IDAHO FALLS

REGIONAL AIRPORT

2025 AIRPORT MASTER PLAN

AIRPORT MASTER PLAN UPDATE

FOR

IDAHO FALLS REGIONAL AIRPORT (IDA)
CITY OF IDAHO FALLS
Idaho Falls, Idaho

SUBMITTED TO

FEDERAL AVIATION ADMINISTRATION
HELENA AIRPORTS DISTRICT OFFICE

AND

IDAHO TRANSPORTATION DEPARTMENT
DIVISION OF AERONAUTICS

PREPARED BY

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Photo: Aerial view of the Snake River as it rushes past Runway 17.

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INTRODUCTION TO AIRPORT MASTER PLANS

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CHAPTER TWO

INTRODUCTION

An airport master plan is the process of establishing an airport's blueprint for long-term development. It is a comprehensive study of the airport to determine an effective plan for future airport development. It helps to ensure the airport will be able to continue to meet the needs of its customers and that development is consistent with local, state, and national planning goals. This includes identifying potential environmental and socioeconomic impacts of airport development projects. An airport master plan is an important step in helping the airport be financially and socially responsible and operate as efficiently as possible.

Airports should update their long-term planning documents every five to ten years in order to identify and respond to emerging national, statewide, and local trends expected to affect the airport. The last master plan for Idaho Falls Regional Airport (IDA) was completed in 2010 and had a base year of 2008. This airport master plan is being undertaken to evaluate and document the airport's current capabilities and facilities, identify its role in both the national and state aviation systems, and develop a forecast of aviation demand in order to plan for the timely development of improved or new facilities that may be required to meet that demand. This airport master plan is intended to be a proactive document that also provides guidance for funding future development projects.

2.1. Federal Aviation Administration Role in Airport Master Plans

Federal Aviation Administration (FAA) Advisory Circular 150/5070-6B, *Airport Master Plans*, provides guidance for the preparation of airport master plans. The intent of this guidance is to provide planning requirements for airports ranging in size and function from small general aviation to large commercial service facilities. This guidance also allows for each master plan to be customized to meet the specific needs of the airport and the surrounding community.

While the FAA does review all elements of an airport master plan to ensure that sound planning techniques have been applied, it only approves the forecast and the airport layout plan. FAA approval is required for these elements because the agency uses them to help determine the airport's eligibility for grant funding of proposed development. Additionally, the FAA Helena Airports District Office (ADO) project manager will interact with the planning team throughout the master planning process and will provide the planning team with additional direction and guidance as needed.[1]

2.1.1. National Plan of Integrated Airport Systems

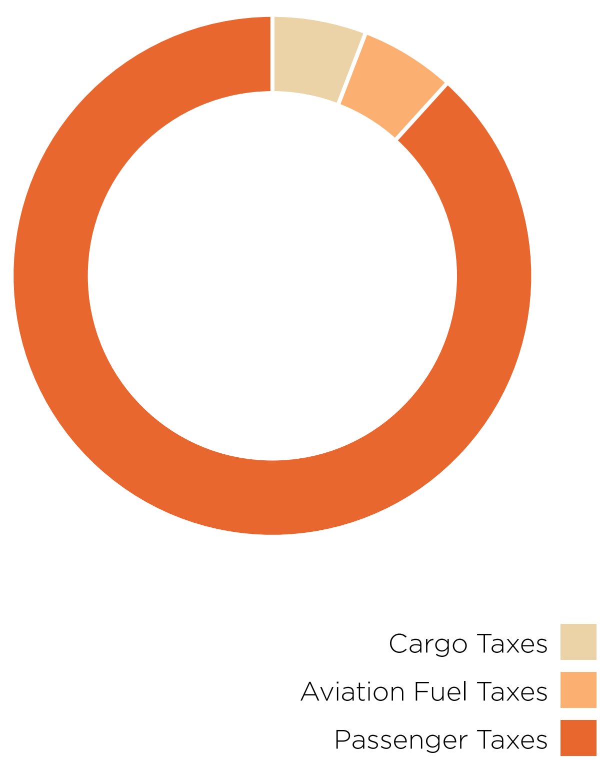
The National Plan of Integrated Airport Systems (NPIAS) identifies the nearly 3,300 public-use airports included in the national airport system, the roles they currently serve, and the amounts and types of airport development eligible for federal funding under the Airport Improvement Program.[2] The National Plan of Integrated Airport Systems and the airport's role in the national aviation system are discussed in more detail in Chapter 3.

2.1.2. Airport Improvement Program

The Airport Improvement Program (AIP) is administered by the FAA to provide grants to public agencies for the planning and development of public-use airports included in the NPIAS. For nonhub primary airports, like IDA, these grants typically cover between 90-95% of eligible costs for planning and development projects. To be eligible, projects must be related to enhancing airport safety, capacity, security, or environmental concerns. These typically include airfield construction and rehabilitation, airfield lighting and signage, navigational aids, and land acquisition as well as planning and environmental studies. Certain professional services that are necessary for eligible projects, such as planning, surveying, and design, can also be eligible.[3]

The Airport Improvement Program is funded by the Airport and Airway Trust Fund (AATF). As shown in Figure 2.1, the AATF is supported by taxes on ticket sales, taxes on air cargo and airmail, and taxes on aircraft fuel.[4] The preparation of the 2025 Airport Master Plan has been paid for through an Airport Improvement Program grant.

Figure 2.1: Airport and Airway Trust Fund



Source: FAA, Airport & Airway Trust Fund (AATF).

a. Grant Assurances and Obligations

Airport sponsors that accept Airport Improvement Program funds must also agree to certain obligations and conditions referred to as grant assurances. These assurances require the airport to maintain and operate its facilities safely and efficiently. This includes having an up-to-date and approved airport layout plan on file with the FAA.[5] These obligations and grant assurances are discussed in more detail in Chapter 11, Planning For Compliance.

2.1.3. FAA Design Standards

The FAA uses the advisory circular (AC) system to provide guidance for the aviation community regarding acceptable methods, procedures, and practices for complying with airport design standards, recommendations, and requirements as well as any other FAA rules and regulations. This system allows airport planners and engineers to identify design criteria for nearly every aspect of an airport.[6] Several advisory circulars are used and referenced throughout this airport master plan. However, AC 150/5070-6B, *Airport Master Plans,* and AC 150/5300-13B, *Airport Design,* are two of the most relevant. FAA design standards are discussed in more detail in Chapter 6, Requirements.

a. Critical Aircraft

A key determination of any airport master plan is the identification of the critical aircraft. The critical aircraft is the most demanding aircraft, or a family grouping of aircraft, with at least 500 annual operations. Identification of the critical aircraft is important because it is used to establish the FAA design standards that will be used for airfield facilities. These standards are based on the physical requirements of the critical aircraft and are used to determine several aspects of airport design such as runway and taxiway dimensions. For airports such as IDA where the infrastructure must support a wide range of aircraft and operations, it is wise to identify separate critical aircraft for the different areas of operations.[7] The critical aircraft is discussed in Chapter 5, Forecast of Aviation Demand.

2.2. Purpose of Airport Master Plans

The purpose of an airport master plan is to provide airport personnel with a long-term strategy for maintaining its important role within the national, state, and regional transportation systems. To serve as an effective planning guide, it should determine future aviation demand, identify and prioritize future development needed to maintain the safe and efficient operation of the airport, and provide justification for these projects. It should also include a realistic schedule for project implementation as well as a capital improvement program (CIP) that identifies potential federal, state, and local sources for funding.[8]

2.3. Objectives of Airport Master Plans

In general, an airport master plan should meet the following objectives:

- Understand the issues, opportunities, and constraints of the airport.
- Consider the impact of aviation trends.
- Identify the capacity of existing airport infrastructure.
- Determine the need for airport improvements.
- Obtain stakeholder and public input.
- Estimate project costs and funding sources.
- Develop a schedule for project implementation.[9]

2.4. Elements of Airport Master Plans

While the elements of an airport master plan are guided by the FAA, they vary in detail and complexity depending on the size, function, and issues of each airport. As shown in Figure 2.2, these elements build upon each other throughout the planning process.

Figure 2.2: Airport Master Plan Process

Research

- Develop Scope of Work
- Inventory
- Aviation Forecast
- Identify Critical Aircraft
- Forecast Approval

Requirements

- Facility Requirements
- Develop Alternatives
- Airport Layout Plans

Implementation

- Cost Estimates
- Capital Improvement Plan
- Implementation Plan
- Financial Analysis
- Final Documents

Source: Ardurra.

2.4.1. 2025 Airport Master Plan Elements

The 2025 Airport Master Plan includes the following elements:

Airport Overview
Provides an overview of the airport's location and history as well as the economy and demographics of the surrounding area.

Inventory
Identifies the airspace surrounding the airport as well as the existing instrument approach procedures. It also documents the condition of all airport facilities and pavements.

Forecast
Identifies existing aviation activity and provides a forecast of the anticipated aviation demand at the airport for the next two decades.

Facility Requirements
Describes design and safety standards relating to runways, taxiways, and other facilities.

Development Alternatives
Identifies and evaluates potential alternatives for meeting the needs of the airport and its users.

Environmental Overview
Presents environmental factors the airport will need to take into consideration as part of proposed projects.

Airport Layout Plan
Describes and explains the technical drawings of airport facilities and planned improvements.

Implementation Plan and Financial Feasibility Analysis
Provides a proposed schedule for each of the projects recommended in the master plan and includes a capital improvement plan that identifies potential sources of funding.

Planning For Compliance
Discusses the obligations and grant assurances the airport must comply with when accepting FAA-administered grant assistance.

Sustainability and Recycling
Identifies sustainability requirements and provides recommendations for recycling and solid waste management.

2.4.2. Public Involvement

Every airport master plan includes a public involvement program. The level of public involvement typically corresponds to the complexity of the airport and the project as well as community interest. Effective public involvement connects numerous stakeholders such as aircraft owners, hangar tenants, and local business owners with public officials, airport planners, and government agencies. Public input is highly encouraged throughout the planning process. However, public involvement has its greatest impact during the early stages of the planning process when planners are better able to respond to concerns and incorporate feedback received from the community. A public involvement program typically includes several methods for the planning team to keep the community informed as well as receive comments and suggestions throughout the master planning process. Details regarding the public involvement program are provided in **Appendix A: Community Engagement Summary**.

Committees
These typically include forming a technical advisory committee (TAC) and a community advisory committee (CAC). Committee members typically have a high level of technical competency associated with some aspect of aviation or airport operations and are stakeholders in the airport's operation. The community advisory committee provides the aviation planning team with valuable feedback and insight into the needs of the local aviation community and keeps the team informed of local issues.

Public Information Meetings
Public meetings or open houses with information stations staffed by members of the planning team can be a very effective method of engaging the public and soliciting community feedback. The formality of these meetings can vary depending on the complexity of the topics presented as well as the needs of the community. Due to the COVID-19 pandemic, public meetings evolved from traditional, in-person meetings to virtual or hybrid formats.

Public Awareness Campaign
An effective public awareness campaign is an essential part of an effective public involvement program. It helps keep the community informed, generate stakeholder involvement, and maintain stakeholder interest throughout the planning process. In addition to public information meetings, aspects of a public awareness campaign can include fliers, fact sheets, press releases, newspaper ads, and general information packets. Additionally, websites with interactive or self-guided presentations as well as electronic copies of the airport master plan are becoming an increasingly popular part of public awareness campaigns. An extensive public involvement program was developed and implemented for this 2025 Airport Master Plan.

Endnotes

1 U.S. Department of Transportation. Federal Aviation Administration. “Advisory Circular 50/5070-6B, Airport Master Plans.” January 27, 2015. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5070-6B_with_chg_1&2.pdf.

2 U.S. Department of Transportation. Federal Aviation Administration. “National Plan of Integrated Airport Systems (NPIAS).” December 7, 2022. https://www.faa.gov/airports/planning_capacity/npias.

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6 U.S. Department of Transportation. Federal Aviation Administration. “Order 1320.46D, FAA Advisory Circular System.” April 7, 2015. https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1320.46D.pdf.

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8 U.S. Department of Transportation. Federal Aviation Administration. “Advisory Circular 50/5070-6B, Airport Master Plans.” January 27, 2015. https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5070-6B_with_chg_1&2.pdf.

9 Ibid.

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AIRPORT OVERVIEW AND AREA SOCIOECONOMICS

TABLES

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CHAPTER THREE

AIRPORT OVERVIEW

This chapter provides a general description of Idaho Falls Regional Airport (IDA) and the surrounding area. This is accompanied by a brief history of the airport, area demographics, and its economic impact on the surrounding area. This overview helps to illustrate the nature of the community and the market the airport serves as well as its role in the community, region, and state. Additionally, the area's socioeconomic data, including population, employment, and income activity, is used when developing the forecast because it helps identify trends that could affect commercial and general aviation activity at the airport.

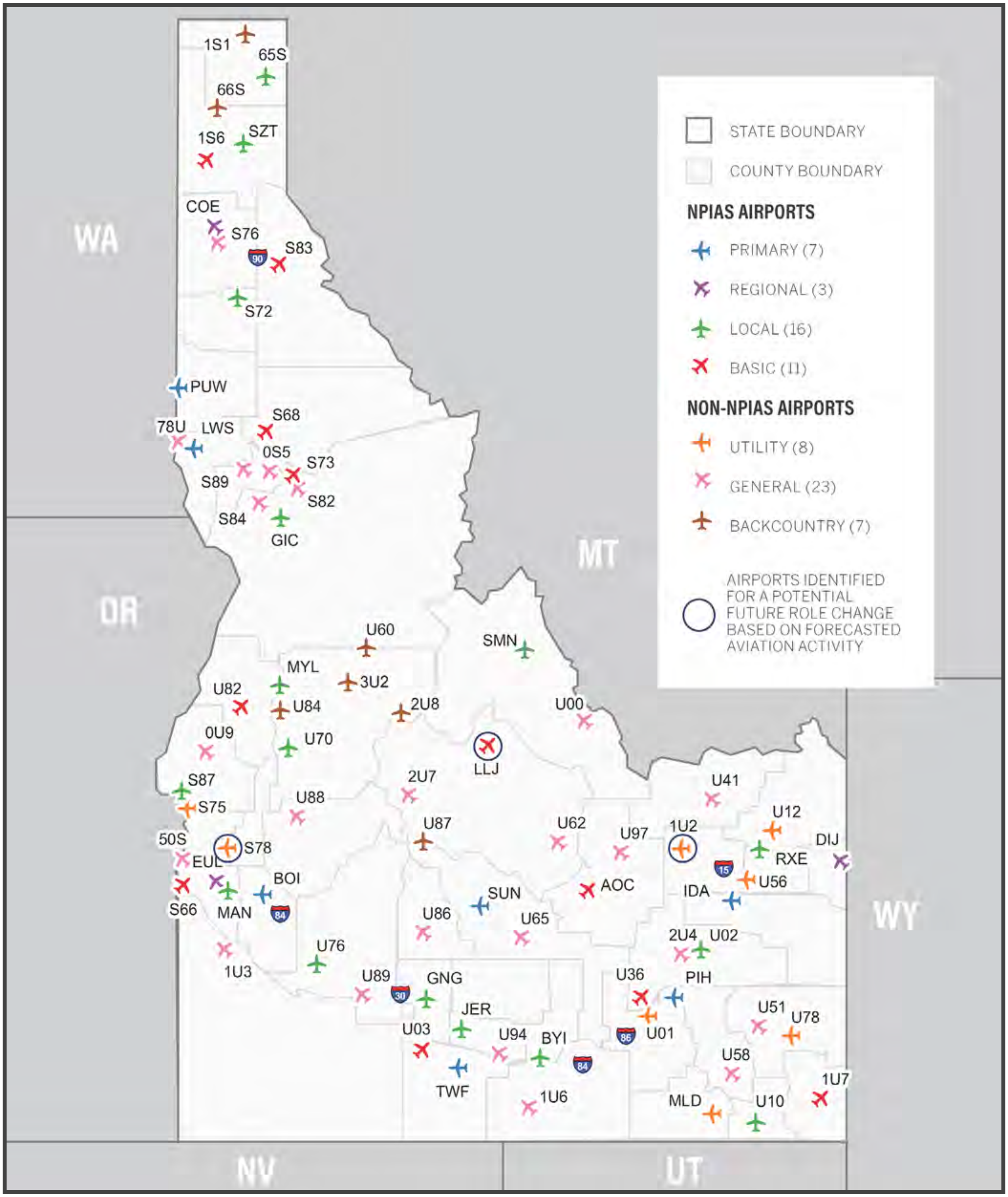
3.1. Area and Airport Overview

3.1.1. Idaho Airports

According to the 2021–2025 National Plan of Integrated Airport Systems (NPIAS), there are 301 aviation facilities in Idaho. Of these 301 facilities, 175 are private, and the remaining 126 are public. Thirty-six Idaho airports are included in the National Plan of Integrated Airport Systems. Six of these facilities are classified as commercial airports, three are classified as regional airports, 16 are classified as local airports, 10 are classified as basic airports, and one is an unclassified airport.[1] (The National Plan of Integrated Airport Systems describes basic airports as those with moderate activity that fulfill the principal role of a community airport while unclassified airports tend to have limited activity.)

The Idaho Transportation Department Division of Aeronautics recently completed the 2020 Idaho Airport System Plan (IASP). The 75 publicly owned, public-use airports included in this plan are shown in Figure 3.1.

Figure 3.1: 2020 Map of Idaho Airport System



Source: Idaho Airport System Plan Update

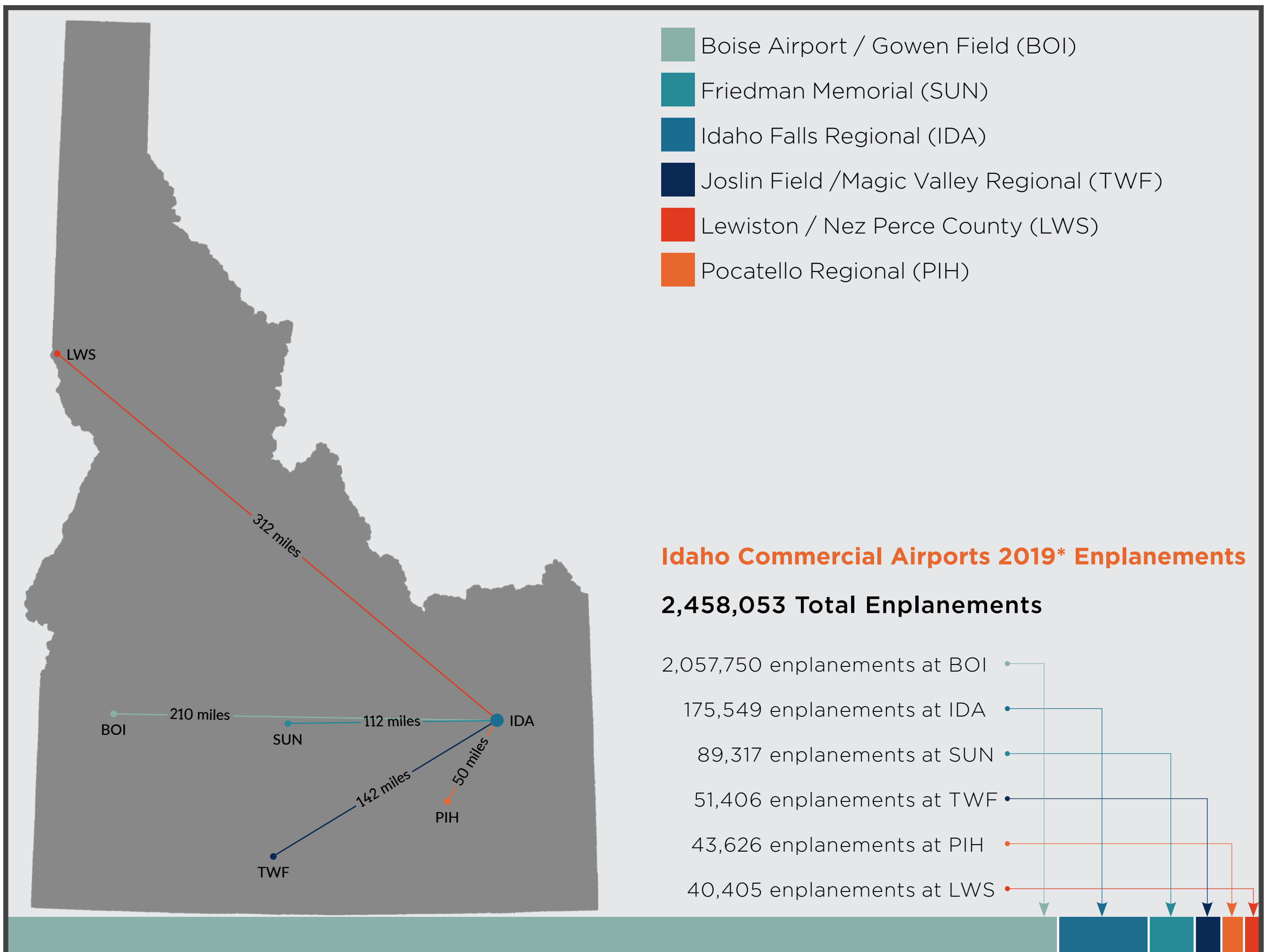
There are six primary commercial service airports in Idaho (Figure 3.2). Boise Air Terminal/ Gowen Field (BOI) is the only medium hub airport, and there are five nonhub airports. In addition to Idaho Falls Regional Airport, these include Friedman Memorial (SUN) in Hailey, Joslin Field/Magic Valley Regional (TWF) in Twin Falls, Lewiston/Nez Perce County (LWS) in Lewiston, and Pocatello Regional (PIH) in Pocatello. There are no small or large hub airports.

