate according to published flight schedules with at least five round trips per week.

conical surface An imaginary three-dimensional surface that encircles the horizontal surface and extends outward for 4,000 feet and upward at a slope of 20 to 1. (see Part 77)

controlled airspace The area in which some or all aircraft may be subject to air traffic control to promote safe and expeditious flow of air traffic.

CPI Consumer Price Index

critical design aircraft The most demanding type of aircraft (or group of aircraft with similar characteristics) that make regular use of the airport. Regular use is defined as 500 annual operations.

crosswind A wind that is not parallel to a runway centerline or to the intended flight path of an aircraft.

crosswind component A wind component that is at a right angle to the longitudinal axis of the runway or the flight path of the aircraft.

crosswind runway An additional runway built parallel to the direction of the prevailing crosswinds to make it safer for small aircraft to land when strong crosswinds made landing on the primary runway difficult.

CRRSAA Coronavirus Response and Relief Supplemental Appropriation Act

CTAF see common traffic advisory frequency

CWA Clean Water Act

D

day-night average sound level (DNL) The standard metric used to reflect a person's cumulative exposure to sound for an average 24-hour period based on an airport's annual aircraft operations. To account for a higher sensitivity to noise exposure at night, DNL calculations add a penalty of ten decibels for flights occurring between 10 p.m. and 7 a.m.

DBE disadvantaged business enterprise

decibel (dB) Sound is measured in units called decibels. The higher the decibel level, the louder the noise.

DEQ Department of Environmental Quality

distance measuring equipment (DME) An electronic navigation system that indicates the number of nautical miles between an aircraft and a ground station or waypoint.

DNL day-night equivalent sound level

DOT Department of Transportation

DW dual wheel type landing gear (see landing gear)

E

effective runway gradient The difference between the highest and lowest elevations of the runway centerline divided by the runway length.

environmental assessment (EA) Determines whether or not a federal action has the potential to cause significant environmental effects. (see NEPA)

environmental impact statement (EIS) Determines if a major federal action will significantly affect the quality of the human environment. The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an EA. (see NEPA)

EPA Environmental Protection Agency

ESA Endangered Species Act

F

FAA see Federal Aviation Administration

FAAP Federal-Aid Airport Program

FAR Federal Aviation Regulation

FBO see fixed base operator

FCT federal contract tower

Federal Aviation Administration (FAA) The branch of the U.S. Department of Transportation responsible for the development of airports and the National Airspace System.

FEMA Federal Emergency Management Agency

Finding of No Significant Impact (FONSI) A public decision document that briefly describes why the project will not have any significant environmental effect and will not require the preparation of an environmental impact statement. (see NEPA)

FIRM flood insurance rate map

fixed base operator (FBO) A business that operates at an airport and provides a wide range of services. These services are typically aimed at general aviation customers and can include aircraft fueling, parking, servicing, charter flights, aircraft rentals, maintenance, hangar rentals, flight instruction, pilot lounge, conference room facilities, car rental arrangements, and more.

fleet mix The types of aircraft that frequent an airport and that need to be considered when planning airport facilities.

flight plan Information relating to the intended flight of an aircraft that is filed electronically, orally, or in writing with air traffic control.

FONSI see finding of no significant impact

FPPA Farmland Protection Policy Act

fuel flowage fee The fee charged by an airport for each gallon of fuel sold or dispensed on airport property to help recover the cost of operating and managing the airport.

FFY fiscal year

G

GA see general aviation

GAMA General Aviation Manufacturers Association

GDP gross domestic product

general aviation (GA) The segment of aviation that encompasses all aspects of civil aviation except certified air carriers and other commercial operators such as airfreight carriers.

general aviation airport A public airport that has less than 2,500 passenger enplanements per calendar year. These airports typically support personal and business aircraft, medical flights, aerial fire fighting, law enforcement, disaster relief, provide access to remote communities, and more.

geographic information system A computer system for developing maps connected to all types of data and are used to manage, analyze, and visualize that data in relation to its location. At airports, these types of smart maps are often used to help manage airport infrastructure such as runway pavements, signage, or utilities.

GHG greenhouse gas

GIS see geographic information system

glideslope (GS) Part of the instrument landing system that provides vertical guidance to aircraft by projecting a radio beam upward at an angle of approximately three degrees from the approach end of a runway.

global positioning system (GPS) A navigation system that uses satellites rather than ground-based transmitters to determine location information.

ground support equipment Vehicles and equipment used to service aircraft between flights. This can include services such as refueling, loading luggage and freight, transporting passengers, refreshing lavatories, and deicing.

GS see glideslope

GSE see ground support equipment

H

hangar A building used to store aircraft.

HIRL high-intensity runway lights (see runway edge lighting system)

horizontal surface An imaginary surface located 150 feet above the established airport elevation that encircles the primary surface. The size of the horizontal surface is based on the type of runway and approach available. Federal Aviation Regulation Part 77 establishes standards and requirements for objects affecting navigable airspace. (see Part 77)

I

IAAP Idaho Airport Aid Program

IAP see instrument approach procedure

IASP Idaho Airport System Plan

IFR conditions When weather conditions have significantly reduced visibility making it unsafe to pilot an aircraft under flight visual flight rules.

IFR see instrument flight rules

IGG Idaho Gem Grant Program

IIJA Infrastructure Investment and Jobs Act (Also known as the bipartisan infrastructure law or BIL.)

ILS see instrument landing system

IMC see instrument meteorological conditions

instrument approach procedure (IAP) A series of predetermined maneuvers pilots use to align their aircraft with the runway when flying under IFR in low visibility conditions.

instrument flight rules (IFR) Rules and regulations established by the Federal Aviation Administration to govern flight using electronic navigation during conditions in which flight by visual reference is not safe.

instrument landing system (ILS) An electronic system used by pilots when conducting a precision instrument approach procedure that provides both horizontal and vertical guidance to a specific runway. The system is often comprised of multiple components with guidance information provided by a localizer or glideslope, distance information provided by a marker beacon or distance measuring equipment, and visual information provided by approach lights, touchdown and centerline lights, or runway lights.

instrument meteorological conditions (IMC) Weather conditions that require pilots to fly under instrument flight rules rather than visual flight rules.

IPaC Information, Planning and Conservation

ITB Idaho Transportation Board

ITD Idaho Transportation Department

itinerant operations Flights that originate or terminate at different airports.

K

KIAS knots of indicated airspeed

knot A unit of speed equal to one nautical mile per hour.

L

landing gear Any part of an aircraft used for landing. Typical landing gear configurations include single wheel (SW), dual wheel (DW), triple wheel (TW), and quadruple wheel (QW) configurations which can also be repeated in tandem.

large aircraft Any aircraft with a maximum takeoff weight (MTOW) of more than 12,500 pounds.

lateral navigation (LNAV) Azimuth (i.e. directional) navigation without vertical navigation.

Light Sport Aircraft (LSA) A small, lightweight aircraft that is relatively simple to fly with a maximum gross takeoff weight of 1,320 pounds and a maximum of two seats.

LIRL see low-intensity runway lights (see runway edge lighting system)

LNAV see lateral navigation

LOC see localizer

local operations Flights taking place within the local traffic pattern, the airport line of sight, the local practice area, or those that execute simulated instrument approaches or low passes at the airport.

localizer (LOC) A navigational aid that is one component of instrument landing systems. It transmits signals that aircraft interpret and display on the cockpit indicator to guide the pilot until the runway is in sight.

localizer performance with vertical guidance (LPV) A type of approach that takes advantage of the refined accuracy of wide area augmentation system (WAAS) lateral and vertical guidance.

LSA see light sport aircraft

M

main gear width The distance from outer edge to outer edge of the widest set of main gear tires.

MALSR medium-intensity approach lighting system with runway alignment indicator lights

markings Paint applied to runways, taxiways, holding positions, and other airport surfaces to help pilots and operators of ground support equipment while maneuvering within the movement area.

master plan see airport master plan

maximum takeoff weight (MTOW) The maximum weight for an aircraft at which the pilot is allowed to attempt to take off due to structural or other limits.

MBTA Migratory Bird Treaty Act

MDA see minimum descent altitude

mean sea level (MSL) The average height of the surface of the sea for all stages of tide.

MGW see main gear width

minimum descent altitude (MDA) The minimum altitude a pilot is authorized to descend to on a non-precision approach.

MIRL medium-intensity runway lights (see runway edge lighting system)

MITL medium-intensity taxiway lights

movement area The runways, taxiways, and other areas of an airport used by aircraft for taxiing, takeoff, and landing that are under the control of an air traffic control tower. It does not include non-movement areas such as those used for loading, refueling, parking, or maintenance.

MSA metropolitan statistical area

MSL see mean sea level

MSW municipal solid waste

MTOW see maximum takeoff weight

N

NAAQS national ambient air quality standards

National Airspace System (NAS) The common network of U.S. airspace. It consists of air navigation facilities, equipment and services, airports or landing areas; aeronautical charts and technical information; and rules, regulations, and procedures.

National Environmental Policy Act (NEPA) Federal legislation requiring federal agencies to assess and document the environmental effects of their proposed actions prior to making decisions. Depending on the severity of the impact, these documents are referred to as a categorical exclusion, an environmental assessment, or an environmental impact statement.

National Plan of Integrated Airport Systems (NPIAS) An inventory of all existing and proposed commercial service airports, reliever airports, and selected public-owned general aviation airports. In addition to discussing the roles these airports currently serve, the NPIAS is used by the FAA in administering the Airport Improvement Program (AIP). It is updated by the FAA every two years.

nautical mile (NM) The most common measurement used for distance in aviation. A nautical mile is slightly longer than a land-measured mile (i.e., statute mile) and is equal to approximately 1.151 statute miles or 6,076 feet.

nautical mile per hour The most common measurement for aircraft speed. One knot is approximately 1.151 miles per hour.

NAVAID see navigation aid

navigable airspace The airspace at or above minimum altitudes of flight that includes the airspace needed to ensure safety in the takeoff and landing of aircraft.

navigational aid (NAVAID) Any facility used for the purpose of guiding or controlling flight such as lighting systems; signaling, radio direction-finding, or other electronic communication devices; or any other facility with a similar purpose.

NEPA see National Environmental Policy Act

NHPA National Historic Preservation Act

NOAA National Oceanic and Atmospheric Administration

noise contour A map showing how noise exposure can vary over extended areas. They are useful for identifying areas exposed to significant aircraft noise surrounding an airport.

nonprecision approach A standard instrument approach procedure in which only horizontal guidance is provided.

notice to air missions (NOTAM) A notice containing information essential to pilots or other personnel concerned with flight operations that is not known far enough in advance to be publicized by other means.

NPDES National Pollutant Discharge Elimination System

NPIAS see national plan of integrated airport systems

NPS National Park Service

NRCS Natural Resources Conservation Service

NRHP National Register of Historic Places

NTSB National Transportation Safety Board

NWI national wetlands inventory

NWS National Weather Service

O

O & M operations and maintenance

object free area (OFA) An area centered on a runway, taxiway, or taxilane centerline that is free of objects except those required for air navigation or aircraft ground maneuvering purposes.

obstacle free zone (OFZ) The airspace below 150 feet located along the runway and extended runway centerline that is required to be clear of all objects except those required for air navigation or aircraft ground maneuvering purposes.

obstruction An object that penetrates any imaginary surface described in Federal Aviation Regulation Part 77. Obstructions are presumed to be hazards to air navigation until an FAA study has determined otherwise. (see Part 77)

OFA see object free area

OFZ see obstacle free zone

OPBA operations per based aircraft

operation see aircraft operation

Operations Network (OPSNET) The official FAA source for air traffic operations and delay data.

P

PAPI see precision approach path indicator

parallel taxiway A taxiway that runs parallel to a runway.

Part 135 The FAA grants the authority to operate on-demand, unscheduled air service in the form of Part 135 certificates. Air carriers authorized to operate with a 135 certificate provide a critical service to passengers and often provide a lifeline to remote populations. Part 135 is the term most people use when referring to Title 14 of the Code of Federal Regulations (CFR), Part 135, *Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft*.

Part 139 Airports that meet certain requirements must have an airport operating certificate issued by the FAA. It is commonly associated with commercial service airports. Part 139 is the term most people use when referring to Title 14 of the Code of Federal Regulations (CFR), Part 139, *Certification of Airports*.

Part 77 Establishes standards and requirements for objects affecting navigable airspace. Objects are considered to be obstructions when they exceed certain heights or penetrate the imaginary surfaces described within Part 77 including the approach surface, conical surface, horizontal surface, primary surface, and the transitional surface. Part 77 is the term most people use when referring to Title 14 of the Code of Federal Regulations (CFR), Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*.

pavement classification rating (PCR) A number that expresses the carrying capacity of a pavement for unrestricted operations.

PCI pavement condition index

PCR pavement classification rating

peak hour The busiest hour in a day. It is also known as the design hour because this information is used to determine if airport facilities are capable of accommodate existing and forecasted demand.

PMP pavement management program

precision approach A standard instrument approach procedure in which both vertical and horizontal guidance is provided.

precision approach path indicator (PAPI) A row of lights normally installed on the left side of a runway that provides visual guidance during an approach to the runway. A pilot on the correct glideslope path will see two white lights and two red lights.

primary surface An imaginary surface longitudinally centered on a runway. The specific dimensions of the primary surface is dependent on the type of runway. Federal Aviation Regulation Part 77 establishes standards and requirements for objects affecting navigable airspace. (see Part 77)

R

ramp see apron

RCRA Resource Conservation Recovery Act

RDC see runway design code

regional jet A commercial jet that typically carries fewer than 100 passengers.

REIL see runway end identifier lights

RNAV see area navigation

ROFA runway object free area (see object free area)

ROFZ runway obstacle free zone (see obstacle free zone)

rotating beacon see airport beacon

runway (RW) A defined rectangular area at an airport designated for landing and takeoff.

runway design code (RDC) The design standards that apply to a particular runway based on the type of aircraft that will be using the runway.

runway direction number A number indicating the orientation of the runway centerline when measured clockwise from magnetic north.

runway edge lighting system A visual navigation aid used to outline the edges of a runway during periods of darkness or restricted visibility conditions. These systems are classified according to the intensity or brightness they are capable of producing which include high-intensity runway lights (HIRL), medium-intensity runway lights (MIRL), and low-intensity runway lights (LIRL). HIRL and MIRL systems typically have variable intensity controls while LIRL systems normally have only one intensity setting.

runway end identifier lights (REIL) A pair of synchronized flashing lights located on each side of the runway threshold to aid pilots in identifying the approach end of a runway.

runway orientation The magnetic bearing of the runway centerline.

runway protection zone (RPZ) A trapezoidal area located at the end of a runway that is centered on the extended runway centerline. It should be kept clear of incompatible uses and activities to enhance the protection of people and property. The dimensions of the RPZ varies based on the type of runway and approach available.

runway safety area (RSA) A defined surface surrounding the runway that is typically 500 feet wide and extending 1,000 feet beyond each runway end that should be kept cleared, graded, free of potential hazards or objects except those required to be located within the RSA.

runway threshold The designated beginning of a runway. The term threshold always refers to landing rather than takeoff.

RVR runway visual range

RW see runway

S

segmented circle A system of markers used by pilots to identify the aerial traffic pattern when flying under visual flight rules (VFR).

SHPO state historical preservation office

SIDA security identification display area

small aircraft Any aircraft with a maximum takeoff weight (MTOW) of 12,500 pounds or less.

socioeconomic Information relating to the interaction of social and economic factors.

statute mile The formal or legal name given to the land-measured mile to distinguish it from a nautical mile. A statute mile is equal to 5,280 feet.

SW single wheel type landing gear (see landing gear)

T

2D two dual wheels in tandem type landing gear (see landing gear)

T-hangar An aircraft hangar in which aircraft are parked tail to tail in the T-shaped space left by the other aircraft.

TAC technical advisory committee

TAF see terminal area forecast

taxilane Areas intended for low speed and precise movement of aircraft that allow aircraft to safely access taxiways and taxiway connectors from non-movement areas.

taxiway design group (TDG) A method of classifying aircraft based on the dimensions of the main gear width (MGW) and cockpit to main gear distance (CMG).

taxiway / taxilane safety area (TSA) A defined surface located alongside the taxiway prepared and suitable for reducing the risk of damage to an aircraft unintentionally departing the taxiway.

taxiway / taxiway connector Defined paths that allow aircraft to safely and efficiently get to and from the runway without interfering with takeoffs or landings.

TDG see taxiway design group

Terminal Area Forecast (TAF) The official FAA forecast of aviation activity for all U.S. airports included in the National Plan of Integrated Airport Systems (NPIAS).

TFMSC see traffic flow management system counts

THPO tribal historical preservation office

threshold lights A series of lights located at a runway threshold that emit green light outward from the runway and emit red light toward the runway to mark the ends of the runway.

tiedowns Aircraft parking positions with fixed anchor points for securing aircraft.

TODA takeoff distance available

TOFA taxiway / taxilane object free area (see object free area)

TORA takeoff run available

touch-and-go A maneuver in which a pilot lands the aircraft and then departs without coming to a complete stop or exiting the runway. These are typically performed to build piloting skills and expertise.

touchdown The point at which an aircraft first makes contact with the landing surface.

touchdown zone The first 3,000 feet of a runway intended to be where a landing aircraft first makes contact with the landing surface.

Traffic Flow Management System Counts (TFMSC) An FAA database that provides information on traffic counts for flights operated under instrument flight rules (IFR) and flights detected by the National Airspace System, usually via RADAR.

transient operations Flights performed by aircraft not based at the airport.

transitional surface An imaginary surface that extends outward and upward from the primary and approach surfaces at right angles to each of the runway centerlines at a slope of seven feet horizontally for each foot vertically. The transitional surface ends where it meets the horizontal surface at an elevation of 883 feet. (see Part 77)

Transportation Security Administration (TSA) The federal agency that regulates aviation security and operates airport screening checkpoints.

TSA see taxiway or taxilane safety area

TW see taxiway or taxiway connector

U

USACE U.S. Army Corps of Engineers

USC United States Code

USDA U.S. Department of Agriculture

USFS U.S. Forest Service

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

utility runway A runway that is intended to be used by aircraft with a maximum gross weight of 12,500 pounds or less.

V

VASI see visual approach slope indicator

very high frequency omnidirectional range (VOR) A ground-based NAVAID aligned with magnetic north that transmits azimuth information for high and low altitude routes and airport approaches.

very high frequency omnidirectional range / tactical air navigation (VORTAC) A navigation aid consisting of both a very high frequency omnidirectional range (VOR) and tactical air navigation (TACAN) that transmits both azimuth and distance information to aircraft.

VFR see visual flight rules

VHF very high frequency

visual approach An air traffic control authorization for an aircraft on an IFR flight plan to proceed to the airport and make an approach using visual references rather than an instrument approach.

visual approach slope indicator (VASI) A type of approach light system normally installed on the left side of a runway that provides visual guidance during an approach to the runway. A pilot on the correct glideslope path will see a set of red lights over a set of white lights.

visual flight rules (VFR) Rules and regulations established by the Federal Aviation Administration to govern flight using visual reference.

visual meteorological conditions (VMC) Weather conditions expressed in terms of visibility, distance from clouds, and ceiling equal to or better than specified minimum during which flight under visual flight rules (VFR) is permitted.

visual runway A runway intended solely for the operation of aircraft using visual approach procedures.

VMC see visual meteorological conditions

VNAV vertical navigation

VOR see very high frequency omnidirectional range

VOR-DME When the very high frequency omnidirectional range (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.

VORTAC see very high frequency omnidirectional range / tactical air navigation

W

wide area augmentation system (WAAS) An extremely accurate navigation system developed for civil aviation.

wind cone or windsock A fabric cone tube resembling a giant sock that is used as a basic indicator of wind direction and strength.

wind rose A diagram showing wind direction, strength, and frequency for a particular location.

A

FORECAST APPROVAL

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Helena Airports District Office
2725 Skyway Dr., Suite 2
Helena, MT 59602

December 12, 2024

Mr. Robert C. Swainston, Commissioner
Franklin County Board of Commissioners
39 W Oneida St
Preston, ID 83263

Preston Airport (U10)
Preston, ID
Forecast Approval Letter

Dear Commissioner Swainston:

The Federal Aviation Administration (FAA) approves the forecast scenario through planning year ten (2033) in the Preston Airport Layout Plan (ALP) Update with Narrative Report. We found the forecast to be generally consistent with the 2023 TAF and FAA Aerospace Forecast. It uses current data and supported by generally accepted forecasting methodologies. This letter serves as the FAA approval of the forecast and critical aircraft determination summarized in Chapter Two: Aviation Forecasts of the Narrative Report.

	Base Year	**Forecast Years**			**Compound Annual Growth Rate**		
	2023	2028	2033	2043	5-Year	10-Year	20-Year
Aircraft Operations							
Itinerant	4,870	5,194	5,519	6,330	1.3%	1.3%	1.3%
Local	1,943	2,073	2,202	2,526	1.3%	1.3%	1.3%
Total Operations	**6,813**	**7,267**	**7,721**	**8,856**	**1.3%**	**1.3%**	**1.3%**
Based Aircraft							
Single-Engine	29	31	32	37	1.3%	1.1%	1.2%
Multi-Engine	0	0	1	1	0.0%	-	-
Helicopter	1	1	1	1	1.3%	1.3%	1.3%
Total Based Aircraft	**30**	**32**	**34**	**39**	**1.3%**	**1.3%**	**1.3%**

The FAA also approves protection for A-I (Small) aircraft as the existing and ultimate critical aircraft. While this approval and subsequent ALP protects for these airport design standards, all future development will need to be justified by current activity levels at the time of proposed implementation of any infrastructure reconstruction or construction. We found the forecast to be supported by reasonable planning assumptions and current data and developed using acceptable forecasting methodologies.

The approval of the forecast does not automatically constitute a commitment on the part of the United States to participate in any development recommended in this airport planning study or shown on the ALP. FAA approval of the forecast scenario in this forecast does not constitute justification for future projects.

Justification for future projects will be made based on activity levels at the time the project is requested for development, in accordance with criteria in FAA Orders 5090.5 and 5100.38. Documentation of actual activity levels meeting planning activity levels will be necessary to justify AIP funding for eligible projects. Further, the approved forecast may be subject to additional analyses if the fundamental rationale of the forecast or the critical aircraft changes materially.

If you have questions, please call me at 406-441-5246.

Sincerely,

Jennifer Schildgen

Jennifer Schildgen
Community Planner
Helena ADO

Cc: Dirk Bowles
Jessica Krueger
Steffen Verdin

B

ENVIRONMENTAL OVERVIEW

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APPENDIX B

ENVIRONMENTAL OVERVIEW

This appendix presents environmental considerations and factors pertinent to the long-term planning of the Preston Airport (U10). The information is compiled from numerous sources, notably from multiple federal and Idaho state agencies.

B.1 INTRODUCTION

The purpose of considering environmental factors in airport master planning is to help the airport sponsor evaluate potential development alternatives and expedite future environmental evaluations. Airport planning provides the basis for a project's purpose and need and aids in completing an environmental evaluation to fulfill requirements set forth by the National Environmental Policy Act (NEPA) of 1969.

The NEPA process evaluates the environmental effects of a federal undertaking, including its alternatives. There are three (3) levels of analysis: categorical exclusion (CATEX) determination; preparation of an environmental assessment / finding of no significant impact (EA / FONSI); and preparation of an environmental impact statement (EIS).

- CATEX: An undertaking may be categorically excluded from a detailed environmental analysis if it meets certain criteria that a federal agency has previously determined as normally having no significant environmental impact.
- EA / FONSI: At the second level of analysis, a federal agency prepares an EA to determine if a federal undertaking would significantly affect the environment. If the answer is no, the agency issues a FONSI, which may include measures to mitigate potentially significant impacts.
- EIS: If the EA determines that the environmental consequences of a proposed federal undertaking may be significant, an environmental impact statement (EIS) is prepared. An EIS is a more detailed evaluation of the proposed action and alternatives.

B.2 AIR QUALITY

The Clean Air Act (CAA) is the primary federal statute governing air quality and air pollution. The CAA regulates air pollutant emissions from stationary and mobile sources and authorizes the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for six pollutants, called criteria pollutants. The criteria pollutants include carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO2), ozone (O3), particle pollution (PM-10 and PM-2.5), and sulfur dioxide (SO2).[1] Areas where concentrations of criteria pollutants are below (i.e., within) the threshold levels are designated as "attainment" areas. Areas where concentrations of criteria pollutants are above the threshold levels are designated as "nonattainment" areas. Areas with prior nonattainment status that have since transitioned to attainment are designated as attainment areas with a maintenance plan, also referred to as "maintenance" areas.

According to the EPA Nonattainment and Maintenance Area Dashboard, U10 is in an area that is in attainment for all six criteria pollutants.[2] The Idaho Department of Environmental Quality (DEQ) is the state agency delegated by the EPA to issue air quality permits.[3] Temporary air quality impacts during construction would be short-term and localized. To minimize air quality impacts, recommended emission reduction strategies include re-using materials onsite, using locally sourced materials to reduce the vehicle trips and trip distances, and adopting dust control measures during construction.

B.3 BIOLOGICAL RESOURCES

Section 7 of the Endangered Species Act (ESA) applies to the actions proposed or performed by federal agencies and sets forth requirements to determine if the proposed action(s) may impact endangered or threatened species. In accordance with Section 7 of the ESA, the FAA must initiate consultation with the U.S. Fish and Wildlife Service (USFWS) and / or National Marine Fisheries Service (NMFS) if the FAA determines that an action may affect a threatened or endangered species or designated critical habitat.

B.3.1 Threatened, Endangered, or Candidate Species

The USFWS Information, Planning and Conservation (IPaC) online system[4] provides information regarding federally designated proposed, candidate, threatened, and endangered species, final critical habitats, species of conservation concern, and service refuges that may occur in an identified area or may be affected by proposed activities.

The IPaC Report identified the ESA-listed threatened Ute Ladies'-tresses (*Spiranthes diluvialis*) and ESA candidate monarch butterfly (*Danaus plexippus*) as species that may occur at U10 or in its vicinity. The IPaC Report did not identify any critical habitats or wildlife refuge lands at U10.

In accordance with FAA AC 150 / 5200-33C, *Hazardous Wildlife Attractants on or near Airports*[5] and FAA CertAlert No. 98-05, *Grasses Attractive to Hazardous Wildlife*,[6] U10 is actively managed to deter wildlife and control vegetation. The developed areas at U10 have been graded, paved, or contain airport infrastructure, while the undeveloped areas surrounding the airfield and airfield facilities contain regularly mowed low-lying grasses and forbs. Two intermittently flowing drainages exist within the eastern and western sides of U10. Both drainages provide wildlife habitat and are lined with various herbaceous vegetation, shrub, and tree plant communities. Refer to *Section B.18 Water Resources* for more information on these drainage features.

Ute Ladies'-tresses

Ute Ladies'-tresses is a perennial herb that is known to occur in moist meadows and floodplains associated with perennial stream terraces, oxbows, lakeshores, and sub-irrigated or spring-fed abandoned stream channels and valleys at elevations between 4,300-6,850 feet.[7] At an elevation of 4,728 feet, U10 is within the elevation where Ute Ladies'-tresses could occur in Idaho. However, U10 does not contain moist meadows, is not within a floodplain of a perennial stream, and does not contain oxbows or lakeshores. U10 contains two drainages, but they only flow intermittently and are not sub-irrigated or spring-fed. In summary, U10 does not contain viable habitat for this species and the Ute Ladies'-tresses is unlikely to occur within the property.

Monarch butterfly

As an ESA candidate species, consultation with USFWS under Section 7 of the ESA is not required for the monarch butterfly; however, USFWS encourages agencies to take advantage of any opportunities to conserve the species.[8] Key monarch butterfly habitats are prairies, grasslands, roadsides, and wetlands with high-density milkweed stands. Its diet consists of milkweed leaves during the larval caterpillar phase and nectar from a wide range of blooming native plants as adults.[9] Undeveloped areas associated with the two intermittent drainages within U10 contain herbaceous vegetation, shrubs, and trees. These drainages and similar undeveloped areas within U10 have the potential to contain milkweed and may contain suitable habitat for the monarch butterfly.

B.3.2 Migratory Birds

Migratory birds are protected by the Migratory Bird Treaty Act (MBTA), and the bald eagle and golden eagle are further protected by the Bald and Golden Eagle Protection Act (BGEPA). The MBTA prohibits the taking (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.[10] The BGEPA prohibits the taking of bald or golden eagles, including their parts, nests, or eggs; the BGEPA defines "take" as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."[11] Work that could lead to the take of an avian species protected under the MBTA and / or the BGEPA should be coordinated with the USFWS before any actions are pursued.

As depicted in **Table B.1**, the IPaC Report identified six migratory bird species that may occur within U10 or its vicinity. These species include the American avocet (*Recurvirostra americana*), American white pelican (*Pelecanus erythrorhynchos*), California gull (*Larus californicus*), Franklin's gull (*Leucophaeus pipixcan),* northern harrier *(Circus hudsonius)* and willet (*Tringa semipalmata*).

Table B.1 BCC Species Identified within U10, or Vicinity

Common Name	Scientific Name	Breeding Season	Preferred Habitat
American Avocet	*Recurvirostra americana*	Apr 21 – Aug 10	Shallow freshwater wetlands, mudflats, tidal lagoons, rice fields, flooded pastures
American White Pelican	*Pelecanus erythrorhynchos*	Apr 1 – Aug 31	Marshes, lakes, salt bays, isolated islands in lakes and feed on shallow lakes, rivers, marshes.
California Gull	*Larus californicus*	Mar 1 – Jul 31	Seacoasts, lakes, farms, and urban centers
Franklin's Gull	*Leucophaeus pipixcan*	May 1 – Jul 31	Prairies, inland marshes; in winter, coasts, oceans
Northern Harrier	*Circus hudsonius*	Apr 1 – Sep 15	Marshes, fields, prairies
Willet	*Tringa semipalmata*	Apr 20 – Aug 5	Marshes, wet meadows, mudflats, beaches

Source: U.S. Fish and Wildlife Service. IPaC Information for Planning and Consultation (July 11, 2024).

As shown in **Table B.1**, undeveloped land on U10 property, specifically in and around the drainage areas to the east and west along the Airport property boundary, and the floodplain of the adjacent Bear River, may provide habitat for American avocet, American white pelican, northern harrier and the willet. Suitable habitat does not exist for California gull and Franklin's gull.

While no other migratory bird species were identified on the IPaC Report, common migratory bird species may occur within U10 or in the vicinity, inhabiting the undeveloped vegetated drainages and the habitat surrounding Bear River to the west.

B.3.3 Wildlife Hazards

FAA AC 150 / 5200-33C, *Hazardous Wildlife Attractants on or Near Airports*,[12] recommends a separation distance of 10,000 feet at airports serving turbine-powered aircraft from hazardous wildlife attractants (e.g., wetlands). Hazardous wildlife are defined as "species of wildlife (birds, mammals, reptiles), including feral and domesticated animals, not under control that may pose a direct hazard to aviation (i.e., strike risk to aircraft) or an indirect hazard such as an attractant to other wildlife that pose a strike hazard or are causing structural damage to airport facilities (e.g., burrowing, nesting, perching)." For all airports, the FAA recommends five statute miles between the farthest edge of the airport's operating area and hazardous wildlife attractants.

U10 may contain wetlands associated with the aforementioned vegetated drainages described in *Section B.18.1 Wetlands*. However, FAA notes that some wetlands are not as attractive to hazardous wildlife as others, with factors such as size, shape, location, canopy cover, and vegetative composition being considerations. FAA recommends that due to the variation in wildlife attractiveness of a given wetland, they be reviewed on a case-by-case basis to determine the likelihood of increasing the number of hazardous wildlife.[13]

The FAA's Wildlife Strike Database was reviewed for reports of aircraft strikes by wildlife at U10. Available reports range from June 1993 to June 2024. During that time, one incident was reported at U10, which occurred in 2015 involving a small bird. The aircraft was damaged, but the level of damage was undetermined at the time of the report.[14] A Wildlife Hazard Site Visit occurred in November 2024. A summary report documents the findings of the visit, which provides information on wildlife hazards at the Airport.

B.4 CLIMATE

Research has shown that an increase in atmospheric greenhouse gas (GHG) emissions is affecting the Earth's climate. GHG emissions result from anthropogenic sources including the combustion of fossil fuels from aviation emissions or construction equipment. Increasing concentrations of GHG emissions in the atmosphere affect global climate and can result in localized impacts.

In January 2021, Executive Order (EO) 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis* was issued. On January 6, 2023, the CEQ released updated interim *Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*.

FAA 1050.1F Desk Reference on Climate[15] states that a qualitative or quantitative assessment of GHG emissions should be performed where the proposed action or alternative(s) would result in an increase in GHG emissions. Additionally, the 2023 CEQ guidance requires that expected GHG emissions contextualize local considerations and existing emission reduction goals. In response to that CEQ requirement, the Franklin County Comprehensive Plan was reviewed, which is the policy document of Franklin County. It is intended to provide data and guide the promulgation of local land use laws. The plan included no requirements or goals related to GHG or climate change.[16]

GHG emissions are not monitored by Franklin County nor Idaho DEQ, and as noted in *Section B.2*, Franklin County is in attainment for all criteria pollutants.

B.5 COASTAL RESOURCES

U10 resides in southeast Idaho, which is not near a coastal zone as defined by the Coastal Zone Management Act of 1972,[17] nor is U10 located in the Coastal Barrier Resources System[18] as defined by the USFWS. There are no coastal resources or coastal zone management plans associated with the Airport as the closest coastal zone, the Pacific Ocean, is over 600 miles to the west of the Airport.

B.6 DEPARTMENT OF TRANSPORTATION ACT 4(F)

Section 4(f) of the Department of Transportation Act states that the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge or historic site of national, state, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative and the project includes all possible planning to minimize harm resulting from the use.[19]

A property must be a significant resource for Section 4(f) to apply. Any part of a Section 4(f) property is presumed to be significant unless there is a statement of insignificance relative to the entire property by the federal, state, or local official having jurisdiction over the property. Section 4(f) protects only those historic or archaeological properties that are listed or eligible for inclusion on the National Register of Historic Places (NRHP), except in unusual circumstances. Any proposed airfield improvements that may directly or indirectly affect NRHP-eligible resources would be considered a physical or constructive "use" of Section 4(f) properties, respectively. Avoidance and minimization measures must be considered before mitigation can be pursued.

According to the NRHP Database,[20] there are no NRHP-listed properties located within U10. The nearest NRHP-listed property is the Franklin County Courthouse (Reference #0000641), located approximately 2.3 miles southeast of U10. Cultural resource surveys that examined the U10 property in its entirely were completed in 2014 and 2020 to confirm the presence / absence of NRHP-eligible properties. Two resources were found to be potentially eligible for listing on the NRHP: a T-Hangar (PA-06) and a Wind Tee (PA-07), both located within the otherwise ineligible Preston Airport (PA-01) property. No other resources in or around U10 retain sufficient significance or integrity to be NRHP-eligible individually. With only two NRHP-eligible resources present, there are no grouping of eligible resources present to warrant an NRHP-eligible historic district. Further details of these resources are addressed in *Section B.10 Historical, Architectural, Archeological, and Cultural Resources*.

No Section 4(f) recreational properties or waterfowl / wildlife refuges are located within or near U10. The nearest Section 4(f) recreational property is the Preston Pickleball Courts and Splash Pad, located approximately 1.5 miles southeast of the Airport. Other Section 4(f) properties in the vicinity of U10 include the Preston Community Park, located approximately two miles southeast of the Airport and the Preston City Craner Recreation Complex, located over three miles to the southeast of the Airport. The nearest waterfowl / wildlife refuge is Oxford Slough Waterfowl Production Area, which is located approximately 15 miles northwest, near Oxford, Idaho.[21]

B.7 LAND AND WATER CONSERVATION ACT OF 1965 6(F)

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act establishes a grant program for states and local governments to acquire and develop public outdoor recreation sites and facilities.[22] Section 6(f)(3) states, "No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he / she finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he / she deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location." The closest 6(f) property is LWCF Preston Park, located over two miles southeast from U10.[23]

B.8 FARMLANDS

The Farmland Protection Policy Act (FPPA) regulates federal actions with the potential to convert farmland to non-agricultural uses. Farmland includes prime farmland, unique farmland, and land of statewide or local importance. Soils information was obtained from the NRCS Web Soil Survey and National Cooperative Soil Survey series descriptions.[24] Soils at U10 are comprised of eight different map units, as listed in **Table B.2**.

Table B.2 Soils at U10

Map Unit Symbol	Map Unit Name	Rating	% of Property
2	Ant Flat silty clay loam, 0 to 2 percent slopes	Farmland of statewide importance, if irrigated	2.5%
51	Hondee gravelly loam, 1 to 4 percent slopes	Prime farmland if irrigated	4.5%
68	Kidman fine sandy loam, 0 to 2 percent slopes	Prime farmland if irrigated	23.7%
70	Kidman fine sandy loam, 20 to 40 percent slopes	Not prime farmland	5.2%
71	Kidman fine sandy loam, wet, 0 to 2 percent slopes	Prime farmland if irrigated	2.1%
109	Parleys silt loam, 0 to 4 percent slopes	Prime farmland if irrigated	8.6%
123	Preston fine sand, 0 to 2 percent slope	Farmland of statewide importance, if irrigated	23.6%
125	Preston loamy sand, 6 to 30 percent slopes	Farmland of statewide importance, if irrigated	29.8%

Source: U.S. Department of Agriculture National Resources Conservation Service, Custom Soil Resource Report: Preston Airport (U10). Accessed on August 9, 2024, at Web Soil Survey - Home (usda.gov)

Ant Flat silty clay loam, 0 to 2 percent slopes (Map Unit Symbol 2), Preston fine sand, 0 to 2 percent slopes (Map Unit Symbol 123) and Preston loamy sand, 6 to 30 percent slopes (Map Unit Symbol 125) are designated as "farmland of statewide importance, if irrigated." Hondee gravelly loam, 1 to 4 percent slopes (Map Unit Symbol 51), Kidman fine sandy loam, 0 to 2 percent slopes (Map Unit Symbol 68), and Kidman fine sandy loam, wet, 0 to 2 percent slopes (Map Unit Symbol 71), and Parleys silt loam, 0 to 4 percent slopes (Map Unit Symbol 109) are designated as "prime farmland if irrigated." Land inside the airport is not irrigated; thus, these soils do not qualify as prime farmland and farmland of statewide importance. No further action is required related to farmlands for the development alternatives proposed in this master plan.

B.9 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

Federal, state, and local laws, including the Resource Conservation Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended (also known as the Superfund), and the Idaho Rules and Standards for Hazardous Waste (58.01.05) regulate hazardous materials use, storage, transport, and disposal. RCRA set up a framework for the proper management of hazardous waste. From this authority, EPA established a comprehensive regulatory program to ensure that hazardous waste is managed safely from "cradle to grave" meaning from the time it is created, while it is transported, treated, and stored, and until it is disposed.[25]

The EPA maintains a list of Superfund Sites called the National Priorities List (NPL) in accordance with CERCLA. These sites have known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the U.S. and its territories. According to the EPA list, there are no superfund sites in Franklin County, in which U10 is located.[26]

The EPA's *My Environment* tool was reviewed to identify any toxic releases to air or land reported at or adjacent to U10; none were reported.[27]

The NEPAssist Tool identifies the location and details of remediation sites and facilities managed by regulatory programs within the EPA's Waste Management and Remediation Division. The tool did not identify any Brownfields sites, Superfund sites, Toxic Release Inventory sites, or hazardous waste (RCRA) facilities within or directly adjacent to U10.[28]

According to AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program (AIP) Assisted Projects*, as part of the project planning and environmental assessment phases, the project proponent should have an adequate due diligence environmental audit conducted for the presence of hazardous materials and contamination on property needed for a project. Contaminated property must be avoided whenever possible, or its use minimized to avoid excessive project costs for the clean-up and remediation of hazardous materials. These audits include Phase I and/or Phase II Environmental Site Assessments (ESA), which should identify quantities of any hazardous materials located at the proposed project site or in the immediate vicinity of a project site.

Regarding pollution prevention, the CEQ Memorandum on *Pollution Prevention and the National Environmental Policy Act* (January 12, 1993) encourages early consideration by federal agencies (for example, during the NEPA scoping process) of opportunities for pollution prevention. In accordance with this guidance, the FAA should, to the extent practicable, include pollution prevention considerations in the proposed action and its alternative(s); address pollution prevention in the environmental consequences section; and disclose in the Record of Decision (ROD) the extent to which pollution prevention was considered.[29]

The Preston Landfill,[30] located approximately 6.5 miles northeast of the Airport, is licensed by the state to accept both solid waste and various types of hazardous waste.

B.10 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act (NHPA) establishes the Advisory Council on Historic Preservation (ACHP) and the NRHP list, administered in Idaho by the Idaho State Historic Preservation Office (SHPO). Section 106 of the NHPA requires federal agencies to consider the effects of their undertaking for properties on or eligible for inclusion on the NRHP.

Any direct or indirect effect to NRHP-eligible resources, or contributing resources to a Historic District, will require consultation with the Idaho SHPO and participating tribes and/or Tribal Historic Preservation Offices (THPOs) for Section 106 compliance. Avoidance and minimization measures must be considered before mitigation can be pursued.

According to the NRHP Database,[31] there are no NRHP-listed properties located within U10. The nearest NRHP-listed property is the Franklin County Courthouse (Reference #0000641), located approximately 2.3 miles southeast of U10.

As described in *Section B.6 Department of Transportation Act 4(f)*, cultural resource surveys that examined the U10 property in its entirely were completed in 2014 and 2020. Two (2) resources were found to be potentially eligible for listing on the NRHP: a T-Hangar (PA-06) and a Wind Tee (PA-07). An October 20, 2020, letter was sent from the FAA to the Idaho SHPO to provide determinations of eligibility of the properties within U10 examined by the 2020 cultural resource survey. The FAA determined that the T-Hangar (PA-06) and Wind Tee (PA-07) were eligible for listing on the NRHP under Criterion A and C. All other properties were determined ineligible for listing on the NRHP. The Idaho SHPO responded in a letter dated November 5, 2020, concurring with the determinations of ineligibility, but not concurring on the determinations of eligibility for PA-06 and PA-07. In sum, according to the correspondence, none of the identified properties within U10 are eligible for listing on the NRHP.

B.11 LAND USE

The FAA has not established a significance threshold for land use. The determination that significant impacts exist in the land use impact category is normally dependent on the significance of other impacts, such as noise and Section 4(f) properties.

Per the FAA 1050.1F Desk Reference,[32] the FAA requires airport operators to ensure that actions are taken to establish and maintain compatible land uses around airports, such as consistency with state and local land use regulations, land use plans, and zoning laws. AIP funding for airport development may not be approved unless the Secretary of Transportation receives written assurance that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the vicinity of the airport to activities and purposes compatible with normal airport operations, including takeoff and landing of aircraft.[33]

The Airport is located partially within unincorporated Franklin County and partially within the City of Preston, approximately 2.8 miles northwest of the City of Preston downtown core. Franklin County does not have countywide zoning. The County does have a localized Airport Overlay Zoning District, which is described in Franklin County Development Code Ordinance # 2007-8-14, adopted August 13, 2007. The district ensures that land development and construction activities in and around U10 are compatible with the safe and continued use of airport operations. It does this through the establishment of height limitation zones, use restrictions, and permits.[34] City of Preston zoning identifies the portion of the Airport within city limits as heavy industrial. Surrounding areas are designated as heavy industrial, heavy commercial / light industry, and residential. The area surrounding U10 consists primarily of state- and county-owned land, grazed rangelands, agricultural and residential land uses. The closest residences are rural homesteads located approximately 1,000 feet north of U10, with a residential community consisting of ten (10) houses located approximately 1,000 feet south of U10.[35]

B.12 NATURAL RESOURCES AND ENERGY SUPPLY

Per the FAA Order 1050.1F Desk Reference for Natural Resources and Energy Supply,[36] the potential impacts of the proposed action and alternative(s) of the natural resources and energy supplies in a study area should be evaluated, including potential increased demands on energy utilities, water supplies and treatment, and natural resources that the proposed action or alternative(s) may cause. EO 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, advises federal agencies to achieve net-zero emissions goals through federal procurement. Though specific significance thresholds for natural resource consumption and energy supply have not been established by the FAA, a proposed action should be examined for the potential to cause demand to exceed available or future supplies of these resources.

General construction at U10 could temporarily increase the Airport's consumption of natural resources and energy. These resources include a variety of construction materials, electricity, fuel, oil, and water (non-potable water may be used for dust control). Transporting construction materials and operating heavy machinery may temporarily increase the Airport's fossil fuel consumption. These resources are not rare or in short supply. Likewise, general construction activities could marginally increase demands on water, electricity, and natural gas. However, these demands are insignificant and can be met by existing Airport infrastructure.

B.13 NOISE AND NOISE COMPATIBLE LAND USE

Noise associated with airport activity is of specific importance to the FAA in examining a proposed federal action. Airport development projects that have the potential to change an airport's runway configuration, aircraft operations, aircraft types, or aircraft flight characteristics can change future airport-related noise levels.

Noise is measured by the Day-Night Sound Level (DNL), the logarithmic average of sound levels in decibels (dB) and based on a 24-hour Equivalent Sound Level (Leq). The levels are time-weighted, such that noise events occurring during sensitive time periods (from 10 pm to 7 am) are penalized 10 dB (i.e., weighted more heavily than those occurring from 7 am to 10 pm). This penalty accounts for the greater sensitivity to noise during nighttime hours and the decrease in background noise levels during these hours. Determining DNL provides a means of measuring and mapping the potential impacts from airport noise relative to the land uses surrounding an airport. The FAA considers a noise impact significant if an action would cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above the DNL 65 dB noise contour when compared to the No Action Alternative. Noise sensitive areas include indoor locations such as residential, educational, medical, and religious structures or sites, as well as outdoor locations such as parks and recreational areas, wilderness areas and wildlife refuges, or cultural and historical sites.

With exception to rural homesteads, there are no other noise sensitive land uses near U10. Three rural residences reside north of the Airport and are widely dispersed on agricultural land, and are more than 1,000 feet north of the Airport. Approximately 10 homes are in a residential community located approximately 1,000 feet south of U10. Small aircraft flying in and out of the Airport are not predicted to expose these residences to a noise level exceeding 65 yearly DNL.

B.14 SOCIOECONOMIC IMPACTS

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

U10 is located in Census Tract 9701 which contains a population of 7,657 according to data from the 2022 ACS 5-year Estimates Detailed Tables. The median age is 30.3 years[37] and approximately 1% of the population is unemployed, while 29% are considered low-income.[38]

U10 operations and ongoing development are not expected to have any significant socioeconomic impact on the residents within Census Tract 9701 or Franklin County. If acquisition of real property or displacement of persons is involved, 49 CFR part 24 (implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970), as amended, must be met for federal projects and projects involving federal funding.

B.15 ENVIRONMENTAL JUSTICE

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, ethnicity, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, signed by the President on February 11, 1994, directs federal agencies to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. The racial makeup of Census Tract 9701 is listed in **Table B.3**.

Table B.3 Racial Makeup of Census Tract 9701

Race	Total Population	% of Total Population
All	7,657	100%
Hispanic or Latino	525	5.6%
White alone	6,988	89.4%
Black or African American alone	0	0.0%
American Indian and Alaska Native alone	16	0.3%
Asian alone	15	0.0%
Native Hawaiian and Other Pacific Islander alone	0	0.0%
Some other race alone	5	1.1%
Two or more races	108	3.6%

Source: U.S. Census Bureau, 2022 ACS 5-year Estimates Detailed Tables, Census Tract 9701. Accessed on October 7, 2024, at DP05 | ACS Demographic and Housing Estimates

As shown in **Table B.3**, the population of Census Tract 9701 is predominantly white (89.4%) with minorities accounting for 10.6% of the population. Future U10 operations and ongoing development are not expected to disproportionately impact environmental justice or minority populations.

B.16 CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires agencies to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children.

According to data from the 2022 U.S. Census Bureau ACS 5-year estimates, approximately 35.1% of the population in Census Tract 9701 is under the age of 18.[39] The nearest school to U10, Franklin County High School, is approximately two miles to the southeast. The school serves students in the ninth through twelfth grade. The closest children's health care facility is Franklin County Medical Center, approximately two miles southeast of U10. All schools, daycares, children's health clinics, or similar child-friendly facilities are well outside the U10 property boundaries. The FAA has not established a significance threshold related to impacts to children's environmental health and safety. However, U10 operations and ongoing development are not anticipated to significantly affect air quality, climate, hazardous materials, noise, water resources, or other environmental resources that could affect children's health and safety. Mitigation measures may be appropriate to reduce or eliminate impacts, such as those used to mitigate other impact categories.

B.17 VISUAL EFFECTS

Visual effects deal broadly with the extent to which the proposed action or alternative(s) would either: produce light emissions that create annoyance or interfere with activities; or contrast with, or detract from, the visual resources and / or the visual character of the existing environment. Visual effects can be difficult to define and assess because they involve subjectivity. Proposed aerospace actions do not commonly result in adverse visual effects, but these effects may occur in certain circumstances. For clarity and uniformity, visual effects are broken into two categories – Light Emission Effects, and Visual Resources and Visual Character.[40]

Light emissions include any light that emanates from a light source into the surrounding environment. Examples of light emission sources include airfield and apron flood lighting, navigational aids, terminal lighting, parking facility lighting, and roadway lighting. Glare is a type of light emission that occurs when light is reflected off a surface (e.g., window glass, solar panels, or reflective building surfaces).[41]

Visual resources include buildings, sites, traditional cultural properties, and other natural or manmade landscape features that are visually important or have unique characteristics. Visual resources may include structures or objects that obscure or block other landscape features. In addition, visual resources can include the cohesive collection of various individual visual resources that can be viewed at once or in concert from the area surrounding the site of the proposed action or alternative(s). In unique circumstances, the nighttime sky may be considered a visual resource.[42]

Visual character refers to the overall visual makeup of the existing environment where the proposed action and alternative(s) would be located. For example, sites near densely populated areas generally have a visual character that is defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscapes, such as open pastures, forests, mountains, or deserts.[43]

There are no special purpose laws or requirements for visual effects, and there are no federally required consultation processes, permits, or other approvals related to visual effects. Additional laws protecting resources that may be affected by visual effects include Section 106 of the NHPA, Section 4(f) of the DOT Act, the Wild and Scenic Rivers Act, and the Coastal Zone Management Act as well as state and local regulations, policies, and zoning ordinances that apply to visual effects.[44]

Various lighting features currently illuminate infrastructure at U10 such as the airfield (e.g., runways and taxiways), buildings, access roadways, automobile parking areas, and the apron area for the safe and secure movement of people and vehicles. Structures at the Airport include, but are not limited to, the fixed base operator office building, hangars, and maintenance buildings. The visual sight of aircraft, aircraft contrails, or aircraft lights at night are consistent with normal airport operations. The land surrounding U10 is a combination of state and county land and agricultural lands with scattered residences. The closest residences are located approximately 1,000 feet south and north of U10. The residences do have a direct line of sight to the Airport; however, the lighting illuminated from U10 is consistent with that of an airport. As described in *Section B.10*, no known historic properties are located within U10 or the vicinity.

Mitigation measures to minimize visual effects of any new light sources include the use of shielding and baffles, angular adjustment of light fixtures, and application of architecture and landscaping design features to enhance the aesthetics and uniqueness of a proposed project.

The development of Airport infrastructure could change the visual character of the area. It is recommended that any development projects be consistent with the style and uses of existing structures at U10 to minimize impacts to the visual resources in the vicinity or visual character of U10.

B.18 WATER RESOUCES

Water resources provide drinking water and support recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Surface water, groundwater, floodplains, and wetlands do not function as separate and isolated components of the watershed, but rather as a single, integrated natural system. Disruption of any one part of this system can have consequences to the functioning of the entire system. The analysis should include potential disruption of the system as well as potential impacts to the quality of the water resources. Because of the close and integrated relationship of these resources, their analysis is conducted under the all-encompassing impact category of water resources. Wild and Scenic Rivers are included because impacts to these water resources can result from obstructing or altering the free-flowing water of a designated river. This section covers the following main topics – wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers.

B.18.1 Wetlands

For regulatory purposes under the Clean Water Act (CWA), the term "wetlands" describe areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.[45] Wetlands generally include swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are federally protected under Section 404 of the CWA, which regulates the discharge of dredge or fill material into Waters of the United States (WOTUS), including wetlands.[46]

According to the National Wetland Inventory (NWI),[47] four wetlands, and / or portions of those wetlands are mapped within the boundary of U10. A riverine feature resides east of Runway 4 / 22 and appears to flow under Industrial Park Road on U10 property. The aforementioned riverine is henceforth referred to as Riverine 1. A freshwater emergent wetland abuts Riverine 1 at its southernmost point and is confined to a drainage channel. A second man-made riverine feature, henceforth referred to as Riverine 2, is utilized for agricultural use and generally flows north through U10's northeast corner. A forested/shrub wetland intersects the western boundary of U10 and is associated with a second vegetated drainage channel.

According to Google Earth aerial imagery, Riverine 1 is no longer visible and appears to have been filled between 2006 and 2009, when Industrial Park Road was constructed. It does not have connectivity to the Bear River or other surface water bodies. The freshwater emergent wetland that abuts Riverine 1 to the south is associated with an off-site intermittent drainage channel that flows from north-to-south. The channel appears to be a tributary to the Bear River, a perennial river.

On the west side of U10, the freshwater forested / shrub wetland associated with an intermittent drainage channel partially conveys through the property boundary. The NWI map shows this wetland as being hydrologically connected to the Bear River to the west of the airport property. Riverine 2 was created for agricultural use as it furrow irrigates the cultivated fields residing east and northeast of U10. According to Google Earth imagery, Riverine 2 appears to have been filled, modified, rerouted, or piped to accommodate surrounding development. It does not have connectivity to the Bear River or other surface water bodies.

A wetland delineation, avoidance and minimization measures, United States Army Corps of Engineers (USACE) Section 404 permitting, and / or mitigation practices may be required for any impacts to the four (4) wetland features associated with U10.

B.18.2 Floodplains

When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-federal public or private entities, the FAA must, in accordance with Executive Order 11988, *Floodplain Management*,[48] reference in the conveyance those uses that are restricted under identified federal, state, or local floodplain regulations; attach other appropriate restrictions to uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or withhold such properties from conveyance.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 1600600400A,[49] U10 is located to the east of the Bear River in Zone C (unshaded), an area of minimal flooding.

B.18.3 Surface Waters

Surface waters include areas where water collects on the surface of the ground, such as streams, rivers, lakes, ponds, estuaries, and oceans. The CWA establishes the basic structure for regulating the discharge of pollutants into WOTUS, specific sections include Section 303(d), Section 404 and 401 (refer to *Section B.18.1 Wetlands*), and Section 402, which establishes the National Pollutant Discharge Elimination System (NPDES) permitting program. Section 303(d) sets forth the process to identify impaired waters and to establish the maximum amount of pollutant allowed in a waterbody, known as the total maximum daily load, necessary to assess current conditions and project impacts. If project activities have the potential to discharge pollutants into WOTUS through a point source, an NPDES permit will likely be required.

Two intermittent drainages exist within U10, described in *Section B.18.1 Wetlands* as corresponding to a freshwater emergent wetland and a freshwater forested / shrub wetland. Both drainages appear to have connectivity to the Bear River, as tributaries. The Bear River is a perennial river that flows in a north-to-south direction approximately 0.5 miles to the west and southwest of U10.

A USACE Section 404 permit and Idaho DEQ Stormwater permit may be required for any direct, or indirect impacts to surface waters. Further, construction activities should use best management practices (BMPs) to protect surface waters.

B.18.4 Ground Water

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The term "aquifer" is used to describe the geologic layers that store or transmit groundwater to wells, springs, and other water sources. The Safe Drinking Water Act[50] prohibits federal agencies from funding actions that would contaminate an EPA-designated sole source aquifer or its recharge area.

According to the EPA, U10 is not located in a Sole Source Aquifer.[51] The nearest sole source aquifer, the Eastern Snake River Plain Aquifer, is approximately 15.5 miles northwest of the Airport.

The Idaho State Geological Survey Groundwater Atlas of Idaho mapping tool[52] identified zero groundwater wells within U10. Six wells were found adjacent to U10. Well depths range from 80 feet to 420 feet. According to the NRCS Web Soil Survey and National Cooperative Soil Survey, the soil map units within U10 correspond to water table depths that mostly exceed 80 inches.

B.18.5 Wild and Scenic Rivers

According to the Wild and Scenic Rivers interactive map provided by the National Parks Service (NPS), the nearest Wild and Scenic River is the Snake River Headwaters, located approximately 86 miles northeast of U10.[53]

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WILDLIFE HAZARD SITE VISIT REPORT

Preston Airport

WILDLIFE HAZARD SITE VISIT SUMMARY REPORT

FINAL DRAFT 08-18-2025

ARDURRA

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1 Wildlife Hazard Site Visit

1.1 Project Team

The Wildlife Hazard Site Visit (WHSV) for Preston Airport (U10 or Airport) was conducted by Ardurra Group, Inc. in November 2024. The site visit and report were conducted in cooperation with Airport staff. Craig Biggs, Airport Manager, was a key contributor to this report. Mr. Biggs is the sole Airport staff member and reports directly to the Preston Airport Board, which oversees airport governance and strategic decisions.

- Craig Biggs, Airport Manager
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The Ardurra team included the following individuals:

- Vince Barthels, a Qualified Airport Wildlife Biologist in accordance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5200-36B, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*.[1] Mr. Barthels conducted all wildlife surveys and supervised the preparation of the WHSV Report.
- AJ Mondor, an Environmental Planner, prepared the WHSV Report. AJ has extensive experience in habitat and wildlife management in Idaho.
- Shane Slate, an Environmental Project Manager, provided review of the WHSV Report. Shane has extensive knowledge and experience working with wildlife, habitats, and airports within the Pacific Northwest.

For more information, please contact:

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1.2 Introduction

The Federal Aviation Administration (FAA) and the United States Department of Agriculture's Wildlife Services (USDA-WS) release an annual report detailing wildlife strikes involving civilian aircraft in the United States. This report has been compiled since 1990, the year the FAA began tracking wildlife strike data. According to FAA Advisory Circular (AC) 150/5200-32C, *Reporting Wildlife Aircraft Strikes*, issued on July 31, 2024, the following key statistics were reported:

- From 1990 to 2022, aircraft struck 639 bird species, 55 species of terrestrial mammals, 46 species of bats, and 34 species of reptiles.
- Between 1990 and 2022, over 276,000 wildlife strike incidents have been recorded in the National Wildlife Strike Database.
- Wildlife strikes have led to a minimum average annual cost of $54.3 million to the U.S. civil aviation industry from 1990 to 2018.[2] Further research estimates that additional "spillover" costs—such as flight delays caused by these strikes—amount to approximately $25 million annually (adjusted to 2020 U.S. dollars).[3]

Despite the steady increase in wildlife strike reporting over the past two decades, discrepancies remain in how different stakeholders—such as pilots, air carriers, airport operators, and air traffic controllers—report these incidents. Specifically, there is a tendency to report more damaging strikes than non-damaging ones, particularly at smaller general aviation (GA) and Part 139 airports. To improve the accuracy of wildlife strike data, it is important to encourage the reporting of all incidents, including detailed information on the species involved, damage incurred, and associated costs.

The FAA has initiated several programs aimed at improving wildlife strike data collection and analysis. Accurate and consistent reporting is critical for the development and effectiveness of wildlife hazard management plans (WHMPs), which require detailed documentation of wildlife strikes occurring within designated distances, as specified in FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or near Airports.*[4] The FAA mandates that strikes occurring "on or near the airport" must be reported, ensuring that significant incidents in these areas are addressed according to wildlife hazard area regulations and included in WHMP reviews.

1.3 Regulatory Background

The FAA is responsible for establishing and enforcing Federal Aviation Regulations (FARs) under Title 14 of the Code of Federal Regulations (CFR), which govern aviation safety at both certificated and non-certificated airports. These regulations are designed to safeguard public safety at airports that operate under FAR Part 139, as well as at non-certificated airports that are federally obligated.

Preston Airport (U10), which is jointly owned and operated by Franklin County and the City of Preston, does not operate under FAR Part 139, as it is not a certificated airport. However, the Airport does receive federal funding for improvements, and by accepting these funds, the Airport is required to adhere to specific conditions outlined in the FAA's grant assurances.

There are 37 grant assurances that airport operators must follow when receiving federal funding. Wildlife hazard management falls under Grant Assurance No. 19, which pertains to "Operations and Maintenance" under the FAA's Airport Improvement Program (AIP). The FAA may recommend wildlife studies, such as a wildlife hazard site visit (WHSV) or wildlife hazard assessment (WHA), for airports receiving federal funds. If the WHSV reveals significant findings, the FAA may advise that the airport complete a full WHA or develop a WHMP in accordance with 14 CFR Part 139.[5] Additionally, a formal adoption of the WHSV recommendations can allow for AIP funding, following FAA review and approval by the appropriate FAA Airport District Office (ADO). This adoption may also be considered a WHMP in certain cases.

1.4 Project Purpose and Objectives

In November 2024, Ardurra conducted a WHSV at U10 to assess the potential risks posed by wildlife on or near the Airport that could threaten aircraft operations. This site visit was conducted in alignment with FAA guidelines and FAA AC150/5200-38, *Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments, and Wildlife Hazard Management Plans.*[6] According to the AC, a WHSV involves three key steps:

- Collecting airport-related data;
- Observing the airport environment for wildlife activity;
- Preparing a final report that includes recommendations based on the findings.

The results from a WHSV are intended to help airport operators assess and mitigate wildlife hazards quickly and determine whether further steps, such as conducting a WHA or developing a WHMP, are necessary. The primary goals of the WHSV report, in accordance with FAA AC 150/5200-38, are to:

- Document the wildlife species present, including their numbers, locations, and movement patterns;
- Identify features on or near the airport that may attract hazardous wildlife;
- Describe the potential risks these wildlife hazards pose to aircraft operations;
- Recommend actions to reduce or eliminate identified wildlife hazards.

Before conducting the WHSV, the Ardurra team examined relevant background data to familiarize themselves with the area and the wildlife species likely to be present around the Airport. Aerial imagery was analyzed to assess the Airport's layout in relation to its surroundings, including nearby features or facilities that might attract wildlife posing potential risks. This information was compiled and served as a reference during discussions with Airport staff and while conducting field surveys.

2 Preston Airport

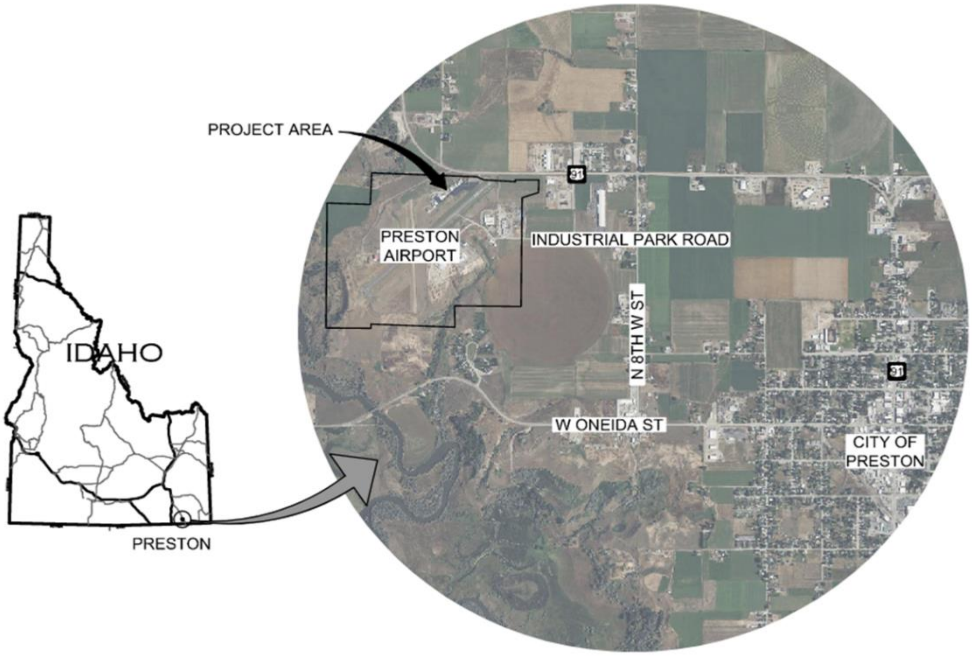
2.1 Site Background

U10 is a GA airport situated in the south-central part of Idaho's Cache Valley. It is surrounded by the Portneuf Range to the north, the Bannock Range to the west, and the Bear River Range to the east. The Airport straddles part of the border between unincorporated Franklin County and the City of Preston — Franklin County's seat and largest city — and is jointly owned and operated by the City and the County. As the only airport in Franklin County, U10 serves a region in southeast Idaho that includes the cities of Preston, Franklin, Dayton, Clifton, Oxford, and Weston. In 2020, this census area had a population of approximately 14,194 people.[7]

The northern region of the Cache Valley, where the Airport is located, has a semi-arid climate. U10 receives an average of 17.3 inches of precipitation and 52.4 inches of snowfall annually. July is the hottest month with an average maximum temperature of 89.2°F and January the coldest with an average minimum temperature of 15.3°F.[8]

U10 is located within the Central Basin and Range Ecoregion established by the United States Environmental Protection Agency.[9] This ecoregion is characterized by a complex landscape of alternating mountain ranges (see Attachment A, Photo 1) and basins, primarily located in the western United States. It encompasses parts of Nevada, Utah, and eastern California, featuring diverse habitats that range from desert environments to higher elevation forests. The region is known for its unique geology, including volcanic formations and ancient lakebeds, as well as its rich biodiversity. This ecoregion supports a variety of plant and animal species adapted to arid conditions, making it an important area for conservation and ecological research.

Figure 2.1 Location and Vicinity Map



Source: Ardurra

2.2 Airport Facility

The 201-acre airport is surrounded by agricultural lands on all sides with some industrial properties to the southeast and the Bear River approximately 0.27 miles to the west. U.S. Highway 91 sits immediately adjacent to the north of the Airport. The Preston Gun Range also lies approximately 0.37 miles to the north. Grass/hay are bailed and removed from the airport. The Airport Manager coordinates weed control as well as mowing. Prior to airport operations, this area was primarily utilized for agricultural and rangelands.

The surrounding agricultural fields grow primarily corn, wheat, hay, alfalfa, potatoes, and barley. The industrial sites closest to the Airport include a welding fabrication shop, a publishing studio, and a wood framing prefabrication shop. Extending out to a 1-mile radius, there are more agricultural fields, some associated residences, pasturelands and wetlands around the river, and more industrial, automotive, and construction businesses.

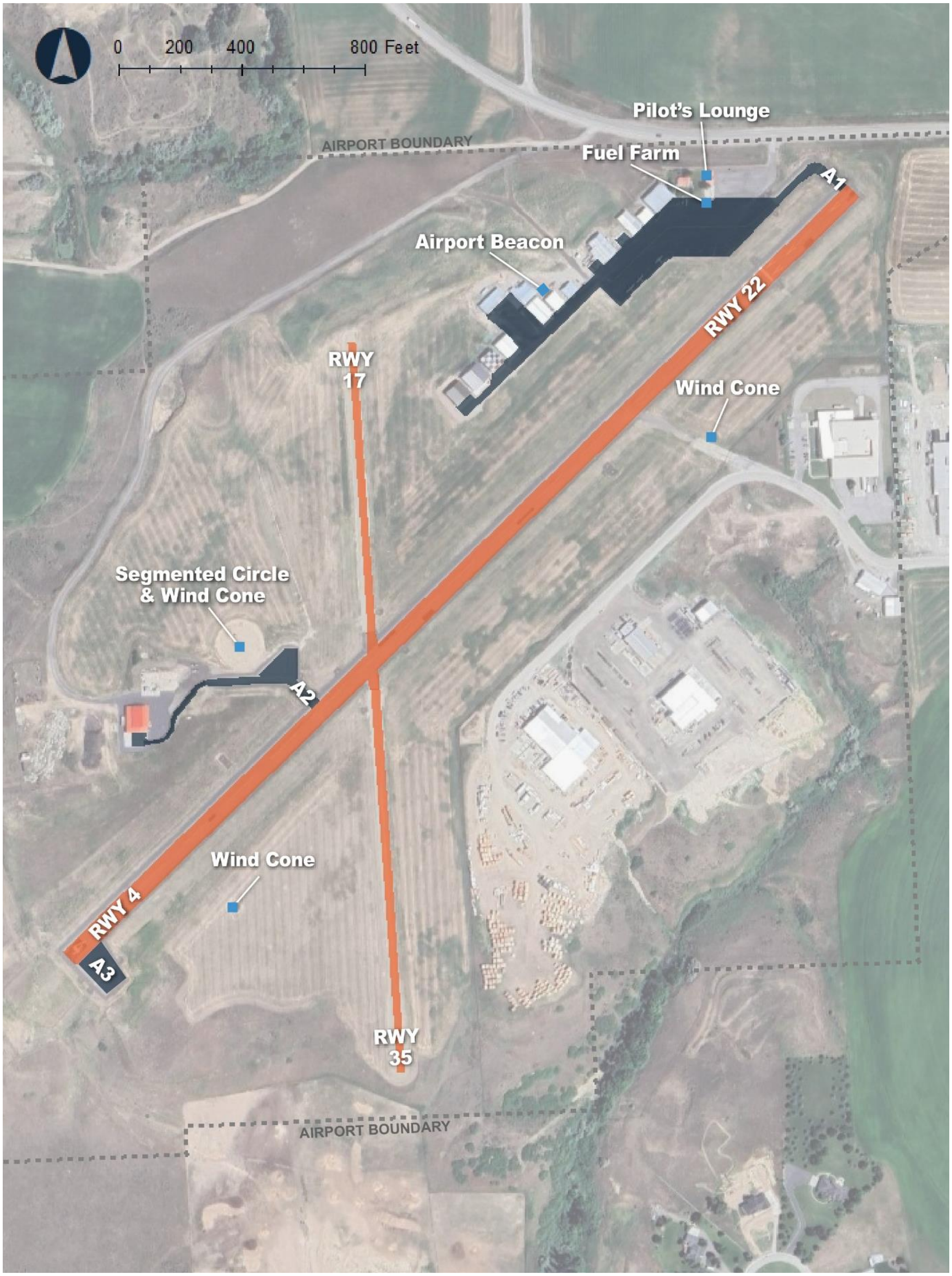
There are two perpendicular runways at U10:

- Runway 4/22 is a northeast-southwest oriented asphalt runway that is 3,557 feet long and 60 feet wide.
- Runway 17/35 is a north-south oriented gravel/dirt runway that is 2,375 feet long and 30 feet wide.

According to Airport records, there were 6,813 operations in calendar year 2023, which did not include glider operations. There are 14 hangar structures at U10. Figure 2.2 shows the airport layout and associated structures.

General Aviation accounts for 99% of flights operating within U10. These include (but are not limited to) single engine and light twins, Cessna, Piper, Beech, and experimental aircraft. A few turboprop aircraft (e.g.: PC-12, or Beech King Air) once or twice a quarter. U10 currently has student training daily with about 20 plus active students. U10 also receives training and transient aircraft that come and go throughout the week for fuel or maintenance or business or fun. Military aircraft utilize U10 once or twice a year.

Figure 2.2 Airport Layout



Source: Ardurra

2.3 FAA Wildlife Strike Database Records

The FAA keeps a National Wildlife Strike Database that tracks strike incidents from 1990 to the present. According to this database, only one wildlife strike has occurred at U10, which was recorded in December 2015 when a government aircraft collided with an unidentified bird.[10]

It is important to note, however, that FAA data should be interpreted with caution. The reporting of strikes is voluntary, and the FAA estimates that only 47 percent of all strikes nationwide from 2009 to 2013 were documented in the database, with that figure rising to about 91 percent when considering commercial aircraft only.[11] U10 does not maintain a log of bird strikes. Mr. Biggs Reported that two of the local instructors each had a bird strike (small sparrow sized) this spring and there was no damage from the impact. No efforts have been made to tried to collect strike data from Airport users.