NPIAS airports are categorized as either primary or nonprimary. Primary airports are defined as having scheduled air carrier service with a minimum of 10,000 annual enplanements (i.e., revenue-paying passengers boarding commercial flights) while nonprimary airports mostly support general aviation. Primary airports fall into one of the following four subcategories based on the percentage of total U.S. enplanements occurring at a facility.[2]

- **Large Hub:** 1% or more
- **Medium Hub:** At least 0.25% but less than 1%
- **Small Hub:** At least 0.05% but less than 0.25%
- **Nonhub:** Less than 0.05% but more than 10,000

In terms of enplanements, BOI is the busiest commercial airport in Idaho, and IDA is the second busiest.[3] The commercial airport located the closest to IDA is Pocatello Regional Airport, which is located approximately 50 miles to the southwest, and Salt Lake International (SLC), which is located approximately 190 miles to the south, is the closest large hub airport.

Figure 3.2: Commercial Airports in Idaho



*2019 data was used to represent normal operations prior to the COVID-19 pandemic.

Source: FAA and Google Earth

3.1.2. Bonneville County

Bonneville County, which is located in southeast Idaho, is bordered by Bingham, Caribou, Jefferson, Madison, and Teton counties in Idaho along with Lincoln and Teton counties in Wyoming. According to the county website, it encompasses approximately 1,216,000 acres (1,900 square miles) which makes it the 15th largest county in Idaho by area.[4] Idaho Falls is the county seat, and the other cities include Ammon, Iona, Irwin, Ririe (partially), Swan Valley, and Ucon. Major roads in Bonneville County include Interstate Highway 15, U.S. Highway 20, U.S. Highway 26, state highway 31, and state highway 43. The terrain ranges from mountainous in the east to farmland and ancient lava fields in the west.

3.1.3. City of Idaho Falls

Present day Idaho Falls can trace its origin as a key river crossing and stagecoach stop on a transportation route during the gold rush to Bannack and Virginia City in southwestern Montana in the early 1860s. In 1863, Harry Rickard and William Hickman began construction of a ferry across the Snake River at a site called Eagle Rock with hopes of attracting gold miners and freight traffic headed to the Montana gold fields. James Taylor purchased the Eagle Rock Ferry from Rickard and Hickman the following year. He also constructed a toll bridge located nine miles south of Eagle Rock. This bridge was named Eagle Rock Bridge and the site was referred to as Taylor's Crossing until 1872 when it was changed to Eagle Rock. In 1879, the Utah Northern Railroad reached Eagle Rock on a rail line that extended from Brigham City, Utah. The Oregon Short Line Railroad started serving Eagle Rock in 1881 and built its shops there. However, the town's population began to decline after 1887 when the railroad shops were relocated to Pocatello. Between 1880 and 1910, irrigation projects and canal systems were developed around the Upper Snake River Valley which caused the area's population to increase again. In 1891, the name of the town was changed from Eagle Rock to Idaho Falls in reference to the rapids below the bridge.[5] In 1900, Idaho Falls developed a canal to harness the energy of the Snake River. This was used to generate electricity for the city which made it the first city in Idaho with its own power plant.[6] Idaho Falls Power continues to provide electricity to the city by way of five hydropower plants located along the Snake River.

3.1.4. Idaho National Laboratory

The Idaho National Laboratory (INL) was founded in 1949 and is a science-based, applied engineering laboratory dedicated to supporting the mission of the U.S. Department of Energy (DOE) with energy research, nuclear science, and national defense.[7] Its headquarters, which is located just across the Snake River from the airport, is where much of the research and development occurs. The Center for Advanced Energy Studies (CAES) is also located here at its Research and Education Campus. This research, education, and innovation consortium between the Idaho National Laboratory, Boise State University, Idaho State University, the University of Idaho, and the University of Wyoming is host to approximately 7,200 researchers and 50,000 students.[8] University Place, which is located just south of this location, is where the local University of Idaho and Idaho State University campuses are located.

In addition, the Advanced Test Reactor (ATR) facility is located approximately 47 miles west of Idaho Falls. This site, which is 890 square miles in size, is where the first usable amount of energy was generated using nuclear power in 1951. The Idaho National Laboratory, which employs more than 5,200 people, is the largest employer in Idaho Falls and generates nearly $3 billion in economic impact for the state of Idaho.[9]

3.2. Airport Overview

Idaho Falls Regional Airport began in 1929 when state aeronautics inspector Arthur Blomgren and U.S. Department of Commerce officials visited Idaho Falls in search of a location for an airport. After acquiring the site for the airport, the city soon completed construction of a 1,500-foot gravel landing strip and beacon tower in 1930.[10] The first passenger flight to land at the airport took place September 1, 1934, when National Parks Airways began offering flights to Yellowstone National Park (Figure 3.3).

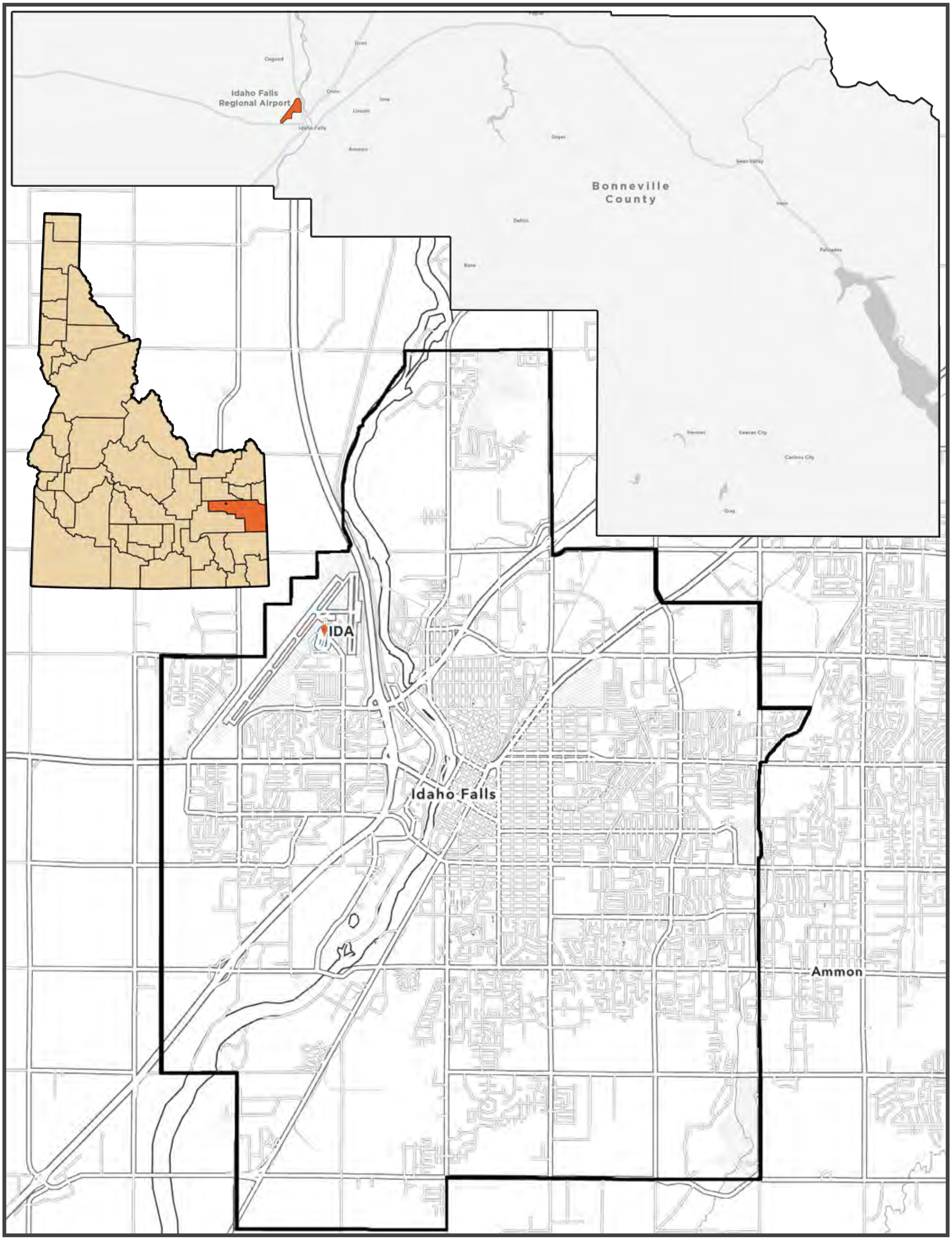
Figure 3.3: First Airline Flight to Idaho Falls Regional Airport

Source: Delta Flight Museum

The airport soon began to expand as a result of the Works Progress Administration (WPA); an ambitious employment and infrastructure program created by President Franklin D. Roosevelt. The city partnered with the Works Progress Administration to build the Red Baron hangar, administration building, administrator's cabin, and beacon tower at the airport in 1936. Additional improvements, which included extending the runways and installing fuel tanks, were completed by 1937, and the airport was given its first operating permit June 8, 1938.[11] The Red Baron hangar, airport beacon, and caretaker's cabin remain intact and make up the Idaho Falls Airport Historic District. Together, they serve as examples of the important role the Works Progress Administration had in the early development of aviation. No other Works Progress Administration aviation structures in the state are known to retain this level of integrity.[12]

Today, the airport continues to support commercial and general aviation with two runways, a passenger terminal, control tower, air cargo facility, navigational aids, hangars, rental cars, parking aprons, and other aeronautical and non-aeronautical services. It is served by five airlines, including Alaska, Allegiant, American, Delta, and United, that offer nonstop flights to 11 destinations. The airport encompasses 866 acres, and the published airport elevation is 4,743.7 feet above mean sea level (MSL). Federal regulatory oversight is fulfilled by the FAA's Northwest Mountain Region through the Helena Airports District Office (ADO).

Figure 3.4: Airport Location and Vicinity Map



Source: Ardurra.

3.2.1. Airport Administration and Governance

Idaho Falls Regional Airport is owned by the city of Idaho Falls which is governed by a mayor and six city council members.[13] The airport director heads up the airport department and manages the airport. The director is appointed by the mayor and confirmed by city council.[14]

3.2.2. Airport Location and Access

As shown in Figure 3.4, the airport is located approximately two miles northwest of downtown Idaho Falls. The main airport facilities are accessed via public roadways (Figure 3.5). North Skyline Drive provides access to the passenger terminal via Grandview Drive and West Broadway Street; both of which can be accessed from Interstate 15. West Broadway also provides direct access from downtown Idaho Falls east of the Snake River, and, as U.S. Highway 20, provides access from the Idaho National Laboratory site to the west.

International Way and Borah Avenue provide access to many of the airport facilities via North Skyline including the main Aero Mark fixed base operator (FBO) apron, the airport snow removal equipment (SRE) building, the maintenance and operations building, and the employee parking lot. The FedEx air cargo facility and the aircraft rescue and fire fighting (ARFF) station are both located on Federal Way which is accessed via North Skyline. Flightline Drive provides access to the south general aviation area via Grandview, and Foote Drive provides access to the west general aviation area.

Figure 3.5: Street Access Map

Source: Google Earth; Ardurra.

3.2.3. Area Airports

As shown in Table 3.1, there are seven airports within 30 nautical miles of Idaho Falls Regional Airport.[1] Two of these are private airports, and the other five are public facilities. Two of the public airports, McCarley Field and Rexburg-Madison County Airport, are NPIAS airports and have published instrument approach procedures.

Table 3.1: Airports Within 30 Nautical Miles of Idaho Falls Regional Airport

Airport and FAA Identifier	Distance From IDA	Location	Runway Dimensions	Instrument Approach Procedures
Idaho Falls Regional IDA	—	Idaho Falls	•RWY 3/21 (asphalt) 9,002 feet x 150 feet •RWY 17/35 (asphalt) 4,050 feet x 75 feet	•ILS or LOC RWY 21 •RNAV (RNP) Z RWY 03 •RNAV (RNP) Z RWY 21 •RNAV (GPS) Y RWY 03 •RNAV (GPS) Y RWY 21 •LOC BC RWY 03 •VOR RWY 03 •VOR RWY 21
Rainbow Ranch (private)	7 Nautical Miles (southeast)	E. Idaho Falls	•RWY 7/25 (turf) 2,400 feet x 60 feet	None, Visual Only
Rigby U56	9 Nautical Miles (northeast)	Rigby	•RWY 1/19 (asphalt) 3,727 feet x 50 feet	None, Visual Only
Rexburg-Madison County RXE	22 Nautical Miles (northeast)	Rexburg	•RWY 17/35 (asphalt) 4,204 feet x 75 feet	•RNAV (GPS) RWY 35 •VOR RWY 35
McCarley Field U02	22 Nautical Miles (southwest)	Blackfoot	•RWY 1/19 (asphalt) 4,314 feet x 75 feet	•RNAV (GPS)-A •RNAV (GPS)-B •VOR/DME-C
Riverside Anderson (private)	26 Nautical Miles (southwest)	Riverside	•RWY 3/21 (turf) 2,700 feet x 80 feet	None, Visual Only
Rockford Municipal 2U4	28 Nautical Miles (southwest)	Rockford	•RWY 16/34 (asphalt) 2,800 feet x 50 feet	None, Visual Only
Mud Lake/West Jefferson County 1U2	28 Nautical Miles (northwest)	Mud Lake	•RWY 2/20 (asphalt) 3,300 feet x 40 feet	None, Visual Only

Source: FAA Airport Data and Information Portal, SkyVector, ITD Aeronautics, Google Earth

1 A nautical mile is slightly longer than a land-measured mile, which is also known as a statute mile, and is equal to 1.1508 statute miles.

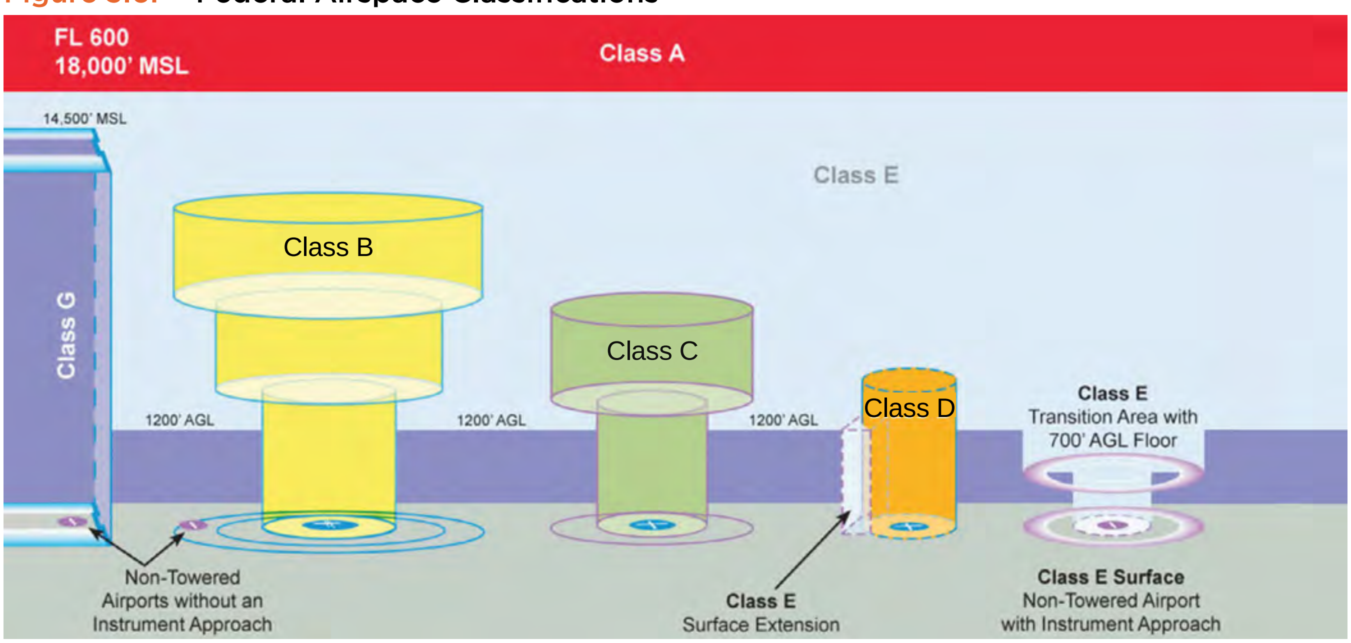
3.3. Airspace and Approaches

The two categories of airspace in the United States are regulatory and nonregulatory. The four types of airspace that make up these two categories are controlled, uncontrolled, special use, and other. The categories and types of airspace are dictated by the complexity or density of aircraft movements, the nature of the operations conducted within the airspace, the level of safety required, and national and public interest.

As shown in Figure 3.6, controlled airspace consists of five different classifications within which air traffic control (ATC) service is provided. When overlapping airspace designations apply to the same volume of airspace, the operating rules associated with the more restrictive airspace designation apply.[15]

- Class A: Airspace from 18,000 feet mean sea level (MSL) up to 60,000 feet mean sea level. This class of airspace is primarily used for aircraft during the cruise and transitioning phases.
- Class B: Airspace surrounding the nation's busiest airports from the surface up to 10,000 feet mean sea level. As such, it has more restrictive operating rules than subsequent classes.
- Class C: Airspace surrounding smaller types of airports from the surface up to 4,000 feet mean sea level above the surface elevation. These airports have an operational control tower, are serviced by a radar approach control, and meet a minimum number of operations or passenger enplanements.
- Class D: Airspace surrounding smaller types of airports from the surface up to 2,500 feet mean sea level above the surface elevation. These airports have an operational control tower but are not serviced by a radar approach control. They do not have to meet a minimum number of operations or passenger enplanements.
- Class E: Controlled airspace not classified as Class A, B, C, or D. In most areas, this airspace begins at 1,200 feet above ground level (AGL) and extends up to 18,000 feet mean sea level.