2.4 Existing Wildlife Hazard Management at U10

Mr. Craig Biggs lives on site at U10 and serves as the Airport Manager. As the sole staff member, he is responsible for all day-to-day operations and wildlife hazard management. Oversight and governance are provided by the Preston Airport Board. Mr. Biggs stated that he patrols the air operations area (AOA) regularly to disperse wildlife from the airfield (birds, deer, and coyotes) primarily utilizing human/vehicle presence though there are no written procedures or policies for managing wildlife hazards and no official wildlife log is in place though plans to implement one are forthcoming. The Airport does not currently hold any state or federal depredation permits to perform lethal control of wildlife within the AOA.

The Airport is equipped with approximately 7,300 feet of four-strand barbed wire perimeter fence (see Attachment A, Photo 4), which is broken in certain areas and insufficient to exclude most wildlife from entering the AOA. Approximately 3,000 feet of six-foot security fence topped with barbed wire (but no skirt to prevent burrowing) is located along Industrial Park Road to the southeast of U10 (see Attachment A, Photos 8, 9, and 10). Approximately 700 feet of four-foot chain link perimeter fence encloses the public parking area at U10 (see Attachment A, Photo 17), but does little to deter wildlife.

U10 maintains vegetation regularly throughout the airfield; grass, sagebrush, and other herbaceous material that is located within the AOA is mowed to maintain fire breaks and trees that become obstructions are removed.

2.5 Recent Airport Improvements

Areas of the Airport were recently graded (summer 2024) and re-seeded with primarily a crested wheatgrass mix. The newly seeded grass is being permitted to grow taller in its first season but will be maintained between 6 and 12 inches once fully established (see Attachment A, Photo 2).

2.6 Current Wildlife Hazard Threats and Concerns

U10 currently lacks a full perimeter security or wildlife fence to prevent mammals from accessing the AOA. The wildlife species posing the greatest risk to aircraft operations include larger mammals such as mule deer and coyotes, that could be excluded by a security or wildlife fence. During the site visit, deer tracks could be seen crossing the runway and runway protection zone (RPZ).

European starlings (see Attachment A, Photos 3 and 15), which were observed in varying numbers, ranging from single individuals to a murmur in excess of 1,000 birds are also frequently seen within the AOA and aircraft movement areas. Other bird species that pose significant risks to aircraft operations, such as waterfowl, finches, and chukar, are commonly found foraging, flying, and perching within the AOA (see Attachment A, Photo 19). Additionally, species typically associated with spring and fall migrations—such as gulls, raptors, blackbirds, and various passerines—represent potential threats to aircraft operations, although few were observed during the WHSV. The following features were observed on and near U10 that have the potential to attract potentially hazardous wildlife.

2.6.1 Agricultural Fields

Agricultural fields surround the Airport in all directions (see Attachment A, Photos 3, 4, and 16) and provide a constant food source for a variety of wildlife, including deer, rabbits, and rodents. The availability of such food attracts species that are often found near the Airport's perimeter, increasing the likelihood of wildlife entering the AOA. The proximity of these fields to the AOA can also lead to an increase in the movement of animals across the area, raising the risk of wildlife strikes with aircraft. Additionally, the proximity to farming activities might attract birds, such as migratory waterfowl and raptors, that forage in the fields, further contributing to potential safety hazards for flight operations. Therefore, managing the interface between agricultural lands and the airport is critical for minimizing wildlife-related risks.

2.6.2 Sagebrush

One of the factors drawing wildlife to U10 is the sagebrush situated outside the runway safety areas (RSAs) but within the AOA. This vegetation is located south and east of the Airport and is particularly attractive to large, potentially dangerous bird species, while also offering thick cover for animals like coyotes and deer. The sagebrush within the AOA provides habitat for birds that forage, rest, and nest in the area. Its dense structure can conceal wildlife, making it difficult for airport staff and pilots to spot potential threats. Therefore, removing the brush is crucial to minimize or prevent wildlife-related incidents with aircraft operations at U10.

2.6.3 Water Source

Bear River, located to the west of the AOA, serves as a water source with an associated riparian area that draws Canada geese, ducks, great blue herons, and other waterfowl. These birds can pose risks as they fly through the surrounding airspace or take refuge within the AOA, increasing the potential for hazardous encounters.

2.6.4 Wooded Areas

Wooded regions (see Attachment A, Photo 5) can be found along the Bear River to the west of the Airport, as well as in the drainages to the north and south. These areas attract birds such as raptors, ravens, and doves, which frequently cross the AOA and runways. In addition, the cover provided by these woods allows coyotes and deer to move freely between wooded areas, potentially crossing the AOA and creating additional risks (see Attachment A, Photos 6, 7, 20, and 22).

3 Wildlife Observations

3.1 Wildlife Hazard Site Visit and Survey Overview

Ardurra carried out a thorough three-day site visit from November 25 to 27, 2024, to evaluate the U10 property. The survey was led by Vince Barthels, an FAA-Qualified Airport Wildlife Biologist (QAWB), with the objective of assessing property boundaries, pinpointing potential wildlife monitoring locations, and documenting existing conditions.

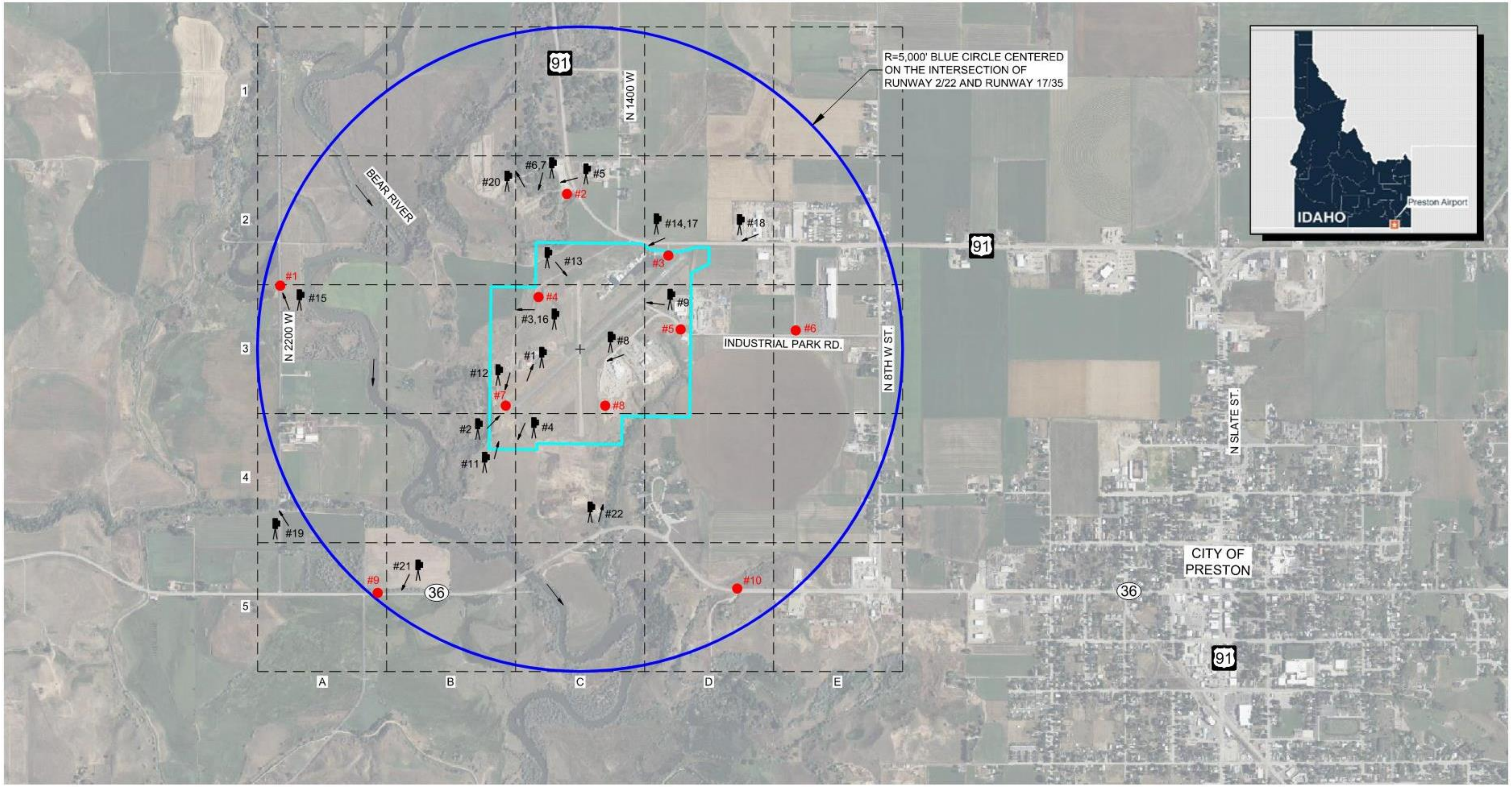
To facilitate wildlife activity monitoring, ten fixed-point survey sites were established (refer to Figure 3.1). Five of these locations were within U10, carefully selected to ensure comprehensive visual coverage of the AOA, which includes runways, taxiways, aprons, buildings, and other structures. The remaining five sites were positioned off-airport in and near areas identified as potential wildlife attractants, such as Bear River, open spaces, sagebrush, and woodlands. These off-airport locations were also strategically aligned within the aircraft approach and departure zones, all within a 5,000-foot radius of the AOA.

Throughout the site visit, the QAWB performed fixed-point wildlife surveys that focused on the presence and behavior of wildlife. A total of four surveys were completed — two during the morning and two in the evening. Morning surveys commenced at dawn, while evening surveys began approximately two hours before sunset. Each survey entailed the QAWB recording all wildlife species observed from each monitoring location over three-minute intervals. Observations were meticulously logged on the WHSV: Wildlife Observation Log data sheet for future analysis.

In addition to the formal survey data, general observations concerning wildlife presence or signs, such as scat, tracks (see Attachment A, Photos 11 and 12), and holes (see Attachment A, Photo 13) not linked to fixed-point monitoring locations, were also made. These observations documented wildlife encounters experienced while traversing between monitoring sites, near hangars, along the airport perimeter, or during other activities on the U10 property.

During the site visit, weather conditions predominantly included rain, with precipitation levels ranging from 0.05 to 0.52 inches, and wind speeds between 9 and 14 miles per hour. Temperatures fluctuated from a brisk 20°F in the mornings to a maximum of 47°F later in the day.

Figure 3.1 Wildlife Hazard Site Visit Exhibit



LEGEND:

▭ AIRPORT BOUNDARY

● #1 WILDLIFE OBSERVATION POINT

#1 PHOTO POINTS (22)

PRESTON AIRPORT
PRESTON, IDAHO
WILDLIFE HAZARD SITE VISIT EXHIBIT

0 750 1500 3000 4500

DATE: 1/30/25 JOB: I: 230478

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1717 S. RUSTLE STREET, SUITE 201
SPOKANE, WA 99224

509-319-2580 | WWW.ARDURRA.COM

I:\230478\03_CAD\Sheets\230478 Wildlife Hazard Site.dwg, 1/30/2025 4:27:25 PM, Timothy Fisch, DWG To PDF.pc3

3.2 Wildlife Survey Results

As indicated in Table 3.1, a total of 3,939 birds and 87 mammals from 27 different wildlife species were observed during the surveys. The species diversity recorded at U10 is typical for the region, especially during the late fall migration period when the WHSV was conducted. The majority of the species observed are either common residents of the area or fall migrants passing through Franklin County. Among the bird species, European starlings were the most frequently sighted, often in flocks numbering over 1,000 individuals. Additionally, coyotes, deer, and signs of badger activity were also recorded within the AOA.

Table 3.1 Wildlife Observed During the WHSV Surveys November 25-27, 2024

Species	Scientific Name	Abundance
American kestrel	*Falco sparverius*	2
Badger	*Taxidea taxus*	Dormant Badger/Coyote Den Observed
Bald eagle	*Haliaeetus leucocephalus*	2
Barn cat	*Felidae spp.*	1
California quail	*Callipepla californica*	14
Canada goose	*Branta canadensis*	103
Chukar	*Alectoris chukar*	39
Coyote	*Canis latrans*	2
Crow	*Corvus spp.*	5
Duck	*Anatidae spp.*	339
European starling	*Sturnus vulgaris*	3,214
Great blue heron	*Ardea herodias*	1
House finch	*Haemorhous mexicanus*	37
House sparrow	*Passer domesticus*	6
Killdeer	*Charadrius vociferus*	1
Magpie	*Pica hudsonia*	40
Marsh wren	*Cistothorus palustris*	2
Mourning dove	*Zenaida macroura*	76
Mule deer	*Odocoileus hemionus*	85
Northern flicker	*Colaptes auratus*	3
Pheasant	*Phasianus colchicus*	8
Pigeon	*Patagioenas fasciata*	8
Red-tailed hawk	*Buteo jamaicensis*	7
Red-winged blackbird	*Agelaius phoeniceus*	4
Ring-billed gull	*Larus delawarensis*	1
Ruby-crowned kinglet	*Corthylio calendula*	3
Sparrow	*Passer domesticus*	23
Total Individuals Observed From 27 Species		**4,026**

Source: Ardurra

3.3 Wildlife Habitat and Activity Assessment at U10

The QAWB also identified various habitats and biological communities on airport property that could attract or support wildlife. General inspections were carried out to pinpoint features that were observed or had the potential to attract hazardous wildlife. These features included agricultural fields, sagebrush, Bear River, wooded areas, buildings, hangars, and airfield structures.

Wildlife activity on U10 property and within its facilities may vary due to seasonal and daily changes in site conditions and weather patterns. The data gathered during the WHSV provides a snapshot of wildlife presence and behavior at the Airport and should not be regarded as a complete representation of wildlife populations or behaviors at U10. Instead, it establishes a baseline for developing recommendations to guide future studies. Any proposed changes or upgrades to U10's property or facilities should be reviewed by the QAWB to assess their potential impact on wildlife presence, behavior, distribution, and abundance within the AOA and surrounding areas. Such changes may involve modifications to structures, landscaping, and stormwater or drainage systems.

3.4 Threatened and Endangered Species

The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list includes species that are threatened or endangered under the Endangered Species Act (ESA). The IPaC data was reviewed to determine if any ESA-listed species may be present in the vicinity of the Airport. Three species were identified: the monarch butterfly (*Danaus plexippus*), a proposed threatened species under the ESA, the Suckley's cuckoo bumble bee (*Bombus suckleyi*), a proposed endangered species under the ESA, and the Ute Ladies'-tresses (*Spiranthes diluvialis*), which is listed as threatened under the ESA. However, none of these species were observed during the WHSV.

In addition to ESA-listed species, migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA). The IPaC species list includes several migratory bird species such as the American avocet (*Recurvirostra americana*), American white pelican (*Pelecanus erythrorhynchos*), California gull (Larus californicus), Franklin's gull (*Leucophaeus pipixcan*), northern harrier (*Circus hudsonius*), and willet (*Tringa semipalmata*). None of these species were observed during the WHSV.

Though not listed on the IPaC species list, two bald eagles (Haliaeetus leucocephalus) were observed in the area. These eagles are further protected under the Bald and Golden Eagle Protection Act of 1940.

3.5 Wildlife Attractants

3.5.1 On-Airport Wildlife Attractants

The primary wildlife attractants identified at U10 are the expansive grass fields within the AOA. These fields draw various species of birds that can pose hazards, while also serving as forage grounds for deer. To ensure optimal visibility and minimal cover for wildlife in the AOA, it is essential to maintain these grass fields at a height of six to twelve inches. Additionally, wooded areas along the Airport boundary provide habitat for raptors, ravens, doves, and other birds that traverse the AOA and runways. The cover from these woodlands also facilitates movement for coyotes and deer, potentially leading them into the AOA and increasing associated risks.

Effective wildlife management necessitates the implementation of exclusion strategies to mitigate attractants on-site. The current four-strand barbed wire fence (see Attachment A, Photo 16), particularly in its current state of disrepair, does little to stop larger wild mammals, such as deer and coyotes, from accessing areas where aircraft operate. The presence of mammals in these zones can create significant hazards for aircraft.

Collisions with large mammals can be disastrous. The FAA designates deer and other large mammals as the species that present the highest threat to aircraft operations. Considering the prevalence of deer in the surrounding environment (see Attachment A, Photos 6, 7, 12, 16, and 20), it is highly recommended that U10 explore the construction of a wildlife exclusion fence around the AOA. This fence should be constructed at a sufficient height to deter deer and designed to contain a buried skirt to prevent burrowing by coyotes and other mammals. Refer to FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or near Airports,*[12] and FAA CertAlert No.16-03, *Recommended Wildlife Exclusion Fencing,*[13] for more information.

3.5.2 Off-Airport Wildlife Attractants

Bear River is situated to the west of the AOA. This water source is an attractant for Canada geese, various duck species, great blue herons, and other water and shorebirds, presenting potential hazards to aircraft as they approach or traverse through the U10 airspace. Additionally, groves of trees located to the south, north, and west of the AOA can serve as roosting sites for potentially hazardous bird species, including raptors and blackbirds. Surrounding the Airport, there are numerous agricultural fields to the north, west, and southeast, which create expansive habitats attractive to Canada geese and other waterfowl that migrate through or above the U10 airspace.

According to FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or near Airports*, land use practices that attract or sustain hazardous wildlife are identified, along with recommended minimum separation distances between these land uses and airports. The FAA advises a minimum separation of at least 5,000 feet between hazardous wildlife attractants and airports serving piston-powered aircraft, and a minimum of 10,000 feet for those serving turbine-powered aircraft, such as U10. Furthermore, it is recommended that there be a separation of 5 statute miles between the outer boundaries of the AOA and any hazardous wildlife attractant that could lead to wildlife movement into or across the approach or departure airspace. FAA AC 150/5200-33C enumerates various land uses as potential hazardous wildlife attractants, including landfills, water management facilities, wetlands, spoil containment areas, agricultural activities, golf courses, and landscaping.

4 Recommendations for Airport Safety

4.1 Recommended Changes to U10 Infrastructure

To enhance wildlife management and safety at U10, it is crucial to evaluate and implement strategic changes to the Airport's infrastructure. These recommendations aim to address current wildlife hazards, improve monitoring capabilities, and minimize the risk of wildlife encounters in the AOA. By considering modifications to existing structures, implementing new technologies, and refining management practices, U10 can better control wildlife activity and further reduce the potential for wildlife strikes. The following infrastructure improvements are designed to provide a comprehensive, long-term solution to managing wildlife at U10 while ensuring the safety of both aircraft operations and wildlife.

4.1.1 Perimeter Fence

It is recommended that the Airport install a wildlife exclusion fence around the perimeter of the property. The fence should include barbed-wire outriggers and four feet of buried skirt to prevent mammals, such as coyotes, from burrowing underneath. Specifications for the construction of such a fence are outlined in FAA AC 150/5370-10H, *Standard Specifications for Construction of Airports*, and specified in Attachment B, Detail F-163. According to FAA CertAlert No.16-03, the fence should fully enclose the Airport property to effectively restrict wildlife from accessing the AOA.[14] Moreover, in alignment with FAA Order 5100.38D, *Airport Improvement Program Handbook*, the implementation of wildlife fencing is typically eligible for funding if the Sponsor has adopted the WHSV Report.[15]

Larger mammals, such as deer and coyotes, pose significant risks to aircraft when they enter the AOA. Strikes with these animals can lead to severe damage or even complete destruction of aircraft, particularly during critical takeoff and landing phases. The QAWB who conducted the site visit identified the lack of a sufficient perimeter fence as a major concern at U10, as it allows larger mammals to freely enter the AOA. A wildlife fence is currently identified for construction in 2029 on the 2025-2030 Capital Improvement Plan (CIP) for U10.

4.1.2 Wildlife Deterrence and Management Strategies

To effectively manage wildlife within the AOA, it is recommended to install a combination of active and passive wildlife harassment techniques and deterrents. These measures should include the use of biosonic calls, such as alarm and distress signals, alongside visual deterrents like effigies, predator models, decoys, lasers, and lights or mirrors. When deploying these dispersal methods, it is important to ensure minimal disruption to Airport personnel and visitors, while effectively deterring wildlife. These techniques are further detailed in Airport Cooperative Research Program (ACRP) Report 23, *Airport Passenger-Related Processing Rates Guidebook*.[16]

In addition to sound and visual deterrents, automated or motion-sensing wildlife repellents should be installed within the AOA. These systems can be triggered by the presence of wildlife, activating sound, lights, or sprays to discourage animals from entering critical areas. To further enhance wildlife monitoring and detection, radar systems could be introduced to track wildlife in flight paths and around the Airport, offering real-time data on wildlife movements. Infrared or motion-sensing cameras could also be strategically placed in high-activity areas, providing immediate insights into wildlife presence and enabling a quick response to emerging threats.

Furthermore, modifications to lighting within the AOA can help reduce attraction for nocturnal bird species. Research has shown that certain light wavelengths or lower-intensity lights can discourage birds from approaching the Airport, thereby improving both aircraft safety and wildlife management. By employing these methods, U10 can effectively mitigate wildlife hazards and enhance overall airport safety.

4.2 Recommendations for U10 Habitat Management

The large grass fields within the AOA at U10 were identified as significant wildlife attractants. If allowed to grow unchecked, the tall grass could obscure potentially hazardous birds and mammals, making them less visible to Airport staff. Adding an as-needed application of herbicides and the continuation of current mowing practices will ensure that these wildlife hazards remain visible to maintenance personnel and aircraft operators. It is crucial that U10 continues to monitor wildlife use in these areas and implements the necessary wildlife management measures to mitigate the risks posed by these attractants.

In addition to on-site efforts, the Airport should collaborate with adjacent landowners to manage habitats in surrounding areas. This could include reducing wildlife attractants, such as food sources, and establishing wildlife barriers to prevent animals from approaching the Airport. Engaging local farmers and community members in this effort can further help minimize wildlife movement toward the Airport. Non-lethal methods, such as capturing and relocating hazardous wildlife species should also be considered to safely manage wildlife populations away from the Airport.

4.3 Wildlife Activity Monitoring Recommendations

The data gathered during the three-day site visit offers a brief overview of wildlife activity at U10. However, it is essential to recognize that wildlife presence, behavior, and site conditions can vary daily, seasonally, and annually. As a result, ongoing monitoring of both on-site and adjacent wildlife is critical for maintaining safety and effective management. U10 should continue to track wildlife behavior, movement, and population density at the Airport and its surroundings.

A comprehensive monitoring program should be implemented to track wildlife populations over time, utilizing data analysis to identify patterns in wildlife movements. This will allow management strategies to be adjusted as needed to address emerging trends and behaviors. The wildlife management plan should be regularly reviewed and updated based on new data, changes in wildlife behavior, or the effectiveness of current management practices.

Regular off-site monitoring at key locations should also be a priority for assessing potential wildlife risks. Bear River, a known habitat for large groups of Canada geese, various waterfowl species, great blue herons, and other water and shorebirds, should be monitored closely. Birds from this area may travel between the river and the Airport, potentially entering the AOA or flying through nearby airspace. It is recommended that U10 track the movements of birds from Bear River. If birds are found to be entering the AOA, it would be prudent for U10 to collaborate with the United States Army Corps of Engineers to explore bird control or management options at the river to mitigate any hazards.

Wildlife patrols should be conducted in conjunction with the monitoring program to identify and address hazardous wildlife within the AOA, with particular focus on areas near sagebrush and woodlands. Patrols should work to disperse deer, coyotes, birds, and other wildlife from these areas. The frequency of these patrols should be adjusted based on seasonal trends and monitoring results. A Per AC 150/5200-38, it is recommended that a wildlife strike log be created and maintained to determine patrol timing, frequency, and need as well as track species within U10 to assist in future wildlife management decisions.

Additionally, both on-airport and adjacent wooded areas should be monitored for bird activity. These wooded areas serve as perching and roosting sites for birds, as well as shelter for deer and coyotes. Birds from these areas may pose a threat to aircraft as they cross runways or fly into airspace. Airport staff should track the movements of birds in these areas to determine if they are entering the AOA or crossing through protected airspace. If birds from nearby wooded areas are observed entering the AOA, U10 should seek permission from the landowner to implement bird dispersal measures. Collaborating with a QAWB can aid in identifying and implementing appropriate bird control strategies in cooperation with the property owner.

Airport personnel should receive training in wildlife identification and management protocols to respond effectively to wildlife hazards in compliance with federal and state regulations. Personnel should be equipped with the necessary tools for managing wildlife threats, including but not limited to:

- Binoculars
- Bird and mammal identification guides
- A wildlife management logbook
- Personal protective equipment (PPE)

4.4 Lethal Control as a Supplement to Non-Lethal Methods

While non-lethal harassment techniques are often effective in managing wildlife, animals can eventually habituate to these methods, reducing their effectiveness over time. In such instances, lethal control may become necessary to complement or reinforce non-lethal strategies. ACRP Synthesis 39, *Airport Wildlife Population Management*, offers comprehensive guidance on integrating lethal control into broader wildlife management plans.[17] Although the use of lethal control may not be popular with the public, it can be crucial for ensuring the safety of airport operations. The benefits, particularly in terms of risk mitigation, often outweigh public concerns. However, lethal control should always be considered a last resort, employed only when non-lethal methods are ineffective or need reinforcement.

State and federal depredation permits should be obtained to implement lethal control measures for managing hazardous wildlife species, such as waterfowl, deer, coyotes, blackbirds, and other hazardous wildlife. Airport operations staff should be properly trained and receive (at minimum) yearly refreshers on safety and proper use of all equipment, particularly those intended for lethal use. Additionally, it is important to provide airport staff with yearly wildlife hazard management training, conducted by a QAWB, to improve their ability to recognize and respond to wildlife risks effectively.

To conduct lethal control on migratory bird species such as Canada geese and raptors, U10 must obtain a federal depredation permit from the USFWS. Additionally, for state-managed species like deer and coyotes, a state depredation permit from the Idaho Department of Fish and Game is required. These permits must be renewed annually with the appropriate federal and state agencies. If lethal control measures are necessary, U10 may enter into a contract with USDA-WS or a private wildlife control contractor to carry out the necessary actions in accordance with all regulatory requirements. This ensures that lethal management is carried out in a controlled, effective, and legal manner.

4.5 Administrative Actions

4.5.1 Wildlife Activity Reporting Recommendations

To ensure effective response to wildlife hazards, all wildlife strikes must be reported to the FAA Wildlife Strike Database (http://wildlife.faa.gov/database.aspx) for tracking and analysis. A clear protocol should be developed for Airport personnel, pilots, and other users to report wildlife sightings or strikes directly to airport management, enabling a timely and coordinated response. Pilots should be advised to file pilot reports (PIREPs) to document any wildlife hazards observed in or around the Airport.

Although the FAA's wildlife strike reporting system is voluntary, reporting all strikes and wildlife sightings is critical for identifying patterns and evaluating wildlife control effectiveness. To streamline this, U10 should establish clear protocols for Airport users—such as fixed-base operators (FBO), pilots, and staff—to report wildlife encounters. U10 management should maintain a comprehensive wildlife strike log of all reported incidents per AC 150/5200-38. These records should be incorporated into U10's WHMP to ensure ongoing monitoring and response.

In cases where persistent wildlife hazards are identified at specific times or locations, a system should be established to issue a Notice to Airmen (NOTAM) to inform pilots of the risks. To further raise awareness about wildlife hazards, informative signage should be posted at key locations throughout the Airport, such as Airport user offices and FBO areas. This will encourage reporting from both Airport personnel and visitors, helping to improve overall wildlife hazard management.

4.5.2 Wildlife Hazard Awareness Protocol

To enhance safety and awareness, the following steps are recommended:

- Encourage Pilots to Report Wildlife Hazards via PIREPs: Pilots should be advised to report any wildlife hazards observed near or on the Airport using PIREPs via UNICOM or the common traffic advisory frequency. This real-time reporting allows for immediate awareness of potential threats to aircraft in the vicinity.
- Issue Specific NOTAMs for Persistent Wildlife Hazards: When a consistent wildlife hazard is identified, especially during peak activity periods, the Airport manager should issue a NOTAM. It is crucial that these notices are specific, highlighting the nature and location of the hazard, rather than using vague terms like "wildlife on and around the airport."
- Raise Awareness with Signage and Communication: To inform everyone on Airport property about wildlife risks, U10 staff should display signs and posters regarding hazardous wildlife and reporting procedures. FAA-approved posters are available, and U10 should consider sending regular email notifications or newsletters to all tenants and stakeholders. These communications should outline the types of wildlife hazards, the importance of reporting strikes, and the steps for doing so.
- Establish a formal wildlife log and associated procedures to determine patrol timing, frequency, and need as well as track species within U10 to assist in future wildlife management decisions.

By implementing these practices, U10 will foster a more proactive approach to wildlife hazard management, improving safety and ensuring that all wildlife encounters are documented and addressed effectively.

4.6 Final Wildlife Hazard Assessment and Management Recommendations

The November 25 to 27, 2024 surveys, conducted by the QAWB in collaboration with U10 staff, have confirmed the presence of hazardous wildlife in proximity to the Airport. Notably, wildlife such as deer, coyotes, and European starlings have been identified as significant threats, posing potential risks to airport operations both on and near airport grounds.

Several management approaches can be implemented to address these identified hazards. One effective strategy involves utilizing dispersal techniques, as outlined in Chapter 4 of ACRP Report 23,[18] in combination with regular hazing activities to discourage wildlife from entering the AOA. A wildlife perimeter fence is planned for 2029 and would greatly help exclude larger mammals from the AOA. In instances where non-lethal methods fail to produce sufficient results, obtaining depredation permits from the Idaho Department of Fish and Game and USDA-WS may be necessary to implement lethal control measures as part of a more comprehensive wildlife management plan.

The findings of the WHSV Report, which serves as an assessment of wildlife hazards at U10, confirm the identification of these risks and outline the appropriate management actions. Since this report has been reviewed by a QAWB, and the findings are adequate to determine necessary steps, a full WHA is not considered necessary. As such, the development of a formal WHMP for U10 is recommended based on the conclusions and proposed actions in this report.

U10 may choose to submit the WHSV Report to the FAA for further review. Should the FAA endorse the recommendations made within the report, there is potential for the subsequent WHMP to receive federal funding. If the FAA grants approval for the final management plan, the implementation of its proposed strategies could also qualify for federal financial support.

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ATTACHMENT A - PHOTO INVENTORY

Photo 1: Facing northeast, parallel to runway 4/22, the windsock and other weather instruments are visible in the midground, with hangars and storage areas in the background. In the distance, the agricultural fields at the foothills provide a suitable habitat for several species of wildlife, which may occasionally venture near the Airport, posing potential risks to air traffic.

Photo 2: Facing northeast from the southern end of Runway 4. Freshly planted crested wheatgrass is visible, having been allowed to grow taller than usual this year to help them become more fully established. In future years, these grasses will be maintained at a height between six and twelve inches to reduce wildlife attraction and ensure safe Airport operations.

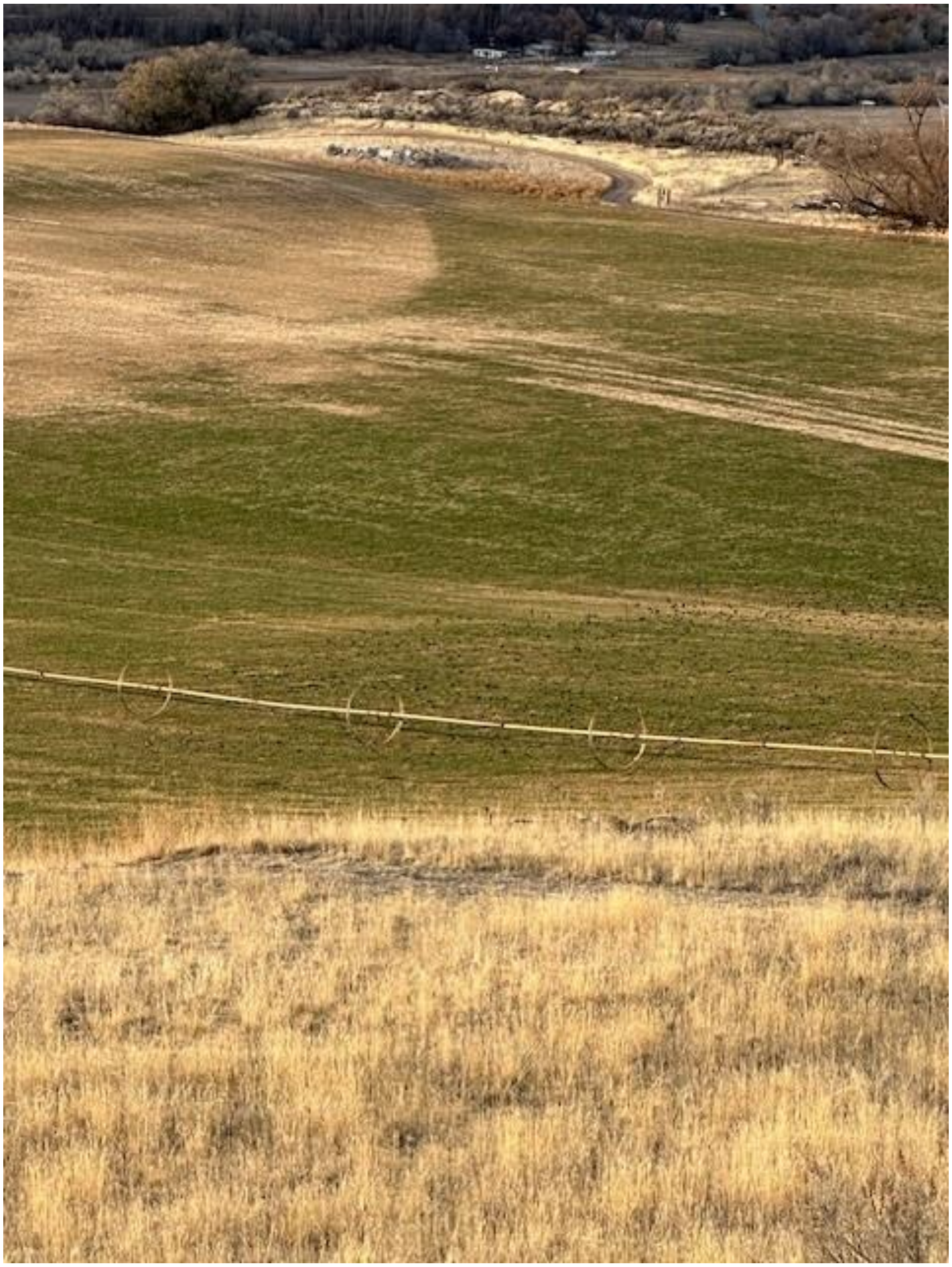


Photo 3: A sizable flock (300+) of European starlings occupies an agricultural field west of the Airport. These fields are one of the primary wildlife attractants around the Airport, drawing large numbers of birds and other animals that pose potential hazards to aircraft during takeoff and landing. The Bear River is in the top (background) of this photo.

Photo 4: In the foreground, a 4-strand barbed wire cattle fence surrounds much of the Airport property. The midground features agricultural fields, primarily grass hay, and beyond that, the landscape transitions into rangeland. The variety of habitats within the Airport's proximity makes the area highly desirable to diverse wildlife, which poses potential risks to Airport operations due to the possibility of animals entering the Airport grounds.

Photo 5: A wooded area near the Airport features mature trees with a variety of birds perched within them. These areas, surrounding the north, west, and south sides of the Airport, provide cover, food, and habitat for wildlife. Such habitats increase the risk of wildlife hazards to air traffic, as animals may wander onto runways or flight paths, posing safety concerns for aircraft.

Photo 6: A mule deer is seen within the observation point #2, north of the Airport. Over the course of the three-day site visit, a total of 85 mule deer were observed, emphasizing the high wildlife activity around the Airport, which presents ongoing safety concerns for aircraft operations.

Photo 7: Two mule deer bucks move through the tall grass understory of the nearby wooded areas, to the north of the Airport. Over the course of the three-day site visit, a total of 85 mule deer were identified, highlighting the significant wildlife presence near the Airport, which poses potential hazards to aircraft operations.

Photo 8: A plane landing at dusk on Runway 4. The 6-foot chain link perimeter security fence in the foreground was installed in the summer of 2024 and runs for approximately 0.6 miles following the southeastern border of the Airport property along Industrial Park Road.

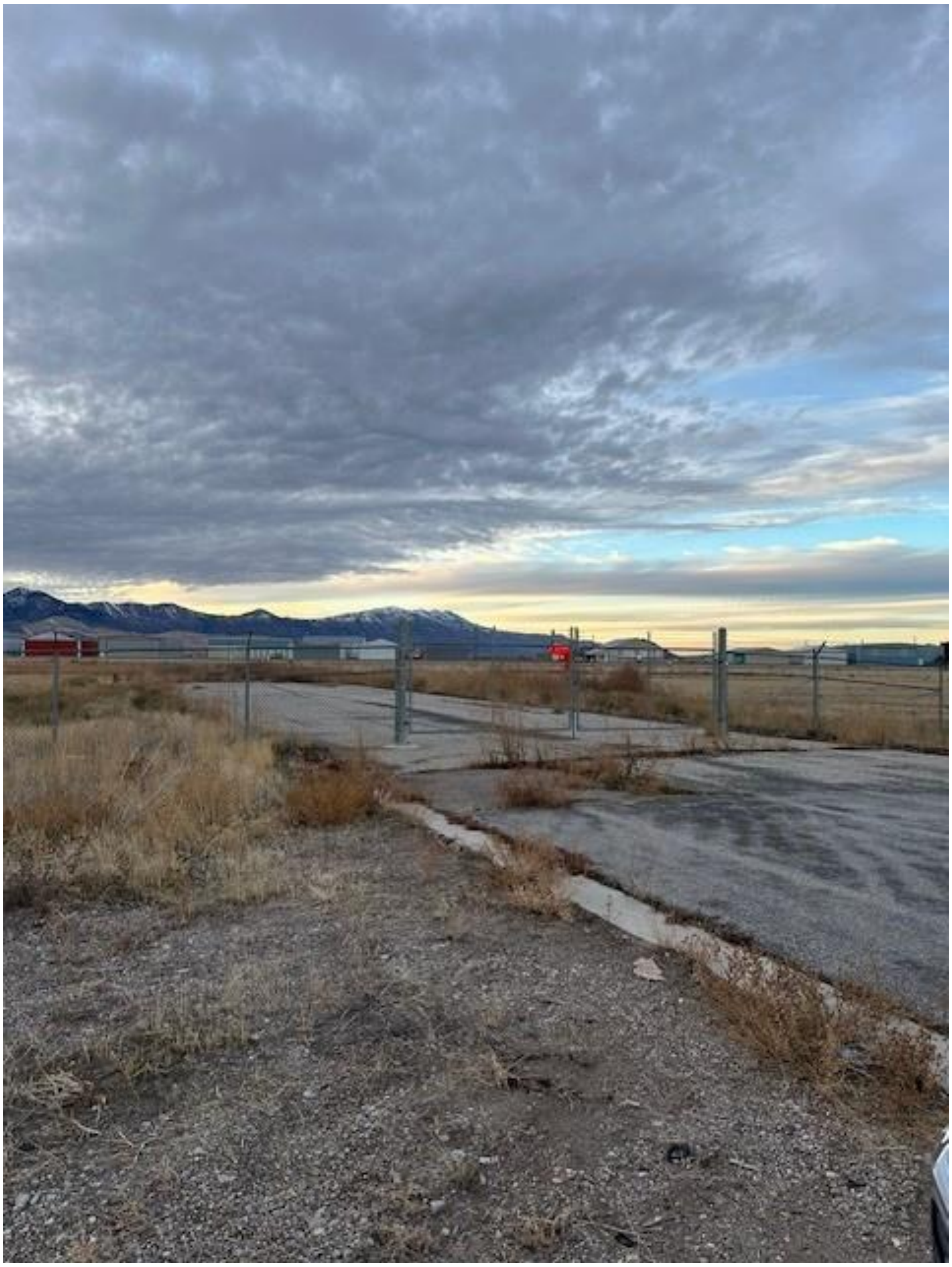


Photo 9: The new security fence runs along the southeastern border of the Airport property, adjacent to Industrial Park Road. It includes a gate that provides vehicle access to the east side of Runway 4/22, helping to secure the area while allowing necessary access for maintenance and operations.

Photo 10: Although the security fence's posts are cemented in place, the fence lacks a skirt or other measures to prevent coyotes and other burrowing wildlife from entering the Airport. This gap in the fence's design leaves the Airport vulnerable to wildlife intrusion, posing potential hazards to aircraft operations.

Photo 11: Fresh snow on the morning of day two made the abundant wildlife sign on and around the Airport more prominent. Here, tracks from a ringneck pheasant are visible, highlighting the presence of these birds in the area. This photo was taken approximately 100′ feet south of the Runway 4 end.

Photo 12: Fresh snow on the morning of day two highlighted the abundant wildlife sign around the Airport, making tracks from mule deer walking through crested wheatgrass more prominent. These tracks serve as evidence of the wildlife activity near the Airport, where animals frequently move through areas that can pose potential hazards to aircraft. These tracks were observed immediately west of the Runway 4 end.

Photo 13: A dormant badger/coyote den is clearly visible against the backdrop of the snow. This photo was taken on the northwestern portion of the Airport property.

Photo 14: The presence of large evergreen trees around the Airport office act as a wildlife attractant to several species of birds. Birds perching/nesting in these trees can be a potential risk to aircraft operations.

Photo 15: A large flock (400+) of European starlings gathers near the Airport, perched on trees and powerlines. Their significant numbers pose a serious hazard to aircraft, increasing the risk of bird strikes, especially during takeoff and landing.

Photo 16: A small group of mule deer moves through an agricultural field, northwest of the Airport. The visible cattle fence offers little deterrence, should the deer decide to enter the Airport boundary.

Photo 17: A 4-foot perimeter fence surrounds the Airport entrance parking area, extending about 275 feet. However, it lacks a gate. The fence connects to a cattle fence to the east, and simply ends to the west, offering minimal deterrence to wildlife.

Photo 18: Facing southwest across Highway 91 toward the Airport hangars. Large game frequently crosses the road, prompting the installation of a "Game Crossing" sign with lights to warn drivers of the potential hazard. This sign is located in the Runway 22 Runway Protection Zone (RPZ).

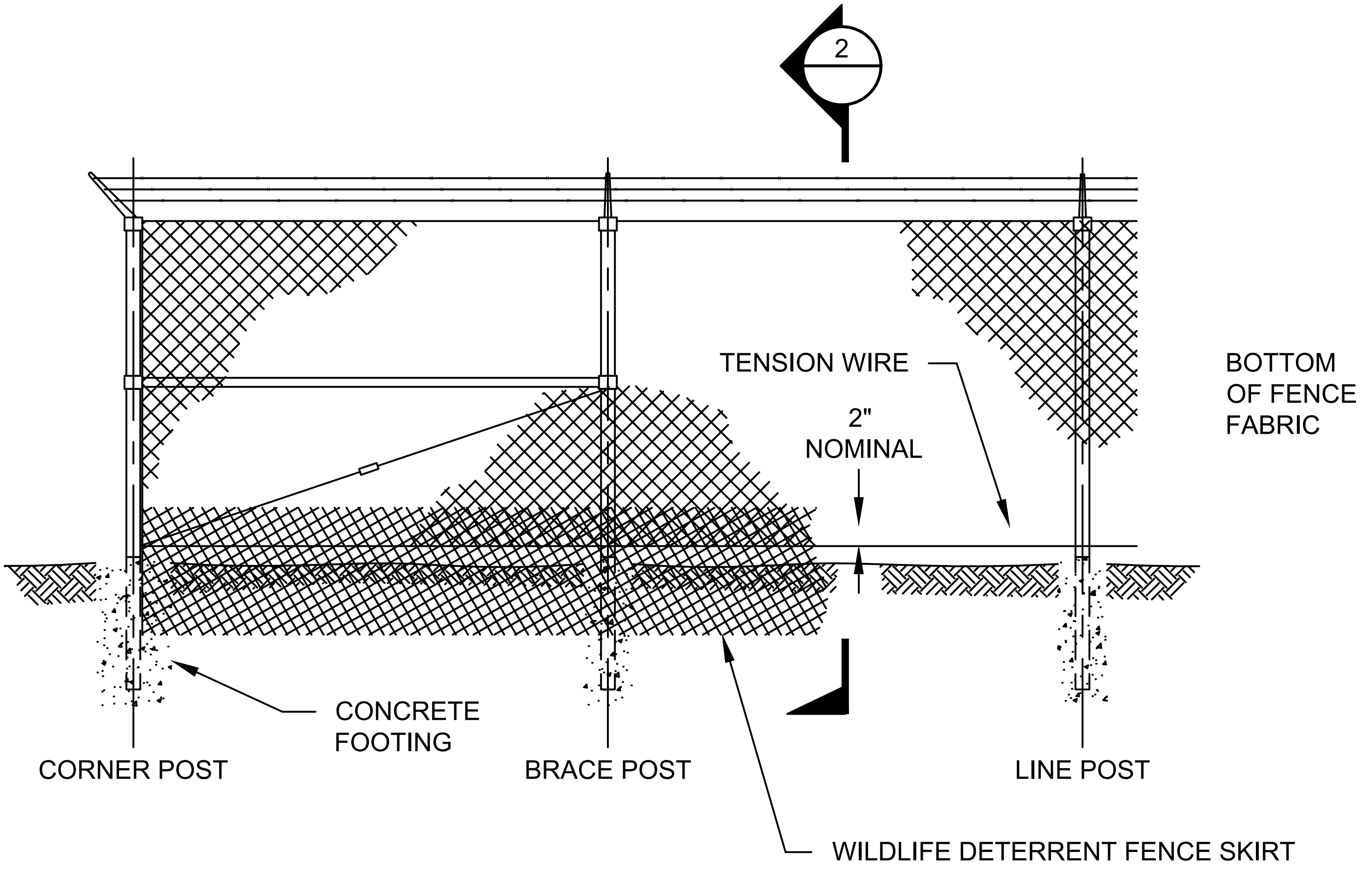
Photo 19: A juvenile bald eagle perches in a tall tree, scanning the adjacent agricultural and wooded lands for its next meal. Its presence near the Airport poses a potential hazard, as large birds like eagles can create significant risks for aircraft during flight. This photo was taken approximately 1,000 feet north of the intersection of Highway 36 and Road N 2200 W (southwest of the Airport).

Photo 20: Mule deer move through a wooded area near the Airport, often venturing close to the runway and flight paths. Their presence poses a significant safety hazard, as aircraft strikes with mule deer can cause serious damage to planes, particularly during takeoff and landing. The risk is heightened due to the deer's tendency to roam in areas near the Airport.

Photo 21: The pasture, range, wetland, and riparian areas surrounding the lower elevations of the Airport create a diverse wildlife habitat that attracts various species, posing significant hazards to Airport operations. These areas are home to animals such as mule deer, waterfowl, and small mammals, which can wander onto runways and flight paths, increasing the risk of wildlife strikes.

Photo 22: Dense thickets like this provide excellent cover for wildlife, offering shelter and concealment for animals such as deer, birds, and small mammals. These areas can make it difficult for Airport personnel to spot wildlife, increasing the risk of animals wandering onto the Airport grounds and potentially causing safety hazards for aircraft.

ATTACHMENT B - DETAIL F-163



EXISTING SECURITY FENCE WITH WILDLIFE DETERRENT FENCE SKIRT

TYPICAL ELEVATION

NOT TO SCALE

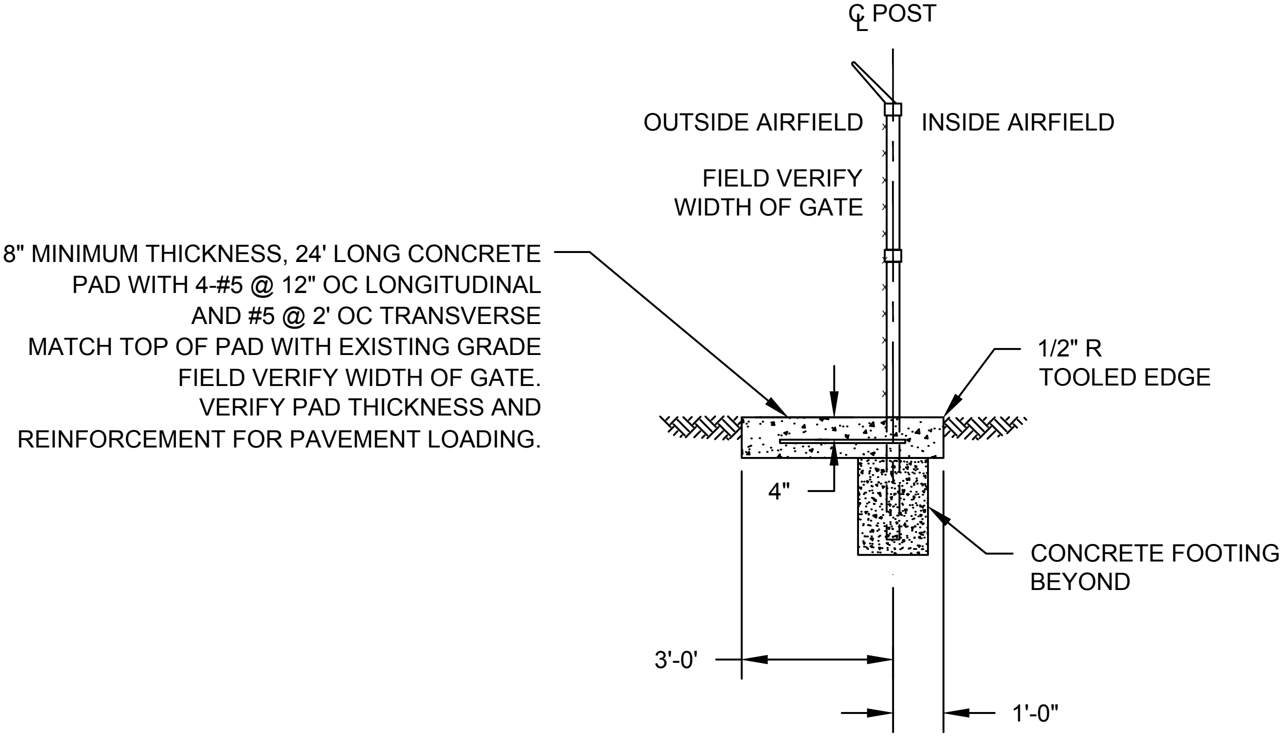
NOTES:

1. MAINTAIN SECURITY FENCE INTEGRITY AT ALL TIMES. DO NOT LEAVE EXCAVATION UNDER FENCE FABRIC WHICH WOULD PERMIT ACCESS.

2. DEPTH OF EXCAVATION SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF THE CHAIN LINK FENCE FABRIC.

3. END JOINTS BETWEEN ADJACENT SECTIONS OF THE WIRE FABRIC SHALL BE LAPPED 4" AND TIED WITH GALVANIZED WIRE TIES AT 2'-0" ON CENTER AND AT EDGES.

NOTE: REFER TO F-163 WILDLIFE DETERRENT FENCE SKIRT FOR SPECIFICATIONS.

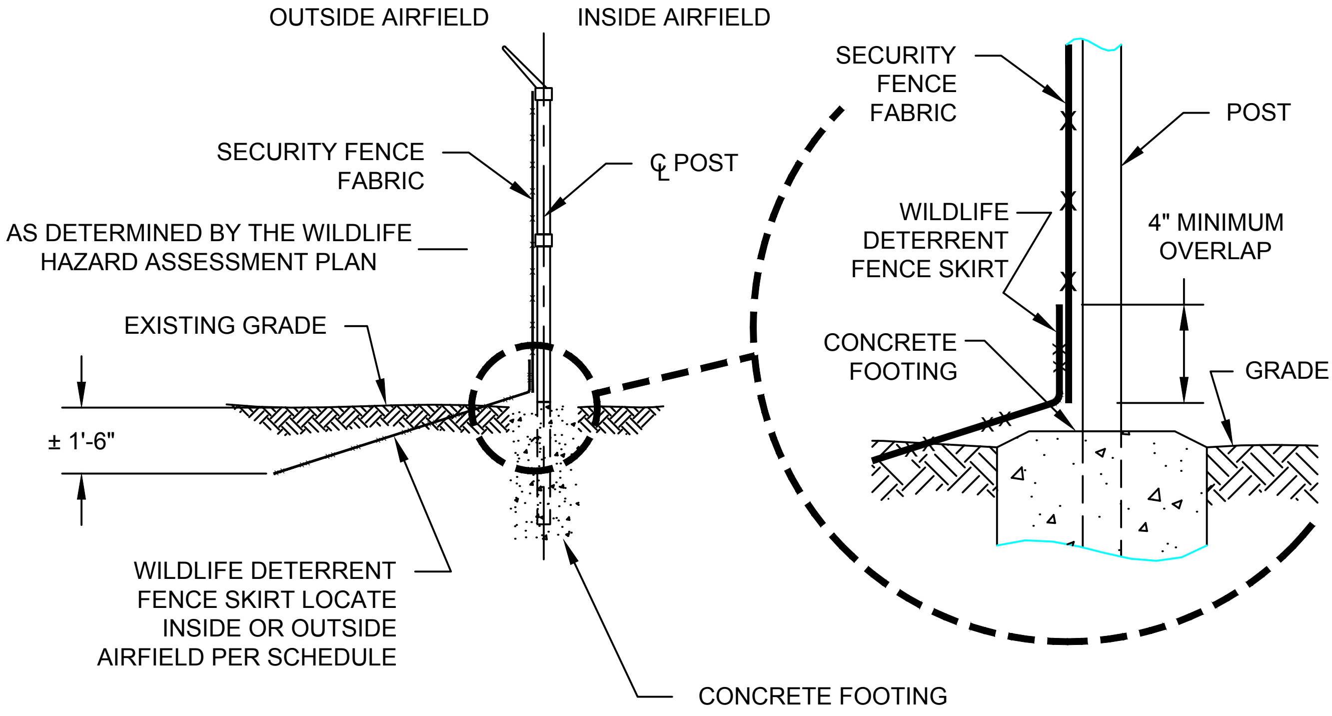


CONCRETE PAD AT GATE

3

GATE DETAIL

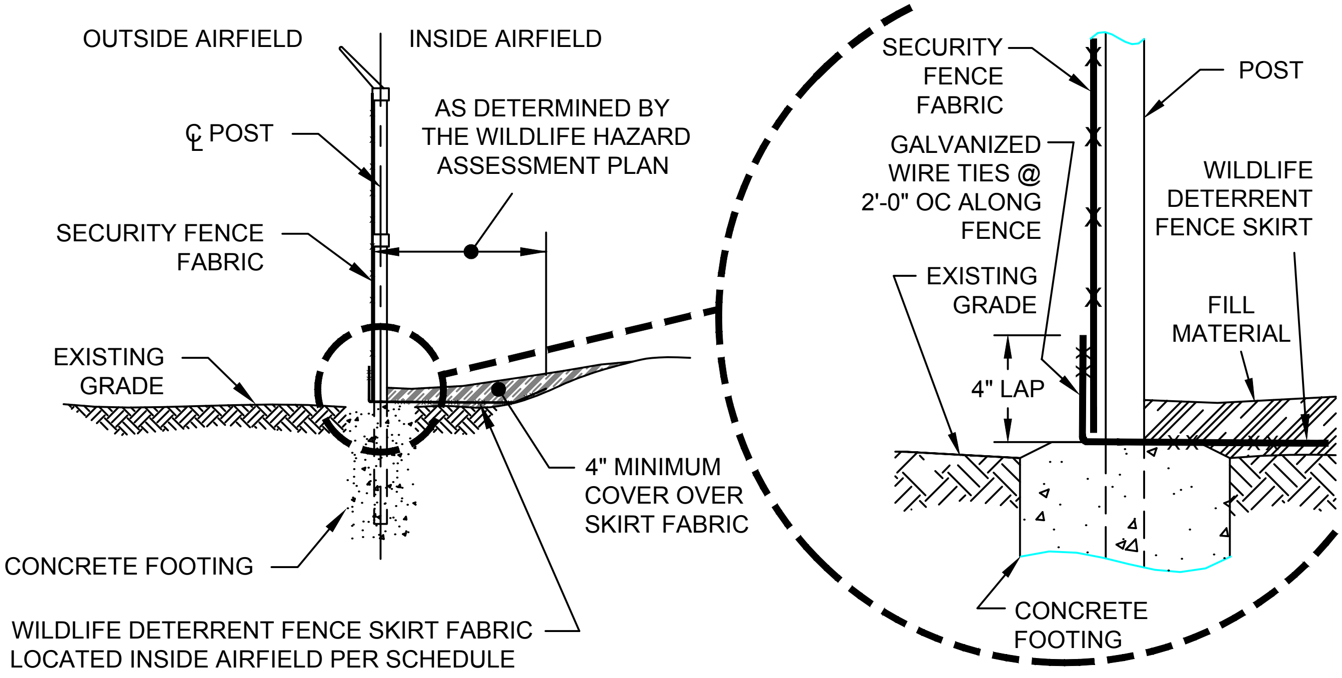
NOT TO SCALE



EXISTING SECURITY FENCE WITH DETERRENT FENCE SKIRT
(TYPICAL EXCEPT AS SHOWN ON SECTION 2A)

2 TYPICAL SECTION

NOT TO SCALE



EXISTING SECURITY FENCE WITH WILDLIFE DETERRENT FENCE SKIRT

2A SECTION

NOT TO SCALE

D

AIRSPACE AND INSTRUMENT PROCUDURE REPORT

Preston (U10) Airport

Airspace and Instrument Procedure Analysis

Prepared By

LEAN Technology Corp

Reviewed By

LEAN Technology Corp

Submitted To

Ardurra Group, Inc.

For

Preston (U10) Airport Master Plan

Disclaimer for Airspace Study

This airspace study is based on information sourced from the Federal Aviation Administration (FAA), Aeronautical Geographic Information System (AGIS), other databases, stakeholder discussions, current procedure data, and identified obstructions at the time of the study throughout various sources.

While every effort has been made to ensure the accuracy and completeness of the information provided, the following disclaimers apply:

1. **Data Accuracy and Currency**: The information utilized in this study reflects the most current data available at the time of analysis. Changes to airspace regulations, airline operations, obstructions, or other relevant factors after the completion of this study may not be reflected.
2. **Stakeholder Input**: Stakeholder discussions were incorporated to provide contextual understanding. However, such input may represent subjective perspectives and should not be interpreted as definitive or binding.
3. **FAA and AGIS Information**: This study relies heavily on FAA and AGIS resources. Any updates or corrections to these sources may affect the findings and recommendations presented.
4. **Obstructions and Physical Factors**: The analysis of obstructions is based on available information at the time of the study. An actual physical survey was not performed and obstructions are based on available data through public databases. Changes in the physical environment or additional obstructions that arise subsequently may require further evaluation.
5. **Construction Approvals**: Any construction projects associated with the findings of this study will require submission of FAA Form 7460-1 (Notice of Proposed Construction or Alteration) and are subject to the FAA's ultimate approval. FAA has final approval of 7460 process and until such approvals are secured, no construction activity should proceed based solely on this study's recommendations.
6. **Scope of the Study**: This study is intended for planning and informational purposes only and does not serve as a formal regulatory or operational approval for any specific activity or project.
7. **Liability**: Neither the authors nor the organizations involved in the preparation of this study shall be held responsible for any decisions or actions taken based on the information contained herein. Users of this study are encouraged to verify details independently and consult with appropriate regulatory bodies before proceeding with any related plans or projects.

This document should be viewed as a snapshot in time, and regular updates are recommended to ensure continued relevance and compliance with evolving conditions and regulations.

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1 Executive Summary

This analysis evaluates the feasibility and benefits of introducing RNAV (GPS) instrument approach and departure procedures to Preston (U10) Airport. It aims to enhance operational reliability, especially under adverse weather conditions, by reducing reliance on visual flight rules (VFR) minimums. The study focuses on Runway 4-22, the airport's primary paved runway, and considers current aeronautical, obstacle, airspace, and weather data. Currently, aircraft flying instrument flight rules (IFR) that request a visual approach into Preston (U10), must have reported weather at the airport that is at or above 1,000-foot cloud ceiling and 3 statute miles (SM) visibility or greater. If reported weather is less than this, Air Traffic Control (ATC) will not allow a visual approach from an instrument flight plan. The instrument approach procedures (IAPs) outlined in this report allow pilots to execute an approach below those weather minimums, thus making the airport available for landing in inclement weather.

Key Findings:

1. Instrument Procedures:
    - Development of RNAV (GPS) approaches to Runways 4 and 22 are feasible and would significantly enhance operational reliability, particularly during winter months.
    - Proposed approaches include offset final approach courses with adjusted vertical descent angles (VDAs) to mitigate terrain challenges offering Category A-C aircraft improved weather minimums over the current VFR report weather requirements.
2. Weather Data Analysis:
    - Historical data shows significant operational limitations during the winter months, with reduced runway effectiveness due to visibility and ceiling constraints.
    - The addition of instrument approach procedures would mitigate these limitations, increasing operational availability during critical periods.
3. Runway and Airfield Infrastructure:
    - Current VFR-only markings on Runway 4-22 would need to be upgraded to non-precision instrument (NPI) marking standards to support instrument approaches.
    - Installation of on-site weather sensing equipment, such as an ASOS or AWOS-3, is recommended to improve the accuracy of local weather reporting. This will also eliminate the primary Remote Altimeter Setting Source (RASS) penalty, which will allow for a lower Minimum Descent Altitude (MDA) for the non-precision approaches and Decision Altitude (DA) for the precision approaches.
4. Departure Procedures:
    - RNAV departure procedures for both north and south departures are feasible and compliant with current FAA design standards.

This report provides descriptions of analyzed procedures that were determined to be feasible for implementation at Preston (U10).

2 Objective of This Analysis

The analysis in this report was created as part of a master plan update for Preston (U10). The objective of the analysis was to identify the feasibility of obtaining public instrument approach and departure procedures at Preston (U10) serving one or both ends of existing Runway 4-22.

To determine the feasibility and efficacy of potential new instrument procedures LEAN performed a flight operations assessment of Preston (U10). This assessment included collecting historical weather data, publicly available aeronautical and obstruction information, data regarding the types and capabilities of current and potential future users of the airport. This information was used with the instrument procedure development platform Terminal Area Route Generation Evaluation and Traffic Simulation (TARGETS) to develop candidate approach and departure procedures based on the determined needs of the airport users and the constraints of the terminal environment. Once candidate procedures were developed, LEAN conducted an additional flight operations assessment utilizing historical weather conditions to determine the overall benefit to the airspace users in terms of runway and airport availability based on the improved approach minimums.

This analysis does not include any information related to the design or performance of NAVAIDs, approach lighting, radar, communications facilities, or runway lighting.

3 Document Overview

This document contains information about the inputs, methods, results, and limitations associated with instrument procedure assessments used to determine the feasibility and utility of the proposed procedures.

The sections below describe information that can be used by stakeholders to consider the accuracy and validity of the methods and results.

Section 4 addresses the aeronautical and geospatial information used to establish baseline aircraft performance and instrument procedure conditions.

Section 5 addresses historical weather information to assess the current state of the airport and the effectiveness of existing VFR operations.

Section 6 addresses the airspace that is currently in use at the airport and how new instrument procedures may be implemented and their impact on aircraft operations.

Section 7 contains a summary of the findings and any recommendations for consideration.

4 Aeronautical and Geospatial Information

4.1 Baseline Information

Aeronautical and geospatial information was collected by LEAN through a combination of FAA maintained publicly available sources, and surveyed sources as a part of the update to the master plan and airport layout plan (ALP). The following sections describe the information that was considered for the instrument procedure assessment.

4.1.1 Runways

Preston (U10) has two runways. Runway 4-22 is paved in asphalt and serves as the primary runway. Runway 17-35 is gravel/dirt and serves as a crosswind runway which is typically used for crop dusting operations. Runway 4-22 has two paved access points, one at midfield and the primary access point at the Runway 22 approach end with access to the majority of the aircraft hangars. There is a small hammerhead taxiway at the approach end of Runway 4.

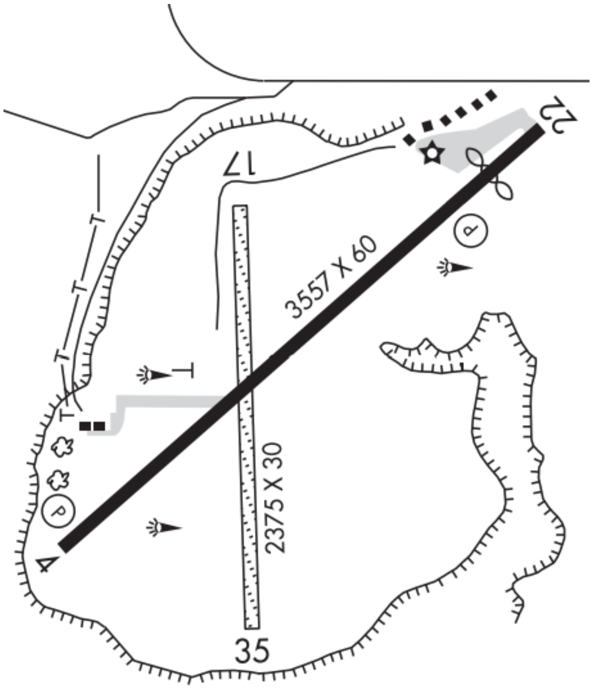


Figure 1: Preston (U10) Airport Sketch

For detailed information about the runways, and their aeronautical properties, please see *Table 1* below.

Table 1: Summary of Existing Declared Distances and Runway Properties at Preston (U10)

RUNWAY	DER Elev. (feet MSL)	TORA (feet)	TODA (feet)	ASDA (feet)	LDA (feet)	Width (feet)	Entry Angle	PCN
4	4724.1	3,557	3,557	3,557	3,557	60	90^{o}	N/A
22	4725				3,173			
17	4727.5	2,375	2,375	2,375	2,375	30	180^{o}	N/A
35	4727.7							

All information in *Table 1* was compiled from FAA eNASR during the 26DEC2024. The DER refers to the departure end of the runway.

4.1.1.1 Declared Distances

As listed in *Table 1*, Runway 4-22 currently utilizes a displaced threshold in the Runway 22 direction of 384 feet. There are no published declared distances at Preston (U10).

4.1.1.2 Runway 4-22 Markings and Surface Treatment
Both Runways 4 and 22 currently have basic visual markings in accordance with typical VFR operations. Runway 17-35 is gravel and unmarked.

Runway 4-22 currently has no surface treatment, meaning it is not grooved nor does it have a porous friction course applied (PFC). The absence of any surface treatment could lead to reduced friction situations for landing and takeoff operations during periods of rain, snow, or ice. All FAR 91-KI, 125, 121, and 135 operators will be required to consider increased landing and takeoff distance considerations under wet and contaminated situations.

Any future jet operations will benefit from the application of grooving and/or PFC.

4.1.1.3 Runway 4-22 Bearing Strength and PCN Limitations
A pavement classification number (PCN) has not yet been established or published for Runway 4-22. The weight limitations published in the FAA Chart Supplement for Preston (U10) Runway 4-22, create potential limitations for larger business jet aircraft.

The single-wheel main landing gear limitation of 12,000 pounds is adequate for all existing aircraft operations of aircraft with that landing gear configuration. However, because there is no dual-wheel weight specified, it is unlikely that the existing runway could support aircraft beyond the current general aviation (GA) traffic which may limit the utility of future instrument procedures.

Without corrective action to either enhance the pavement strength, or identify a PCN appropriate to larger aircraft operations, this deficiency will require future aircraft operators to either impose a runway weight bearing restriction on the calculated maximum allowable takeoff weight, or to directly correspond with the airport to determine if some latitude exists to exceed the published runway weight limits.

If an opportunity arises to enhance the current bearing strength via runway rehabilitation, this will mitigate possible operational weight restrictions. Additionally, establishing a PCN value for the runway would mitigate possible operator-imposed weight restrictions on what is ostensibly a design life protection value. However, the team does not recommend those actions as a part of this study as the current and planned operations do not require it.

4.1.2 NAVAIDs and Lighting

4.1.2.1 NAVAIDs
Having no existing published instrument approaches, departures, or arrivals, Preston (U10) is not currently served by any existing FAA or airport-owned NAVAIDs. The nearest VOR facilities are the Malad City (MLD) VOR/DME to the west and the Brigham City (LHO) VOR/DME to the southwest.

4.1.2.2 Lighting
The following visual guidance lighting system (VGLS) and visual glideslope indicators (VGSI), identified in *Table 2*, were considered for Runway 4-22.

Table 2: Existing Approach Lighting Elements Supporting Runway 4-22

RUNWAY	Lighting	Type	Length (feet)	Elevation (feet MSL)	Slope / TCH (feet AGL)
4	ALS	REIL	0	4,275	N/A
	VGSI	PAPI (2L)	807.8	4724.9	3.00 / 43.6
22	VGSI	PAPI (2L)	809.7	4725.7	3.00 / 43.6

All information in *Table 2* was compiled from FAA eNASR during the 26DEC2024. In addition to the information listed in *Table 2*, Runway 4-22 is supported by medium intensity runway edge lighting. Both ends of Runway 4-22 have a 2-box PAPI that is installed at a 3° glide path angle (GPA) and is operated continuously. The Runway 22 PAPI is designated as unusable beyond 4.0 nautical miles (NM).

4.1.3 Obstacles and Terrain

Preston is situated at the northern end of the Cache Valley with significant rising terrain to the east and west. To the east is the Bear River Range which stands approximately 5 NM from Preston (U10) with peaks at approximately 10,000 feet AMSL. West of the airport is the Malad Range, which is another substantial mountain range with peaks exceeding 9,500 feet AMSL. The Cache Valley runs in a north-south orientation with slowly rising terrain north of the airport and decreasing terrain to the south.

The area surrounding the airport has a limited amount of residential and commercial development in the vicinity, but most of the areas surrounding the airport are agricultural with features related to transportation or power distribution dispersed through the valley.

4.1.3.1 Overall Obstacles

Obstacle information considered in this analysis originated from a combination of FAA and airport/project team sources intended to cover a 50 NM area surrounding Preston (U10). This included obstacle information specific to Preston (U10) and other obstacle information in the vicinity of the airport as seen in *Figure 2* below.

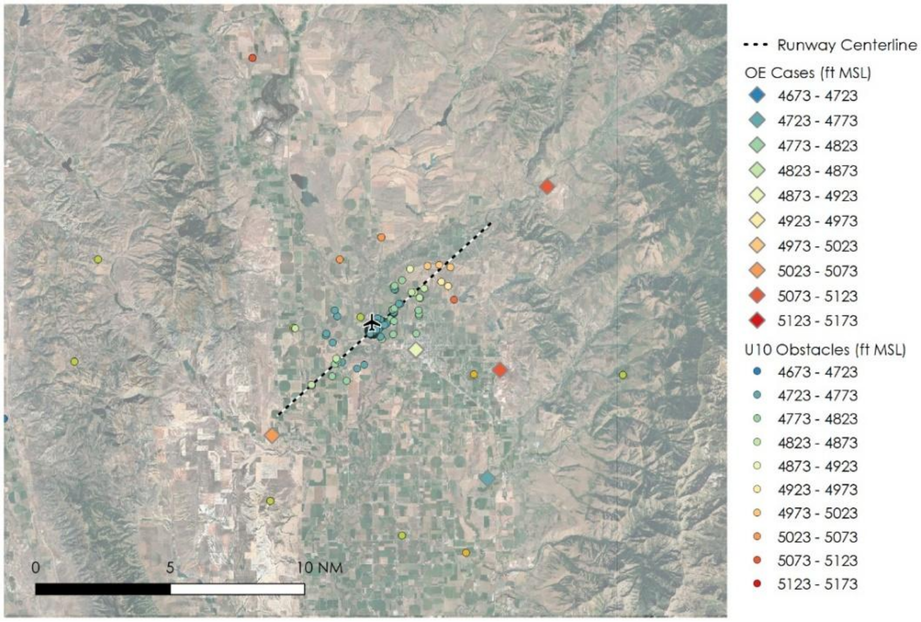


Figure 2. Obstructions within 15 NM of Preston (U10)

The first source used to gather existing obstacle information in the vicinity of the airport was the FAA Obstacle Authoritative Source (OAS), which was accessed via the FAA AIRNAV download available from the Aeronautical Data Information Portal (ADIP). This data was obtained using a radius-based search for obstacle information located within 15 NM of Preston (U10).