Figure 3.6: Federal Airspace Classifications



Source: FAA, Pilot's Handbook of Aeronautical Knowledge

Uncontrolled airspace, 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 surface to the base of Class E airspace. Even though air traffic control has no authority or responsibility to control air traffic in Class G airspace, visual flight rules (VFR) still apply. 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.[16]

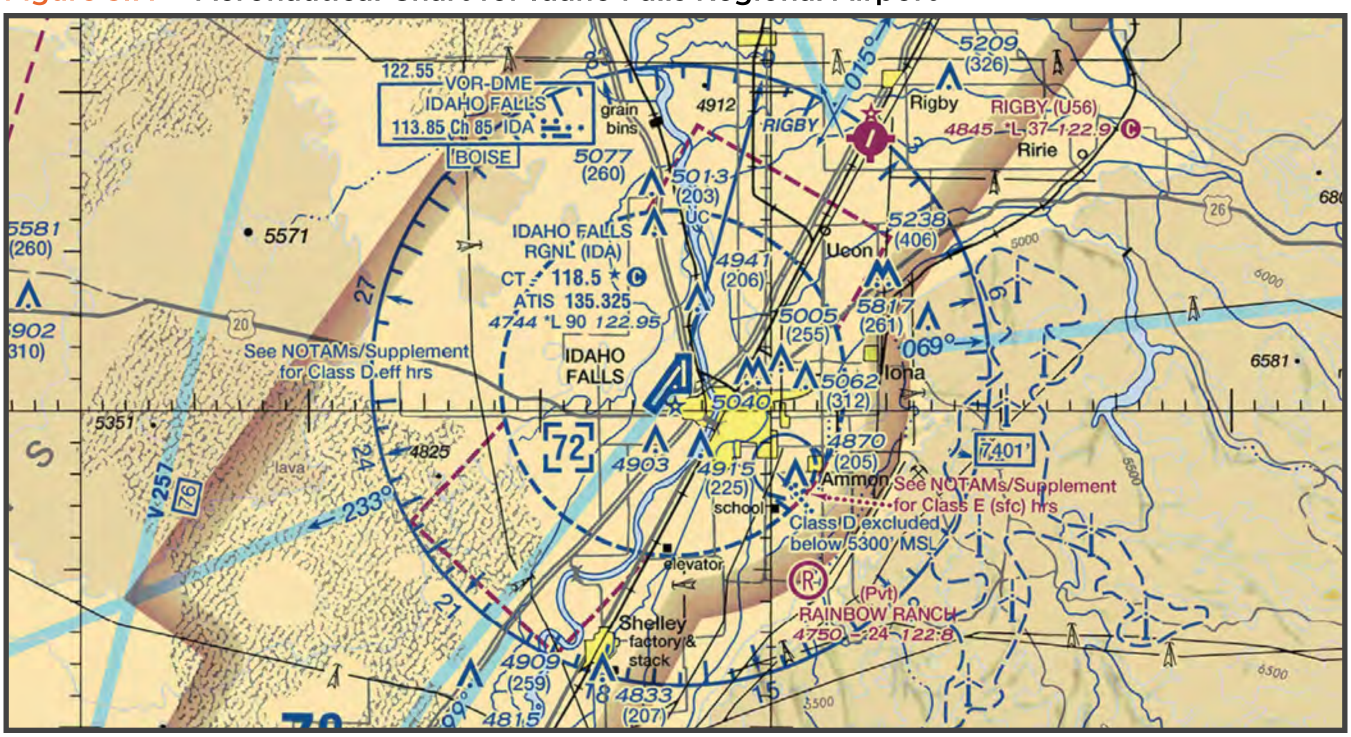
3.3.1. Airspace at Idaho Falls Regional Airport

The airport has an airport traffic control tower (ATCT) with published daily operating hours of 7 a.m. to 8 p.m. Between those hours, Class D airspace is in effect. When the control tower is closed, the Class D airspace becomes Class E airspace.

As shown in Figure 3.7, the Class D airspace is centered over the airport with a radius that extends five nautical miles. It begins at the surface and extends up to 7,200 feet mean sea level or 2,500 above ground level. The small circle shown at the southeast edge of the Class D airspace indicates where it drops below 5,300 feet mean sea level to accommodate the helicopter landing area at Eastern Idaho Regional Medical Center.

It is important to note that the Class E airspace extends beyond the Class D airspace to the northeast and southwest to protect the Runway 3/21 instrument approaches. These Class E extensions begin at ground level, are seven nautical miles wide, and vary in length between two to four nautical miles. Outside of the Class D airspace and Class E extensions, there is a larger Class E surface that begins at 700 feet above ground level and extends northeast for approximately 30 miles to Sugar City and southwest for approximately 60 miles to American Falls. Additionally, there is a national security area that begins approximately 26 nautical miles west of IDA and surrounds the Idaho National Laboratory site. The aeronautical chart indicates pilots should remain above 6,000 feet mean sea level in this area.

Figure 3.7: Aeronautical Chart for Idaho Falls Regional Airport



Source: Sky Vector

3.3.2. Instrument Approach Procedures for Idaho Falls Regional Airport

As shown in Table 3.2, there are eight published instrument approach procedures (IAP) for Idaho Falls Regional Airport. These multiple approaches incorporate a wide range of navigational aids and equipment to provide pilots with several options for landing at the airport during inclement weather.

Table 3.2: Instrument Approach Procedures

Minimum Altitude* and Minimum Visibility** by Aircraft Approach Category					
Category	**A**	**B**	**C**	**D**	**E**
Runway 3					
Runway 3: LOC BC					
S-LOC 3	336 ft & 1 mile				
CIRCLING	456 ft & 1 mile	556 ft & 1 mile	656 ft & 1.75 miles	676 ft & 2.25 miles	676 ft & 2.5 miles
Runway 3: RNAV (RNP) Z					
RNP 0.11 DA	306 ft & 0.875 mile				
RNP 0.30 DA	402 ft & 1.125 mile				
Runway 3: RNAV (GPS) Y					
LPV DA	200 ft & 0.75 mile				
LNAV/VNAV DA	258 ft & 0.75 mile				
LNAV MDA	356 ft & 1 mile				
CIRCLING	456 ft & 1 mile	556 ft & 1 mile	656 ft & 1.75 miles	676 ft & 2.25 miles	
Runway 3: VOR					
S-3	556 & 1 mile		556 & 1.625 miles		
CIRCLING	556 & 1 mile		656 & 1.75 miles	676 & 2.25 miles	
Runway 21					
Runway 21: ILS or LOC					
S-ILS 21	250 ft & 0.5 mile				
S-LOC 21	385 ft & 0.5 mile		385 ft & 0.625 mile		
CIRCLING	456 ft & 1 mile	556 ft & 1 mile	656 ft & 1.75 miles	676 ft & 2.25 miles	676 ft & 2.5 miles
Runway 21: RNAV (RNP) Z					
RNP 0.11 DA	276 ft & 0.5 mile				
RNP 0.30 DA	385 ft & 0.625 mile				
Runway 21: RNAV (GPS) Y					
LPV DA	250 ft & 0.5 mile				
LNAV/VNAV DA	281 ft & 0.5 mile				
LNAV MDA	365 ft & 0.5 mile		365 ft & 0.625 mile		
CIRCLING	456 ft & 1 mile	556 ft & 1 mile	656 ft & 1.75 miles	676 ft & 2.25 miles	
Runway 21: VOR					
S-21	665 ft & 0.5 mile		665 ft & 1.5 miles		
CIRCLING	656 ft & 1 mile		656 ft & 1.875 miles	676 ft & 2.25 miles	

*Altitude shown in feet above ground level
**Visibility shown in statute miles (One statute mile is equal to 5, 280 feet)

Source: FAA Airport Data and Information Portal (approach plates valid July 14 to August 11, 2022)

3.4. Aircraft Accident History

The National Transportation Safety Board (NTSB) is an independent federal agency that investigates civil aviation accidents and incidents in the United States. The agency maintains the Aviation Accident Database & Synopses which includes records dating as far back as January 1, 1983. This information, which is publicly available at the NTSB Case Analysis and Reporting Online (CAROL) database, lists a total of 29 reports associated with IDA. As shown in Table 3.3, the most recent incident took place September 21, 2015.

Table 3.3: Accident Report Summary (1983–2021)

Date	NTSB #	Purpose	Injuries	Fatalities	Conditions	Phase of Flight
9/21/2015	WPR15IA263	Aerial Survey	2	0	Dawn/Visual	Takeoff
6/28/2015	GAA15CA145	Personal	0	0	Day/Visual	Taxiing
8/11/2014	WPR14LA341	Personal	0	0	Day/Visual	Takeoff
9/19/2013	WPR13LA416	Business	3	0	Day/Visual	Landing/Approach
6/22/2013	WPR13FA281	Personal	1	2	Day/Visual	Takeoff
7/11/2012	WPR12CA311	Personal	0	0	Dusk/Visual	Landing/Touchdown
5/12/2012	WPR12CA202	Personal	0	0	Day/Visual	Landing Roll
6/10/2011	WPR11CA262	Instructional	0	0	Day/Visual	Landing Roll
9/28/2010	WPR10IA482	Personal	0	0	Dusk/Visual	Landing Roll, Go Around
7/5/2009	WPR09LA336	Personal	1	0	Day/Visual	Takeoff
12/21/2008	WPR09CA066	Personal	0	0	Night/Visual	Landing Roll
9/30/2008	SEA08LA216	Personal	0	0	Day/Visual	Taxiing
5/20/2008	LAX08CA091	Personal	0	0	Night/Visual	Landing Roll
2/3/2005	SEA05CA043	Instructional	0	0	Day/Visual	Landing Roll
7/17/2003	SEA03CA162	Personal	0	0	Day/Visual	Taxiing
3/17/2003	SEA03LA047	Instructional	0	0	Day/Visual	Go Around
8/5/2002	SEA02FA146	Instructional	0	3	Day/Visual	Traffic Pattern
6/23/2002	SEA02LA105	Aerial Photo	0	0	Day/Visual	Landing Roll
3/23/2002	SEA02LA057	Personal	0	0	Day/Visual	Landing Roll
11/10/2000	SEA01FA017	Maintenance Check	0	2	Day/Visual	Orbiting
10/16/1999	SEA00LA002	Personal	0	0	Day/Visual	Landing Roll
7/22/1997	SEA97LA174	Agricultural	0	0	Day/Visual	Takeoff
11/17/1993	SEA94LA033	Personal	0	0	Day/Visual	Landing Roll
9/3/1993	SEA93LA190	Personal	0	0	Day/Visual	Landing Roll
5/9/1987	SEA87IA093	Personal	0	0	Day/Visual	Go Around, Landing Roll
12/7/1985	SEA86LA029	Positioning	0	0	Day/Inst.	Landing Approach
11/6/1985	SEA86LA024	Corporate	0	0	Day/Inst.	Landing Approach
5/20/1983	SEA83LA102	Personal	1	0	Day/Visual	Takeoff
3/16/1982	SEA82DA038	Personal	0	0	Day/Inst.	Landing Approach

Source: NTSB Case Analysis and Reporting Online (CAROL) Database

3.5. Grant History

The FAA provides grants to airports through the Airport Improvement Program (AIP) to assist with funding capital improvement and planning projects. As summarized in Table 3.4, the airport has received a total of $90.6 million in AIP funding from 1984 to 2021.

Many airports have also recently received funding to provide economic relief in response to the COVID-19 pandemic. Sources of this funding have included the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020; the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA) of 2020; and the American Rescue Plan Act (ARPA) of 2021. In addition, the Infrastructure Investment and Jobs Act (IIJA) was signed into law November 15, 2021, which resulted in $25 billion in new funding becoming available for airport infrastructure, terminals, and air traffic facilities. Table 3.5 lists the federal grants IDA has received as a result of these laws.

Table 3.4: Airport Improvement Program Grant History (1984–2021)

Sequence No. & Fiscal Year	Brief Project Description	Amount
001-1984	SRE; apron; improve building and drainage; acquire land for approaches	$564,005
002-1985	ARFF vehicle; groove runway; extend runway; improve airport drainage	$998,983
003-1986	Noise mitigation; rehab runway; improve drainage; acquire land	$472,607
004-1986	Airport master plan study	$80,000
005-1987	SRE; improve access road; noise mitigation; acquire land for development	$504,092
006-1988	Acquire land for approaches; improve access road	$397,749
007-1989	Improve access road; acquire ARFF safety equipment	$557,045
008-1990	Improve ARFF building	$762,134
009-1991	Construct apron; install signs; acquire security equipment and land	$1,755,674
010-1992	Improve runway safety area	$2,468,701
011-1992	Improve runway safety area	$1,500,000
012-1993	Improve runway safety area	$2,859,720
013-1994	Acquire snow removal equipment	$366,105
014-1995	Rehab apron; rehab runway lighting	$2,424,775
015-1997	Airport master plan study, conduct miscellaneous study	$298,545
016-1997	Rehab runway	$2,079,487
017-1998	Rehab runway	$867,912
018-1999	Improve safety area and service road; acquire land; ARFF vehicle	$530,249
019-2000	Improve terminal building	$156,128
020-2000	Rehabilitate taxiway; acquire security equipment; expand apron	$678,059
021-2001	Improve terminal building	$2,828,469
022-2001	Install runway vertical guidance system; acquire snow removal equipment	$373,385
023-2003	Modify access road; rehab apron	$1,423,213

Source: FAA and 2010 Idaho Falls Regional Airport Master Plan

Sequence No. & Fiscal Year	Brief Project Description	Amount
024-2004	Rehab taxiway, runway, and apron; conduct study; remove obstructions; acquire wheelchair lift; install vertical visual guidance system	$5,461,921
025-2005	Rehab apron and taxiway; remove obstructions; expand apron	$3,239,040
026-2005	Expand apron	$848,486
027-2006	Expand apron; install runway vertical visual guidance system 17/35	$5,391,619
028-2007	Acquire SRE; construct SRE building; rehab runway 2/20	$600,000
029-2008	Rehab runway 2/20; runway incursion markings	$8,066,071
030-2008	Rehab runway 2/20	$633,961
031-2009	Construct SRE building	$534,266
032-2009	Update airport master plan study	$318,250
033-2009	Construct SRE building	$793,300
034-2010	Construct SRE building	$625,000
035-2010	Acquire ARFF vehicle	$663,689
036-2011	Improve runway 2/20 safety area; install fencing; rehabilitate apron	$1,766,524
037-2012	Acquire SRE; construct apron; expand terminal building	$753,507
038-2013	Expand terminal building	$2,316,501
039-2014	Construct access road; construct apron; construct taxiway	$1,888,760
040-2015	Expand apron	$2,070,282
041-2016	Expand terminal building; rehabilitate runway 2/20; rehabilitate taxiway	$1,064,269
042-2016	Acquire land for approaches	$583,424
043-2017	Install guidance signs; rehabilitate Taxiway A, connectors, and Taxiway C	$7,813,597
044-2018	Expand Terminal Building	$3,455,367
045-2019	Acquire SRE	$700,000
045-2019	Modify Terminal Building	$848,191
046-2019	Reconstruct Runway	$500,000
046-2019	Construct Taxiway	$1,438,822
047-2020	Modify Terminal Building	$12,185,559
050-2021	Update Airport Master Plan Study	$701,987
051-2021	Seal Runway Pavement Surface and Pavement Joints	$361,271
052-2021	Acquire ARFF Vehicle and Safety Equipment	$742,453
	Total	**$90,611,167**

Source: FAA and 2010 Idaho Falls Regional Airport Master Plan

Table 3.5: COVID-19 Response Grant History (2020–2021)

Sequence No. & Fiscal Year	Federal Response Act	Amount
48-2020	Coronavirus Aid, Relief, and Economic Security Act	$2,279,821
49/54-2020	Coronavirus Response and Relief Supplemental Appropriations Act	$1,790,343
55-2021	American Rescue Plan Act	$2,558,077
2022	Infrastructure Investment and Jobs Act	$1,806,687
	Total	**$8,434,928**

Source: FAA

3.5.1. Idaho Airport Aid Program Grants

The State's Aeronautics Fund distributes grants to Idaho airports via the Idaho Airport Aid Program (IAAP). It is a trustee and benefit program that provides matching funds to municipal governments for public airport improvements.

The Idaho Airport Aid Program is administered according to Idaho Administrative Code IDAPA 39.04.04, and funding requests are submitted to the Idaho Transportation Department (ITD) Division of Aeronautics and the Idaho Transportation Board (ITB) for approval. Only public entities, such as a city, county, airport authority, political subdivision, or public corporation, that own or lease and operate a public-use landing facility are eligible for Idaho Airport Aid Program funds. Additionally, an airport owner must have a state approved airport plan (section 200.01) and protective zoning (section 200.04) in place to participate in the Idaho Airport Aid Program. However, the Idaho Airport Aid Program can provide funding for those items if an airport needs to develop or update these items.

Grants are mainly awarded for scheduled projects or purchases of maintenance and safety supplies. However, small project awards are also distributed for unscheduled or emergency projects. All allocations must meet high priority needs and achieve maximum benefit and use of available funds. Airport projects funded with state and local dollars are prioritized by the following rating system:

1. Aircraft Operations Safety
2. Protects Prior Public Investments
3. Assures Maximum Use and Benefit of Federal Funds
4. Aircraft Landing Projects
5. Preservation of Existing Aircraft Landing Facilities
6. Development of Aircraft Landing Facilities
   - Large geographical area with no air accessibility.
   - Additional new sites in urban areas where landing sites are rapidly becoming non-existent.
   - Recreational area development where land availability is becoming difficult to obtain.

The State Aeronautics Fund is mainly funded by Idaho's aviation fuel tax.[17] However, aircraft and pilot registrations, the sale of aeronautical charts and directories, federal reimbursements, and other miscellaneous items also provide additional sources of revenue for the fund. Table 3.6 lists the Idaho Airport Aid Program grants IDA has received dating back to 1946.

Table 3.6: Idaho Airport Aid Program Grant History (1946–2019)

Fiscal Year	Brief Project Description	Amount
1946-1966	Airport development projects	$21,745
1973	Land acquisition; rehab and strengthen runways, taxiways, and aprons; entrance road improvement; obstruction removal	$30,000
1973	Airspace easements; mark runways and taxiways	$8,000
1973	Airport master plan study	$1,000
1975	Land acquisition; rehab and strengthen runways; construct aprons	$20,000
1977	Acquire land; terminal expansion; SRE; fencing	$80,000
1980	Acquire land; passenger loading bridges	$8,436
1984	Acquire land; construct light apron tie downs and T-hangar taxilanes; markings; fencing; SRE; terminal building water line	$12,081
1993	Soil remediation from crop dusting residue	$22,500
1996	Nonprimary Entitlement (NPE) match	$22,500
1996	Signs; security; SRE; land acquisition	$38,000
1998	Airport master plan study; initial pavement study	$30,400
1999	Air carrier apron repair; snowplow blade; historic hangar repair	$25,000
2000	Security light upgrade; parking lot; security fence	$15,000
2001	Rehab TW C; expand cargo apron; fencing; relocate segmented circle	$45,000
2001	Improve airport terminal; acquire SRE; install Runway 20 PAPI	$45,000
2004	Acquire wheelchair lift; conduct misc. study; install RW vertical/visual guidance system; rehab apron; rehab RW and TW; remove obstructions	$45,000
2005	Expand general aviation apron	$25,500
2007	Acquire SRE; construct SRE building phase 1; rehab RW 2/20 design	$25,500
2008	Rehab RW 2/20; RW incursion markings	$25,000
2009	Construct SRE building; update airport master plan study	$20,000
2010	Construct SRE building	$20,000
2011	Improve RSA RW 2/20; install perimeter fencing; rehab apron	$20,000
2012	Acquire SRE, construct apron; expand terminal building	$25,000
2017	Install guidance signs; rehab TW A and connectors; rehab TW C	$25,000
2018	Expand terminal building	$15,000
2019	Modify terminal building, acquire SRE, construct TW	$15,000
	Total	**$679,662**

Source: 2010 IDA Airport Master Plan and ITD-Aeronautics

3.6. Economic Impact

An airport's economic impact is essentially a measure of the financial effect it has on the state and local economy. As part of the update to the Idaho Airport System Plan, ITD Aeronautics also updated the Idaho Airport Economic Impact Analysis (AEIA) which discusses the economic impact of Idaho airports—both on a statewide basis as well as for individual airports. It is important to note that this report was completed as of July 2020, but the data is from 2018 prior to COVID-19 impacts.