OAS Obstacles in AIRNAV represent a combination of previous AC-150-5300-18 compliant obstacle surveys, surveys performed for airport surface clearance, determined 7460 obstructions and FAA flight inspection obstacles. Obstacles obtained from this source contain FAA assigned accuracy values which introduce a horizontal and vertical uncertainty that translates an obstacle referenced using WGS-84 coordinates to define a point with an elevation, into a 3-dimensional cylindrical shape. This is called survey accuracy and must be considered for instrument procedure design.

The second source used for this project were specific AC-150-5300-18 and NOAA 405 specification surveys. These were also downloaded from FAA ADIP and overlaid on top of the AIRNAV obstacles. In cases where the previous survey identified a point that was in the same latitude and longitude as a current AIRNAV/OAS obstacle, then the elevation and accuracy of the AIRNAV/OAS obstacle was used. However, there is certain supplemental object information in previous surveys which was not submitted to the FAA as obstacles through the airport's GIS process. These objects were valid unless a scan of aerial imagery, or feedback from the project team, indicated that the object was no longer valid or had been removed or relocated.

The final obstacle source considered in this analysis was the obstacle information available from the FAA Obstruction Evaluation and Airport Airspace Analysis (OEAAA) website. Determined OE cases represent proposed structures off the airport, while determined NRA cases represent proposed projects and structures on the airport. Cases determined between 2021 and Q4 2024 were retrieved and evaluated. Any determined obstacle that would result in a structure which could affect instrument procedures or aircraft performance was considered to exist today. The only exceptions were cases where the OE was seen to either be temporary, and not resulting in a new structure after the temporary action was completed, or cases where an NRA identified a temporary project on the airfield.

Proposed obstructions that are submitted without a survey accuracy code are assigned an accuracy of 4D (50 ft vertical accuracy, 250ft horizontal accuracy). This is likely both larger and taller than the accuracy values that will be determined by survey following the construction of the structure. However, proposed objects which are determined by the FAA to have no substantial impact on the surrounding airspace often do not receive an updated survey definition following the OE review.

4.1.3.2 Terrain

Terrain information was sourced from USGS 3DEP at a 30 meter to 90 meter spacing across the 50 NM area surrounding Preston (U10). Additionally, the FAA-required 200-foot Adverse Assumption Obstacle (AAO) value was also applied to all terrain points outside of the Preston (U10) AAO exempt area for procedure analysis.

The terrain surrounding the airport (*Figure 3*) is located in the FAA designated mountainous area, and therefore required mountainous terrain analysis for instrument procedure design both to Runway 4 and Runway 22.

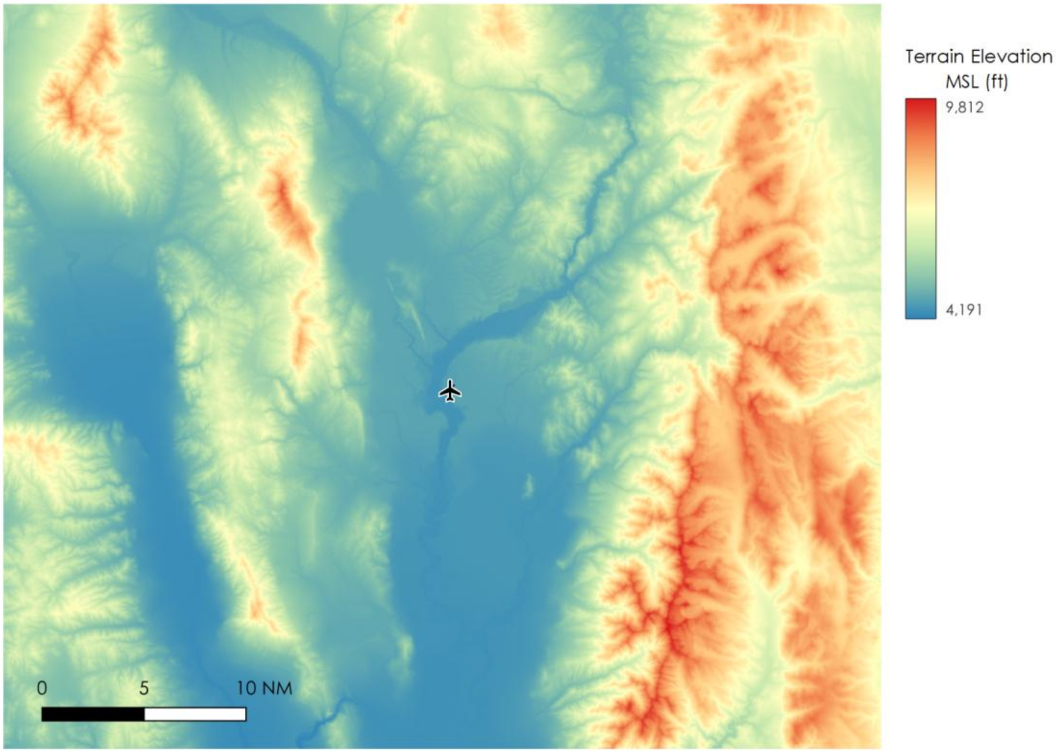


Figure 3: Cache Valley and Surrounding Terrain Near Preston (U10) (black airplane)

5 Historical Weather Data

Review and analysis of historical weather provides important insight into the need and utility of instrument approach and departure procedures. This section describes the historical weather data that was collected, the overall properties of key weather data, and which historical weather data was used to create distributions as inputs to the instrument procedure feasibility assessment.

5.1 Terminal Weather Data

When using terminal weather data to inform a forward-looking feasibility of instrument procedures, the selection of weather-related inputs must be made in a manner to maintain statistically significant reliability. The goal of this selection is to ensure that a variable modeled as an input can be both a plausible expectation of future weather conditions and not an inadvertent statistical outlier that creates an unintentional bias in the results.

This section describes how terminal weather information was collected, which inputs were selected for use with takeoff performance computations, and how the information was converted into distributions for use with the Monte Carlo modeling.

5.1.1 Source and Methods for Terminal Weather Data Processing

Terminal historical weather information was collected from the National Climactic Data Center (NCDC) Climate Data Online (CDO) servers over a 10-year historical period. Since Preston (U10) does not have on-airport weather reporting in the form of and ASOS/AWOS, the data collected for this report was originally reported from the nearest NCDC collection site which is the on airport ASOS at Logan-Cache (LGU), 18.3 miles to the south of Preston (U10). Data was collected in the form of METARs consisting of both routine hourly observations and non-routine off-hour weather events, resulting in approximately 120,000 weather observations.

While Logan-Cache (LGU) sees similar weather to Preston (U10) as they are both situated in the Cache Valley at a similar elevation, the project team sought to corroborate the observed weather data with a more local source of information. The project team identified an Idaho DOT road weather sensor located approximately 7 miles to the south of the airport. The sensor data was fused with the available METAR data to provide a more accurate picture of the weather at Preston (U10).

To accurately analyze time-series weather data a process of time weighting must be accomplished over the period of study. Typically, weather observations are made on an hourly schedule. When a significant change in weather occurs for wind, ceiling, or precipitation due to a storm or turbulent wind conditions, these observations may be made more frequently. The process of time-weighting accounts for these "brief" weather observations that only occur during some portion of an hour, without exerting an excess influence relative to the typical hourly observations. The mathematical steps used to achieve time weighting are not expressed in this report but can be described in more detail by the project team upon request.

Increasing data fidelity to a time increment of less than an hour yields no statistical difference to the results constructed over a one-hour increment. However, accounting for monthly variations in data is essential to ensure the accuracy of any normalization in a data distribution used as an input.

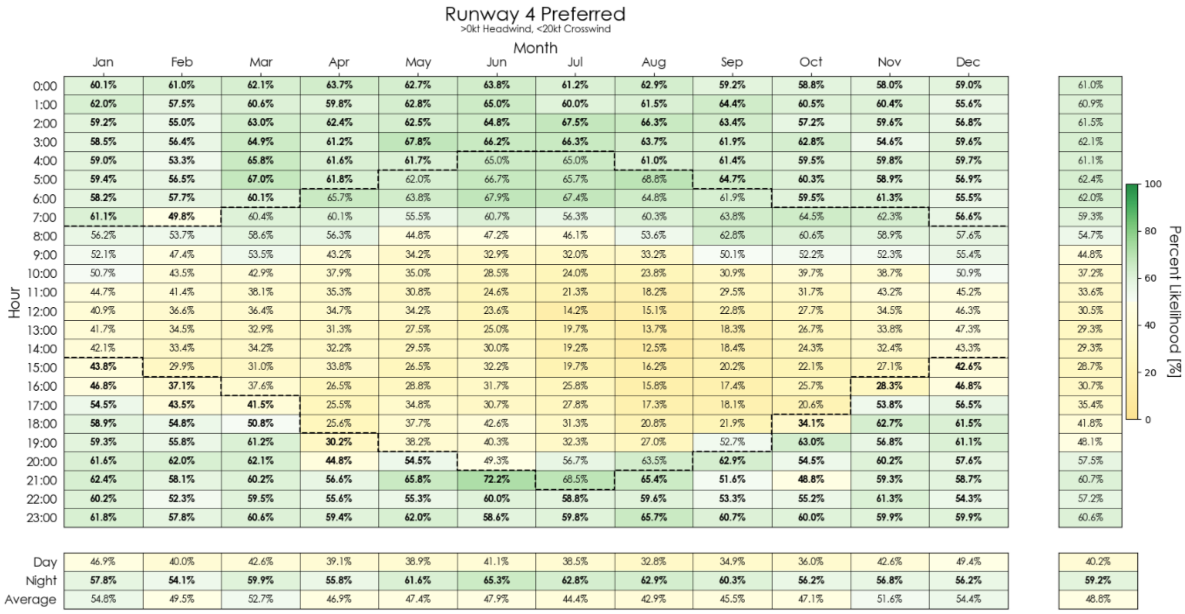
5.1.2 Winds and Runway Usage

Runway selection is a critical variable in the determination of overall runway length requirements, especially when comparing existing or proposed runways to other runways that may be advantageously oriented in such a way to enhance overall wind coverage. A runway, or more specifically a runway direction, is preferred for operational use when that direction experiences no tailwind and has limited crosswind. For a typical airport with multiple runways covering a large portion of possible wind directions, the preferred threshold for winds is for a runway to have 0 knots of tailwind and less than 10 knots of crosswind. These are general guidelines based on general aircraft handling and wind envelope limitations.

To determine which runway direction might be used, historical wind direction and intensity were modeled together using the same METAR information as the previous weather elements.

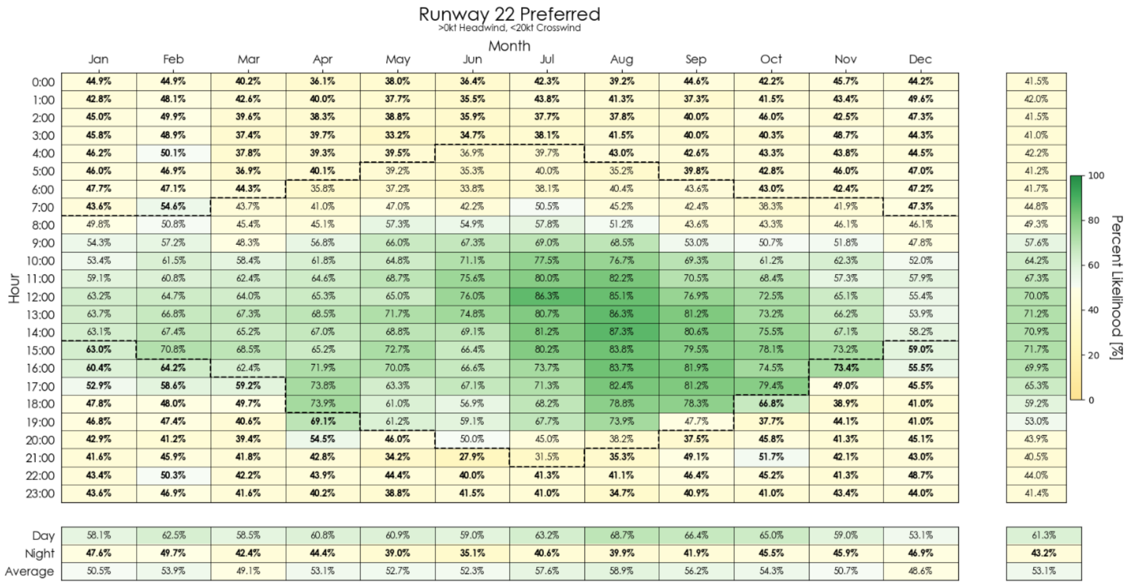
Table 3 and *Table 4* show the historical likelihood that Runways 4 and 22 would have been preferred for use based on these wind criteria. Ceiling and visibility are not considered in this discussion.

Table 3: 10-Year Historical Likelihood of Runway 4 Being Preferred for Operation Based on Wind Data



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	**60.1%**	**61.0%**	**62.1%**	**63.7%**	**62.7%**	**63.8%**	**61.2%**	**62.9%**	**59.2%**	**58.8%**	**58.0%**	**59.0%**	61.0%
1:00	**62.0%**	**57.5%**	**60.6%**	**59.8%**	**62.8%**	**65.0%**	**60.0%**	**61.5%**	**64.4%**	**60.5%**	**60.4%**	**55.6%**	60.9%
2:00	**59.2%**	**55.0%**	**63.0%**	**62.4%**	**62.5%**	**64.8%**	**67.5%**	**66.3%**	**63.4%**	**57.2%**	**59.6%**	**56.8%**	61.5%
3:00	**58.5%**	**56.4%**	**64.9%**	**61.2%**	**67.8%**	**66.2%**	**66.3%**	**63.7%**	**61.9%**	**62.8%**	**54.6%**	**59.6%**	62.1%
4:00	**59.0%**	**53.3%**	**65.8%**	**61.6%**	**61.7%**	65.0%	65.0%	**61.0%**	**61.4%**	**59.5%**	**59.8%**	**59.7%**	61.1%
5:00	**59.4%**	**56.5%**	**67.0%**	**61.8%**	62.0%	66.7%	65.7%	68.8%	**64.7%**	**60.3%**	**58.9%**	**56.9%**	62.4%
6:00	**58.2%**	**57.7%**	**60.1%**	65.7%	63.8%	67.9%	67.4%	64.8%	61.9%	**59.5%**	**61.3%**	**55.5%**	62.0%
7:00	**61.1%**	**49.8%**	60.4%	60.1%	55.5%	60.7%	56.3%	60.3%	63.8%	64.5%	62.3%	**56.6%**	59.3%
8:00	56.2%	53.7%	58.6%	56.3%	44.8%	47.2%	46.1%	53.6%	62.8%	60.6%	58.9%	57.6%	54.7%
9:00	52.1%	47.4%	53.5%	43.2%	34.2%	32.9%	32.0%	33.2%	50.1%	52.2%	52.3%	55.4%	44.8%
10:00	50.7%	43.5%	42.9%	37.9%	35.0%	28.5%	24.0%	23.8%	30.9%	39.7%	38.7%	50.9%	37.2%
11:00	44.7%	41.4%	38.1%	35.3%	30.8%	24.6%	21.3%	18.2%	29.5%	31.7%	43.2%	45.2%	33.6%
12:00	40.9%	36.6%	36.4%	34.7%	34.2%	23.6%	14.2%	15.1%	22.8%	27.7%	34.5%	46.3%	30.5%
13:00	41.7%	34.5%	32.9%	31.3%	27.5%	25.0%	19.7%	13.7%	18.3%	26.7%	33.8%	47.3%	29.3%
14:00	42.1%	33.4%	34.2%	32.2%	29.5%	30.0%	19.2%	12.5%	18.4%	24.3%	32.4%	43.3%	29.3%
15:00	**43.8%**	29.9%	31.0%	33.8%	26.5%	32.2%	19.7%	16.2%	20.2%	22.1%	27.1%	**42.6%**	28.7%
16:00	**46.8%**	**37.1%**	37.6%	26.5%	28.8%	31.7%	25.8%	15.8%	17.4%	25.7%	**28.3%**	**46.8%**	30.7%
17:00	**54.5%**	**43.5%**	**41.5%**	25.5%	34.8%	30.7%	27.8%	17.3%	18.1%	20.6%	**53.8%**	**56.5%**	35.4%
18:00	**58.9%**	**54.8%**	**50.8%**	25.6%	37.7%	42.6%	31.3%	20.8%	21.9%	**34.1%**	**62.7%**	**61.5%**	41.8%
19:00	**59.3%**	**55.8%**	**61.2%**	**30.2%**	38.2%	40.3%	32.3%	27.0%	52.7%	**63.0%**	**56.8%**	**61.1%**	48.1%
20:00	**61.6%**	**62.0%**	**62.1%**	**44.8%**	**54.5%**	49.3%	56.7%	63.5%	**62.9%**	**54.5%**	**60.2%**	**57.6%**	57.5%
21:00	**62.4%**	**58.1%**	**60.2%**	**56.6%**	**65.8%**	**72.2%**	68.5%	**65.4%**	**51.6%**	**48.8%**	**59.3%**	**58.7%**	60.7%
22:00	**60.2%**	**52.3%**	**59.5%**	**55.6%**	**55.3%**	**60.0%**	**58.8%**	**59.6%**	**53.3%**	**55.2%**	**61.3%**	**54.3%**	57.2%
23:00	**61.8%**	**57.8%**	**60.6%**	**59.4%**	**62.0%**	**58.6%**	**59.8%**	**65.7%**	**60.7%**	**60.0%**	**59.9%**	**59.9%**	60.6%
Day	46.9%	40.0%	42.6%	39.1%	38.9%	41.1%	38.5%	32.8%	34.9%	36.0%	42.6%	49.4%	40.2%
Night	**57.8%**	**54.1%**	**59.9%**	**55.8%**	**61.6%**	**65.3%**	**62.8%**	**62.9%**	**60.3%**	**56.2%**	**56.8%**	**56.2%**	**59.2%**
Average	54.8%	49.5%	52.7%	46.9%	47.4%	47.9%	44.4%	42.9%	45.5%	47.1%	51.6%	54.4%	48.8%

Table 4: 10-Year Historical Likelihood of Runway 22 Being Preferred for Operation Based on Wind Data



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	**44.9%**	**44.9%**	**40.2%**	**36.1%**	**38.0%**	**36.4%**	**42.3%**	**39.2%**	**44.6%**	**42.2%**	**45.7%**	**44.2%**	41.5%
1:00	**42.8%**	**48.1%**	**42.6%**	**40.0%**	**37.7%**	**35.5%**	**43.8%**	**41.3%**	**37.3%**	**41.5%**	**43.4%**	**49.6%**	42.0%
2:00	**45.0%**	**49.9%**	**39.6%**	**38.3%**	**38.8%**	**35.9%**	**37.7%**	**37.8%**	**40.0%**	**46.0%**	**42.5%**	**47.3%**	41.5%
3:00	**45.8%**	**48.9%**	**37.4%**	**39.7%**	**33.2%**	**34.7%**	**38.1%**	**41.5%**	**40.0%**	**40.3%**	**48.7%**	**44.3%**	41.0%
4:00	**46.2%**	**50.1%**	**37.8%**	**39.3%**	**39.5%**	36.9%	39.7%	**43.0%**	**42.6%**	**43.3%**	**43.8%**	**44.5%**	42.2%
5:00	**46.0%**	**46.9%**	**36.9%**	**40.1%**	39.2%	35.3%	40.0%	35.2%	**39.8%**	**42.8%**	**46.0%**	**47.0%**	41.2%
6:00	**47.7%**	**47.1%**	**44.3%**	35.8%	37.2%	33.8%	38.1%	40.4%	43.6%	**43.0%**	**42.4%**	**47.2%**	41.7%
7:00	**43.6%**	**54.6%**	43.7%	41.0%	47.0%	42.2%	50.5%	45.2%	42.4%	38.3%	41.9%	**47.3%**	44.8%
8:00	49.8%	50.8%	45.4%	45.1%	57.3%	54.9%	57.8%	51.2%	43.6%	43.3%	46.1%	46.1%	49.3%
9:00	54.3%	57.2%	48.3%	56.8%	66.0%	67.3%	69.0%	68.5%	53.0%	50.7%	51.8%	47.8%	57.6%
10:00	53.4%	61.5%	58.4%	61.8%	64.8%	71.1%	77.5%	76.7%	69.3%	61.2%	62.3%	52.0%	64.2%
11:00	59.1%	60.8%	62.4%	64.6%	68.7%	75.6%	80.0%	82.2%	70.5%	68.4%	57.3%	57.9%	67.3%
12:00	63.2%	64.7%	64.0%	65.3%	65.0%	76.0%	86.3%	85.1%	76.9%	72.5%	65.1%	55.4%	70.0%
13:00	63.7%	66.8%	67.3%	68.5%	71.7%	74.8%	80.7%	86.3%	81.2%	73.2%	66.2%	53.9%	71.2%
14:00	63.1%	67.4%	65.2%	67.0%	68.8%	69.1%	81.2%	87.3%	80.6%	75.5%	67.1%	58.2%	70.9%
15:00	**63.0%**	70.8%	68.5%	65.2%	72.7%	66.4%	80.2%	83.8%	79.5%	78.1%	73.2%	**59.0%**	71.7%
16:00	**60.4%**	**64.2%**	62.4%	71.9%	70.0%	66.6%	73.7%	83.7%	81.9%	74.5%	**73.4%**	**55.5%**	69.9%
17:00	**52.9%**	**58.6%**	**59.2%**	73.8%	63.3%	67.1%	71.3%	82.4%	81.2%	79.4%	**49.0%**	**45.5%**	65.3%
18:00	**47.8%**	**48.0%**	**49.7%**	73.9%	61.0%	56.9%	68.2%	78.8%	78.3%	**66.8%**	**38.9%**	**41.0%**	59.2%
19:00	**46.8%**	**47.4%**	**40.6%**	**69.1%**	61.2%	59.1%	67.7%	73.9%	47.7%	**37.7%**	**44.1%**	**41.0%**	53.0%
20:00	**42.9%**	**41.2%**	**39.4%**	**54.5%**	**46.0%**	50.0%	45.0%	38.2%	**37.5%**	**45.8%**	**41.3%**	**45.1%**	43.9%
21:00	**41.6%**	**45.9%**	**41.8%**	**42.8%**	**34.2%**	**27.9%**	31.5%	**35.3%**	**49.1%**	**51.7%**	**42.1%**	**43.0%**	40.5%
22:00	**43.4%**	**50.3%**	**42.2%**	**43.9%**	**44.4%**	**40.0%**	**41.3%**	**41.1%**	**46.4%**	**45.2%**	**41.3%**	**48.7%**	44.0%
23:00	**43.6%**	**46.9%**	**41.6%**	**40.2%**	**38.8%**	**41.5%**	**41.0%**	**34.7%**	**40.9%**	**41.0%**	**43.4%**	**44.0%**	41.4%
Day	58.1%	62.5%	58.5%	60.8%	60.9%	59.0%	63.2%	68.7%	66.4%	65.0%	59.0%	53.1%	61.3%
Night	**47.6%**	**49.7%**	**42.4%**	**44.4%**	**39.0%**	**35.1%**	**40.6%**	**39.9%**	**41.9%**	**45.5%**	**45.9%**	**46.9%**	**43.2%**
Average	50.5%	53.9%	49.1%	53.1%	52.7%	52.3%	57.6%	58.9%	56.2%	54.3%	50.7%	48.6%	53.1%

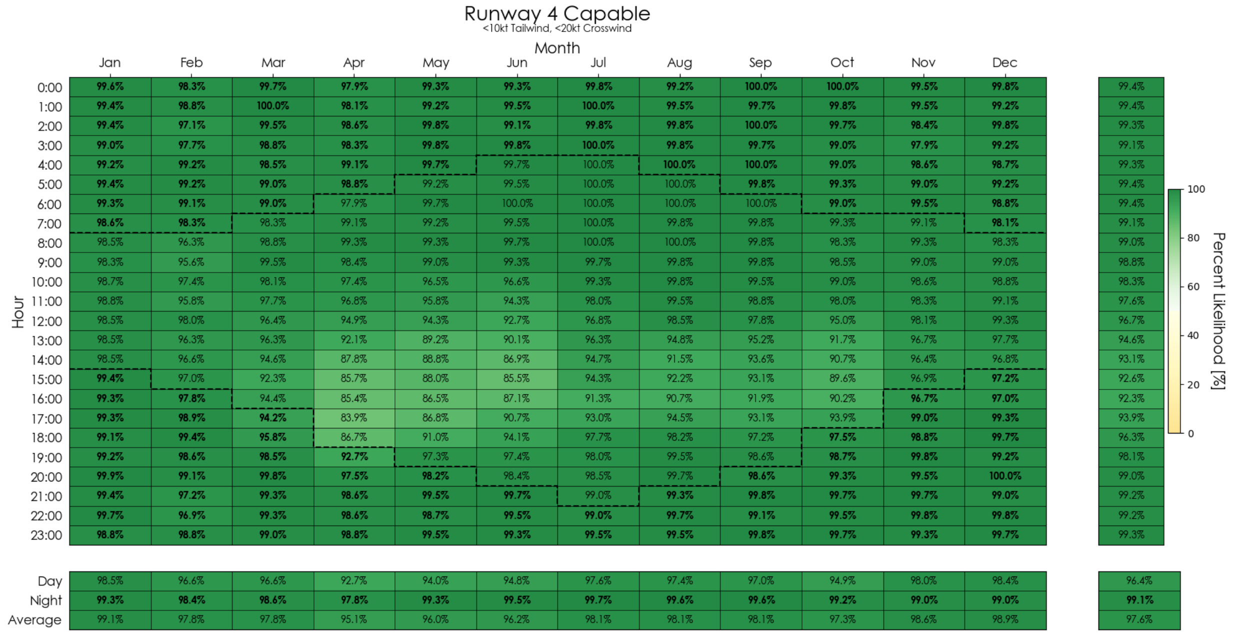
Hours and months containing values in green indicate periods when the runway would be preferred for use by an aircraft operator (assuming no other terrain, convective activity, or ATC restrictions). Hours in white represent an hour and month when the runway use is neutral, while hours and months in yellow represent periods when the runway is less likely to be used.

Similarly to runway preference, wind data was examined to assess whether a runway could be used. A runway is considered capable of supporting operations up to a much higher tailwind and crosswind limit compared to the previous analysis of runway preference. In the case of Preston (U10), no more than a 10-knot tailwind and a crosswind of up to 20 knots are used to determine whether a runway direction is capable of being used. These numbers are general guidelines the air traffic control tower (ATCT) uses for wind limits for runways at airports without an official wind study.

The likelihood of runway preference was compared to the runway capability to provide a complete picture about the hours per month when a runway is rarely considered for usage. This comparison could also illustrate if a runway was unsuitable for aircraft operations due to severe crosswinds.

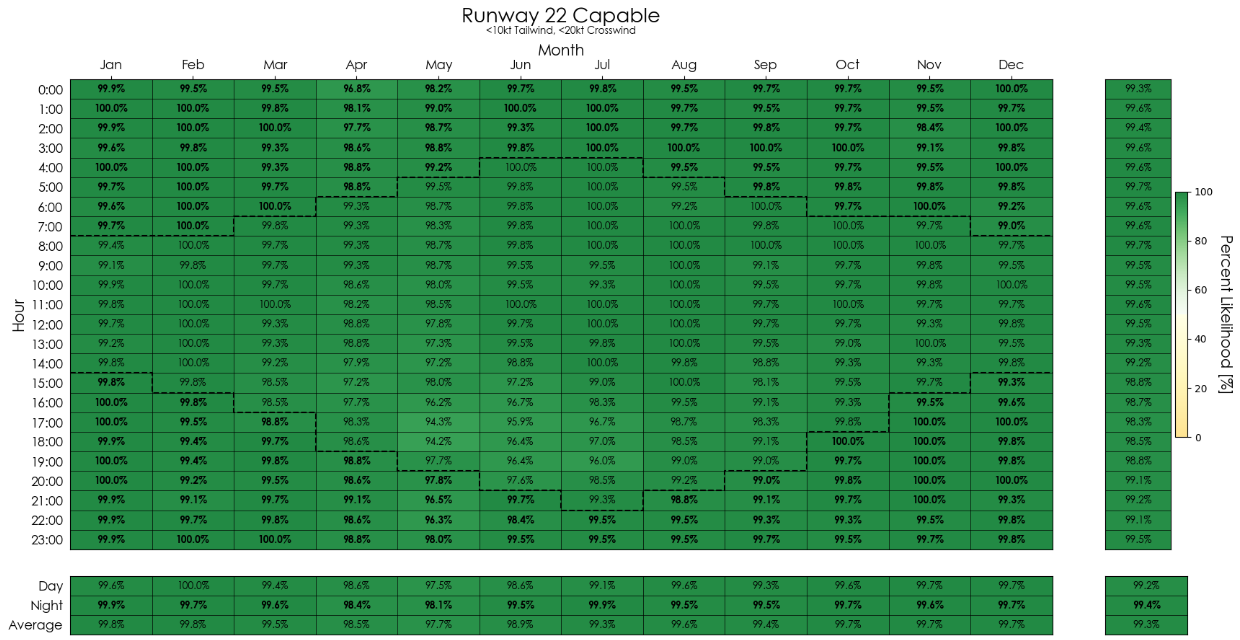
Table 5 and *Table 6* represent the runway capability analysis based on 10 years of historical wind data for Runways 4 and 22, respectively. Ceilings and visibility were not considered in this segment of the analysis.

Table 5: 10-Year Historical Likelihood of Runway 4 Being Capable of Supporting Operations Based on Wind Data



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	**99.6%**	**98.3%**	**99.7%**	**97.9%**	**99.3%**	**99.3%**	**99.8%**	**99.2%**	**100.0%**	**100.0%**	**99.5%**	**99.8%**	99.4%
1:00	**99.4%**	**98.8%**	**100.0%**	**98.1%**	**99.2%**	**99.5%**	**100.0%**	**99.5%**	**99.7%**	**99.8%**	**99.5%**	**99.2%**	99.4%
2:00	**99.4%**	**97.1%**	**99.5%**	**98.6%**	**99.8%**	**99.1%**	**99.8%**	**99.8%**	**100.0%**	**99.7%**	**98.4%**	**99.8%**	99.3%
3:00	**99.0%**	**97.7%**	**98.8%**	**98.3%**	**99.8%**	**99.8%**	**100.0%**	**99.8%**	**99.7%**	**99.0%**	**97.9%**	**99.2%**	99.1%
4:00	**99.2%**	**99.2%**	**98.5%**	**99.1%**	**99.7%**	99.7%	100.0%	**100.0%**	**100.0%**	**99.0%**	**98.6%**	**98.7%**	99.3%
5:00	**99.4%**	**99.2%**	**99.0%**	**98.8%**	99.2%	99.5%	100.0%	100.0%	**99.8%**	**99.3%**	**99.0%**	**99.2%**	99.4%
6:00	**99.3%**	**99.1%**	**99.0%**	97.9%	99.7%	100.0%	100.0%	100.0%	100.0%	**99.0%**	**99.5%**	**98.8%**	99.4%
7:00	**98.6%**	**98.3%**	98.3%	99.1%	99.2%	99.5%	100.0%	99.8%	99.8%	99.3%	99.1%	**98.1%**	99.1%
8:00	98.5%	96.3%	98.8%	99.3%	99.3%	99.7%	100.0%	100.0%	99.8%	98.3%	99.3%	98.3%	99.0%
9:00	98.3%	95.6%	99.5%	98.4%	99.0%	99.3%	99.7%	99.8%	99.8%	98.5%	99.0%	99.0%	98.8%
10:00	98.7%	97.4%	98.1%	97.4%	96.5%	96.6%	99.3%	99.8%	99.5%	99.0%	98.6%	98.8%	98.3%
11:00	98.8%	95.8%	97.7%	96.8%	95.8%	94.3%	98.0%	99.5%	98.8%	98.0%	98.3%	99.1%	97.6%
12:00	98.5%	98.0%	96.4%	94.9%	94.3%	92.7%	96.8%	98.5%	97.8%	95.0%	98.1%	99.3%	96.7%
13:00	98.5%	96.3%	96.3%	92.1%	89.2%	90.1%	96.3%	94.8%	95.2%	91.7%	96.7%	97.7%	94.6%
14:00	98.5%	96.6%	94.6%	87.8%	88.8%	86.9%	94.7%	91.5%	93.6%	90.7%	96.4%	96.8%	93.1%
15:00	**99.4%**	97.0%	92.3%	85.7%	88.0%	85.5%	94.3%	92.2%	93.1%	89.6%	96.9%	**97.2%**	92.6%
16:00	**99.3%**	**97.8%**	94.4%	85.4%	86.5%	87.1%	91.3%	90.7%	91.9%	90.2%	**96.7%**	**97.0%**	92.3%
17:00	**99.3%**	**98.9%**	**94.2%**	83.9%	86.8%	90.7%	93.0%	94.5%	93.1%	93.9%	**99.0%**	**99.3%**	93.9%
18:00	**99.1%**	**99.4%**	**95.8%**	86.7%	91.0%	94.1%	97.7%	98.2%	97.2%	**97.5%**	**98.8%**	**99.7%**	96.3%
19:00	**99.2%**	**98.6%**	**98.5%**	**92.7%**	97.3%	97.4%	98.0%	99.5%	98.6%	**98.7%**	**99.8%**	**99.2%**	98.1%
20:00	**99.9%**	**99.1%**	**99.8%**	**97.5%**	**98.2%**	98.4%	98.5%	99.7%	**98.6%**	**99.3%**	**99.5%**	**100.0%**	99.0%
21:00	**99.4%**	**97.2%**	**99.3%**	**98.6%**	**99.5%**	**99.7%**	99.0%	**99.3%**	**99.8%**	**99.7%**	**99.7%**	**99.0%**	99.2%
22:00	**99.7%**	**96.9%**	**99.3%**	**98.6%**	**98.7%**	**99.5%**	**99.0%**	**99.7%**	**99.1%**	**99.5%**	**99.8%**	**99.8%**	99.2%
23:00	**98.8%**	**98.8%**	**99.0%**	**98.8%**	**99.5%**	**99.3%**	**99.5%**	**99.5%**	**99.8%**	**99.7%**	**99.3%**	**99.7%**	99.3%
Day	98.5%	96.6%	96.6%	92.7%	94.0%	94.8%	97.6%	97.4%	97.0%	94.9%	98.0%	98.4%	96.4%
Night	**99.3%**	**98.4%**	**98.6%**	**97.8%**	**99.3%**	**99.5%**	**99.7%**	**99.6%**	**99.6%**	**99.2%**	**99.0%**	**99.0%**	**99.1%**
Average	99.1%	97.8%	97.8%	95.1%	96.0%	96.2%	98.1%	98.1%	98.1%	97.3%	98.6%	98.9%	97.6%

Table 6: 10-Year Historical Likelihood of Runway 22 Being Capable of Supporting Operations Based on Wind Data



Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	99.9%	99.5%	99.5%	96.8%	98.2%	99.7%	99.8%	99.5%	99.7%	99.7%	99.5%	100.0%	99.3%
1:00	100.0%	100.0%	99.8%	98.1%	99.0%	100.0%	100.0%	99.7%	99.5%	99.7%	99.5%	99.7%	99.6%
2:00	99.9%	100.0%	100.0%	97.7%	98.7%	99.3%	100.0%	99.7%	99.8%	99.7%	98.4%	100.0%	99.4%
3:00	99.6%	99.8%	99.3%	98.6%	98.8%	99.8%	100.0%	100.0%	100.0%	100.0%	99.1%	99.8%	99.6%
4:00	100.0%	100.0%	99.3%	98.8%	99.2%	100.0%	100.0%	99.5%	99.5%	99.7%	99.5%	100.0%	99.6%
5:00	99.7%	100.0%	99.7%	98.8%	99.5%	99.8%	100.0%	99.5%	99.8%	99.8%	99.8%	99.8%	99.7%
6:00	99.6%	100.0%	100.0%	99.3%	98.7%	99.8%	100.0%	99.2%	100.0%	99.7%	100.0%	99.2%	99.6%
7:00	99.7%	100.0%	99.8%	99.3%	98.3%	99.8%	100.0%	100.0%	99.8%	100.0%	99.7%	99.0%	99.6%
8:00	99.4%	100.0%	99.7%	99.3%	98.7%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	99.7%	99.7%
9:00	99.1%	99.8%	99.7%	99.3%	98.7%	99.5%	99.5%	100.0%	99.1%	99.7%	99.8%	99.5%	99.5%
10:00	99.9%	100.0%	99.7%	98.6%	98.0%	99.5%	99.3%	100.0%	99.5%	99.7%	99.8%	100.0%	99.5%
11:00	99.8%	100.0%	100.0%	98.2%	98.5%	100.0%	100.0%	100.0%	99.7%	100.0%	99.7%	99.7%	99.6%
12:00	99.7%	100.0%	99.3%	98.8%	97.8%	99.7%	100.0%	100.0%	99.7%	99.7%	99.3%	99.8%	99.5%
13:00	99.2%	100.0%	99.3%	98.8%	97.3%	99.5%	99.8%	100.0%	99.5%	99.0%	100.0%	99.5%	99.3%
14:00	99.8%	100.0%	99.2%	97.9%	97.2%	98.8%	100.0%	99.8%	98.8%	99.3%	99.3%	99.8%	99.2%
15:00	99.8%	99.8%	98.5%	97.2%	98.0%	97.2%	99.0%	100.0%	98.1%	99.5%	99.7%	99.3%	98.8%
16:00	100.0%	99.8%	98.5%	97.7%	96.2%	96.7%	98.3%	99.5%	99.1%	99.3%	99.5%	99.6%	98.7%
17:00	100.0%	99.5%	98.8%	98.3%	94.3%	95.9%	96.7%	98.7%	98.3%	99.8%	100.0%	100.0%	98.3%
18:00	99.9%	99.4%	99.7%	98.6%	94.2%	96.4%	97.0%	98.5%	99.1%	100.0%	100.0%	99.8%	98.5%
19:00	100.0%	99.4%	99.8%	98.8%	97.7%	96.4%	96.0%	99.0%	99.0%	99.7%	100.0%	99.8%	98.8%
20:00	100.0%	99.2%	99.5%	98.6%	97.8%	97.6%	98.5%	99.2%	99.0%	99.8%	100.0%	100.0%	99.1%
21:00	99.9%	99.1%	99.7%	99.1%	96.5%	99.7%	99.3%	98.8%	99.1%	99.7%	100.0%	99.3%	99.2%
22:00	99.9%	99.7%	99.8%	98.6%	96.3%	98.4%	99.5%	99.5%	99.3%	99.3%	99.5%	99.8%	99.1%
23:00	99.9%	100.0%	100.0%	98.8%	98.0%	99.5%	99.5%	99.5%	99.7%	99.5%	99.7%	99.8%	99.5%
Day	99.6%	100.0%	99.4%	98.6%	97.5%	98.6%	99.1%	99.6%	99.3%	99.6%	99.7%	99.7%	99.2%
Night	99.9%	99.7%	99.6%	98.4%	98.1%	99.5%	99.9%	99.5%	99.5%	99.7%	99.6%	99.7%	99.4%
Average	99.8%	99.8%	99.5%	98.5%	97.7%	98.9%	99.3%	99.6%	99.4%	99.7%	99.7%	99.7%	99.3%

The color selection in the cells for the runway capable likelihoods are the same used for the runway preference likelihoods.

This analysis shows that both runway directions are capable of supporting operations from a wind perspective. Consequently, the runway preference tables may yield a more accurate picture of likely runway selection. The preferred tables, (*Table 3* & *Table 4*), suggest that operations in the Runway 4 direction are preferred in the morning and evening hours while those in the Runway 22 direction are preferred during daytime hours, particularly in the afternoon. The capability tables (*Table 5* & *Table 6*), indicate that winds are not typically strong enough to prevent operation in either direction.

5.1.2.1 Wind and Runway Usage Limitations

There are three limitations from this type of wind and runway usage analysis that should be noted. The first is that when comparing a specific likelihood value for a particular hour and month across all the runways, the sum of likelihoods can yield a value over 100%. This is primarily because calm wind conditions will be treated as enabling each runway to be equally likely of usage. Thus, if the winds were always calm at the airport, both Runway 4 and 22 would be 100% capable of operation.

The second limitation is that wind gusts were considered as steady state wind conditions without any further manipulation such as multiplying gusts by 1.5. This can result in time periods where the likelihood of a runway direction is neither preferred nor capable. Because gusting wind conditions typically do not last for long periods of time, the application of time weighting minimizes the overall impact of high gusting wind conditions over a given period. However, gust application against the established crosswind and tailwind limitations can limit the overall usability of a runway.

The third limitation is that this level of runway usage analysis is not based on any historical air traffic utilization information. Air traffic control information is valuable in verifying that the historical weather analysis is a close match to commonly experienced airfield conditions.

5.1.3 Effectiveness of Existing Airfield

To understand the effectiveness of an airport's instrument approach procedures, the procedures need to be evaluated relative to historical weather conditions when each runway is in use and when all runway/approach options are available for use by pilots and air traffic controllers. LEAN describes the effectiveness of instrument approaches in three ways: Runway Effectiveness of an Approach Procedure, Overall Effectiveness of an Approach Procedure, and Ability of the airport to stay open to approach operations.

5.1.3.1 Runway Effectiveness of An Approach Procedure

Historical weather data was analyzed for a combination of runway use, ceilings, and visibility to examine the effectiveness of each runway-specific approach procedure and for the airport as a whole.

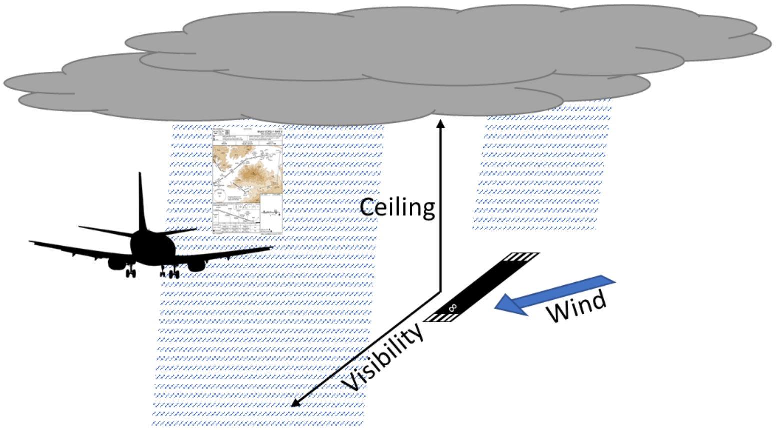
For runway effectiveness, descriptive statistics were generated from time weighted weather observations to determine the likelihood that:

1. The runway with the approach procedure was capable of supporting approach and landing based on wind conditions.

   And

2. The runway with the approach procedure was experiencing ceiling and visibility greater than or equal to the approach procedure serving the runway.

For example, when winds on Runway 4 would have been capable of supporting an approach (from the south), we determined the likelihood that the ceilings and visibility in that time weighted period would be enough to support an approach. If the winds did not support the runway operation, then no descriptive statistics were calculated because the analysis assumed that a different runway, and approach procedure, would have been in use.

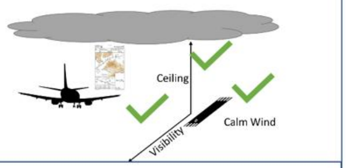
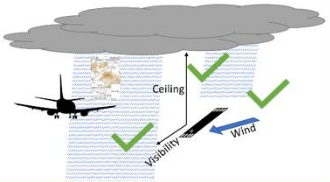
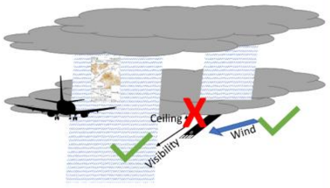


This analysis shows how effective an approach is when a specific runway is in use, but not how beneficial the approach is to the entire airport. Hence the term runway effectiveness to describe only how valuable the approach is for the specific runway it is intended to serve.

5.1.3.2 Overall Effectiveness of An Approach Procedure

Understanding the effectiveness of an approach enabling aircraft to land on the designated runway is important, but it does not reveal how often that approach would benefit overall operations at Preston (U10).

To determine the effectiveness of a specific approach to the overall airport, the ceilings and visibility supported by the approach, and the capability of the runway to support approaches by wind, are analyzed within the overall hourly availability of the runway. This is different from the runway effectiveness because it takes into consideration periods when the approach may have been usable, but it was unavailable because the winds favored another runway, or vice versa.

	Runway 4
March 09:00 – 10:00 Approach Benefits the Airport	
March 22:00 – 22:20 Approach Benefits the Airport	
March 22:20 – 22:40 Approach Does Not Benefit the Airport	

In the image shown above, the overall effectiveness of the approach enabling aircraft to arrive into Preston (U10) would be high from 09:00 – 10:00 and 22:00 – 22:20. However, because the ceiling was lower than what was required for the approach procedure between 22:20 – 22:40, the procedure would not be effective at enabling arrivals into Preston (U10) during that time.

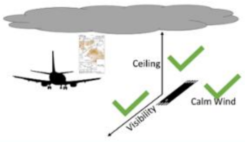
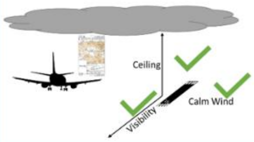
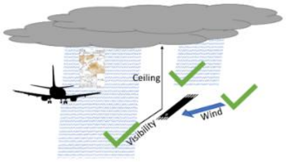
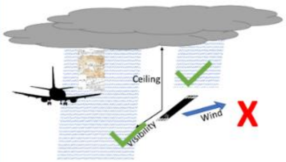
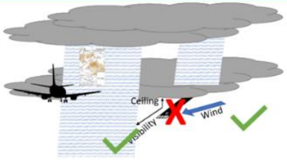
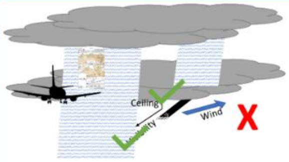
5.1.3.3 Ability of the Airport to Support Approach Operations

To determine how effective the airport is at enabling pilots to successfully arrive at a given hour and month, LEAN used an analysis that combined multiple approach overall effectiveness together.

Determining whether an airport is likely to remain open involves examining which runway would likely have been the one available by wind preference/capability and then considering whether the aircraft/flight crew has the navigation capability to use the approach within the required weather minimums. For sophisticated aircraft operators with advanced onboard navigation technology, the range of options usually permits a higher likelihood of being able to arrive at the airport at the desired month/hour. However, for pilots with less training, or who are operating less capable aircraft, the number of approach procedure options may create a reduced likelihood of arriving at the desired time.

This reliance on training and onboard navigation technology results in different categories of aircraft that LEAN creates from historical and planned operations at the airport.

The figure below demonstrates the general analysis process of when the airport would be considered to be likely to be open to arrivals.

	Runway 4	Runway 22
March 09:00 – 10:00 Airport Likely to Be Open		
March 22:00 – 22:20 Airport Likely to Be Open		
March 22:20 – 22:40 Airport Not Likely to Be Open		

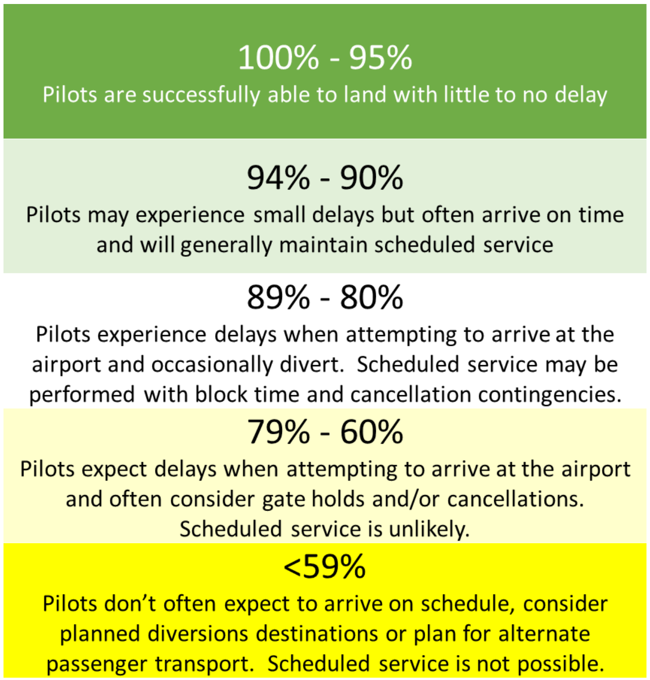
This example reveals that between 09:00 – 10:00, the airport would be open to arrivals using either Runway 4 or 22. It also reveals that the airport would be open to arrivals using Runway 4 between 22:00 – 22:20. However, it reveals that between 22:20 – 22:40, the airport would likely be closed to arrivals because the winds favored Runway 22 and the weather conditions were worse than those supported by the approach serving Runway 22.

By combining multiple approaches, for multiple runways, the likelihood expressed as a result of this analysis reveals how well the airport can remain open to aircraft operations at the desired time of day in a given month.

5.1.3.4 Likelihoods used with Runway, Overall, and Airport Open to Operations Statistics

The process of statistically expressing the likelihood for an approach, or combination of approaches to different runway ends, to enable arrivals at the airport is expressed as a percentage of likely availability for the given hour and month.

The following relationship translates that statistical likelihood, into qualitative likelihoods determined by LEAN based on observations of aircraft, and airline, operations at airports of varying sizes over the past 20 years.



100% - 95%
Pilots are successfully able to land with little to no delay

94% - 90%
Pilots may experience small delays but often arrive on time and will generally maintain scheduled service

89% - 80%
Pilots experience delays when attempting to arrive at the airport and occasionally divert. Scheduled service may be performed with block time and cancellation contingencies.

79% - 60%
Pilots expect delays when attempting to arrive at the airport and often consider gate holds and/or cancellations. Scheduled service is unlikely.

<59%
Pilots don't often expect to arrive on schedule, consider planned diversions destinations or plan for alternate passenger transport. Scheduled service is not possible.

By considering these real-world relationships to discrete likelihood values, LEAN can not only determine how effective an approach is but also measure how effective a change in the approach procedure might be, or how impactful the change or loss of a procedure will be.

The following sections will all utilize a similar color coding relative to the likelihood values presented. The relationships listed in the tables are most applicable to real world operations when examining the "overall" and "airport open to operations" statistical results.

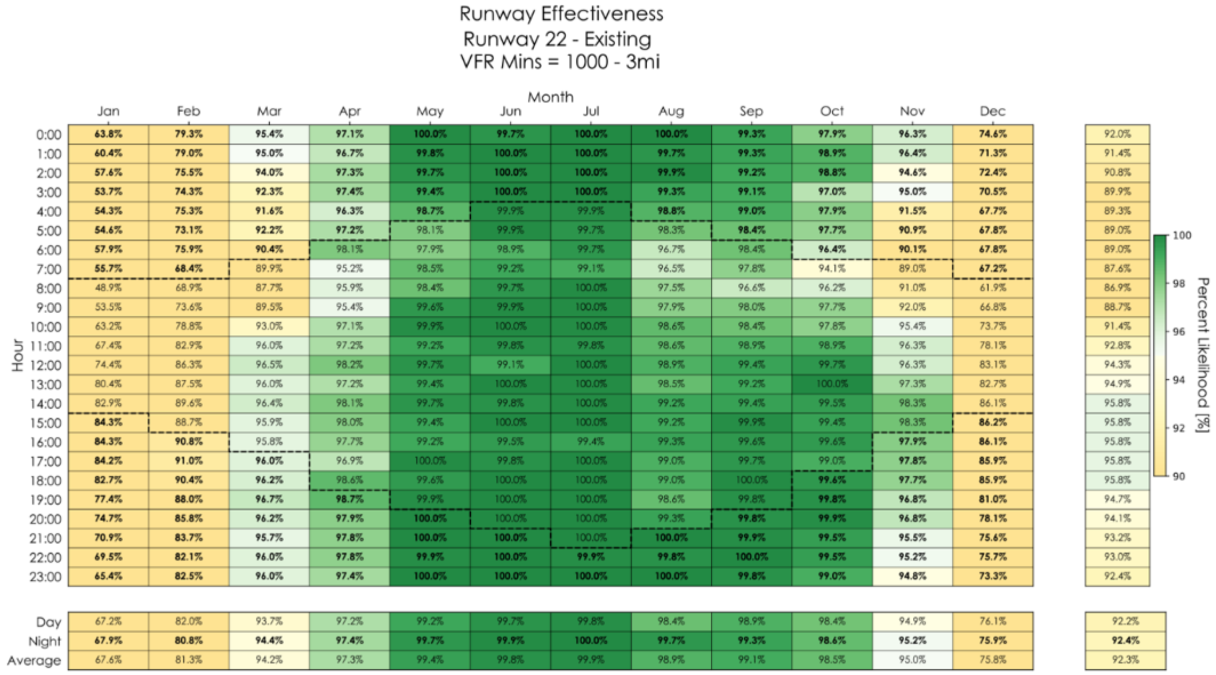
5.1.3.5 Effectiveness of Existing Approaches

Preston (U10) does not currently have published instrument procedures, therefore approach operations to the airfield are conducted under visual conditions. Operations where a pilot is on an IFR flight plan and requests a visual approach from ATC, the reported weather at Preston (U10) must have a ceiling at or above 1,000 feet and visibility of 3 SM or greater. *Table 7* and *Table 8* below indicate the runway effectiveness for Runway 4 and Runway 22, respectively, for these visual minimums.

Table 7: Existing Runway Effectiveness for VFR Minimums to Runway 4

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	63.9%	78.5%	95.6%	97.2%	100.0%	99.7%	100.0%	100.0%	99.3%	97.9%	96.3%	74.5%	91.9%
1:00	60.7%	78.3%	95.0%	96.8%	99.8%	100.0%	100.0%	99.7%	99.3%	98.8%	96.3%	71.1%	91.4%
2:00	57.5%	74.7%	93.9%	97.4%	99.7%	100.0%	100.0%	99.9%	99.2%	98.5%	94.6%	72.1%	90.7%
3:00	53.4%	72.8%	92.0%	97.4%	99.4%	100.0%	100.0%	99.3%	99.1%	96.7%	95.0%	70.4%	89.7%
4:00	54.1%	74.9%	91.4%	96.2%	98.7%	99.9%	99.9%	98.8%	99.0%	97.5%	91.5%	67.4%	89.1%
5:00	54.4%	72.0%	91.9%	97.1%	98.1%	99.9%	99.7%	98.3%	98.5%	97.6%	90.8%	67.8%	88.9%
6:00	57.6%	74.9%	90.2%	97.8%	98.0%	98.9%	99.7%	96.7%	98.4%	96.3%	90.1%	67.6%	88.9%
7:00	55.1%	67.6%	89.6%	94.7%	98.5%	99.2%	99.1%	96.5%	97.8%	94.2%	88.9%	66.5%	87.4%
8:00	48.4%	68.3%	87.7%	95.8%	98.5%	99.7%	100.0%	97.5%	96.5%	96.1%	90.9%	61.9%	86.8%
9:00	53.5%	73.0%	89.6%	95.0%	99.6%	99.9%	100.0%	97.8%	97.9%	97.7%	91.8%	66.9%	88.6%
10:00	62.9%	77.9%	92.6%	96.7%	99.9%	100.0%	100.0%	98.6%	98.4%	97.8%	94.8%	73.3%	91.1%
11:00	67.1%	82.2%	95.4%	96.8%	99.3%	99.8%	99.8%	98.6%	98.9%	98.9%	96.4%	78.0%	92.6%
12:00	73.8%	85.4%	95.9%	98.0%	99.8%	99.0%	100.0%	98.9%	99.3%	99.7%	96.2%	82.8%	94.1%
13:00	80.4%	86.5%	95.0%	97.1%	99.5%	100.0%	100.0%	98.4%	99.2%	100.0%	97.1%	82.2%	94.6%
14:00	82.7%	88.4%	95.9%	97.9%	99.7%	99.7%	100.0%	99.2%	99.3%	99.3%	98.3%	86.0%	95.6%
15:00	83.6%	88.3%	95.5%	97.7%	99.3%	100.0%	100.0%	99.1%	99.8%	99.3%	98.3%	85.9%	95.6%
16:00	83.5%	90.5%	95.1%	97.0%	99.1%	99.2%	99.4%	99.3%	99.6%	99.7%	98.0%	85.5%	95.5%
17:00	83.9%	90.3%	95.2%	96.8%	100.0%	99.8%	100.0%	98.9%	99.8%	99.1%	97.9%	85.2%	95.6%
18:00	82.4%	89.5%	95.8%	97.5%	99.7%	100.0%	100.0%	99.0%	99.9%	99.5%	97.7%	86.2%	95.6%
19:00	77.3%	87.8%	96.7%	98.0%	100.0%	100.0%	100.0%	98.4%	99.8%	99.7%	96.7%	80.6%	94.6%
20:00	74.8%	85.3%	96.1%	97.3%	100.0%	100.0%	100.0%	99.3%	99.8%	99.5%	96.8%	77.4%	93.9%
21:00	70.8%	83.5%	95.6%	97.5%	100.0%	100.0%	100.0%	100.0%	99.9%	99.4%	95.5%	75.1%	93.1%
22:00	69.4%	81.8%	95.8%	97.7%	99.9%	100.0%	100.0%	99.8%	100.0%	99.5%	95.2%	75.3%	92.9%
23:00	65.4%	81.9%	95.9%	97.2%	99.5%	100.0%	100.0%	100.0%	99.8%	99.1%	94.8%	73.1%	92.2%
Day	67.0%	81.3%	93.2%	96.8%	99.3%	99.7%	99.8%	98.4%	98.9%	98.3%	94.7%	75.9%	92.0%
Night	67.7%	80.2%	94.2%	97.2%	99.7%	99.9%	100.0%	99.7%	99.3%	98.4%	95.2%	75.5%	92.3%
Average	67.4%	80.6%	93.9%	97.0%	99.4%	99.8%	99.9%	98.8%	99.1%	98.4%	95.0%	75.5%	92.1%

Table 8: Existing Runway Effectiveness for VFR Minimums to Runway 22

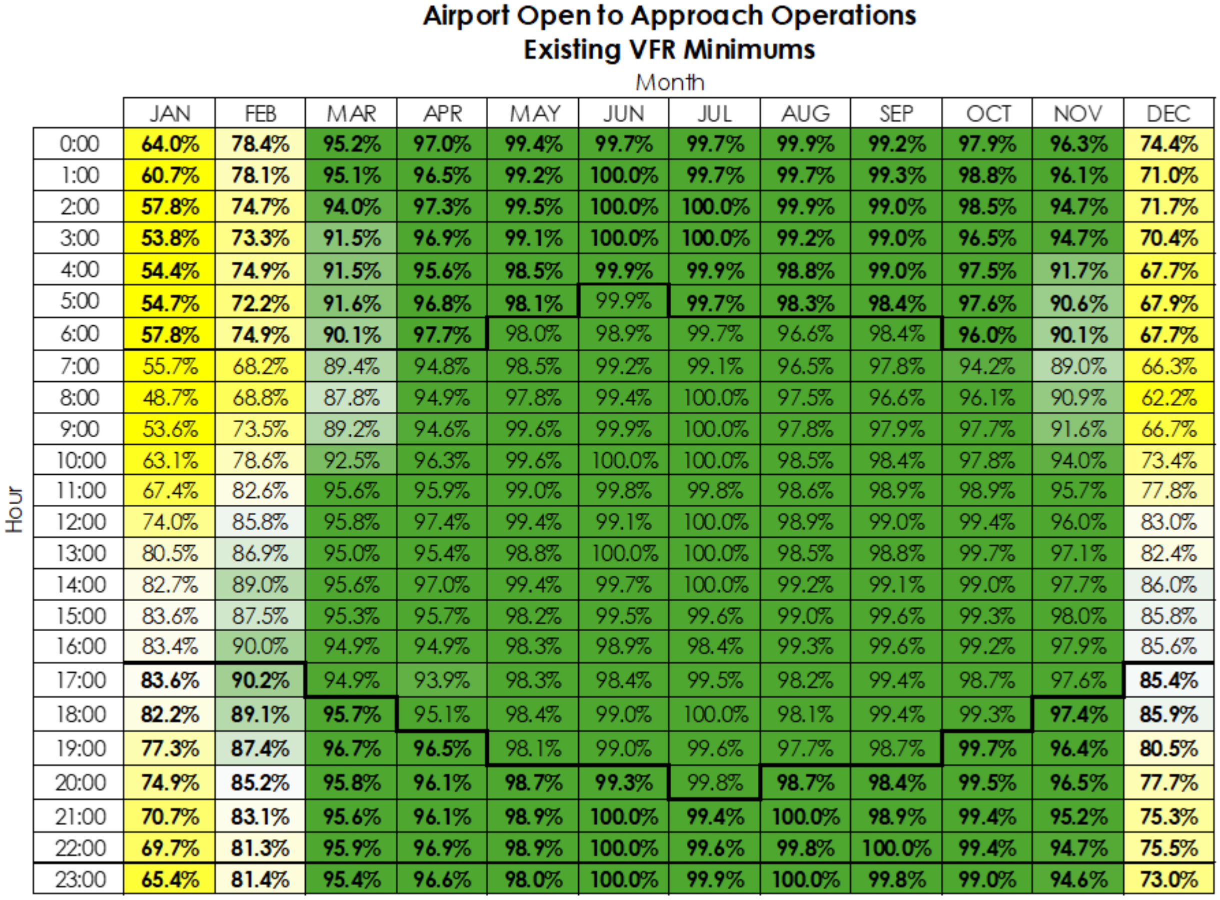


Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	63.8%	79.3%	95.4%	97.1%	100.0%	99.7%	100.0%	100.0%	99.3%	97.9%	96.3%	74.6%	92.0%
1:00	60.4%	79.0%	95.0%	96.7%	99.8%	100.0%	100.0%	99.7%	99.3%	98.9%	96.4%	71.3%	91.4%
2:00	57.6%	75.5%	94.0%	97.3%	99.7%	100.0%	100.0%	99.9%	99.2%	98.8%	94.6%	72.4%	90.8%
3:00	53.7%	74.3%	92.3%	97.4%	99.4%	100.0%	100.0%	99.3%	99.1%	97.0%	95.0%	70.5%	89.9%
4:00	54.3%	75.3%	91.6%	96.3%	98.7%	99.9%	99.9%	98.8%	99.0%	97.9%	91.5%	67.7%	89.3%
5:00	54.6%	73.1%	92.2%	97.2%	98.1%	99.9%	99.7%	98.3%	98.4%	97.7%	90.9%	67.8%	89.0%
6:00	57.9%	75.9%	90.4%	98.1%	97.9%	98.9%	99.7%	96.7%	98.4%	96.4%	90.1%	67.8%	89.0%
7:00	55.7%	68.4%	89.9%	95.2%	98.5%	99.2%	99.1%	96.5%	97.8%	94.1%	89.0%	67.2%	87.6%
8:00	48.9%	68.9%	87.7%	95.9%	98.4%	99.7%	100.0%	97.5%	96.6%	96.2%	91.0%	61.9%	86.9%
9:00	53.5%	73.6%	89.5%	95.4%	99.6%	99.9%	100.0%	97.9%	98.0%	97.7%	92.0%	66.8%	88.7%
10:00	63.2%	78.8%	93.0%	97.1%	99.9%	100.0%	100.0%	98.6%	98.4%	97.8%	95.4%	73.7%	91.4%
11:00	67.4%	82.9%	96.0%	97.2%	99.2%	99.8%	99.8%	98.6%	98.9%	98.9%	96.3%	78.1%	92.8%
12:00	74.4%	86.3%	96.5%	98.2%	99.7%	99.1%	100.0%	98.9%	99.4%	99.7%	96.3%	83.1%	94.3%
13:00	80.4%	87.5%	96.0%	97.2%	99.4%	100.0%	100.0%	98.5%	99.2%	100.0%	97.3%	82.7%	94.9%
14:00	82.9%	89.6%	96.4%	98.1%	99.7%	99.8%	100.0%	99.2%	99.4%	99.5%	98.3%	86.1%	95.8%
15:00	84.3%	88.7%	95.9%	98.0%	99.4%	100.0%	100.0%	99.2%	99.9%	99.4%	98.3%	86.2%	95.8%
16:00	84.3%	90.8%	95.8%	97.7%	99.2%	99.5%	99.4%	99.3%	99.6%	99.6%	97.9%	86.1%	95.8%
17:00	84.2%	91.0%	96.0%	96.9%	100.0%	99.8%	100.0%	99.0%	99.7%	99.0%	97.8%	85.9%	95.8%
18:00	82.7%	90.4%	96.2%	98.6%	99.6%	100.0%	100.0%	99.0%	100.0%	99.6%	97.7%	85.9%	95.8%
19:00	77.4%	88.0%	96.7%	98.7%	99.9%	100.0%	100.0%	98.6%	99.8%	99.8%	96.8%	81.0%	94.7%
20:00	74.7%	85.8%	96.2%	97.9%	100.0%	100.0%	100.0%	99.3%	99.8%	99.9%	96.8%	78.1%	94.1%
21:00	70.9%	83.7%	95.7%	97.8%	100.0%	100.0%	100.0%	100.0%	99.9%	99.5%	95.5%	75.6%	93.2%
22:00	69.5%	82.1%	96.0%	97.8%	99.9%	100.0%	99.9%	99.8%	100.0%	99.5%	95.2%	75.7%	93.0%
23:00	65.4%	82.5%	96.0%	97.4%	100.0%	100.0%	100.0%	100.0%	99.8%	99.0%	94.8%	73.3%	92.4%
Day	67.2%	82.0%	93.7%	97.2%	99.2%	99.7%	99.8%	98.4%	98.9%	98.4%	94.9%	76.1%	92.2%
Night	67.9%	80.8%	94.4%	97.4%	99.7%	99.9%	100.0%	99.7%	99.3%	98.6%	95.2%	75.9%	92.4%
Average	67.6%	81.3%	94.2%	97.3%	99.4%	99.8%	99.9%	98.9%	99.1%	98.5%	95.0%	75.8%	92.3%

The existing VFR minimums allow effective use of the airfield for the months of March through November with average runway effectiveness exceeding 95%. However, in the winter months of December, January and February, runway effectiveness drops precipitously with January being the most impacted. The early morning hours in January are particularly impacted, resulting in less than 60% runway effectiveness in both runway directions.

These runway effectiveness values combine to describe how often an operator should reasonably expect that the airport will be available for approach operations at a given time. This combination of wind direction, visibility and ceiling measurements results in the data given in *Table 9*. Consistent with the individual runway effectiveness results above, the data shows the airport is constrained in the winter months, especially in the morning hours, due to the lack of available instrument approaches and published minimums below the VFR weather reporting requirements.

Table 9: Airport Open to Operations Frequency Based on Existing Conditions



Airport Open to Approach Operations
Existing VFR Minimums

Month

Hour	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0:00	64.0%	78.4%	95.2%	97.0%	99.4%	99.7%	99.7%	99.9%	99.2%	97.9%	96.3%	74.4%
1:00	60.7%	78.1%	95.1%	96.5%	99.2%	100.0%	99.7%	99.7%	99.3%	98.8%	96.1%	71.0%
2:00	57.8%	74.7%	94.0%	97.3%	99.5%	100.0%	100.0%	99.9%	99.0%	98.5%	94.7%	71.7%
3:00	53.8%	73.3%	91.5%	96.9%	99.1%	100.0%	100.0%	99.2%	99.0%	96.5%	94.7%	70.4%
4:00	54.4%	74.9%	91.5%	95.6%	98.5%	99.9%	99.9%	98.8%	99.0%	97.5%	91.7%	67.7%
5:00	54.7%	72.2%	91.6%	96.8%	98.1%	99.9%	99.7%	98.3%	98.4%	97.6%	90.6%	67.9%
6:00	57.8%	74.9%	90.1%	97.7%	98.0%	98.9%	99.7%	96.6%	98.4%	96.0%	90.1%	67.7%
7:00	55.7%	68.2%	89.4%	94.8%	98.5%	99.2%	99.1%	96.5%	97.8%	94.2%	89.0%	66.3%
8:00	48.7%	68.8%	87.8%	94.9%	97.8%	99.4%	100.0%	97.5%	96.6%	96.1%	90.9%	62.2%
9:00	53.6%	73.5%	89.2%	94.6%	99.6%	99.9%	100.0%	97.8%	97.9%	97.7%	91.6%	66.7%
10:00	63.1%	78.6%	92.5%	96.3%	99.6%	100.0%	100.0%	98.5%	98.4%	97.8%	94.0%	73.4%
11:00	67.4%	82.6%	95.6%	95.9%	99.0%	99.8%	99.8%	98.6%	98.9%	98.9%	95.7%	77.8%
12:00	74.0%	85.8%	95.8%	97.4%	99.4%	99.1%	100.0%	98.9%	99.0%	99.4%	96.0%	83.0%
13:00	80.5%	86.9%	95.0%	95.4%	98.8%	100.0%	100.0%	98.5%	98.8%	99.7%	97.1%	82.4%
14:00	82.7%	89.0%	95.6%	97.0%	99.4%	99.7%	100.0%	99.2%	99.1%	99.0%	97.7%	86.0%
15:00	83.6%	87.5%	95.3%	95.7%	98.2%	99.5%	99.6%	99.0%	99.6%	99.3%	98.0%	85.8%
16:00	83.4%	90.0%	94.9%	94.9%	98.3%	98.9%	98.4%	99.3%	99.6%	99.2%	97.9%	85.6%
17:00	83.6%	90.2%	94.9%	93.9%	98.3%	98.4%	99.5%	98.2%	99.4%	98.7%	97.6%	85.4%
18:00	82.2%	89.1%	95.7%	95.1%	98.4%	99.0%	100.0%	98.1%	99.4%	99.3%	97.4%	85.9%
19:00	77.3%	87.4%	96.7%	96.5%	98.1%	99.0%	99.6%	97.7%	98.7%	99.7%	96.4%	80.5%
20:00	74.9%	85.2%	95.8%	96.1%	98.7%	99.3%	99.8%	98.7%	98.4%	99.5%	96.5%	77.7%
21:00	70.7%	83.1%	95.6%	96.1%	98.9%	100.0%	99.4%	100.0%	98.9%	99.4%	95.2%	75.3%
22:00	69.7%	81.3%	95.9%	96.9%	98.9%	100.0%	99.6%	99.8%	100.0%	99.4%	94.7%	75.5%
23:00	65.4%	81.4%	95.4%	96.6%	98.0%	100.0%	99.9%	100.0%	99.8%	99.0%	94.6%	73.0%

6 Airspace and Instrument Procedures

6.1 Airspace/Air Traffic Control

Preston (U10) is a non-towered airport that operates under the jurisdiction of Salt Lake City (ZLC) ARTCC and is just north of existing Class E airspace utilized by Logan-Cache (LGU) Airport (*Figure 4*). Preston (U10) does not have any significant air traffic concerns or constraints.