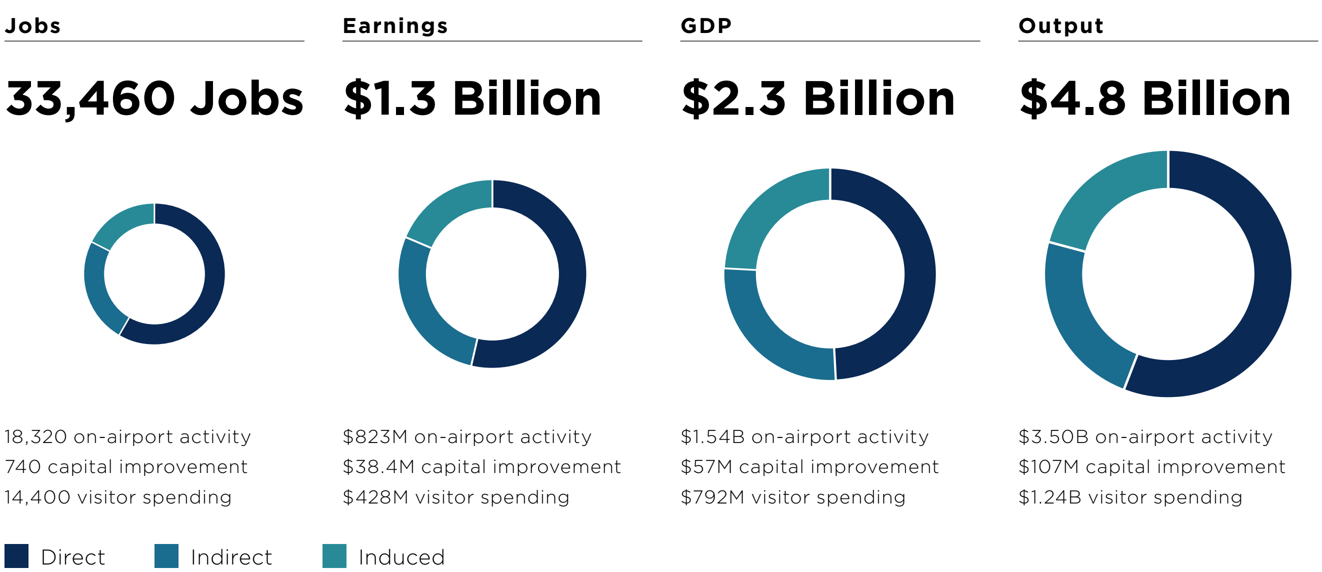
There are three types of economic impacts discussed in this report: direct, indirect, and induced. Direct impacts are attributed to on-airport activity such as car rentals, concessions, and fuel sales as well as capital improvements and off-airport visitor spending. Indirect impacts are typically the result of interactions between businesses and suppliers of goods and services (e.g., purchases from suppliers) while induced impacts are associated with respending income earned within a community. (Both indirect and induced impacts are considered to be multiplier effects.) An airport's total impact is the sum of the direct, indirect, and induced impacts which are expressed in the following four ways:

1. Jobs or Employment: The number of people employed at businesses associated with the airport.
2. Earnings or Labor Income: Wages, salaries, and benefits received by those employees.
3. Gross Domestic Product (GDP): The dollar value of final goods and services. It does not include the value of intermediate goods and services used to produce the final product.
4. Output: The economic activity generated by the operation of the airport and all related activities including the dollar value of intermediate goods and services.

3.6.1. Economic Impact of Idaho Airports

Figure 3.8 shows the economic impact of the 75 airports in the Idaho Airport System. For 2018, the total economic output of these airports exceeded \$4.8 billion. They also contributed nearly \$2.4 billion to Idaho's GDP and supported more than 33,460 jobs with a resulting \$1.3 billion in earnings.[18]

Figure 3.8: Economic Impact of Idaho Airports, 2018

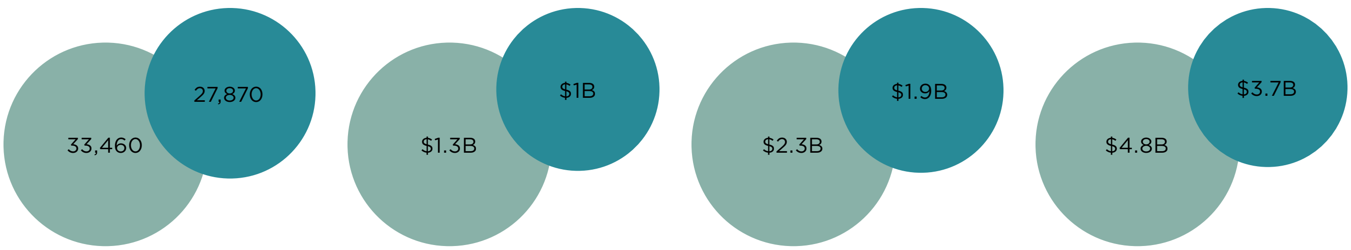


Source: 2020 Idaho Airport Economic Impact Analysis Update

According to the 2020 Idaho Airport Economic Impact Analysis, the total economic output of the six commercial airports was $3.7 billion for 2018. It also states these airports contributed $1.9 billion to Idaho's GDP and supported 27,870 jobs with a resulting $1 billion in earnings. Figure 3.9 shows the economic impact of Idaho's commercial service airports.[19]

Figure 3.9: Economic Impact of Commercial Airports in Idaho, 2018

Jobs	Earnings	GDP	Output
27,870	**$1B**	**$1.9B**	**$3.7B**



Total impact of Idaho's commercial airports   Total impact of Idaho airports

Source: 2020 Idaho Airport Economic Impact Analysis Update

3.6.2. Economic Impact of Idaho Falls Regional Airport

The 2020 Idaho Airport Economic Impact Analysis included airport-specific impacts for each airport in the Idaho system. This analysis shows the economic output for Idaho Falls Regional Airport was $145.6 million for 2018. It also shows the airport contributed $80.2 million to Idaho's GDP and supported 1,240 jobs with a resulting $42.5 million in earnings (Figure 3.10).

Figure 3.10: Economic Impact of Idaho Falls Regional Airport, 2018

Jobs	Earnings	GDP	Output
1,240	**$42.5M**	**$80.2M**	**$145.6M**

● = 10 jobs   ● = $1,000,000   ● = $1,000,000   ● = $1,000,000

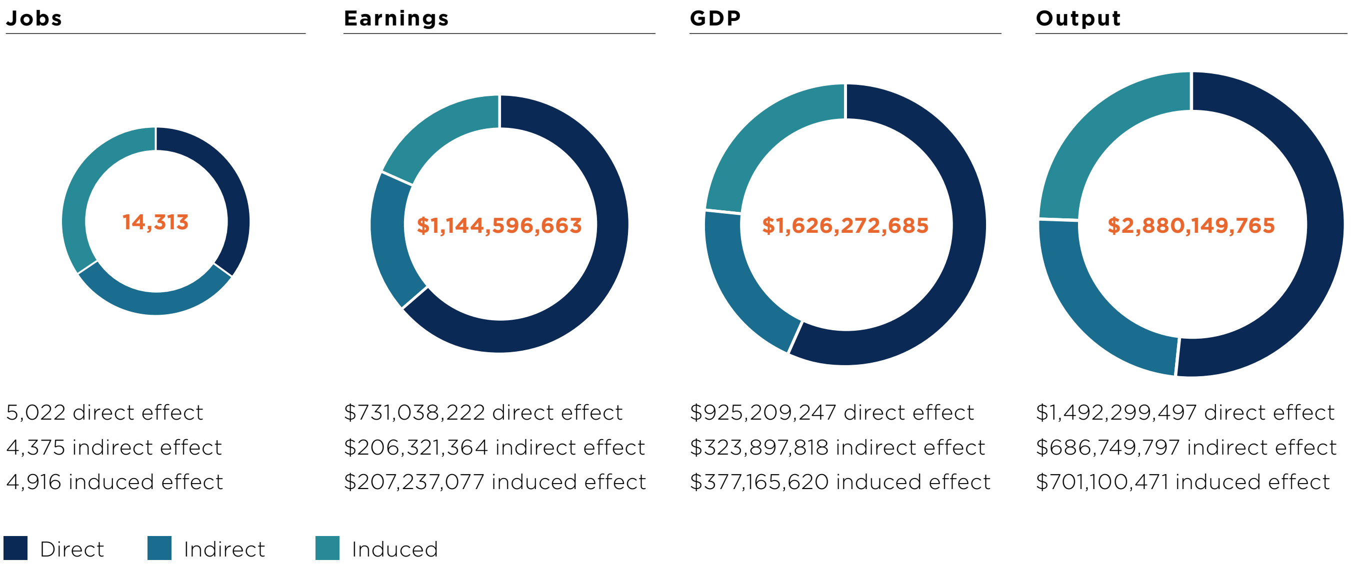
Source: 2020 Idaho Airport Economic Impact Analysis Update

3.6.3. Economic Impact of Idaho National Laboratory

As previously mentioned, Idaho National Laboratory (INL) employs approximately 5,022 people which makes it the largest employer in Idaho Falls, and one of Idaho's largest employers. For fiscal year 2020, it was Idaho's seventh largest private employer. When compared to both public and private businesses, it was Idaho's tenth largest employer. This is in addition to the nearly $240 million the company subcontracted to Idaho businesses. Idaho National Laboratory's total economic output for fiscal year 2020 was $2.88 billion, representing more than 3.44% of Idaho's total output, while its impact on Idaho's total labor income was more than $1.14 billion, representing 1.4% of Idaho's total personal income (Figure 3.11).[20]

The company's impact within eastern Idaho includes approximately $157.3 million spent in the region with $135.7 million spent specifically at small businesses. In addition, the company awarded $127,900 in community grants and $75,700 in economic development grants for fiscal year 2021.[21]

Figure 3.11: Statewide Economic Impact of Idaho National Laboratory, Fiscal Year 2020



Source: Idaho National Laboratory Economic Impact Summary, FY 2020

3.7. Socioeconomic and Demographic Review

The socioeconomic characteristics of a community may influence the demand for air travel within an airport's geographic region. This data can help identify trends that may impact current and future aviation operations; especially in the preparation of aviation demand forecasts. It is also helpful in making sure the community's long-term needs are taken into consideration as part of the airport planning process.

The Idaho Falls Metropolitan Statistical Area (MSA), which consists of Bonneville, Jefferson, and Butte Counties, is the geographic focus of this socioeconomic overview.[22] Much of the data was obtained from Woods and Poole Economics, Inc.; an independent firm that specializes in long-term economic and demographic projections.

3.7.1. Population Rates

According to Woods and Poole, the population within the Idaho Falls Metropolitan Statistical Area was 153,107 for 2020 with a compound annual growth rate (CAGR) of 1.9% between 2000–2020. The population is projected to have a compound annual growth rate of 1.1% through 2040. As shown in Figure 3.12, the majority of the population within the Idaho Falls Metropolitan Statistical Area is 34 years of age or younger.

Figure 3.12: Age Distribution, 2020

Source: Woods and Poole Economics, Inc.

3.7.2. Household Income

According to Woods and Poole, the average (i.e., mean) household income for the Idaho Falls Metropolitan Statistical Area was estimated to be $141,957 for 2020 while total per capita income was $50,331. Figure 3.13 shows the average incomes for the Idaho Falls Metropolitan Statistical Area in comparison to the average household and per capita incomes for Idaho.

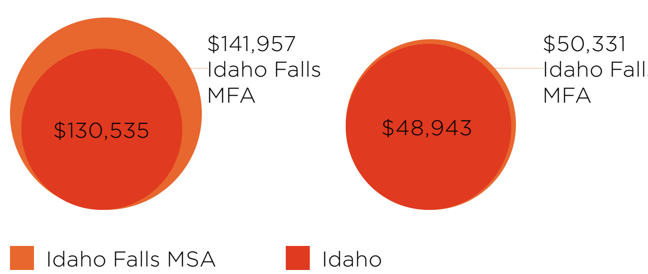
3.7.3. Top Employers and Industries

According to Woods and Poole, the top five industries within the MSA for 2020 were health care and social assistance; professional and technical services; retail; state and local government; and construction. Figure 3.14 shows the top industries in which people are employed within the Idaho Falls MSA.

The Woods and Poole data also lists industries in terms of earnings for the MSA. The top five for 2020 were professional and technical services; retail; health care and social assistance; administrative and waste services; and state and local government. Figure 3.15 shows the top industries in terms of earnings for the MSA.

Figure 3.13: Average Incomes, 2020

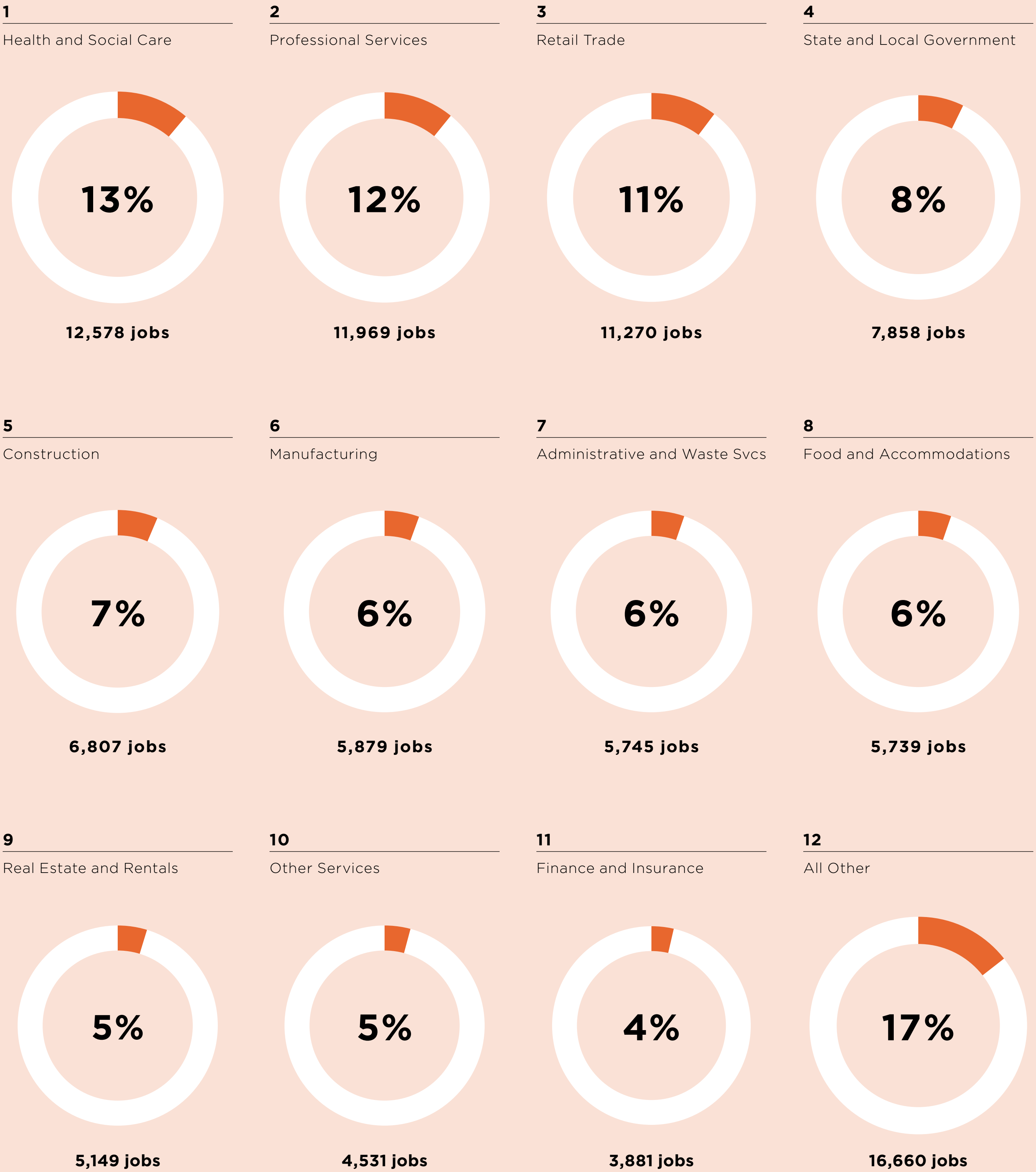
Household Income	Per Capita Income
$141,957 Idaho Falls MSA	**$50,331** Idaho Falls MSA
$130,535 Idaho	**$48,943** Idaho



Source: Woods and Poole Economics, Inc.

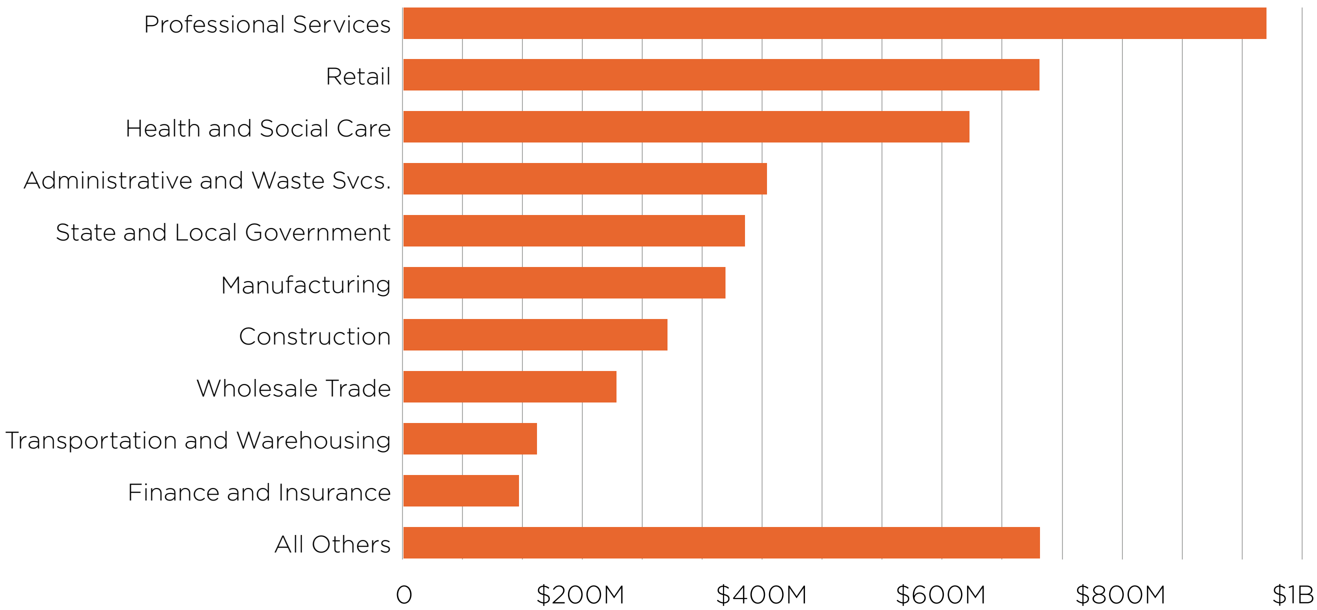
Figure 3.14: Top Industries by Employment, 2020

Idaho Falls Metropolitan Statistical Area Employment by Industry



Source: Woods and Poole Economics, Inc.

Figure 3.15: Top Industries by Earnings, 2020

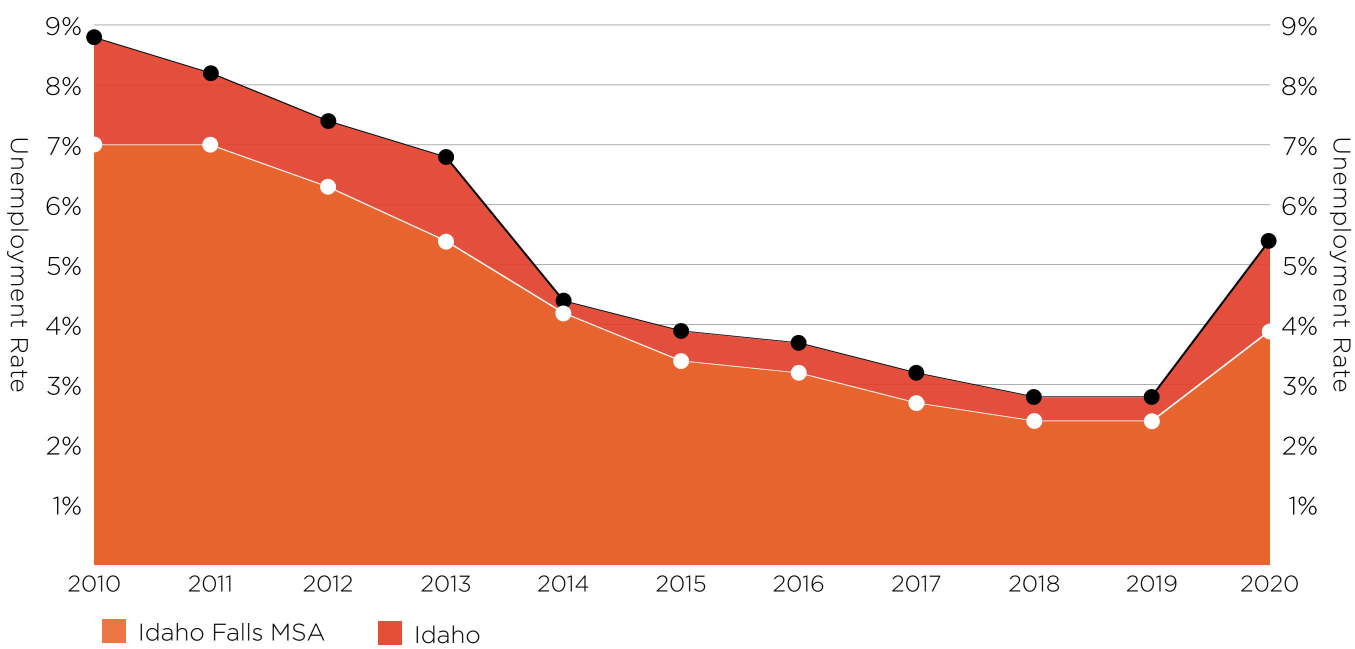


Source: Woods and Poole Economics, Inc.