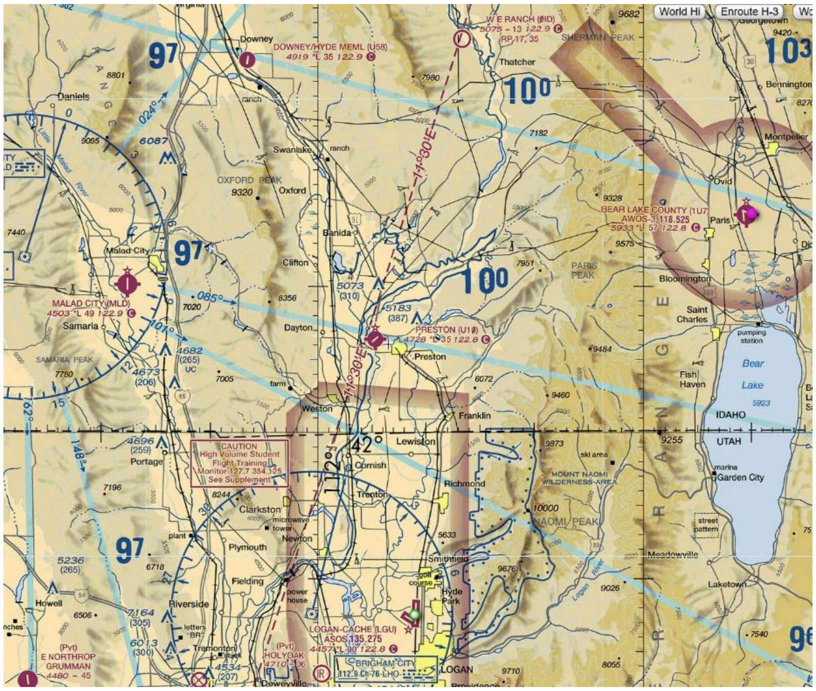


Figure 4: Image of FAA Sectional Chart Depicting the Classes of Airspace Surrounding Preston (U10)

6.2 Existing Instrument Procedures

6.2.1 Arrivals

Preston (U10) is not currently supported by any published Standard Terminal Arrival Procedures (STARs) and instead relies primarily on pilots visually navigating to and from the Preston (U10) airspace.

Currently, the overall frequency of operations, and the nature of flight operations activity on the airfield, does not suggest that there is a need for the FAA to publish and maintain STARs. Therefore, no further analysis was undertaken to explore the development of STARs in this report.

6.2.2 Departures

Preston (U10) is not supported by any published departure procedures, either obstacle, RNAV or otherwise. This means that aircraft operators that wish to depart Preston (U10) must depart under visual meteorological conditions (VMC) and determine their own path from the runway until reaching a safe altitude for the intended flight operation.

6.2.3 Existing Instrument Approaches

Preston (U10) does not currently have published approach procedures, when conducting a visual approach from an IFR flight plan cloud clearance requirements of 14 CFR section 91.155 are not applicable. Approach operations to the airfield must be authorized by the air traffic control facility and only occur when reported weather at the airport is at or above 1000’ ceilings and 3 SM visibility or greater.

6.3 Opportunities for Additional Approaches

This project team examined additional approach opportunities into Preston (U10), including an exploration of new approaches to both Runway 4 and Runway 22. The goal of the analysis was to identify opportunities to create viable RNAV (GPS) approaches to the runway end for both additional safety and increased airfield utility when weather drops below VFR weather minimums.

RNAV (GPS) approaches were evaluated for LPV, VNAV/LNAV, and LNAV under FAA 8260.3G, 8260.19K and 8260.58D via TARGETS 7.4.1.

6.3.1 Potential Future RNAV (GPS) Approach to Runway 4

A new RNAV (GPS) approach to Runway 4 would provide several enhancements to Preston (U10) in its current and future state. There are no current published instrument approach minimums for Runway 4. The only approach available from an IFR flight plan is a visual approach in which currently utilizes VFR reported weather minimums of 1,000 feet DH and 3 SM visibility. This leaves the airport with unreliable instrument approach coverage when environmental conditions favor Runway 4 operations, particularly during the winter season when heavy snow is a common occurrence.

Due to significant terrain to the southwest of the airport, a new RNAV (GPS) approach was constructed with emphasis first on whether a final approach course could be designed to either vertically and/or laterally avoid Obstacle Clearance Surface (OCS) penetrations. Several combinations of glidepath angle and offset angle of the final approach course were analyzed to determine if there were any viable combinations that could produce a criteria-compliant straight-in approach (+/- 3 degrees of the extended runway centerline).

The study revealed that an offset final approach course (FAC) and an increased vertical descent angle (VDA) were required to mitigate the mountainous terrain in the area. The leading candidate RNAV (GPS) procedure utilizes a FAC that is offset from the extended runway centerline by 20° to the east, keeping aircraft away from rising terrain. Even with the offset FAC, a VDA of 3.77° was required, which is the maximum VDA for a Category C approach. This combination of offset FAC and increased VDA meets FAA criteria for up to Category C but precludes the publication of Category D lines of minima for a public FAR Part 97 instrument approach procedure. Thus, the potential future RNAV (GPS) approach would only be capable of serving aircraft approach category A through C.

The new offset approach also has several Vertical Guidance Surface (VGS) penetrations which preclude the inclusion of vertically guided approach designs (VNAV/LNAV, LPV or RNP) leaving only LNAV. Refer to the graphics below, (*Figure 5* & *Figure 6*), that depict and the proposed obstacle evaluation areas and sample IAP chart respectively.

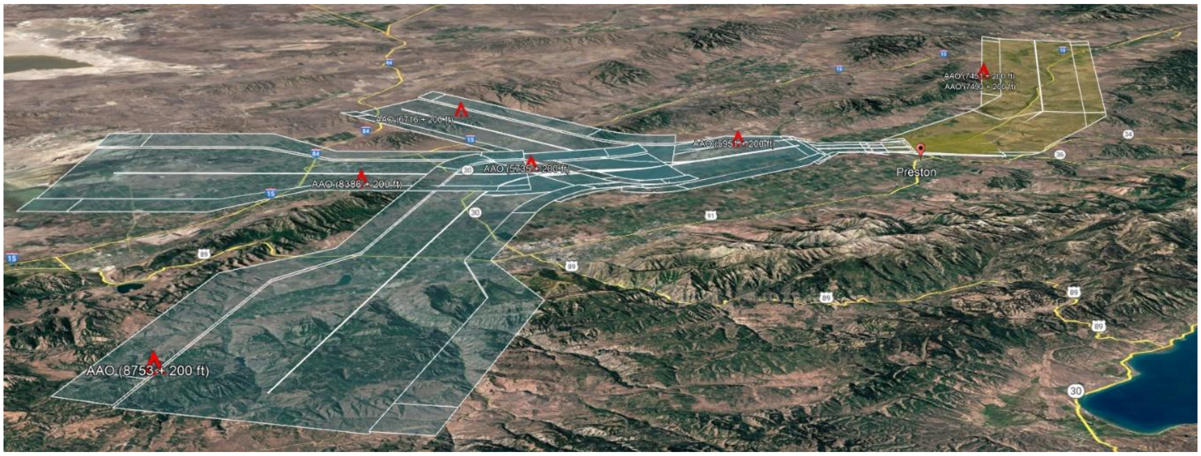
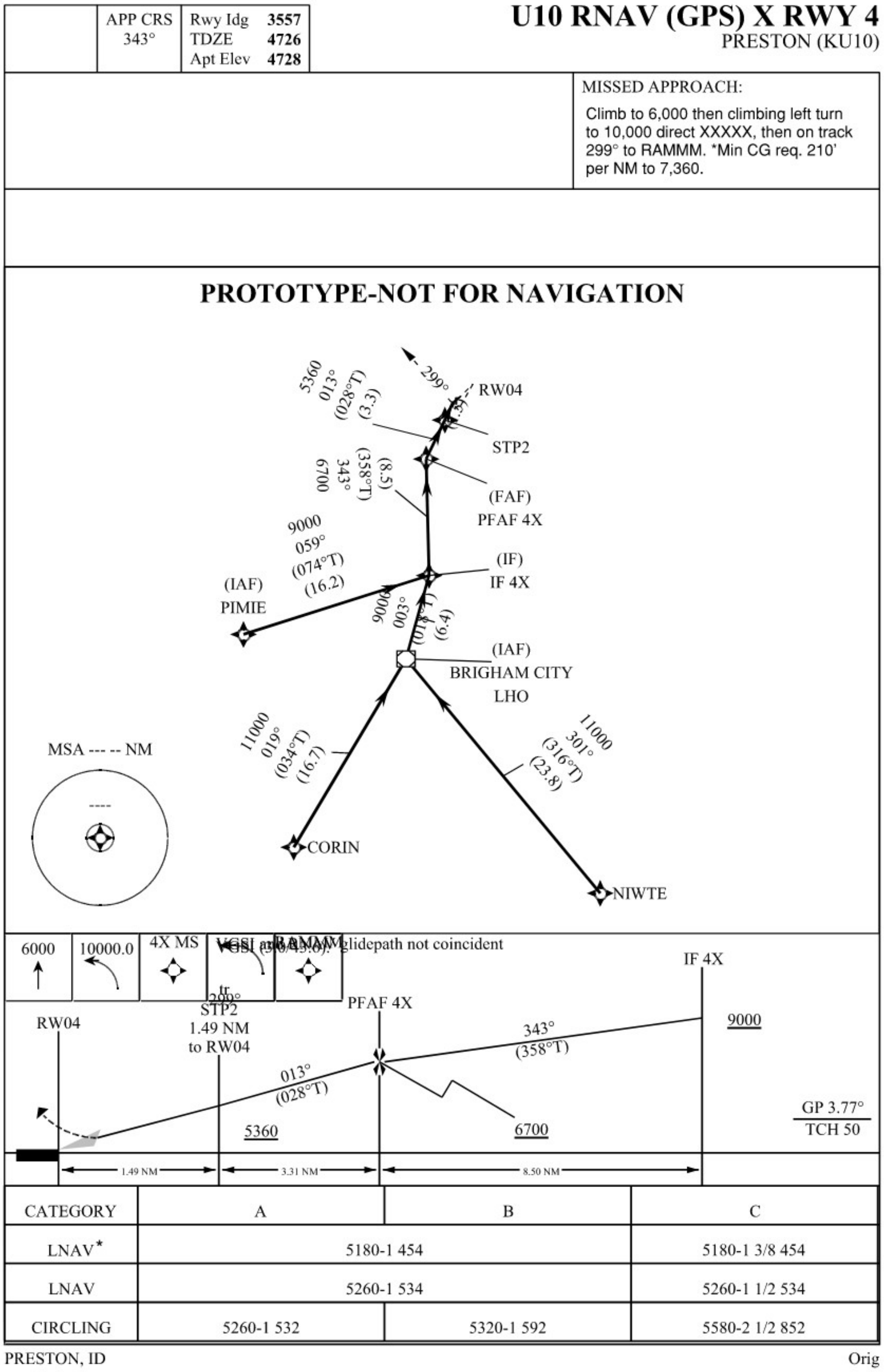


Figure 5: Obstacle Evaluation Areas (OEAs) for Proposed RNAV (GPS) Approach to Runway 4



Climb to 6,000 then climbing left turn to 10,000 direct XXXXX, then on track 299° to RAMMM. *Min CG req. 210' per NM to 7,360.

CATEGORY	A	B	C
LNAV*	5180-1 454		5180-1 3/8 454
LNAV	5260-1 534		5260-1 1/2 534
CIRCLING	5260-1 532	5320-1 592	5580-2 1/2 852

Figure 6: Sample Instrument Approach Procedure Chart for Potential Future RNAV (GPS) Approach to Runway 4

Note: 'XXXXX' represents a placeholder for a five-letter unique pronounceable name that will be identified by the FAA when the procedure is created.

These minimums represent a significant improvement over the existing VFR minimums. The addition of this approach would also require the markings on Runway 4 to be upgraded from the current basic visual to non-precision instrument markings. Because the airport does not currently have an on-airfield altimeter, the procedure minimums include a primary RASS adjustment of 84 feet. A RASS penalty or adjustment exists when the weather source is greater than 5 NM away from the airport reference point (ARP). If a primary weather radar system was installed on airport, this penalty would not apply and it would be removed from the calculation, which would allow for a lower MDA and circling MDA (CMDA).

6.3.2 Potential Future RNAV (GPS) Approach to Runway 22

A new RNAV (GPS) approach to Runway 22 would provide several enhancements to Preston (U10) in its current and future state. There are no current published instrument approach minimums for Runway 22. The only approach available from an IFR flight plan is a visual approach in which Runway 22 currently utilizes VFR reported weather minimums of 1,000 feet DH and 3 SM visibility. This leaves the airport with unreliable instrument approach coverage when environmental conditions favor Runway 22 operations, particularly during the winter season when heavy snows are common occurrences. Ideally, the airport would have approach procedures to both primary runway ends to accommodate operations in poor weather conditions regardless of wind direction.

Similarly to Runway 4, an RNAV (GPS) approach to Runway 22 is feasible utilizing and offset FAC which avoids the highest terrain north and east of the airport. The procedure requires a 15° offset to the west with a 3.50° VDA. This combination of offset approach course and increased VDA meets FAA criteria for up to Category C but precludes the publication of Category D lines of minima for the approach. Thus, the potential future RNAV (GPS) approach would only be capable of serving aircraft approach Category A through C. The new approach does not have vertical guidance surface (VGS) penetrations which allows for VNAV lines of minima but still does not meet the criteria to support LPV. Refer to the graphics below, (Figure *7* & *Figure 8*), that depict the proposed obstacle evaluation areas and sample IAP chart respectively.

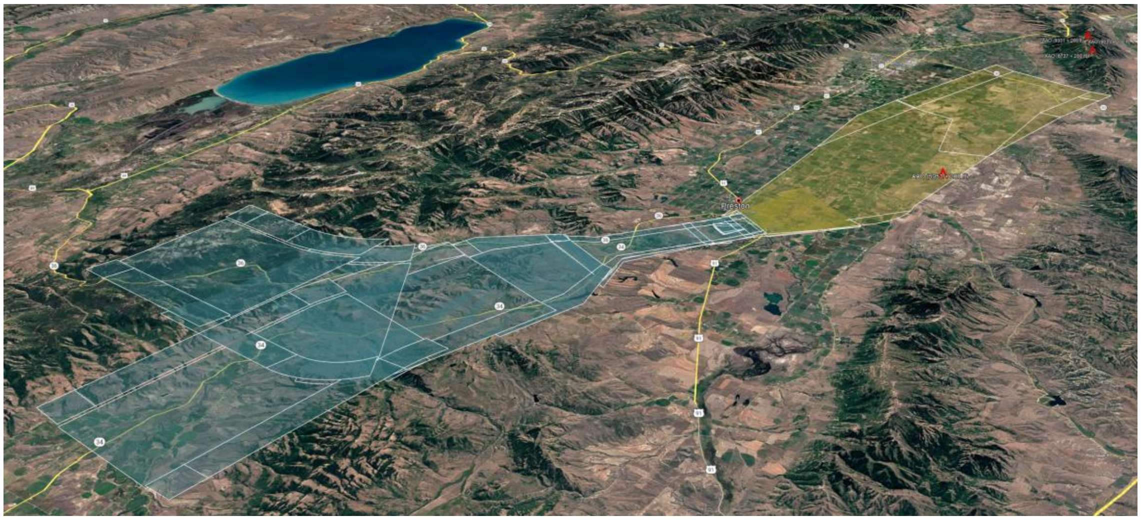
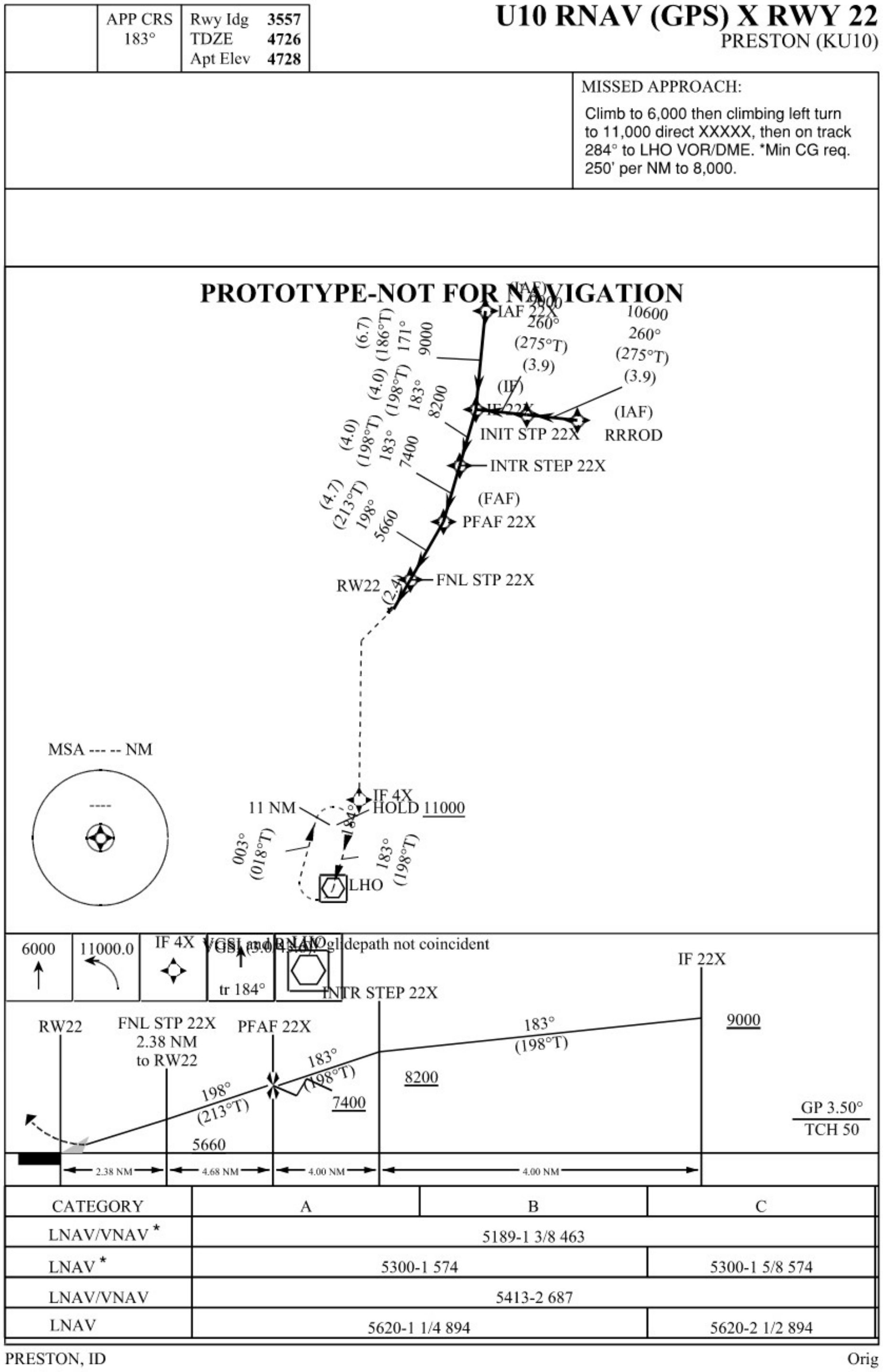


Figure 7: Potential future RNAV (GPS) Approach to Runway 22 Obstacle Evaluation Areas with LNAV Final and Missed



APP CRS	Rwy ldg	3557
183°	TDZE	4726
	Apt Elev	4728

U10 RNAV (GPS) X RWY 22

PRESTON (KU10)

MISSED APPROACH:

Climb to 6,000 then climbing left turn to 11,000 direct XXXXX, then on track 284° to LHO VOR/DME. *Min CG req. 250' per NM to 8,000.

PROTOTYPE-NOT FOR NAVIGATION

CATEGORY	A	B	C
LNAV/VNAV *	5189-1 3/8 463		
LNAV *	5300-1 574		5300-1 5/8 574
LNAV/VNAV	5413-2 687		
LNAV	5620-1 1/4 894		5620-2 1/2 894

PRESTON, ID

Orig

Figure 8: Sample Instrument Approach Procedure Chart for Potential Future RNAV (GPS) Approach to Runway 22

Note 1: ‘XXXXX’ represents a placeholder for a five-letter unique pronounceable name that will be identified by the FAA when the procedure is created.

Note 2: When circling minimums are created, they are applied to each runway end for the whole airport (unless otherwise specified as N/A). The circling minimums associated with RNAV (GPS) Approach to Runway 4 are also associated with RNAV (GPS) Approach to Runway 22. In the interest of limited space, they were omitted from the design IAP chart. When this procedure is published, circling minimums will fit on the page and be published on the bottom of the IAP chart.

Note 3: Everything described above about RASS remains the same for Runway 22.

It is recommended that Preston (U10) pursue the RNAV (GPS) Approach to Runway 22 via an FAA IFP Gateway Entry at the earliest possible opportunity.

6.3.3 Potential Future RNAV (GPS) Approach to Runway 35

An RNAV (GPS) approach procedure to existing Runway 35 was briefly analyzed to determine if there would be future opportunity for a procedure. A future RNAV (GPS) approach is feasible to the existing Runway 35 alignment. Because the runway is oriented north-south within the valley a runway-aligned, straight-in approach is feasible utilizing a 3.50° GPA. However, this would require major alterations to the Runway 17-35 surface to support regular aircraft operations, including runway extension, paving, markings, and lighting. Without such alterations, the FAA will not create or publish an instrument approach to this runway end.

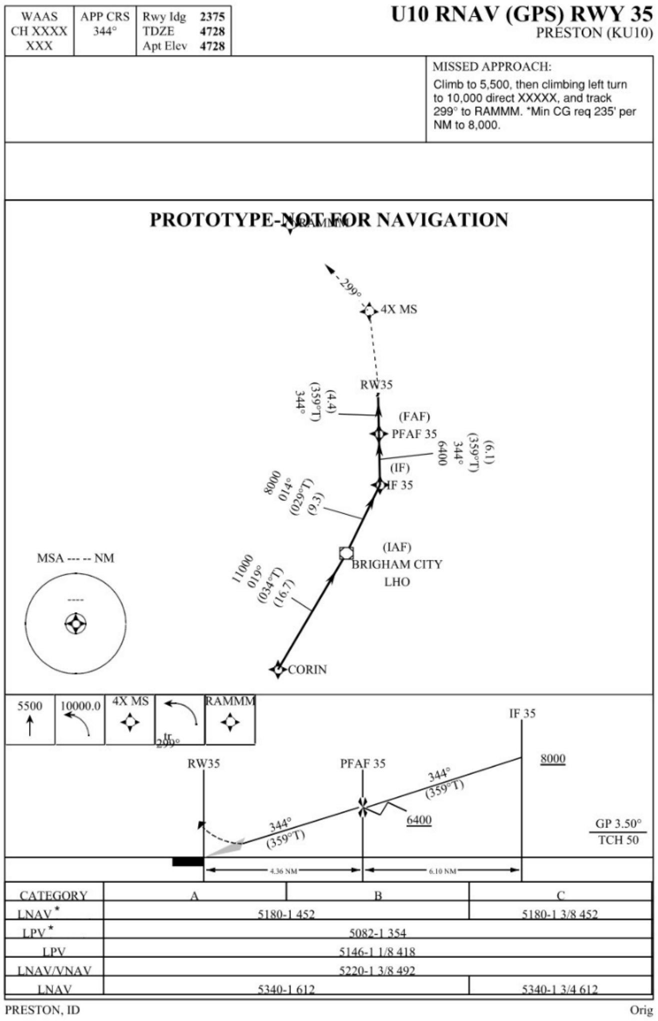


Figure 9: Sample Instrument Approach Procedure Chart for Potential Future RNAV (GPS) Approach to Runway 35

While this approach provides the best theoretical minimums to the airfield, Runway 17-35 will require significant infrastructure investment and upgrades to achieve them, which may not be commensurate with anticipated future at the airport, especially considering the introduction of new approach procedures to Runway 4-22.

6.3.4 Potential Future RNAV (GPS) Approach to Runway 17

Approach procedures to Runway 17 were not investigated thoroughly under the scope of this study. The existing condition of Runway 17-35 coupled with the rising terrain to the north allows for minimal opportunity to improve airfield operations.

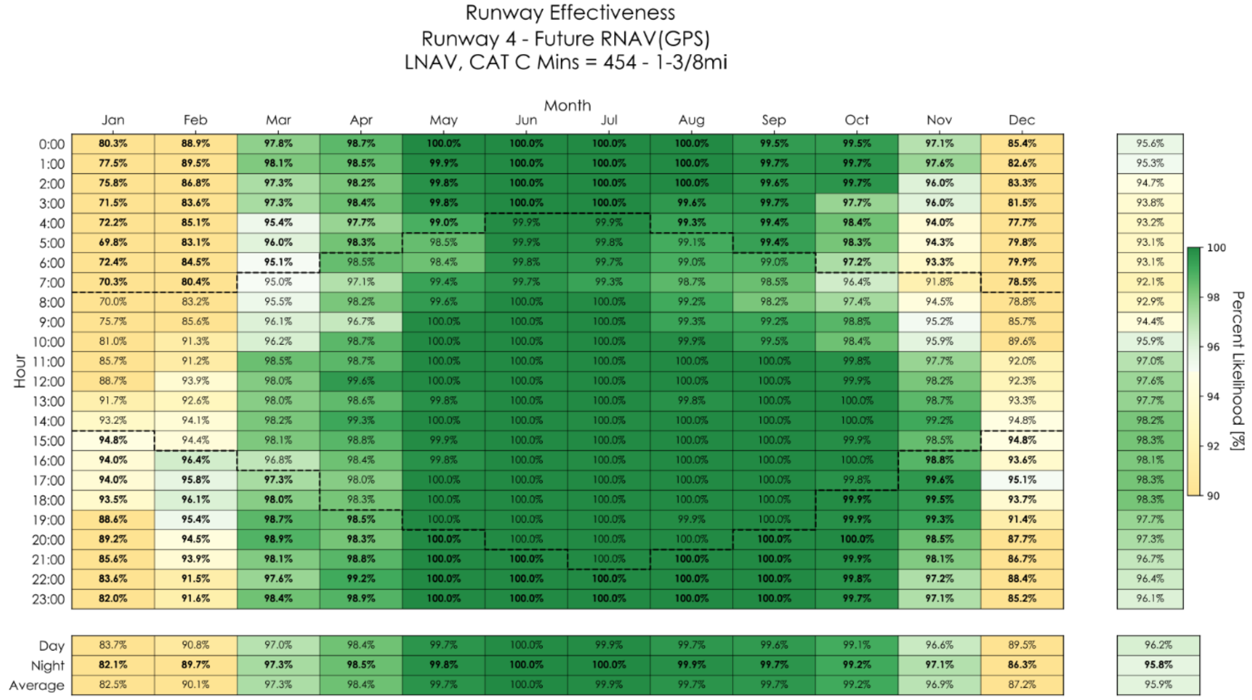
LEAN does not recommend pursuing an additional approach procedure development to Runway 17.

6.3.5 Effectiveness of Proposed Approaches

To understand the effectiveness of an airport's existing approach procedures, the approaches need to be examined relative to historical weather conditions when each runway is in use and when all runway/approach options are available for use by pilots and air traffic controllers. LEAN describes the effectiveness of instrument approaches utilizing runway effectiveness of an approach procedure and ability of the airport to stay open to approach operations.

Table 10 and *Table 11* below indicate the runway effectiveness for Runways 4 and 22.

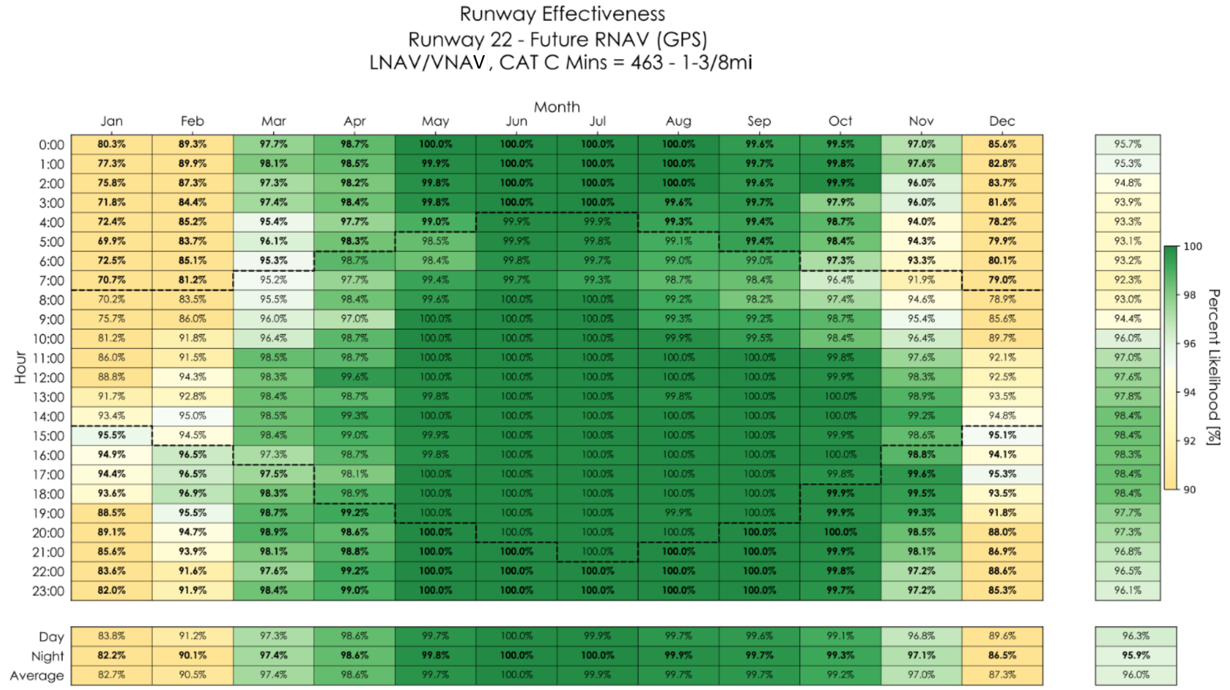
Table 10: Runway Effectiveness for Runway 4 with New RNAV (GPS)



Runway Effectiveness
Runway 4 - Future RNAV(GPS)
LNAV, CAT C Mins = 454 - 1-3/8mi

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	80.3%	88.9%	97.8%	98.7%	100.0%	100.0%	100.0%	100.0%	99.5%	99.5%	97.1%	85.4%	95.6%
1:00	77.5%	89.5%	98.1%	98.5%	99.9%	100.0%	100.0%	100.0%	99.7%	99.7%	97.6%	82.6%	95.3%
2:00	75.8%	86.8%	97.3%	98.2%	99.8%	100.0%	100.0%	100.0%	99.6%	99.7%	96.0%	83.3%	94.7%
3:00	71.5%	83.6%	97.3%	98.4%	99.8%	100.0%	100.0%	99.6%	99.7%	97.7%	96.0%	81.5%	93.8%
4:00	72.2%	85.1%	95.4%	97.7%	99.0%	99.9%	99.9%	99.3%	99.4%	98.4%	94.0%	77.7%	93.2%
5:00	69.8%	83.1%	96.0%	98.3%	98.5%	99.9%	99.8%	99.1%	99.4%	98.3%	94.3%	79.8%	93.1%
6:00	72.4%	84.5%	95.1%	98.5%	98.4%	99.8%	99.7%	99.0%	99.0%	97.2%	93.3%	79.9%	93.1%
7:00	70.3%	80.4%	95.0%	97.1%	99.4%	99.7%	99.3%	98.7%	98.5%	96.4%	91.8%	78.5%	92.1%
8:00	70.0%	83.2%	95.5%	98.2%	99.6%	100.0%	100.0%	99.2%	98.2%	97.4%	94.5%	78.8%	92.9%
9:00	75.7%	85.6%	96.1%	96.7%	100.0%	100.0%	100.0%	99.3%	99.2%	98.8%	95.2%	85.7%	94.4%
10:00	81.0%	91.3%	96.2%	98.7%	100.0%	100.0%	100.0%	99.9%	99.5%	98.4%	95.9%	89.6%	95.9%
11:00	85.7%	91.2%	98.5%	98.7%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	97.7%	92.0%	97.0%
12:00	88.7%	93.9%	98.0%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	98.2%	92.3%	97.6%
13:00	91.7%	92.6%	98.0%	98.6%	99.8%	100.0%	100.0%	99.8%	100.0%	100.0%	98.7%	93.3%	97.7%
14:00	93.2%	94.1%	98.2%	99.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.2%	94.8%	98.2%
15:00	94.8%	94.4%	98.1%	98.8%	99.9%	100.0%	100.0%	100.0%	100.0%	99.9%	98.5%	94.8%	98.3%
16:00	94.0%	96.4%	96.8%	98.4%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	98.8%	93.6%	98.1%
17:00	94.0%	95.8%	97.3%	98.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	99.6%	95.1%	98.3%
18:00	93.5%	96.1%	98.0%	98.3%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	99.5%	93.7%	98.3%
19:00	88.6%	95.4%	98.7%	98.5%	100.0%	100.0%	100.0%	99.9%	100.0%	99.9%	99.3%	91.4%	97.7%
20:00	89.2%	94.5%	98.9%	98.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.5%	87.7%	97.3%
21:00	85.6%	93.9%	98.1%	98.8%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	98.1%	86.7%	96.7%
22:00	83.6%	91.5%	97.6%	99.2%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	97.2%	88.4%	96.4%
23:00	82.0%	91.6%	98.4%	98.9%	100.0%	100.0%	100.0%	100.0%	100.0%	99.7%	97.1%	85.2%	96.1%
Day	83.7%	90.8%	97.0%	98.4%	99.7%	100.0%	99.9%	99.7%	99.6%	99.1%	96.6%	89.5%	96.2%
Night	82.1%	89.7%	97.3%	98.5%	99.8%	100.0%	100.0%	99.9%	99.7%	99.2%	97.1%	86.3%	95.8%
Average	82.5%	90.1%	97.3%	98.4%	99.7%	100.0%	99.9%	99.7%	99.7%	99.2%	96.9%	87.2%	95.9%

Table 11: Runway Effectiveness for Runway 22 with New RNAV (GPS)



Runway Effectiveness
Runway 22 - Future RNAV (GPS)
LNAV/VNAV, CAT C Mins = 463 - 1-3/8mi

Hour	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
0:00	80.3%	89.3%	97.7%	98.7%	100.0%	100.0%	100.0%	100.0%	99.6%	99.5%	97.0%	85.6%	95.7%
1:00	77.3%	89.9%	98.1%	98.5%	99.9%	100.0%	100.0%	100.0%	99.7%	99.8%	97.6%	82.8%	95.3%
2:00	75.8%	87.3%	97.3%	98.2%	99.8%	100.0%	100.0%	100.0%	99.6%	99.9%	96.0%	83.7%	94.8%
3:00	71.8%	84.4%	97.4%	98.4%	99.8%	100.0%	100.0%	99.6%	99.7%	97.9%	96.0%	81.6%	93.9%
4:00	72.4%	85.2%	95.4%	97.7%	99.0%	99.9%	99.9%	99.3%	99.4%	98.7%	94.0%	78.2%	93.3%
5:00	69.9%	83.7%	96.1%	98.3%	98.5%	99.9%	99.8%	99.1%	99.4%	98.4%	94.3%	79.9%	93.1%
6:00	72.5%	85.1%	95.3%	98.7%	98.4%	99.8%	99.7%	99.0%	99.0%	97.3%	93.3%	80.1%	93.2%
7:00	70.7%	81.2%	95.2%	97.7%	99.4%	99.7%	99.3%	98.7%	98.4%	96.4%	91.9%	79.0%	92.3%
8:00	70.2%	83.5%	95.5%	98.4%	99.6%	100.0%	100.0%	99.2%	98.2%	97.4%	94.6%	78.9%	93.0%
9:00	75.7%	86.0%	96.0%	97.0%	100.0%	100.0%	100.0%	99.3%	99.2%	98.7%	95.4%	85.6%	94.4%
10:00	81.2%	91.8%	96.4%	98.7%	100.0%	100.0%	100.0%	99.9%	99.5%	98.4%	96.4%	89.7%	96.0%
11:00	86.0%	91.5%	98.5%	98.7%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	97.6%	92.1%	97.0%
12:00	88.8%	94.3%	98.3%	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	98.3%	92.5%	97.6%
13:00	91.7%	92.8%	98.4%	98.7%	99.8%	100.0%	100.0%	99.8%	100.0%	100.0%	98.9%	93.5%	97.8%
14:00	93.4%	95.0%	98.5%	99.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.2%	94.8%	98.4%
15:00	95.5%	94.5%	98.4%	99.0%	99.9%	100.0%	100.0%	100.0%	100.0%	99.9%	98.6%	95.1%	98.4%
16:00	94.9%	96.5%	97.3%	98.7%	99.8%	100.0%	100.0%	100.0%	100.0%	100.0%	98.8%	94.1%	98.3%
17:00	94.4%	96.5%	97.5%	98.1%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	99.6%	95.3%	98.4%
18:00	93.6%	96.9%	98.3%	98.9%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	99.5%	93.5%	98.4%
19:00	88.5%	95.5%	98.7%	99.2%	100.0%	100.0%	100.0%	99.9%	100.0%	99.9%	99.3%	91.8%	97.7%
20:00	89.1%	94.7%	98.9%	98.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.5%	88.0%	97.3%
21:00	85.6%	93.9%	98.1%	98.8%	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	98.1%	86.9%	96.8%
22:00	83.6%	91.6%	97.6%	99.2%	100.0%	100.0%	100.0%	100.0%	100.0%	99.8%	97.2%	88.6%	96.5%
23:00	82.0%	91.9%	98.4%	99.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.7%	97.2%	85.3%	96.1%
Day	83.8%	91.2%	97.3%	98.6%	99.7%	100.0%	99.9%	99.7%	99.6%	99.1%	96.8%	89.6%	96.3%
Night	82.2%	90.1%	97.4%	98.6%	99.8%	100.0%	100.0%	99.9%	99.7%	99.3%	97.1%	86.5%	95.9%
Average	82.7%	90.5%	97.4%	98.6%	99.7%	100.0%	99.9%	99.7%	99.7%	99.2%	97.0%	87.3%	96.0%

The proposed approach procedures provide significant benefit over the existing VFR minimums available to the runway ends today. The most restrictive periods of operation in the winter months see a 10-15% improvement in runway effectiveness in both directions, bringing the average runway effectiveness over 80% for December, January, and February. The combined effect of this improvement can be seen in *Table 12* below. With the inclusion of the new lower minimums the airport's availability for operations increases significantly (10-15%) in the winter months. The procedure enhancements, along with required airfield upgrades, would position the airport for future expansion and support of larger and more sophisticated operators in the future.