3.7.4. Unemployment Rates

Unemployment within the Idaho Falls MSA was declining at a steady pace until 2019. However, the COVID-19 pandemic caused rates to increase for 2020. As shown in Figure 3.16, while the unemployment rates for the MSA have followed a similar trend to those for the whole state, they have remained lower than the statewide unemployment rates.[23]

Figure 3.16: Unemployment Rates, 2010–2020



Source: U.S. Bureau of Labor Statistics

3.7.5. Looking Ahead

Idaho Falls was named the Best-Performing Small City for 2021 by the Milken Institute. According to the organization's report, *Best-Performing Cities 2021: Foundations for Growth and Recovery*, Idaho Falls experienced significant short-term job growth of 4.7% from October 2019 to October 2020. This was largely due to the high-profile employers in the region.[24]

> **"Idaho Falls is also considered one of the best places to live in Idaho due to its natural amenities, safety, and low cost of living, as well as access to high-quality jobs."**
>
> —Milken Institute

Several new projects and recent announcements indicate Idaho Falls will continue to experience economic growth despite the impacts and uncertainties related to the COVID-19 pandemic. These include national and regional chains expanding to Idaho Falls such as the new 180,000 square-foot Costco store that opened in August 2020 as well as the 187,000 square-foot RC Willey store that is expected to open in late 2022. Other notable construction projects include a new 19,000-square-foot Summit Orthopaedics building that opened in January 2022, and a new 48,000-square-foot event center at Snake River Landing that is expected to be completed by October 2022. In addition, the College of Eastern Idaho will soon begin construction of an 88,000-square-foot, two-story Future Tech facility with an estimated cost of $40 million. The building, which will house its cybersecurity, solar power, battery technology, agriculture technology, and radiation safety programs, should be completed by early 2024.

Growth and expansion are also evident at the Idaho Falls Regional Airport. This includes a recent renovation and remodel of the terminal building that increased the number of gates from three to six. The airlines have also added new nonstop routes including an Allegiant Air route to Portland as of May 2021, American Airlines routes to Phoenix and Dallas-Fort Worth as of June 2021, and an Alaska Airlines route to Seattle as of June 2021.

Additionally, several recent announcements from the Idaho National Laboratory (INL) show the company is continuing to grow—as will its role as a major employer and contributor to the local economy. These include a partnership with PNW Hydrogen to combat climate change and bring the nation closer to a carbon-free future that comes with $20 million in funding from the U.S. Department of Energy as well as a partnership with the city of Idaho Falls to potentially turn the fields near MK Simpson Boulevard into a hub for research institutions in hopes of spurring a focused expansion of businesses and amenities in the area.

Another notable high-tech project involves a partnership between UAMPS and Portland-based reactor producer NuScale. The companies plan to build a first-of-its-kind nuclear reactor at the Idaho National Laboratory desert site west of Idaho Falls. The project, which was announced in 2020, involves building six module reactors that could produce a total of 462 megawatts. The project received $1.4 billion in funding from the U.S. Department of Energy, and the plant is expected to be running by 2029. These examples, and more, have city officials expecting a major population boom with the number of residents potentially doubling within a decade.[25]

Endnotes

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AIRSIDE AND LANDSIDE INVENTORY

4

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CHAPTER FOUR

INVENTORY

This chapter details the physical environment of Idaho Falls Regional Airport (IDA). All major airport components, structures, and pavements are documented. It also includes a detailed wind analysis using data recorded at the airport.

4.1. Natural and Physical Environment

4.1.1. Geology, Topography, and Soils

Idaho Falls Regional Airport is located within the city of Idaho Falls and is situated less than 1,000 feet from the western bank of the upper Snake River. It is also within the eastern section of the Snake River Plain which is a large and wide depression that extends east to west across southern Idaho. The elevation within the eastern Snake River Plain ranges from approximately 2,900 feet to over 6,000 above sea level.[1] The Upper Snake River Plain is nearly level and contains pastureland, cities, suburbs, industries, and cropland where extensive surface irrigation occurs.[2] Beneath the eastern Snake River Plain is a sole source, basalt aquifer that provides drinking water for approximately 200,000 people in southeastern and south-central Idaho. It is the largest basalt aquifer in Idaho, and it discharges nearly 2.6 trillion gallons of water into the Snake River annually which makes it one of the most productive aquifers in the United States.[3] The geology of the airport is primarily basalt, or lava rock, with the eastern and northern edges of the airport property

consisting of alluvium, or sediment from the Snake River.[4] Airport field elevation is reported by the Federal Aviation Administration (FAA) as 4,743.7 feet above mean sea level. As shown in Figure 4.1, a topographic survey of the airport shows the elevation at the airport varies between 4,720 and 4,750 feet above sea level.

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) provides an online web soil survey tool to research soil types and attribute data for a selected area of interest.[5] Table 4.1 lists the soil types shown in the web soil survey for the airport (Figure 4.2).

Table 4.1: Soil Types Located at Idaho Falls Regional Airport

Map Unit	Soil Type	Acres	Percent of Area
7	Bock loam	0.3	0%
20	Packham gravelly loam	21.4	3%
22	Pancheri silt loam, 0–2% slopes	406.5	57.1%
23	Pancheri silt loam, 2–4% slopes	242.5	34.1%
24	Pancheri silt loam, 4–8% slopes	30	4.2%
33	Polatis-rock outcrop complex, 2–25% slopes	3.8	0.5%
47	Stan sandy loam	6.9	1%

Source: USDA NRCS

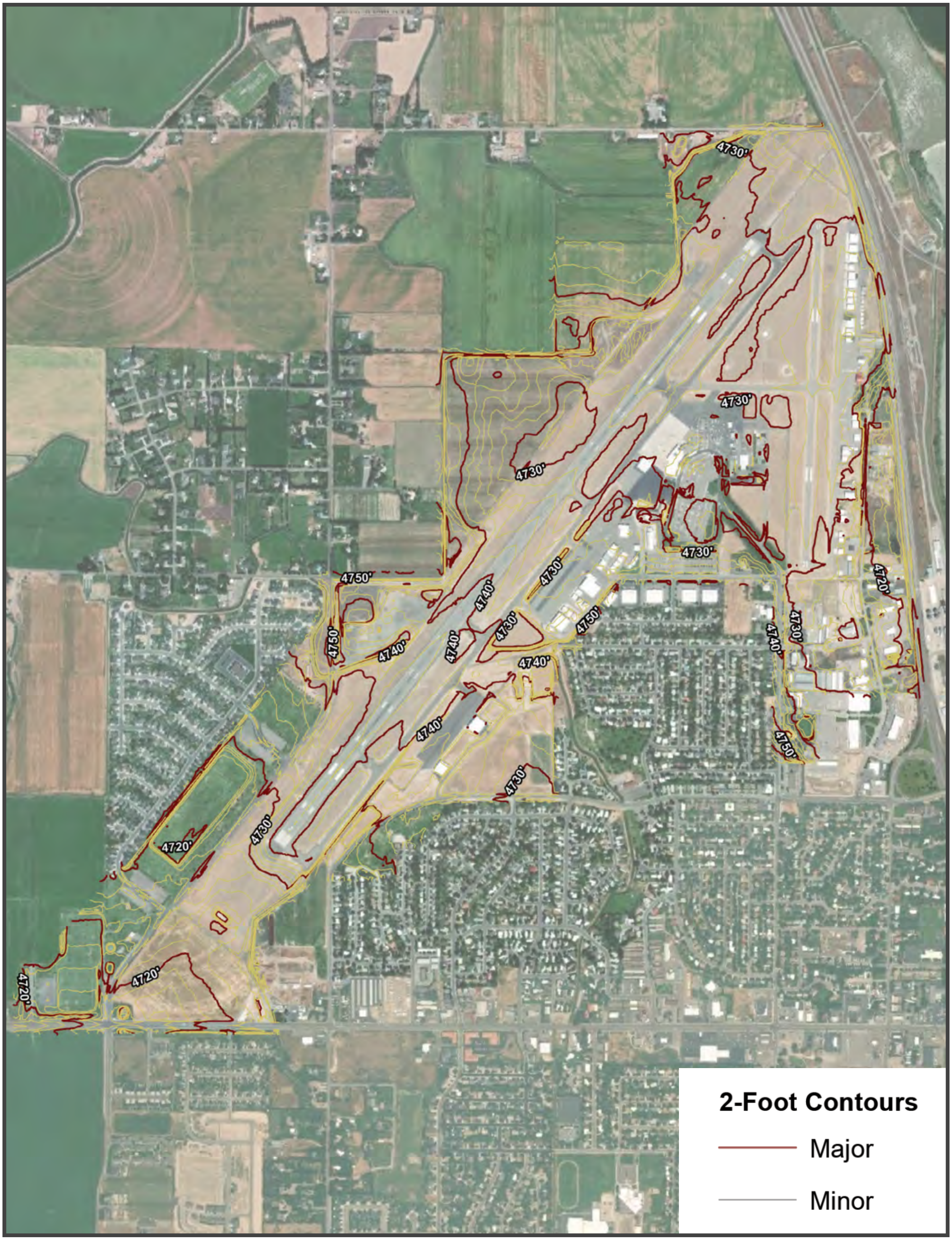
Approximately 95% of the soil type at IDA is the Pancheri silt loam variety. This soil type has a hydrologic soil group rating of B which means it has a moderate infiltration rate when thoroughly wet. It is considered well drained with a moderate rate of water transmission. Soil texture ranges from moderately fine to moderately coarse. Pancheri silt loam, with a slope of zero to two percent and two to four percent, is considered prime farmland if irrigated and reclaimed of excess salts and sodium. However, Pancheri silt loam with a slope of four to eight percent is not considered to be prime farmland.

4.1.2. Vegetation

The eastern Snake River Plain contains thousands of square miles of sagebrush desert and farmland irrigated with water withdrawn from the Eastern Snake Plain Aquifer. Vegetation in the Snake River Plain consists of Wyoming big sagebrush (*Artemisia tridentata* subsp. *wyomingensis*), basin big sagebrush (*Artemisia tridentata*), mountain sagebrush (*Artemisia tridentata* subsp. *vaseyana*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), Indian ricegrass (*Achnatherum hymenoides*), rabbitbrush (*Ericameria nauseosa*), and fourwing saltbush (*Atriplex canescens*).[6]

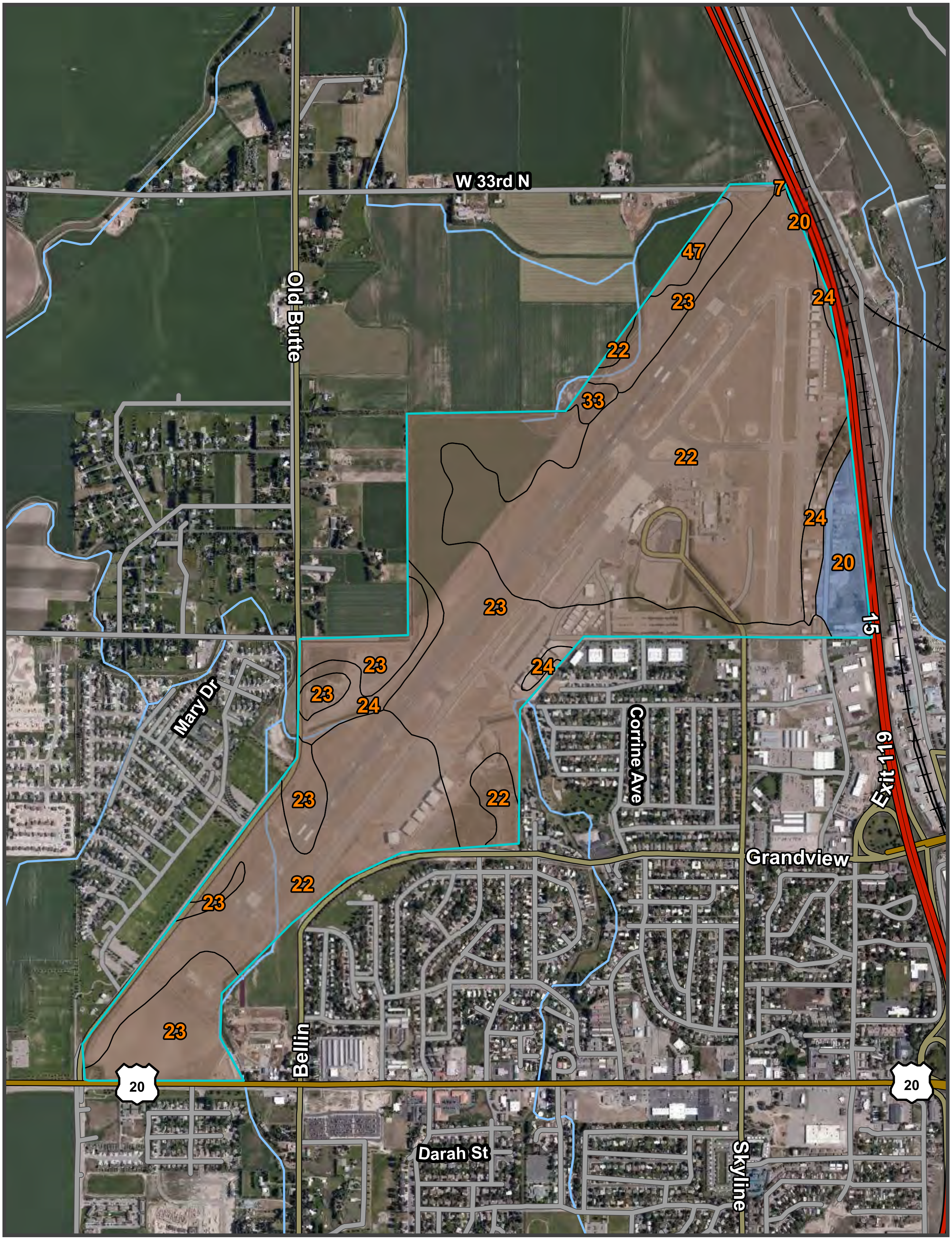
The USDA Plant Hardiness Zone Map is the standard by which gardeners and growers can determine which plants are most likely to thrive at a given location. The USDA has given Idaho Falls a growing zone designation of 5a. This designation means the average annual extreme minimum temperature ranges between minus 20 to minus 15 degrees Fahrenheit.[7]

Figure 4.1: Topography of Idaho Falls Regional Airport



Source: Ardurra.

Figure 4.2: Soil Types at Idaho Falls Regional Airport



Source: USDA NRCS

4.1.3. Climate

The Snake River Plain ecoregion has a dry, mid-latitude steppe (i.e., grassland plain) climate which is marked by warm summers and cold winters. According to the National Oceanic and Atmospheric Administration's (NOAA) 1981–2010 Climate Normals, the average high temperature at the airport is 57.3 F, and the average low temperature is 31 F. As shown in Figure 4.3, July is the hottest month with an average high temperature of 86.2 F, and January is the coldest month with an average low temperature of 11.7 F. On average, the airport receives an annual total of 10.39 inches of precipitation. As shown in Figure 4.4, May receives the most precipitation with an average of 1.5 inches, and July receives the least precipitation with an average of 0.5 inches.

Figure 4.3: Average Temperatures

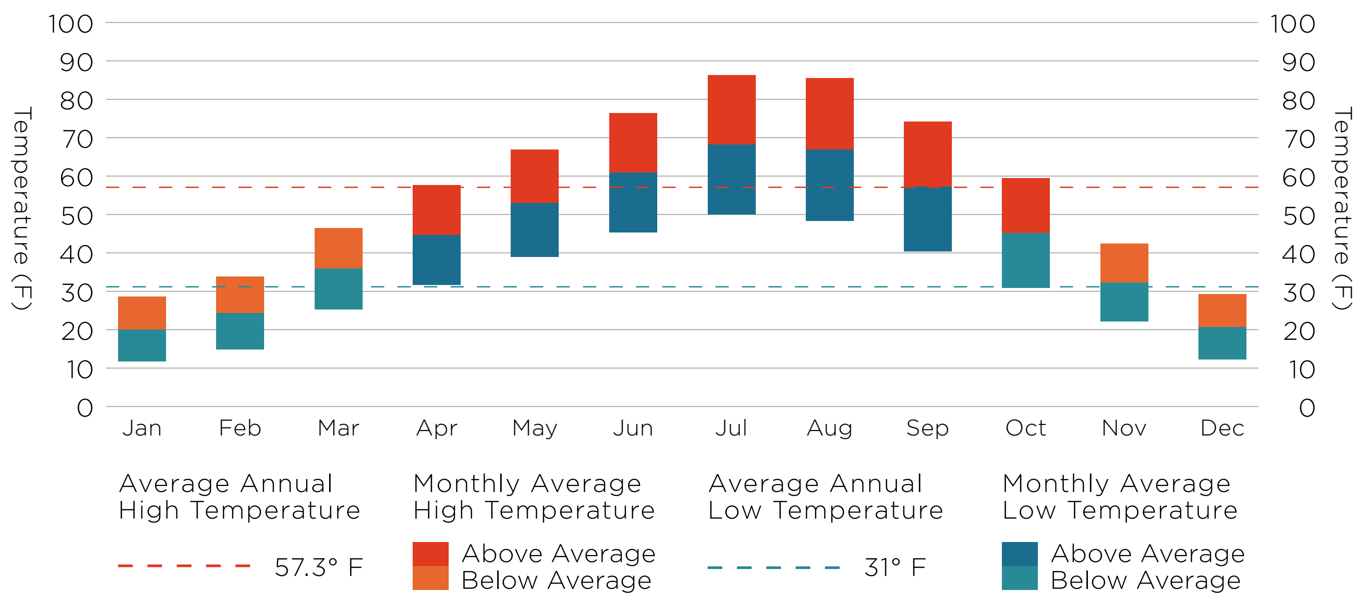
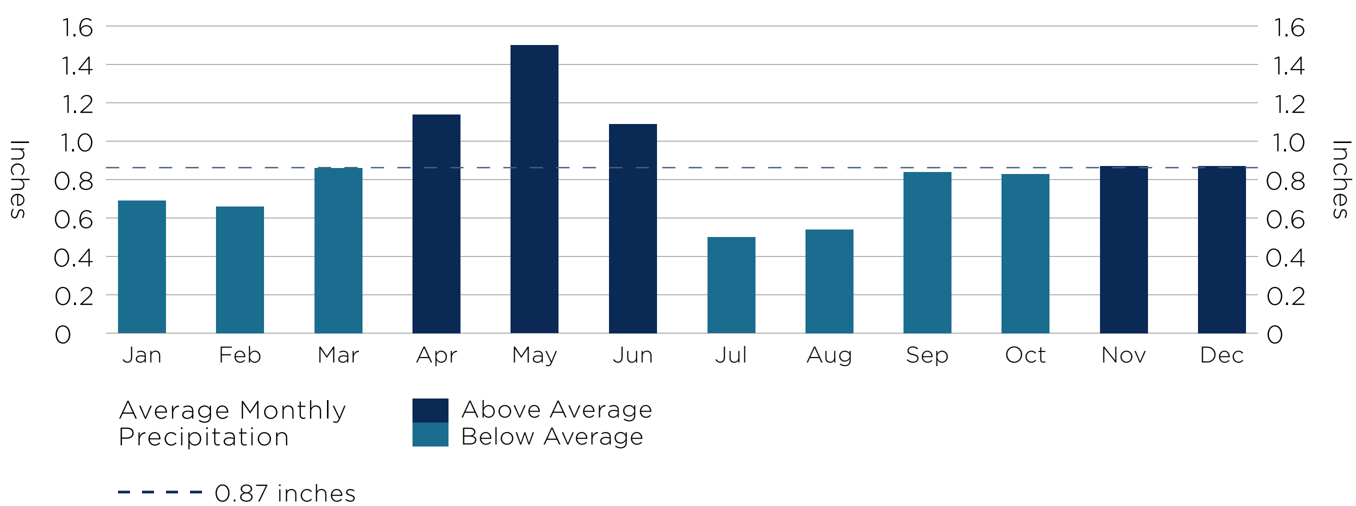


Figure 4.4: Average Precipitation



Source: NOAA 1981-2010 Climate Normals for Idaho Falls Regional Airport

4.1.4. Wind Coverage

Both wind speed and direction can significantly impact a runway's safe usability. While aircraft are capable of safely taking off and landing with a crosswind, smaller aircraft are typically more affected by them. Other factors must also be taken into consideration such as crosswind speed, type of aircraft, and the skill of the pilot.

When determining a runway's ideal orientation, FAA guidance states that an airport's primary runway should be aligned with the prevailing wind. It also states that wind coverage for a runway should be a minimum of 95%. In other words, a runway's orientation should be the direction that results in the least amount of crosswind (i.e., wind blowing at a right angle to the runway). Typically, this is based on an analysis of wind data that includes the last ten consecutive years of wind observations.

The aircraft approach category (AAC) and airplane design group (ADG), as defined in Chapter 1, are combined with the runway approach and visibility minimums to form the runway design code (RDC). As shown in Table 4.2, the RDC is then used to determine the allowable crosswind component. Essentially, this means the runway should be aligned so that crosswinds don't exceed allowable speeds 95% of the time in order to provide conditions that are safe for the type of aircraft that typically use the runway.

Table 4.2: Allowable Crosswind Component by Runway Design Code

Runway Design Code	Allowable Crosswind Component (Knots)
A-I and B-I (includes small aircraft)	10.5
A-II and B-II	13.0
A-III, B-III, C-I through C-III, D-I through D-III	16.0
A-IV, B-IV, C-IV through C-VI, D-IV through D-VI	20.0

Source: FAA AC 150/5300-13B, Table B-1

When conducting wind analysis, it is important the data reflects all conditions to ensure adequate runway coverage. The data used to conduct wind analysis for this report was obtained from the FAA's Airport Data and Information Portal (ADIP) for 2011–2020 which includes wind direction, speed, and visibility conditions. The resulting wind coverage percentages are listed in Table 4.3.

The following wind roses and wind overlays incorporate data from 92,858 observations for the all-weather wind roses and wind overlay, 13,962 for the instrument flight rules (IFR) wind rose and wind overlay, and 79,540 for the visual flight rules (VFR) wind overlay.

Table 4.3: Wind Coverage Percentages

Crosswind	Runway 3/21			Runway 17/35		Combined Runways	
	All Weather	IFR	VFR	All Weather	VFR	All Weather	VFR
10.5 Knots	97.94%	98.06%	97.93%	93.78%	93.62%	99.24%	99.24%
13 Knots	97.05%	99.02%	99.06%	97.03%	96.87%	99.65%	99.66%
16 Knots	99.70%	99.62%	99.71%	98.91%	98.83%	99.89%	99.89%
20 Knots	99.93%	99.89%	99.93%	99.72%	99.70%	99.98%	99.98%

Source: FAA Airport Data and Information Portal

Figure 4.5: Runway 3/21 All Weather Wind Rose

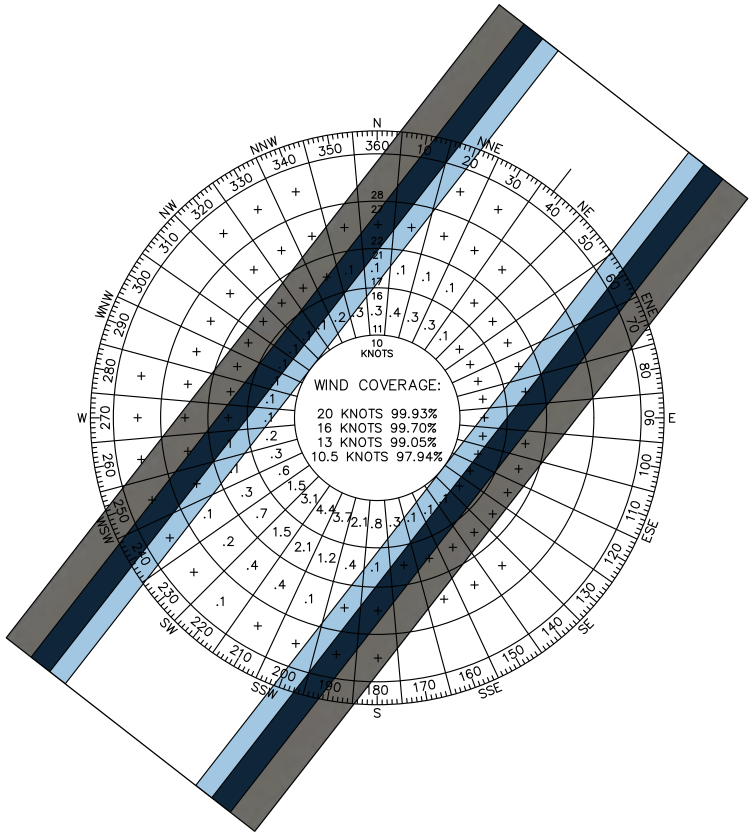
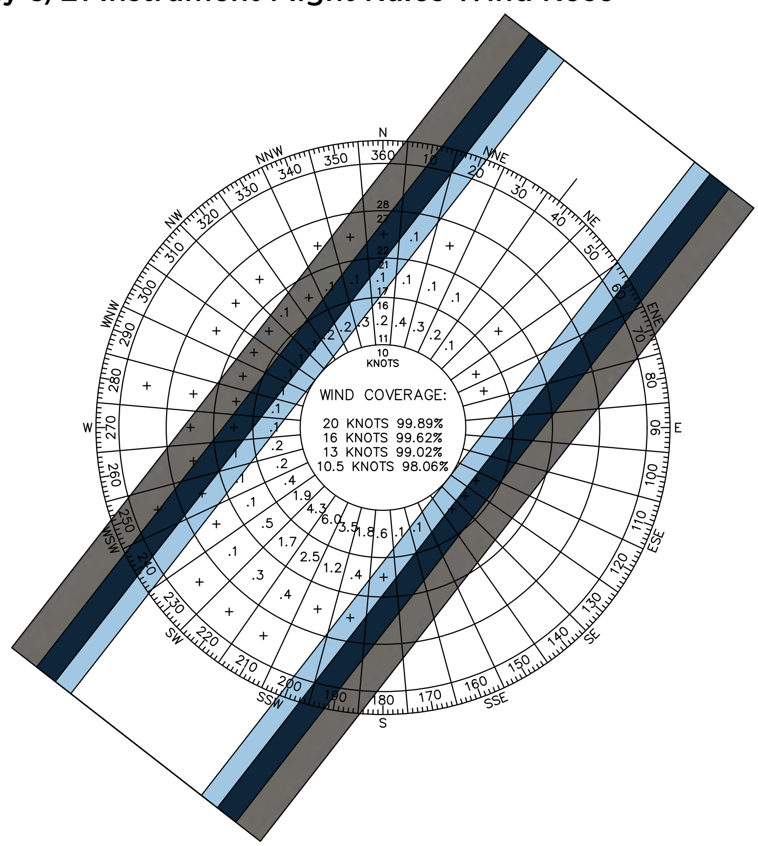


Figure 4.6: Runway 3/21 Instrument Flight Rules Wind Rose



Source: FAA Airport Data and Information Portal

Figure 4.7: Runway 17/35 All Weather Wind Rose

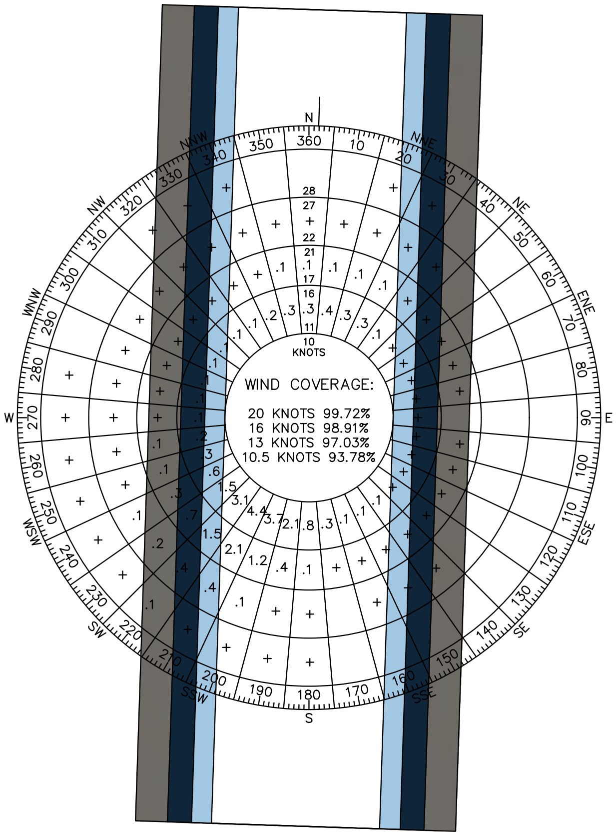
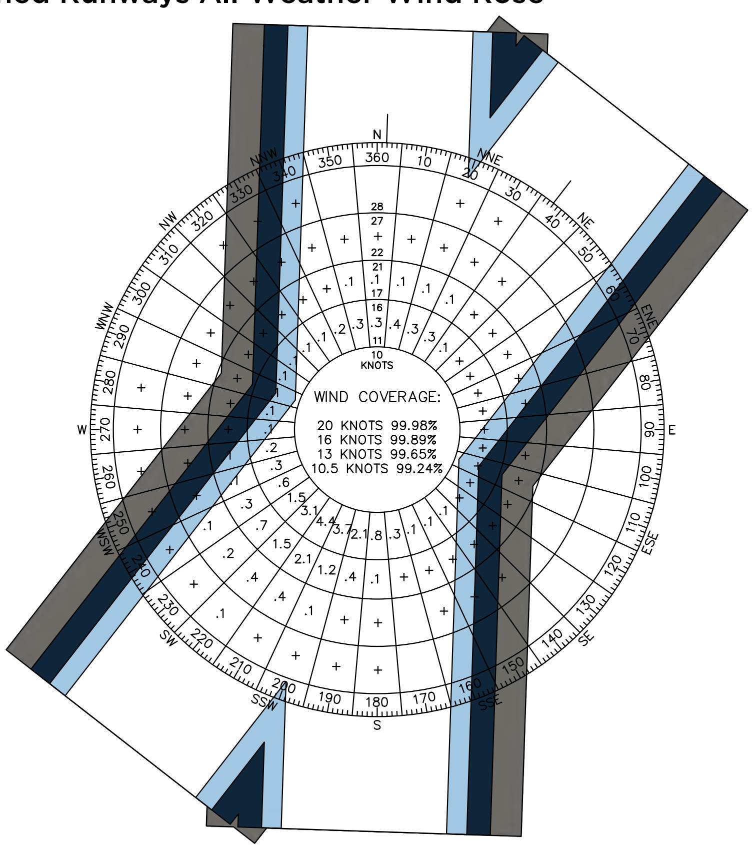


Figure 4.8: Combined Runways All Weather Wind Rose



Source: FAA Airport Data and Information Portal

Combined Runways Wind Overlays

Figure 4.9: All Weather Wind Overlay

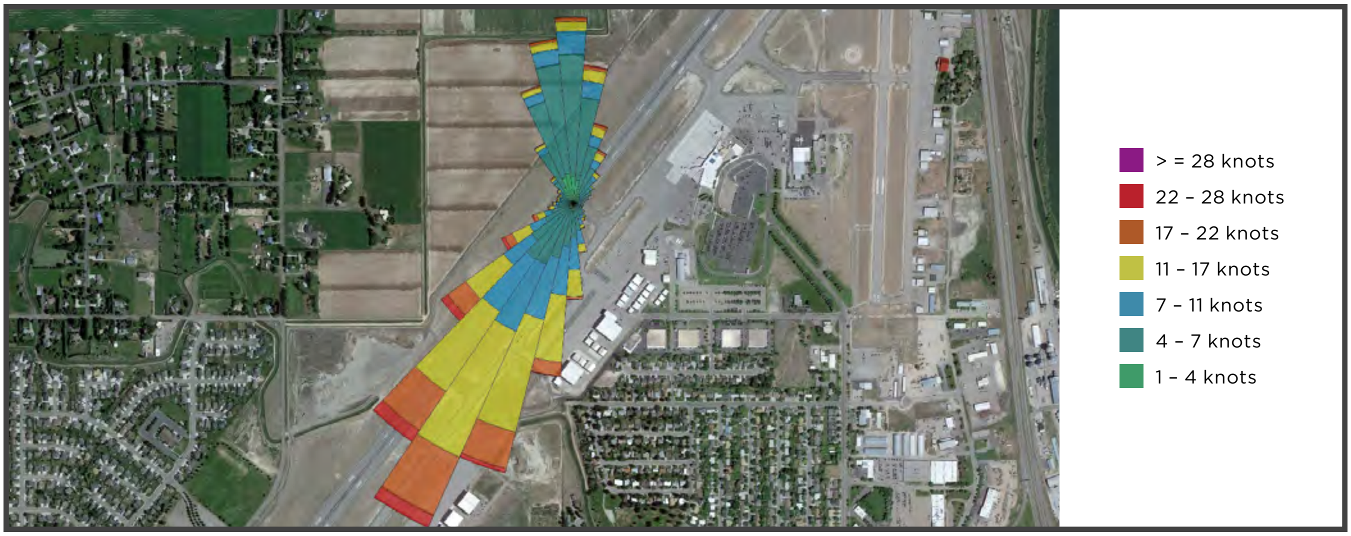
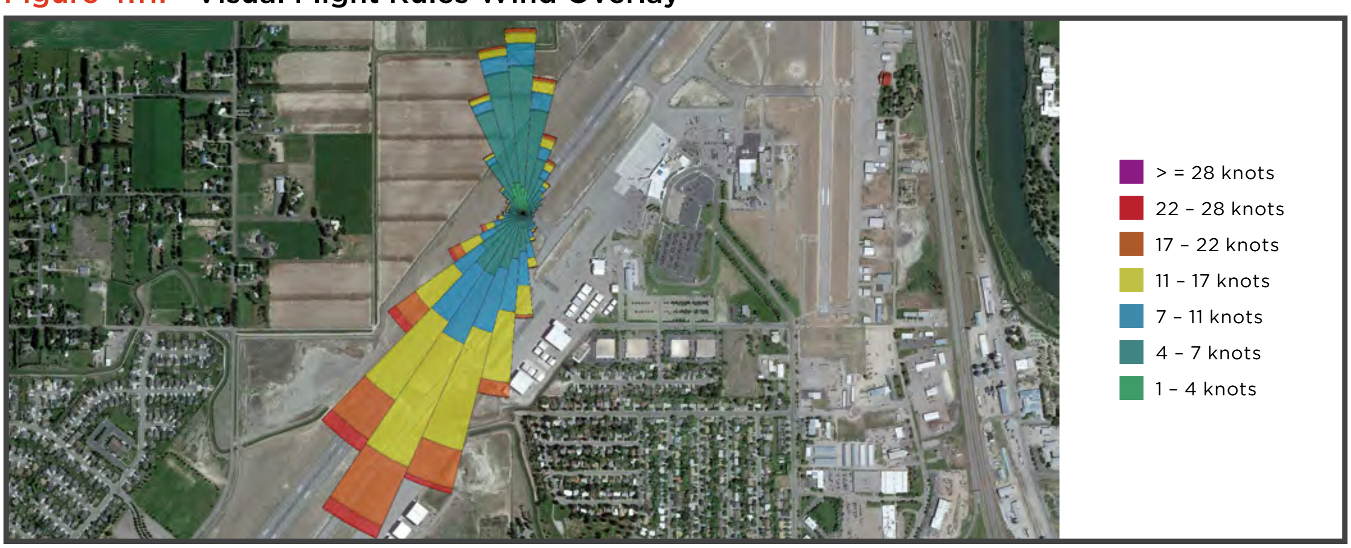


Figure 4.10: Instrument Flight Rules Wind Overlay

Figure 4.11: Visual Flight Rules Wind Overlay



Source: FAA Airport Data and Information Portal

4.2. Airport Zoning

Effective compatible land use planning around an airport addresses airspace, safety, and noise considerations. In many instances, the community's willingness to take a proactive approach in establishing compatible land use policies around the airport prevents the need to be reactive and mitigate more severe conflicts in the future. Effective comprehensive land use compatibility plans take both height and land use restrictions into consideration and are incorporated via zoning. Coupled with other proactive measures, such as voluntary noise abatement programs and selective fee-simple land acquisition, proactive planning around the airport protects both the airport and the surrounding community. Furthermore, federal grant assurances require airport sponsors to operate and maintain the airport in a safe and serviceable condition, prevent and remove airport hazards, and take appropriate measures to ensure compatible land uses exist around the airport.

It is important to point out there is a difference between basic land use zoning and height restrictive zoning. As its name implies, the intent of height restrictive zoning is to protect the airspace around an airport from objects or structures that may pose hazards to aircraft operations. In general, this type of zoning conforms to Title 14 of the Code of Federal Regulations Part 77 (**Part 77**). On the other hand, the intent of land use zoning is to prevent incompatible land uses near an airport. The practice of taking both height and land use restrictions into consideration protects the airport and helps prevent the effects of airport operations, such as noise, dust, fumes, or aircraft accidents, from having a negative impact on sensitive land uses such as residential areas.