Table 12: Airport Open to Operations with New RNAV (GPS) to Runway 4-22.

Airport Open to Approach Operations
New RNAV (GPS) Procedures to Runway 4-22

Month

Hour	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0:00	**80.4%**	**88.6%**	**97.5%**	**98.5%**	**99.4%**	**100.0%**	**99.7%**	**100.0%**	**99.5%**	**99.5%**	**97.1%**	**85.3%**
1:00	**77.5%**	**88.9%**	**98.2%**	**98.2%**	**99.3%**	**100.0%**	**99.7%**	**100.0%**	**99.7%**	**99.7%**	**97.3%**	**82.4%**
2:00	**75.9%**	**86.6%**	**97.2%**	**98.1%**	**99.5%**	**100.0%**	**100.0%**	**100.0%**	**99.5%**	**99.7%**	**96.1%**	**82.8%**
3:00	**71.9%**	**83.7%**	**96.8%**	**97.9%**	**99.5%**	**100.0%**	**100.0%**	**99.5%**	**99.5%**	**97.4%**	**95.6%**	**81.4%**
4:00	**72.4%**	**84.9%**	**95.5%**	**97.1%**	**98.9%**	**99.9%**	**99.9%**	**99.4%**	**99.4%**	**98.4%**	**94.1%**	**78.1%**
5:00	**70.0%**	**83.0%**	**95.5%**	**98.0%**	**98.6%**	99.9%	**99.8%**	**99.1%**	**99.4%**	**98.3%**	**94.0%**	**79.9%**
6:00	**72.4%**	**84.2%**	**95.0%**	**98.4%**	98.4%	99.8%	99.7%	98.9%	99.0%	**97.0%**	**93.2%**	**80.0%**
7:00	70.7%	80.9%	94.6%	97.2%	99.3%	99.7%	99.3%	98.7%	98.5%	96.5%	91.9%	78.3%
8:00	70.2%	83.4%	95.5%	97.3%	98.9%	99.7%	100.0%	99.2%	98.3%	97.4%	94.5%	79.1%
9:00	75.7%	85.8%	95.7%	96.2%	100.0%	100.0%	100.0%	99.3%	99.2%	98.8%	94.9%	85.2%
10:00	81.0%	91.4%	96.0%	98.2%	99.7%	100.0%	100.0%	99.9%	99.4%	98.4%	95.1%	89.4%
11:00	85.9%	91.1%	98.5%	97.7%	99.7%	100.0%	100.0%	100.0%	100.0%	99.8%	97.0%	92.1%
12:00	88.8%	94.0%	97.9%	98.9%	99.7%	100.0%	100.0%	100.0%	99.7%	99.6%	98.0%	92.3%
13:00	91.7%	92.8%	97.7%	96.8%	99.2%	100.0%	100.0%	99.8%	99.6%	99.7%	98.7%	92.9%
14:00	93.2%	94.4%	97.7%	98.3%	99.7%	100.0%	100.0%	100.0%	99.7%	99.7%	98.6%	94.6%
15:00	94.8%	93.3%	97.7%	96.8%	98.7%	99.5%	99.6%	99.8%	99.8%	99.8%	98.3%	94.5%
16:00	93.9%	95.7%	96.5%	96.1%	98.9%	99.7%	98.9%	99.9%	100.0%	99.6%	98.7%	93.6%
17:00	**93.7%**	**95.5%**	96.8%	95.1%	98.4%	98.6%	99.5%	99.3%	99.7%	99.4%	99.3%	**95.1%**
18:00	**93.4%**	**95.5%**	**97.7%**	95.8%	98.8%	99.0%	100.0%	99.1%	99.5%	99.8%	**99.2%**	**93.5%**
19:00	**88.5%**	**95.0%**	**98.7%**	**97.0%**	98.2%	99.0%	99.6%	99.3%	98.9%	**99.9%**	**99.0%**	**91.2%**
20:00	**89.2%**	**94.2%**	**98.6%**	**97.2%**	**98.7%**	**99.3%**	99.8%	**99.4%**	**98.7%**	**99.9%**	**98.2%**	**87.9%**
21:00	**85.4%**	**93.5%**	**98.1%**	**97.3%**	**98.9%**	**100.0%**	**99.4%**	**100.0%**	**99.0%**	**99.9%**	**97.8%**	**86.6%**
22:00	**83.8%**	**90.8%**	**97.7%**	**98.3%**	**99.0%**	**100.0%**	**99.7%**	**100.0%**	**100.0%**	**99.8%**	**96.6%**	**88.3%**
23:00	**82.0%**	**90.9%**	**97.9%**	**98.2%**	**98.5%**	**100.0%**	**99.9%**	**100.0%**	**100.0%**	**99.7%**	**97.0%**	**85.0%**

6.3.6 VGSI and Proposed Procedures

The instrument approach procedures identified on Runway 4 and 22 both require the use of VDAs that are well in excess of the current VGSI nominal aiming angle of 3.00 degrees.

To comply with FAA Order 8260.3 and 8260.19 criteria, the existing VGSIs angle should be modified to equal their respective VDA angle identified on the RNAV (GPS) approaches. This would be increasing the VGSI to 3.77° for Runway 4, and 3.50° for Runway 22.

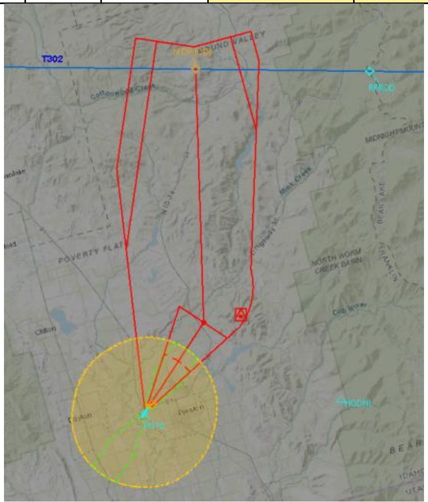
This report does not contain any detailed analysis for the design and modification of the VGSI. However, if the airport and LEAN continue to pursue instrument approach procedures like those identified in this report, it will be important to evaluate and modify the VGSI as well.

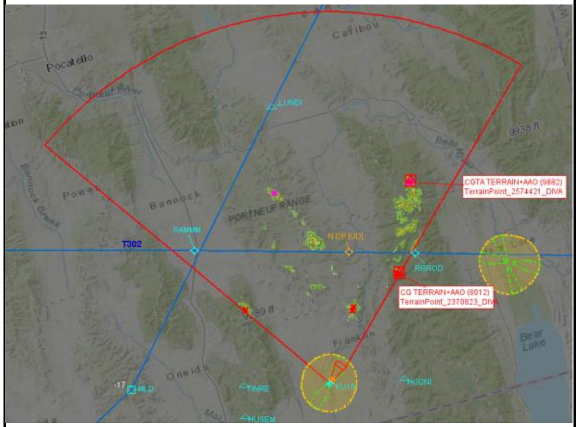
6.3.7 Departures and Analysis of Departures

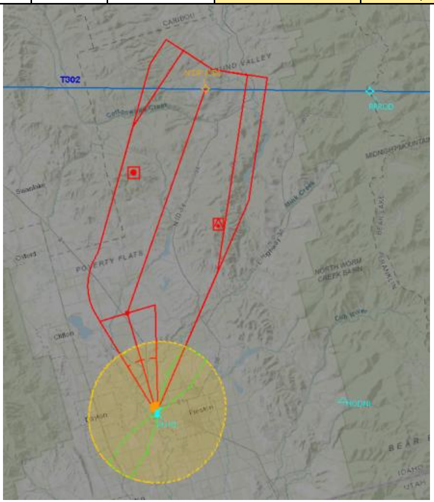
This study also included analysis of possible implementation of RNAV departure procedures for Preston (U10). Currently Preston (U10) operates as a visual-only airport and does not have published departure procedures. Sectorized departures and routed departure procedures were analyzed north and south departures from the airfield.

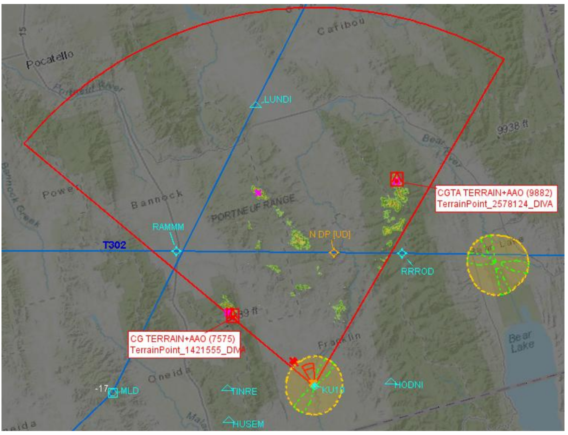
Through this investigation the project team identified several feasible options which are described in *Table 13* below:

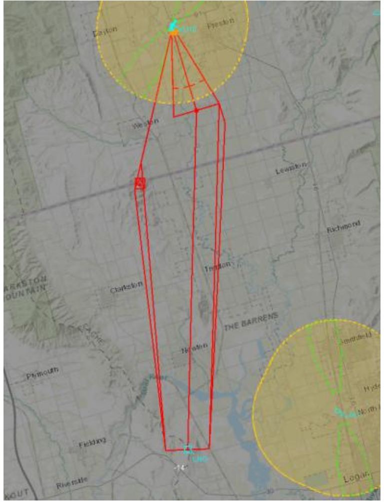
Table 13: Potential Future Departure Procedures

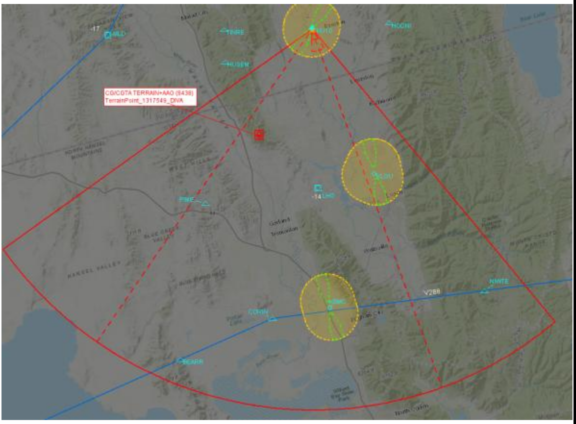
Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
North	**4**	**RNAV ODP**	**370**	**7,000**
				
Minimums	**Standard**		Required NAVAIDS	**None**

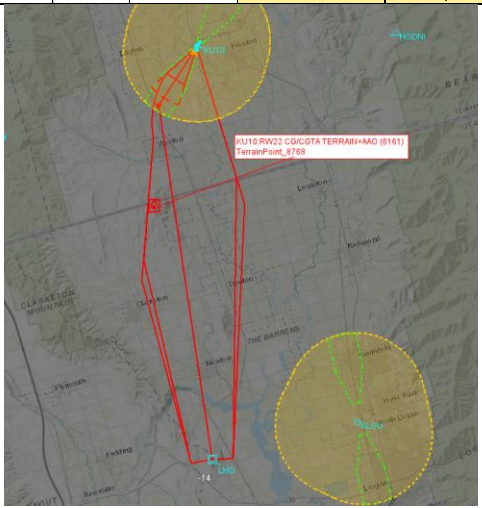
Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
North	**4**	**Diverse**	**275**	**9,100**
				
Minimums	**Standard**		Required NAVAIDS	**None**

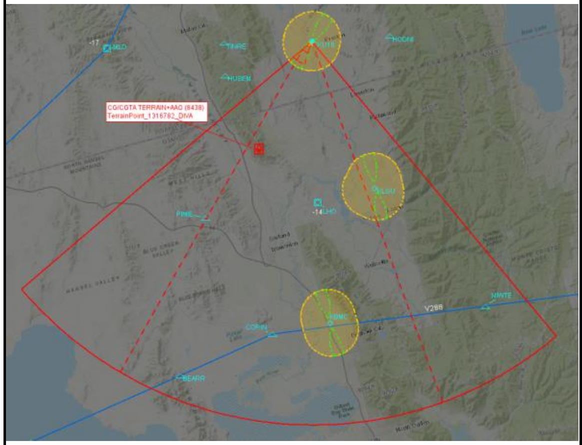
Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
North	**35**	**RNAV ODP**	**250**	**7,300**
				
Minimums	**Standard**		Required NAVAIDS	**None**

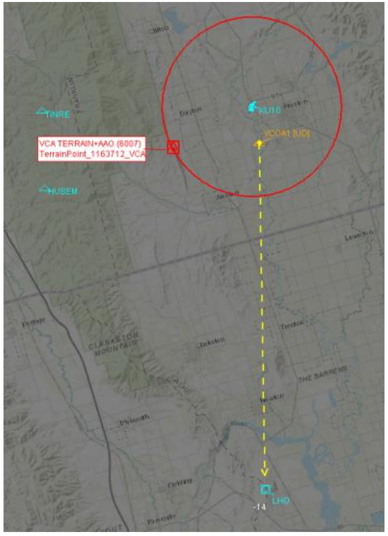
Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
North	**35**	**Diverse**	**295**	**8,500**
				
Minimums	**Standard**		Required NAVAIDS	**None**

Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
South	**17**	**RNAV ODP**	**205**	**6,200**
				
Minimums	**Standard**		Required NAVAIDS	**LHO VOR**

Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
South	**17**	**Diverse**	**340**	**9,600**
				
Minimums	**Standard**		Required NAVAIDS	**None**

Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
South	**22**	**RNAV ODP**	**255**	**6,200**
				
Minimums	**Standard**		Required NAVAIDS	**LHO VOR**

Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
South	**22**	**Diverse**	**345**	**9,600**
				
Minimums	**Standard**		Required NAVAIDS	**None**

Direction	Runway	Type	Climb Gradient (ft/NM)	Term. Altitude (ft MSL)
All	**All**	**VCOA**	**Standard**	**10,000**
				
Minimums	**Standard**		Required NAVAIDS	**LHO VOR**

Each of these procedures was developed using the TARGETS platform and is compliant with current procedure design criteria and could be considered feasible for development in the future. All of the proposed procedures accounted for the traverse way and did not have an impact on that area. They are clear of all obstacles including terrain and manmade. All runways will require a higher than standard climb gradient therefore an additional departure procedure, a Visual Climb Over Airport (VCOA) will be required. The sectorized departures tend to require higher climb gradients than the routed RNAV departure procedures except for the climb gradient required for the Runway 22 RNAV departure which is affected by the terrain to the east and north of the airport.

6.3.8 Summary of Analyzed Procedures

Preston (U10) currently operates both departures and approaches under VFR. While this generally serves the needs of the existing user group for most of the year, the addition of instrument approach and departure procedures could afford the airfield the opportunity to operate more successfully in the winter months and to support larger aircraft and more sophisticated operators in the future.

Establishing new, offset RNAV (GPS) approaches to Runways 4 and 22 could provide significant benefit to the airport through the reduction in weather requirements below the existing VFR minimums.

Table 14: Summary of Feasible Approach Procedures at Preston (U10)

Procedure	Existing/New	Minimums (Cat C)	Meets FAA Design Criteria	Airfield/NAVAID/ILS Modifications
RNAV (GPS) Rwy 4	New	LNAV: 454 - 1 3/8	**Yes**	**NPI Paint Markings**
RNAV (GPS) Rwy 22	New	LNAV: 574 - 1 5/8 LNAV/VNAV: 463 - 1 3/8	**Yes**	**NPI Paint Markings**
RNAV (GPS) Rwy 35	New	LPV: 354 - 1 LNAV/VNAV: 492 - 1 3/8 LNAV: 452 - 1 3/8	**Yes**	**Runway Paving, Paint, Lighting**

There are currently no existing departure procedures at Preston (U10). In the future, the following procedures could be developed through several meetings between western flight procedures team, air traffic control, and Preston (U10) airport, to discuss the introduction of new instrument approach procedures, RNAV SIDs including ODPs and routed departures, and/or sectorized departures that safely take aircraft in and out of the valley and above surrounding terrain.

Table 15: Summary of Analyzed Departure Procedures at Preston (U10)

Procedure	Existing/New	Minimums (Cat C)	Meets FAA Design Criteria	Climb Gradient Required
RNAV ODP Rwy 4	New	Standard	**Yes**	**370 ft/NM to 7,000' MSL**
Diverse Departure Rwy 4	New	Standard	**Yes**	**275 ft/NM to 9,100' MSL**
RNAV ODP Rwy 35	New	Standard	**Yes**	**250 ft/NM to 7,300' MSL**
Diverse Departure Rwy 35	New	Standard	**Yes**	**295 ft/NM to 8,500' MSL**
RNAV ODP Rwy 17	New	Standard	**Yes**	**205 ft/NM to 6,200' MSL**
Diverse Departure Rwy 17	New	Standard	**Yes**	**340 ft/NM to 9,600' MSL**
RNAV ODP Rwy 22	New	Standard	**Yes**	**255 ft/NM to 6,200' MSL**
Diverse Departure Rwy 22	New	Standard	**Yes**	**345 ft/NM to 9,600' MSL**
VCOA (All Rwys)	New	Standard	**Yes**	Standard

7 Summary of Findings

This report analyzed the effectiveness of the existing runways at Preston (U10), focusing on the capabilities of the existing paved Runway 4-22. This was performed through the analysis of the existing weather conditions, airspace, and available approach minimums. This airspace analysis and instrument procedure design identified several potential approach and departure procedures that may benefit the airport in the future through the introduction of reduced minimums and increased safety of operations.

7.1 Summary of Historical Weather Conditions

The historical weather information identified key periods throughout the year, particularly in the winter months, where the existing VFR minimums are not sufficient to reliably sustain operations into and out of Preston (U10). Wind data indicated that runway preference typically varies daily, favoring Runway 4 operations in the morning and Runway 22 operations in the late morning and afternoon periods. This preference pattern, in conjunction with the most limiting minimums occurring on winter early mornings indicates that enhancements to Runway 4 approach and departure minimums would provide the most value to the airport.

Because there is no weather sensing equipment on the airfield, weather data had to be aggregated from other sources in the area. As the airport pursues instrument approaches and departures with lower minimums, weather sensing equipment such as an ASOS or AWOS-3 will be important to ensure accurate local readings. The addition of this equipment would also contribute to further lowering the minimums of the proposed procedures by eliminating the RASS adjustment to the proposed MDA, CMDA, and DA.

7.2 Summary of Potential Instrument Procedures

This report determined that adding a new RNAV (GPS) procedure to both Runway 4 and Runway 22 is feasible and useful for Preston (U10). These procedures require no significant deviations from standard design set forth in FAA Order 8260.3, 8260.58 or 8260.19 and could be requested for development by the FAA. These approaches would reduce the overall minimums to both runway ends and potentially increase the overall usability of the airport while reducing pilot workloads. Should the airport choose to pursue only one procedure, the weather data indicates that the RNAV (GPS) to Runway 4 would provide the most overall benefit to the airport. To support any of these procedures, the runway would need to be updated with Non-Precision Instrument (NPI) markings.

Future opportunities to develop departure procedures at Preston (U10) could be undertaken to provide sub-VFR minimums for departing aircraft. There are viable departure procedure options to all runways at the airfield which meet current FAA criteria and do not have overly restrictive climb gradient requirements. However, Runway 4-22 is the only runway the FAA would design procedures to currently. Runway 17-35 is an option after major upgrades are completed.

Should the airport choose to pursue approach and/or departure procedure development with the FAA, it is not recommended to request any instrument procedures to Runways 17 or 35 until the airport is prepared to make significant investment in the improvement of the runway (extension, paving, lighting, etc).

E

PLANNING FOR COMPLIANCE

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APPENDIX E

PLANNING FOR COMPLIANCE

Airport sponsors that accept federal grants or federal property must also agree to certain obligations known as grant assurances. FAA Order 5190.6B, *Airport Compliance Manual*, provides guidance in interpreting and implementing these commitments, and the FAA's airport compliance program helps airport sponsors meet their obligations. In general, these grant assurances remain in effect for the useful life of the project but do not exceed 20 years. Obligations associated with land acquisition are an exception and do not have a duration limit while the Airport remains a public use facility. The duration and applicability of each grant assurance for airport sponsors are summarized in FAA Order 5100.38D, *Airport Improvement Program Handbook*, Table 2-5, Duration and Applicability of Grant Assurances (Airport Sponsors).[1]

E.1 SOURCES OF OBLIGATIONS

Each grant agreement and deed of property conveyance includes the obligations an airport sponsor must agree to as a condition of accepting grant funding or property from the federal government. FAA-administered airport financial assistance programs include:

- Grant agreements issued through airport development grant programs such as the Federal Aid to Airports Program (FAAP), Airport Development Aid Program (ADAP), and Airport Improvement Program (AIP).
- Grant agreements and instruments of non-surplus conveyance issued under the 1946 Airport Act, 1970 Airport Act, or the Airport and Airway Improvement Act of 1982 (AAIA).
- Surplus property instruments of transfers issued under the provisions of Section 13(g) of the Surplus Property Act of 1944.
- Deeds of conveyance issued under Section 16 of the 1946 Airport Act, Section 23 of the 1970 Airport Act, and Section 516 of the AAIA.
- AP-4 agreements authorized by various acts between 1939 and 1944.
- Exclusive Rights under Section 303 of the Civil Aeronautics Act of 1938 and Section 308(a) of the FAA Act.
- Commitments included in environmental documents prepared in accordance with FAA requirements related to the National Environmental Policy Act of 1969 (NEPA) and the AAIA.
- Written agreements between the sponsor and the FAA which includes settlement agreements resulting from litigation.

E.2 FEDERAL GRANT ASSURANCES

There are 39 Grant Assurances that federally obligated airport sponsors must comply with in the performance of grant agreements for airport development, planning, and noise compatibility programs.[2] The FAA has published *Airport Sponsor and Airport User Rights and Responsibilities* to provide airport sponsors with guidance in understanding and fulfilling these grant assurances by explaining some of the more complex grant assurances (Grant Assurances 5, 22, 23, 24, and 25) in simple terms.[3]

Most violations of grant assurances occur unintentionally rather than in a deliberate attempt to avoid federal obligations because many airport sponsors do not fully understand every requirement or how they apply in a specific circumstance. The FAA's Airport Compliance Program is designed to help ensure airport sponsors are fully informed of their federal obligations and understand how to comply with each grant assurance given the circumstances at a particular airport. The Airport Cooperative Research Program (ACRP) Report 184, *Understanding FAA Grant Assurance Obligations*, has also been published by the Transportation Research Board (TRB) to provide additional guidance on interpreting and meeting these obligations. According to this report, most compliance complaints made against airports were related to the following grant assurances.[4]

E.2.1 Grant Assurance 5: Preserving Rights and Powers

Grant Assurance 5, Preserving Rights and Powers, prohibits an airport sponsor from taking or permitting any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in the grant agreement without FAA approval. It also requires airport sponsors to act promptly to acquire, extinguish, or modify any outstanding rights or claims of right of others that would interfere with the sponsor's ability to comply with all of its obligations. In other words, airport sponsors can't take any action or enter into any agreement that could prevent it from complying with its grant obligations. This means most real estate transactions require prior FAA approval.

E.2.2 Grant Assurance 19: Operation and Maintenance

Grant Assurance 19, Operation and Maintenance, applies to airports subject to Federal Aid to Airports Program, Airport Development Aid Program, and Airport Improvement Program agreements; surplus property; and conveyances as well as deeds of conveyance issued under Section 16, Section 23, and 516. It requires an airport to preserve, operate, and maintain airport facilities in a safe and serviceable condition for the benefit of the public and in a manner that will eliminate aviation hazards. This applies to all facilities shown on the approved airport layout plan which are dedicated for aviation use, and includes facilities conveyed under the Surplus Property Act.

E.2.3 Grant Assurance 20: Hazard Removal and Mitigation

Grant Assurance 20, Hazard Removal and Mitigation, requires airports to prevent, as much as reasonably possible, the growth or establishment of obstructions in the aerial approaches to the airport. The term obstruction refers to natural or man-made objects that penetrate the imaginary surfaces as defined in Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. (Previously discussed in Section 3.4. Airport Airspace).

E.2.4 Grant Assurance 21: Compatible Land Use

Grant Assurance 21, Compatible Land Use, requires an airport to take appropriate action, to the extent reasonably possible, to restrict the use of lands in the vicinity of the airport to activities and purposes compatible with normal airport operations.

E.2.5 Grant Assurance 22: Economic Nondiscrimination

Grant Assurance 22, Economic Nondiscrimination, requires an airport to be operated for the use and benefit of the public, and to make it available to all types, kinds, and classes of aeronautical activity on fair and reasonable terms and without unjust discrimination.

E.2.6 Grant Assurance 23: Exclusive Rights

Grant Assurance 23, Exclusive Rights, requires an airport to be operated without granting or permitting any exclusive right to conduct any aeronautical activity at the airport. Aeronautical activity is defined as any activity that involves or is related to the operation of an aircraft or contributes to the safety of such operations (e.g., air taxi and charter operations, aircraft storage, sale of aviation fuel).

E.2.7 Grant Assurance 24: Fee and Rental Structure

Grant Assurance 24, Fee and Rental Structure, requires an airport to maintain a fee and rental structure for the facilities and services that will make the airport as self-sustaining as possible. (Note: Fair and reasonable for aeronautical activities and fair market value for nonaeronautical activities).

E.2.8 Grant Assurance 25: Airport Revenue

Grant Assurance 25, Airport Revenue, requires airports to use all airport revenues for the capital or operating costs of the airport, the local airport system, or other local facilities that are owned or operated by the owner or operator of the airport and directly relate to the actual air transportation of passengers or property.

a. Special Conditions Affecting Noise Land and Future Aeronautical Use Land

An airport must apply interim revenue derived from noise land or future aeronautical use land to projects eligible for grants under the Airport Improvement Program. This income may not be used for the matching share of any grant.

E.2.9 Grant Assurance 29: Airport Layout Plan

Grant Assurance 29, Airport Layout Plan, requires an airport to develop, operate, and maintain the airport in accordance with its most recently approved airport layout plan. Airport land depicted on the latest property map included in Exhibit A of this document cannot be disposed of or otherwise encumbered without prior FAA approval.

E.2.10 Grant Assurance 31: Disposal of Land

Grant Assurance 31, Disposal of Land, requires an airport to obtain FAA approval for the sale or other disposal of property acquired under the Federal Aid to Airports Program, Airport Development Aid Program, or Airport Improvement Program and for the use of any net proceeds.

E.2.11 Other Obligations

Grant agreements can also include obligations relating to:

- Use of Government Aircraft
- Land for Federal Facilities
- Standard Accounting Systems
- Reports and Inspections
- Consultation with Users
- Terminal Development Prerequisites
- Construction Inspection and Approval
- Minimum Wage Rates
- Veterans Preference
- Audits, Audit Reports and Record Keeping Requirement
- Local Approval
- Civil Rights
- Construction Accomplishment
- Planning Projects
- Good Title
- Sponsor Fund Availability

E.3 COMPLAINT RESOLUTION

Under Title 14 of the Code of Federal Regulations 13.1, *Reports of Violations*, any person who knows of a violation of federal aviation laws, regulations, rules, policies, or orders may informally report the violation to the FAA. Under this section, airport users may make an informal complaint to report allegations of grant assurance violations to the FAA. Individuals seeking to file informal complaints are encouraged to do so in writing. Alleged violations are then investigated by the FAA's Airports District Office or Regional Airports Division.

Title 14 CFR Part 16, *Rules of Practice for Federally-Assisted Airport Enforcement Proceedings*, which is commonly referred to as Part 16, outlines the formal complaint process. To file a formal complaint under Part 16, complainants must be directly and substantially affected by any alleged noncompliance. Part 16 includes regulatory time frames and detailed procedures associated with the process. This includes engaging in a good faith effort to resolve the matter informally as this is the preferred course of action when it comes to addressing violations. The FAA maintains a Part 16 Database that contains copies of all the final determinations of these complaints. For airports facing a formal complaint, it may be helpful to review previous decisions made in similar cases.[5]

E.4 COMPATIBLE LAND USE

Land use compatibility is attained when property located on and near an airport is used in ways that don't adversely affect flight operations nor is itself adversely affected by airport operations. According to FAA Order 5190.6B, *Airport Compliance Manual*, land use planning and zoning are important tools to help protect airport investments from incompatible land uses, protect airport approaches, protect airport approaches, and ensure land uses on and near airport property are compatible with normal airport operations while also meeting federal obligations relating to Grant Assurance 21.

This includes restricting uses that create or contribute to flight hazards such as tall structures or have features that block the line of sight from the control tower to the airfield, inhibit pilot visibility (e.g., glaring lights or smoke), interfere with navigational guidance systems, or attract birds. Likewise, the development of public facilities (e.g., schools, churches, concert halls) and residential areas should also be avoided near the airport due to noise and safety concerns. This includes airpark developments, which allow aircraft owners to reside and park their aircraft on the same property with immediate access to an airfield, because aircraft owners are entitled to the same protection from airport impacts as any other residents of the community.

A "through-the-fence" agreement is when an airport allows owners of property located adjacent to the airport to access the airfield. While the FAA does not support these types of agreements under any circumstances when they are associated with residential use (e.g., airpark developments), exceptions may be granted on a case-by-case basis for off-airport aeronautical businesses providing the sponsor makes sure the agreement does not violate any grant assurances.[6]

E.4.1 Improper and Noncompliant Land Uses

The most common improper and noncompliant land use is when property that has been designated for aeronautical use, or on property not released by the FAA for nonaeronautical use, is used or leased for nonaeronautical uses (i.e., not shown on the airport layout plan). This includes using hangars to store automobiles, using property and buildings for animal control facilities, non-airport vehicle and maintenance equipment storage, aircraft museums, and municipal administrative offices.

Failure to take adequate steps to prevent hazardous wildlife on airport property is another common area of noncompliance. This can stem from allowing incompatible land uses that are hazardous wildlife attractants such as wastewater ponds, municipal flood control channels and drainage basins, sanitary landfills, solid waste transfer stations, electrical power substations, water storage tanks, public parks, or golf courses. Additionally, towers or buildings that penetrate Part 77 surfaces or are located within a runway protection zone, runway obstacle free zone, or runway object free area are also incompatible land uses.[7]

E.5 COMPLIANCE AT PRESTON AIRPORT

The following conditions at Preston Airport should be closely monitored to ensure the Airport is complying with required grant assurances.

E.5.1 Runway Protection Zones

Certain types of land use within the RPZ must be coordinated with the FAA. Those uses included structures, commercial and industrial buildings, recreational uses, transportation facilities, fuel storage, wastewater treatment facilities, and utilities, such as solar panels. At U10, U.S. Highway 91 runs through the Runway 22 and Runway 17 RPZs. These are pre-existing RPZ conditions that are noted on the Airport Layout Plan; however, every effort should be made by the Airport to relocate these roadways outside of the Runway 22 and Runway 17 RPZs if any major road reconstruction is planned.

E.5.2 Hangar Use Policy

According to the FAA's policy on the nonaeronautical use of airport hangars, an airport sponsor may permit nonaeronautical items to be stored in hangars provided the hangar is primarily used for aeronautical purposes, and the items do not interfere with the aeronautical use of the hangar. As with other aeronautical facilities at airports subject to federal grant assurances, the FAA must approve the nonaeronautical use of hangars, and airport sponsors must receive at least fair market value for any nonaeronautical uses of the airport. Aeronautical uses include storage of active aircraft, final assembly of aircraft under construction, noncommercial construction of amateur-built or kit-built aircraft, and storage of aircraft handling equipment as well as the maintenance, repair, or refurbishment of aircraft but not the indefinite storage of nonoperational aircraft. Additionally, sponsors should have a program to monitor use of hangars and take measures to prevent unapproved non-aeronautical use of hangars. Airport sponsors may adopt more restrictive rules for use of hangars via airport rules and regulations, minimum standards, lease provisions, building codes, or local ordinances.[8]

E.6 SUMMARY

According to FAA Order 5190.6B, the FAA's airport compliance program is contractually based and does not attempt to control or direct the operation of airports. Rather, the program is designed to monitor and enforce obligations agreed to by airport sponsors in exchange for valuable benefits and rights granted by the federal government in return for substantial direct grants of funds and for conveyances of federal property for airport purposes. The airport compliance program is designed to protect the public interest in civil aviation. Grants and property conveyances are made in exchange for binding commitments (i.e., grant assurances) designed to ensure the public interest in civil aviation will be served. The FAA bears the responsibility of seeing that these commitments are met. The FAA considers all federal airport obligations important. However, the most important objective in the FAA's oversight of the compliance program is to ensure and preserve safety at all federally obligated airports.

ENDNOTES

[1] Federal Aviation Administration. (2019, February). *Order 5100.38D, Airport Improvement Program Handbook*. Retrieved August 2024, from https://www.faa.gov/airports/aip/aip_handbook/media/AIP-Handbook-Order-5100-38D-Chg1.pdf

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[3] Federal Aviation Administration. (2013). *Airport Sponsor & Airport User Rights and Responsibilities*. Retrieved August 2024, from https://www.faa.gov/sites/faa.gov/files/airports/airport_compliance/compliance_guidance/airportSponsorAndUserRightsBrochure.pdf

[4] Airport Cooperative Research Program: Transportation Research Board. (2017, December). *Report 184, Guidebook on Understanding FAA Grant Assurance Obligations*. Retrieved August 2024, from https://www.trb.org/Main/Blurbs/177621.aspx

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[8] Federal Aviation Administration. (2016, June). *Policy on the Non-Aeronautical Use of Airport Hangars*. Retrieved August 2024, from https://www.govinfo.gov/content/pkg/FR-2016-06-15/pdf/2016-14133.pdf