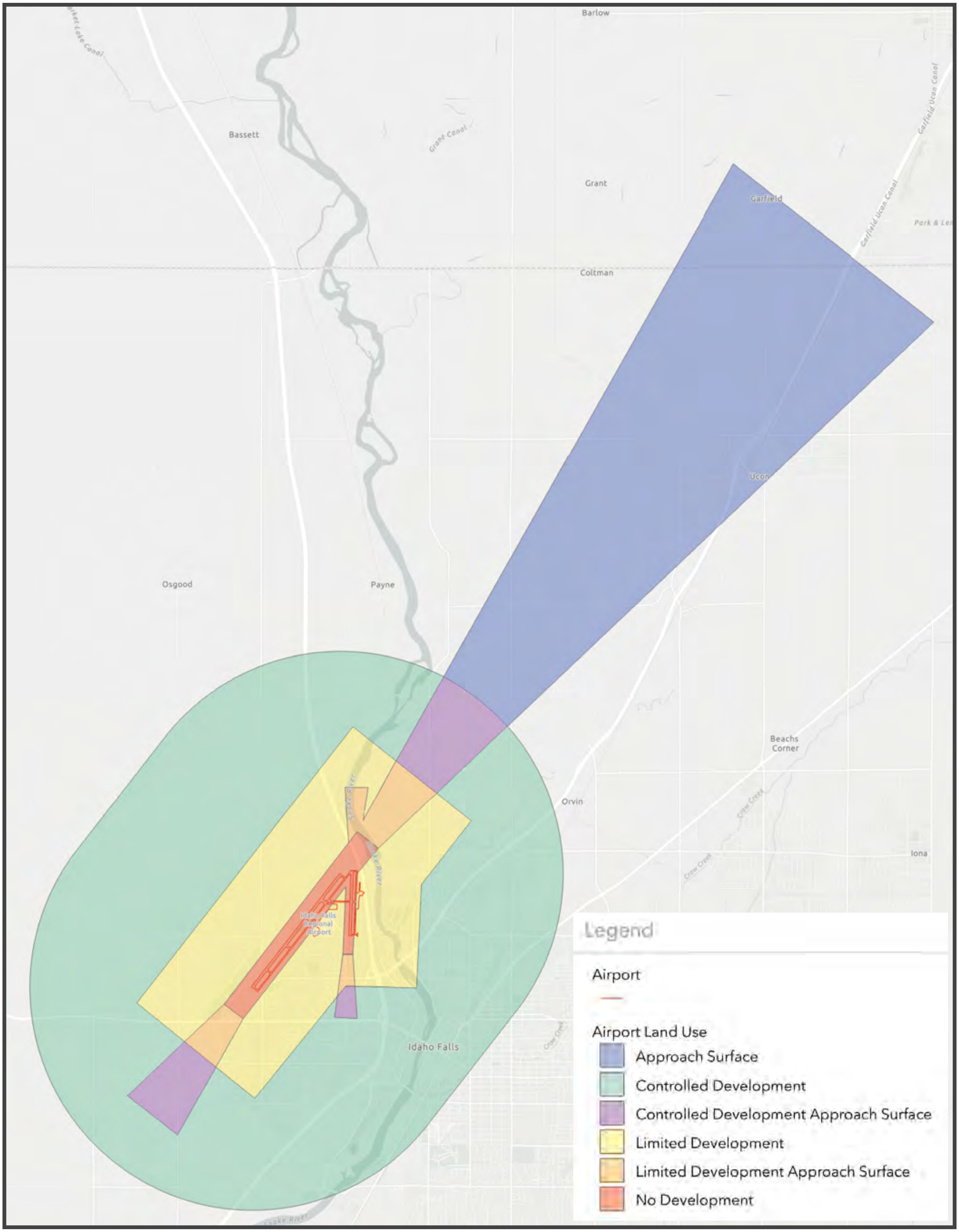
4.2.1. City Land Use Protections

The city of Idaho Falls has developed a comprehensive plan that provides a road map for city and community leaders to address and strategically plan for growth. An update to this plan, *Imagine IF, A Plan to Move Idaho Falls Forward Together, City of Idaho Falls' Comprehensive Plan*, was completed in 2021 and approved by the city council February 24, 2022.[8]

As part of the comprehensive planning process, background studies were performed to provide an understanding of current conditions of several resources important to the community—including the airport. The section that discusses the airport refers to the airport overlay zones that were adopted by the city in 2019 with the intention of restricting incompatible uses from locating near the airport (Idaho Falls City Code; Title 11, Chapter 5, Section 11-5-3).[9]

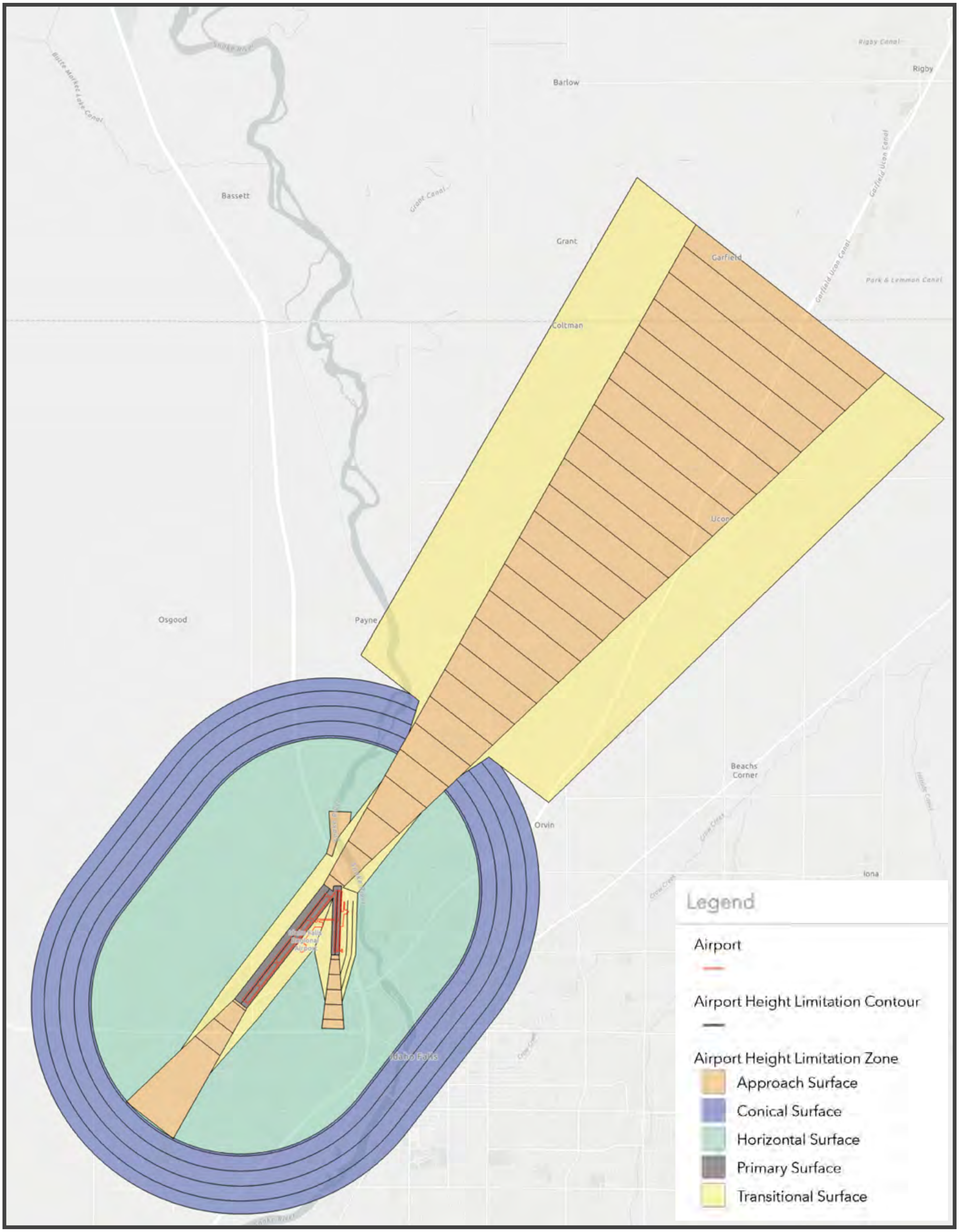
The compatible land use designations, which are shown in Figure 4.12, include a No Development Zone, Limited Development Approach Surface Zone, Controlled Development Approach Surface Zone, Limited Development Zone, and Controlled Development Zone. Height zone designations, which protect the airport's Part 77 surfaces, are shown in Figure 4.13. These include an Approach Surface Height Zone, Transitional Surface Height Zone, Horizontal Surface Height Zone, and Conical Surface Height Zone. As shown in Figure 4.14, the city's land use regulations designate airport property as Light Manufacturing and Heavy Commercial (**LM**). Additionally, a map showing the location of all public property located in the vicinity of the airport is included as Figure 4.15. This includes land owned by the city of Idaho Falls, Bonneville County, state of Idaho, and Bureau of Land Management (**BLM**).

Figure 4.12: Airport Land Use Zoning Map



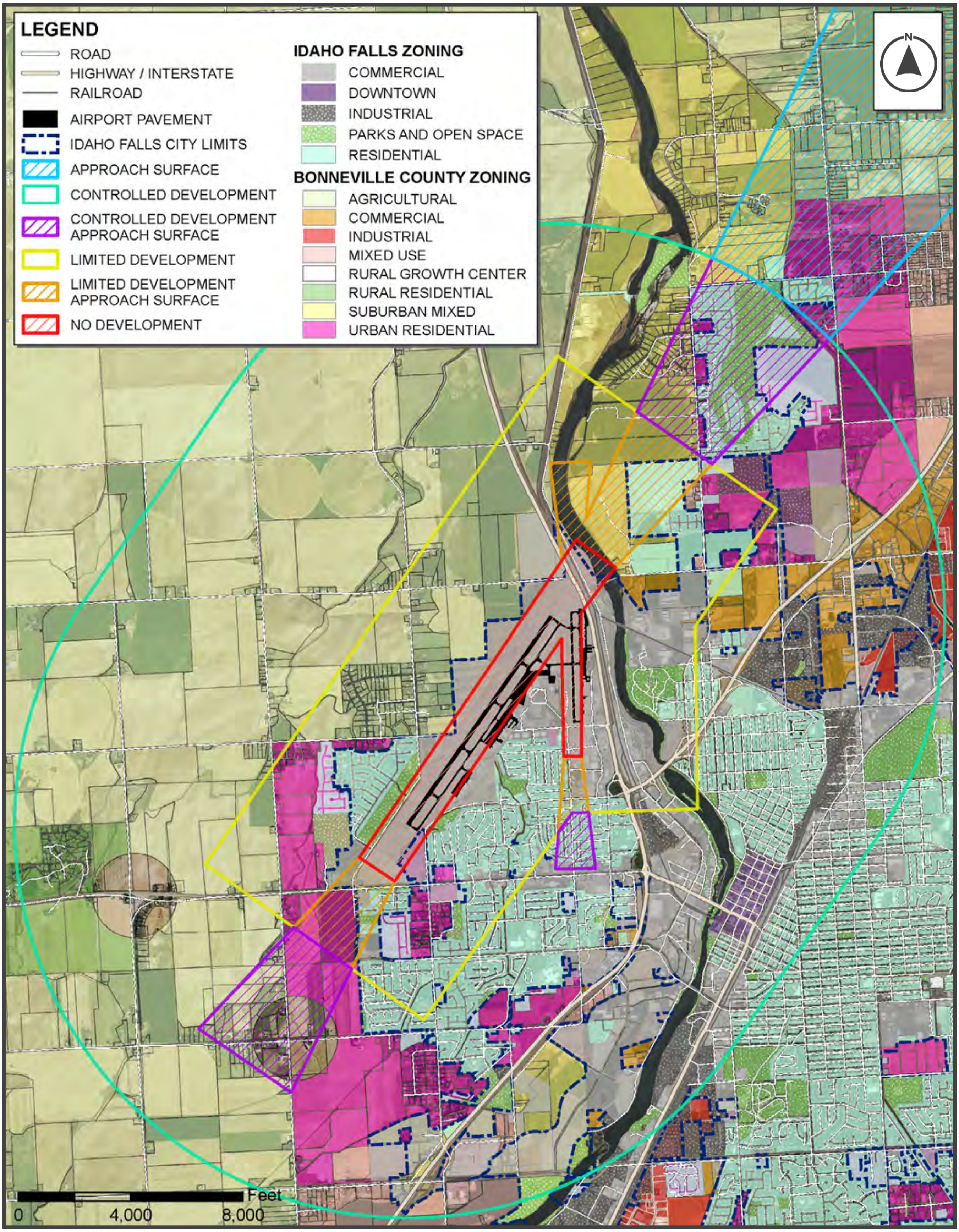
Note: Zoning outside of Idaho Falls city limits is not in effect.
Source: City of Idaho Falls

Figure 4.13: Airport Height Zoning Map



Note: Zoning outside of Idaho Falls city limits is not in effect.
Source: City of Idaho Falls

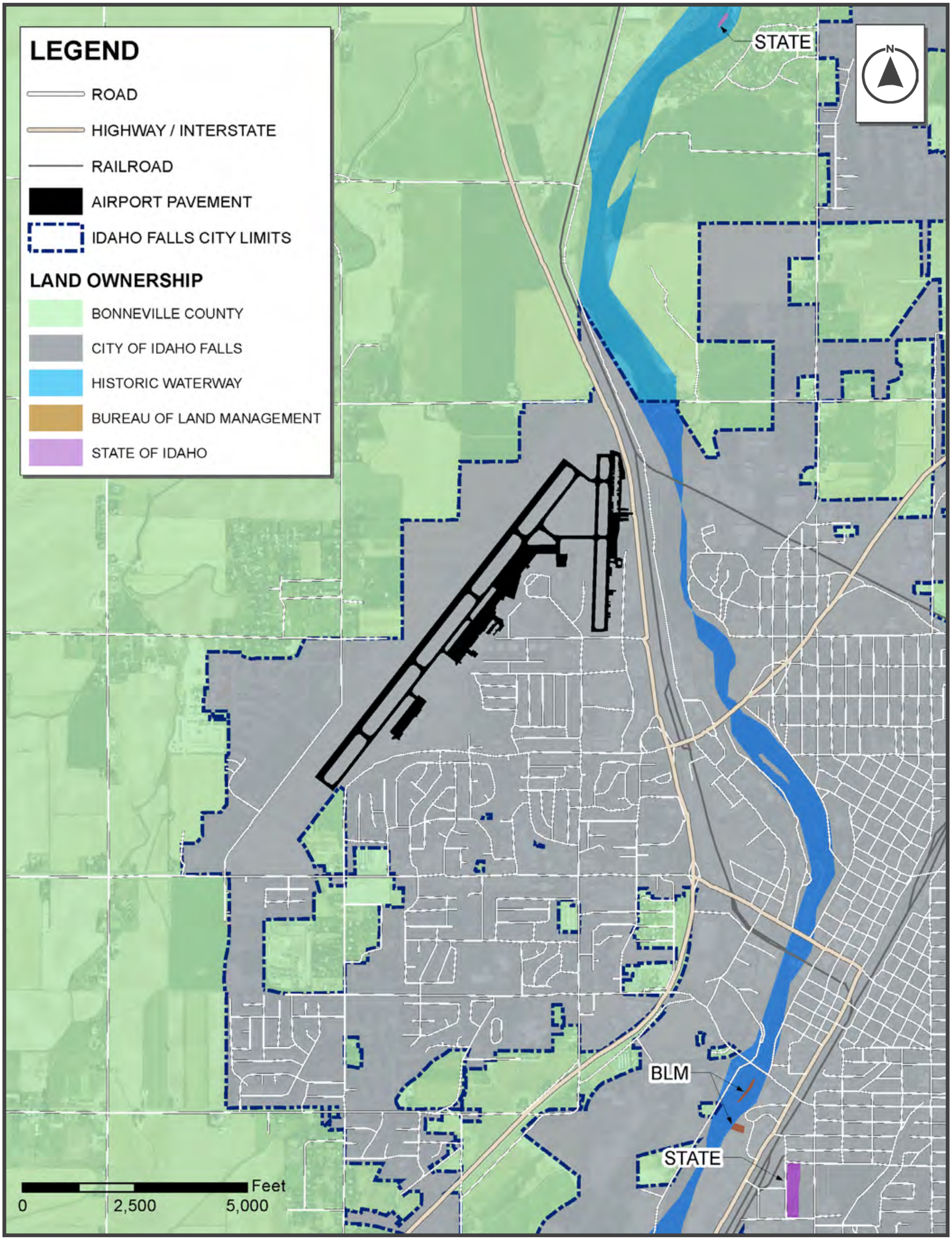
Figure 4.14: Idaho Falls Land Use Zoning Map



Note: Zoning outside of Idaho Falls city limits is not in effect.

Source: City of Idaho Falls and Bonneville County

Figure 4.15: Idaho Falls Corporate Boundaries



Source: Bureau of Land Management

4.3. Based Aircraft

According to the Airport Master Record, Form 5010-1, there are 168 aircraft based at the airport. This includes 128 single engine, 29 multi-engine, six jets, and five helicopters. In addition, there are three gliders listed that are not included in this number. The 2010 Airport Master Plan reported a total of 151 based aircraft, and the 2019 planning study completed for Runway 17/35 reported approximately 100 based aircraft. Accurately determining the number of based aircraft can be somewhat challenging for an airport because it is primarily determined using self-reported information provided by airport tenants.

4.4. Pavement Condition

Airport sponsors that receive federal assistance to construct or repair airfield pavements are required to establish a pavement maintenance management program. This has been shown to be the most cost efficient method for ensuring airfield pavement is safe. Pavement tends to deteriorate relatively slowly during the first several years. However, it eventually begins to deteriorate at a faster rate which results in an accelerated drop in condition. Timely maintenance can renew the pavement condition and prolong its lifespan. An effective pavement maintenance management program will include scheduling the necessary maintenance prior to its condition beginning to deteriorate rapidly. At a minimum, a pavement maintenance management program must include an inventory of the airfield pavement, an inspection schedule, and records of all pavement inspections and maintenance activities. Information about airport pavement maintenance management programs can be found in FAA AC 150/5380-7B, *Airport Pavement Management Program (PMP)*.

A pavement condition report was completed as of November 2015 by Applied Research Associates, Inc. This report details the pavement condition index rating for each of the paved surfaces at the airport as of July 2015. The pavement condition index (PCI) is a rating of the condition of each pavement surface and indicates its functional performance. Standard PCI values range from 0–100. As shown in Table 4.4, these ratings are grouped into seven color-coded categories. Typically, scores of 65 or more only require preventative maintenance, such as crack sealing, while scores between 41–64 require major rehabilitation. Pavements with a PCI rating of 40 or less require reconstruction.

Table 4.4: Pavement Condition Index Rating Categories

Rating	0–10	11–25	26–40	41–55	56–70	71–85	86–100
Category	Failed	Serious	Very Poor	Poor	Fair	Satisfactory	Good
	Reconstruction Required			Major Rehabilitation		Preventative Maintenance	

Source: Applied Research Associates, Inc.

The findings from the 2015 pavement condition report are summarized in the tables on the following pages and illustrated in Figure 4.16. It is important to note that multiple pavement maintenance projects have been completed since 2015, and the PCI values shown may not reflect current PCI ratings. These projects include rehabilitation of Taxiways A and C as well as rehabilitation of Runway 3/21 and the associated connecting taxiways.

As shown in Table 4.5, the overall average for all airfield pavements was 79 with an average PCI of 86 for the runways, 65 for the taxiways, and 83 for the aprons. Table 4.6 lists the size of each branch of pavement and the number of sections within each branch. A detailed summary of each section is shown in Table 4.7. This includes the type of surface, size, age, and PCI rating for each section.

Table 4.5: Average Airfield Pavement PCI Rating by Facility Type, 2015

Facility Type	Average PCI Rating
Runways	86
Taxiways	65
Aprons	83
Overall Average Airfield Pavement PCI Rating	**79**

Source: Applied Research Associates, Inc.

Table 4.6: Pavement Branch Identification

Branch ID	Name	Number of Sections	Square Footage
AFBO	FBO Ramp	3	52,320
AFEDEX	FedEx Ramp	3	68,637
AGA	GA Ramp	8	323,562
ASQ	South Quad Ramp	1	257,883
ATERM	Terminal Ramp	9	1,151,413
RW1735	Runway 17/35	1	304,442
RW220	Runway 2/20 (3/21)	4	1,350,240
TLA	Hangar Taxilane	1	9,875
TWA	Taxiway A	2	570,812
TWA1	Taxiway A-1	1	26,380
TWA2	Taxiway A-2	1	33,755
TWA3	Taxiway A-3	1	33,458
TWA4	Taxiway A-4	1	34,089
TWA5	Taxiway A-5	1	42,972
TWB	Taxiway B	1	325,880
TWC	Taxiway C	3	196,863

Source: Applied Research Associates, Inc., Table 1

Table 4.7: Pavement Age and PCI Ratings, 2015

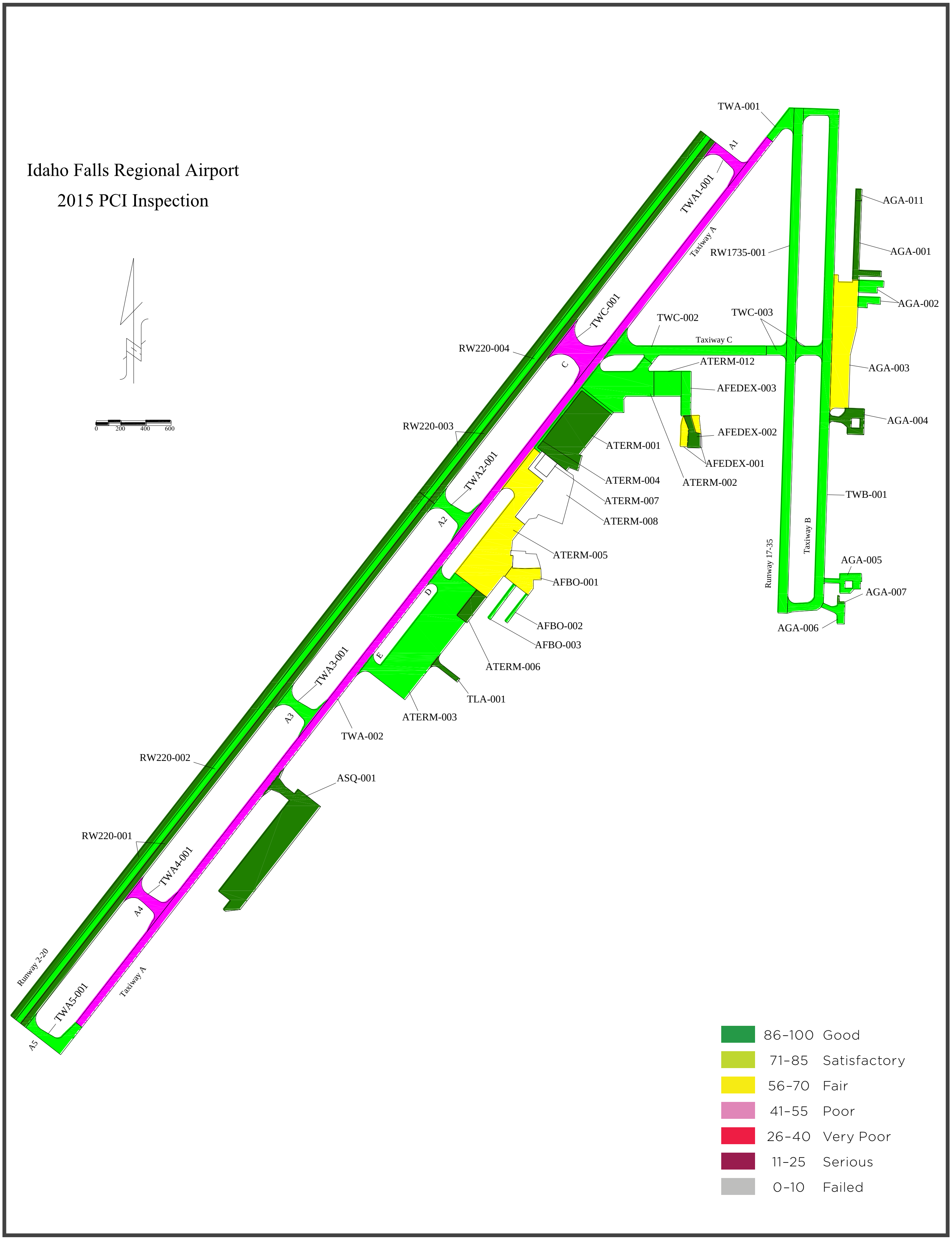
Branch ID	Section	Surface Type	Square Footage	Year Built	2015 PCI
AFBO	1	Asphalt with Asphalt Overlay	38,120	2003	67
AFBO	2	Asphalt with Asphalt Overlay	6,050	2004	76
AFBO	3	Asphalt with Asphalt Overlay	8,150	2004	82
AFEDEX	1	Asphalt Cement	20,593	2004	69
AFEDEX	2	Asphalt Cement	19,702	2014	100
AFEDEX	3	Asphalt Cement	28,342	2004	78

Source: Applied Research Associates, Inc., Table 3

Branch ID	Section	Surface Type	Square Footage	Year Built	2015 PCI
AGA	1	Asphalt Cement	38,707	2006	88
AGA	11	Asphalt Cement	4,362	2014	100
AGA	2	Asphalt Cement	29,525	2005	79
AGA	3	Asphalt with Asphalt Overlay	178,016	2004	66
AGA	4	Asphalt Cement	31,816	2005	86
AGA	5	Asphalt Cement	24,693	2006	82
AGA	6	Asphalt Cement	15,060	2006	74
AGA	7	Asphalt Cement	1,383	2015	100
ASQ	1	Asphalt Cement	257,883	2015	100
ATERM	1	Portland Cement Concrete	181,915	2005	90
ATERM	12	Asphalt Cement	45,577	2004	77
ATERM	2	Asphalt with Asphalt Overlay	138,240	2004	83
ATERM	3	Asphalt Cement	340,480	2006	83
ATERM	4	Asphalt with Asphalt Overlay	19,031	2004	82
ATERM	5	Asphalt with Asphalt Overlay	254,000	2003	68
ATERM	6	Asphalt Cement	26,240	2012	94
ATERM	7	Portland Cement Concrete	17,080	2015	100
ATERM	8	Asphalt Cement	130,850	2015	100
RW1735	1	Asphalt Cement	304,442	2004	78
RW220	1	Asphalt Cement	553,000	2008	90
RW220	2	Asphalt Cement	266,500	2008	85
RW220	3	Asphalt with Asphalt Overlay	367,160	2008	89
RW220	4	Asphalt with Asphalt Overlay	183,580	2008	85
TLA	1	Asphalt Cement	9,875	2006	88
TWA	1	Asphalt Cement	23,278	2005	78
TWA	2	Asphalt Cement	547,534	1998	54
TWA1	1	Asphalt Cement	26,380	1998	44
TWA2	1	Asphalt Cement	33,755	2008	83
TWA3	1	Asphalt Cement	33,458	2008	84
TWA4	1	Asphalt Cement	34,089	1998	46
TWA5	1	Asphalt Cement	42,972	2008	80
TWB	1	Asphalt with Asphalt Overlay	235,880	2005	78
TWC	1	Asphalt Cement	60,475	1998	54
TWC	2	Asphalt with Asphalt Overlay	105,000	2004	73
TWC	3	Asphalt Cement	31,388	2004	80

Source: Applied Research Associates, Inc., Table 3

Figure 4.16: Pavement Condition Index Diagram



Source: Applied Research Associates, Inc.

4.5. Aviation Facilities

The airport property is a total of 866 acres, and the elevation is 4,743.7 feet above mean sea level (MSL). Figure 4.17 shows the general layout of the airport's main facilities.

4.5.1. Runways

The primary runway, Runway 3/21, is a northeast-southwest oriented runway (Figure 4.18).[1] As shown in Table 4.8, the runway is 9,002 feet long and 150 feet wide, and declared distances are all equal to the full runway length. The elevation of the Runway 3-end is 4,742 feet, and the elevation of the Runway 21-end is 4,731 feet. As a result, the runway slopes down toward the Runway 21-end at a 0.11% grade. As shown in Table 4.9, the runway is equipped with high intensity runway lights (HIRL) and has precision instrument runway markings. The runway is paved with asphalt that has been grooved.[2] Its published pavement classification number (PCN) is 57/F/B/X/T. This classification is a relative indication of the load-carrying capacity of the pavement; F is pavement type (flexible), B is the subgrade category (medium strength), X indicates tire pressure (medium, limited to 218 psi), and T is the method used to determine the PCN value (technical evaluation). It has a published weight bearing capacity of 140,000 pounds for single wheel (SW), 175,000 pounds for dual wheel (DW), and 270,000 pounds for dual tandem wheel (DTW) configurations (Table 4.8).

The secondary or crosswind runway, Runway 17/35, is a north-south oriented runway (Figure 4.18). This runway is 3,964 feet long and 75 feet wide. There are no declared distances listed on the Airport Master Record for Runway 17/35. The elevation of the Runway 17-end is 4,731.1 feet, and the elevation of the Runway 35-end is 4,731.2 feet. As a result, the runway has a very slight downward slope toward the Runway 17-end with an approximate grade of 0.007%. The runway is equipped with medium intensity runway lights (MIRL) and has visual runway markings. The remarks section of the Airport Master Record states that takeoffs and landings are not authorized for this runway between sunset to sunrise unless air traffic control services are available. The runway is paved with asphalt with a published PCN of 7/F/B/X/T. It has a published weight bearing capacity of 43,000 pounds for SW and 58,000 pounds for DW configurations.

Table 4.8: Runway Pavement Dimensions and Maximum Allowable Gross Weights

Runway	Length	Width	SW	DW	DTW
Runway 3/21	9,002 feet	150 feet	140,000 #	175,000 #	270,000 #
Runway 17/35	3,964 feet	75 feet	43,000 #	58,000 #	—

Source: Pavement Consultants, Inc.

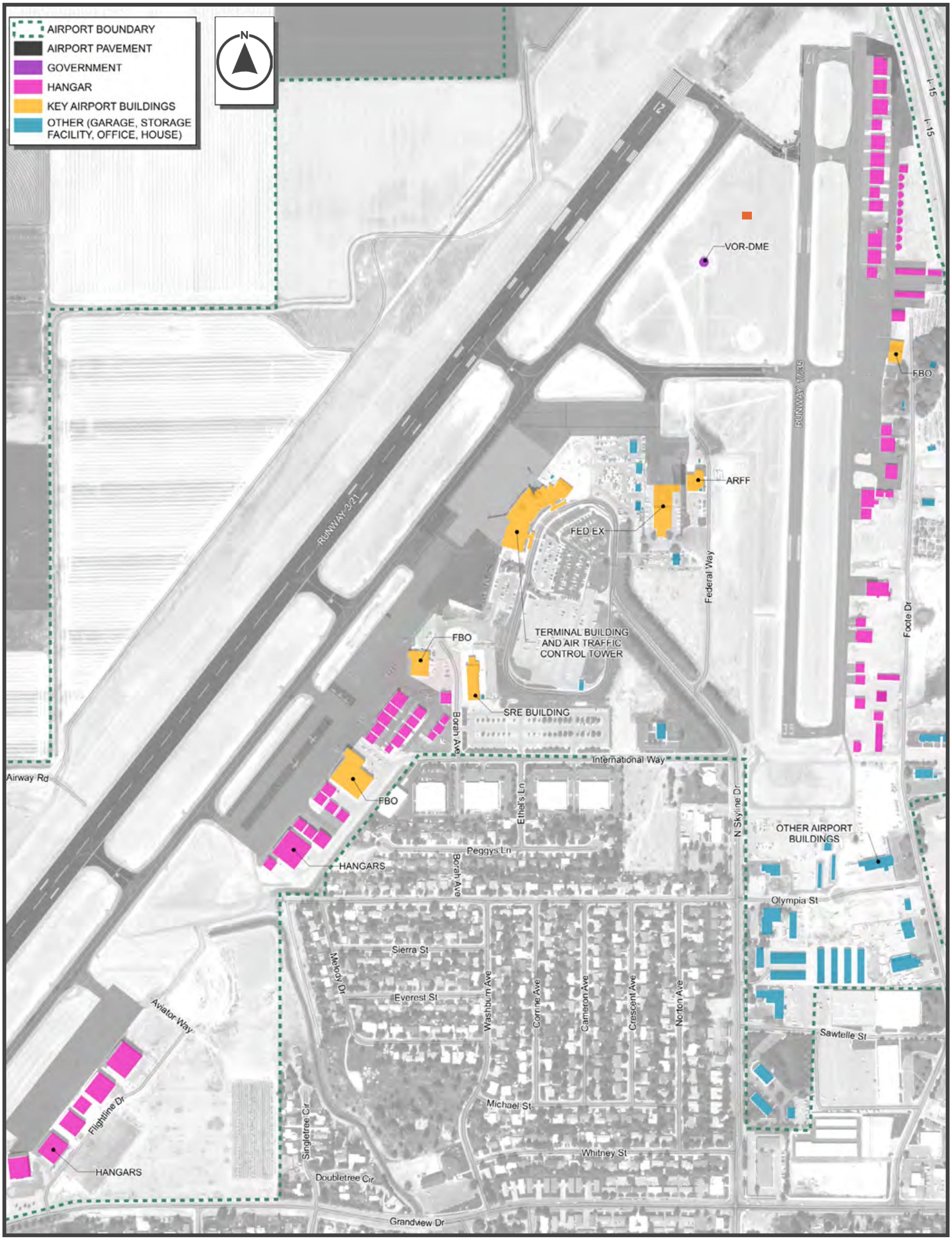
Table 4.9: Runway Lighting

NAVAID	Runway 3	Runway 21	Runway 17	Runway 35
HIRL	●	●		
MIRL			●	●
Markings	Precision	Precision	Visual	Visual

Source: Ardurra.

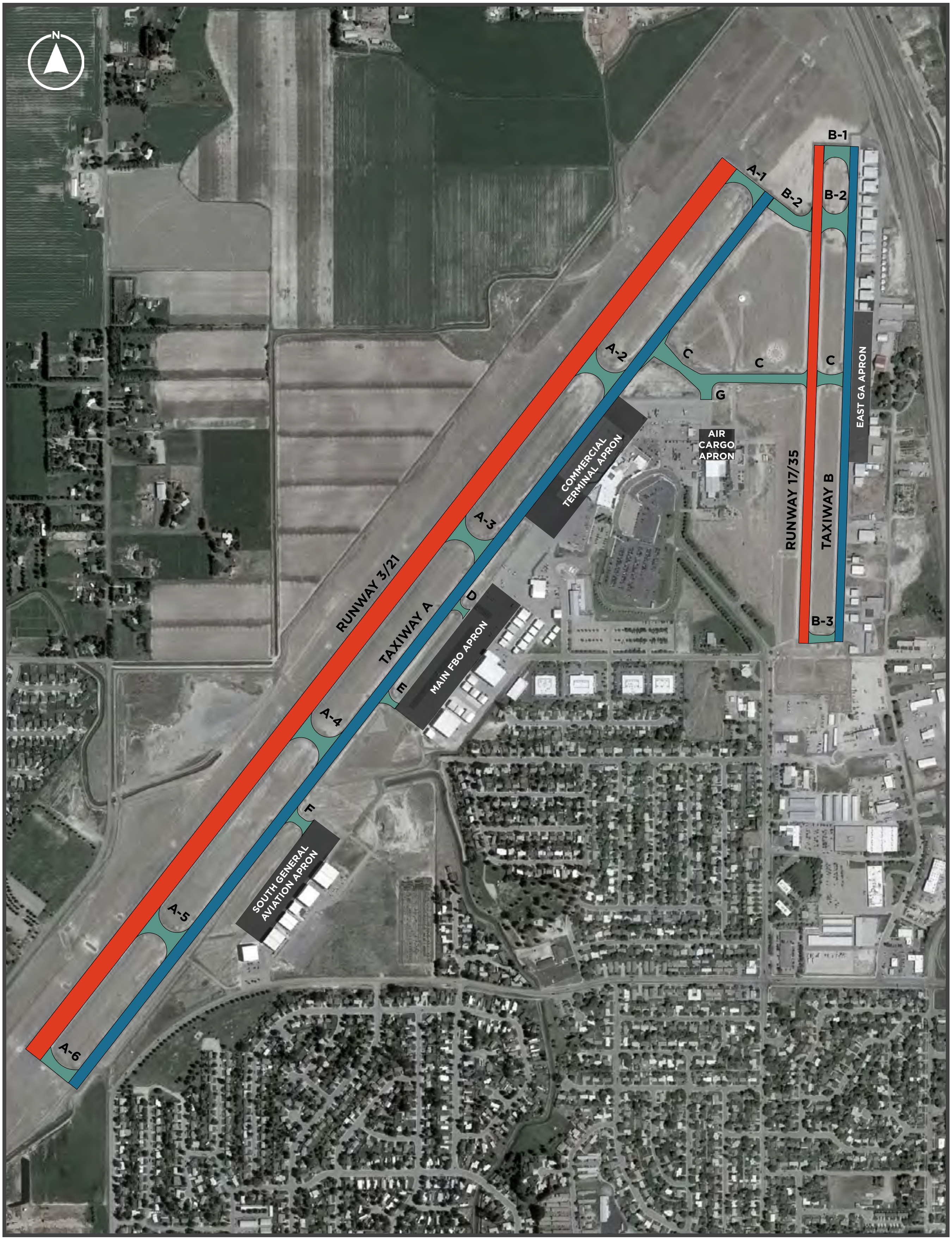
1. The runway's designation was revised from 2/20 to 3/21 in 2018 to account for normal changes in magnetic declination.
2. Pavement grooving improves drainage which helps to eliminate standing water on the runway, reduces the risk of hydroplaning, and protects against ice formation.

Figure 4.17: Main Airport Facilities



Source: Ardurra.

Figure 4.18: Runway and Taxiway System



Source: Ardurra.

4.5.2. Taxiways, Taxilanes, and Connectors

Taxiways and taxiway connectors increase airfield traffic flow and capacity by allowing aircraft to safely and efficiently get to and from the runway without interfering with takeoffs or landings. Both are considered part of the movement area. At airports with an air traffic control tower, such as IDA, air traffic controllers are responsible for maintaining aircraft separation within the movement area. Pilots must get permission from air traffic control before entering these areas when the control tower is open.[3]

Taxiways, which are designated with a letter or a letter and number combination, look similar to runways but are usually not as wide and have different markings. Taxilanes, which are not considered to be part of the movement area, allow aircraft to safely access taxiways and taxiway connectors from other non-movement areas of the terminal apron such as those used for loading, refueling, parking, or maintenance. They are intended for low speed and precise movement of aircraft.

Idaho Falls Regional Airport has three main taxiways, several taxiway connectors, and no designated taxilanes. All taxiways are equipped with medium intensity taxiway lights (MITL) except for Taxiway B and its connectors to Runway 17/35 which are equipped with blue taxiway reflectors.

West Taxiway System

As shown in Figure 4.18, Taxiway Alpha (A) is a full-length parallel taxiway for Runway 3/21. It is 60 feet wide with 20-foot unpaved shoulders. The Taxiway A centerline is 400 feet from the Runway 3/21 centerline. This meets the runway centerline to taxiway centerline separation requirements for ARC C-III. Much of Taxiway A was either reconstructed or rehabilitated between 2017 and 2018.

There are six taxiway connectors between Taxiway A and Runway 3/21. These connectors have been designated as A-1 through A-6 (from north to south) and are of varying widths due to curves and fillets. Taxiways A-1 and A-2 were reconstructed in 2018.

Taxiway Foxtrot (F) connects the south general aviation apron to Taxiway A. Taxiways Echo (E) and Delta (D) connect the main fixed base operator (FBO) apron to Taxiway A. Taxiway Golf (G), which connects the north terminal apron to Taxiway Charlie (C), was constructed in 2018.

Taxiway C is the main taxiway that connects the east general aviation complex at Taxiway Bravo (B) and Runway 17/35 to Taxiway A. Taxiway C is 70 feet wide between Taxiway B and Runway 17/35 and is 60 feet wide between Runway 17/35 and Taxiway A. This taxiway was reconstructed and realigned in 2018.

East Taxiway System

As shown in Figure 4.18, Taxiway B is a full-length parallel taxiway for Runway 17/35. It is 35 feet wide and was last rehabilitated in 2005. The Taxiway B centerline is 270 feet from the Runway 17/35 centerline. The movement area boundary is approximately 30 feet from the Taxiway B centerline and does not meet standards.

There are four connecting taxiways between Taxiway B and Runway 17/35. They have been designated as B-1, B-2, C, and B-3 (from north to south). Taxiways B-1 and B-2 were constructed in 2020 when the Runway 17-end was shortened. Taxiway B-2 also connects Runway 17/35 to Taxiway A at A-1.

3. The boundaries of the movement area are typically established by way of a letter of agreement between the control tower and the airport operator.

4.5.3. General Aviation Apron

There are three general aviation aircraft parking aprons at IDA. The south general aviation apron, which was constructed in 2015, is approximately 258,000 square feet. As shown in Figure 4.19, there is space for aircraft parking, but there are no marked spaces.

Figure 4.19: South General Aviation Apron

Source: Ardurra.

The main FBO apron, which is constructed of asphalt, is approximately 650,000 square feet. It is located along Taxiway A to the south of the commercial terminal apron. As shown in Figure 4.20, there are 23 marked spaces for large aircraft and 24 spaces for small aircraft. Undesignated taxilanes provide access to the 15 hangars located within the main FBO apron.

Figure 4.20: Main FBO Apron

Source: Ardurra.

The east general aviation apron, which is constructed of asphalt, is approximately 178,000 square feet. It is located along Taxiway B where it intersects with Taxiway C. As shown in Figure 4.21, there are 21 marked spaces for small aircraft parking, three helicopter parking circles, and a compass calibration pad.

Figure 4.21: East General Aviation Apron

Source: Ardurra.

4.5.4. Commercial Terminal Apron

The commercial terminal apron, which is constructed of asphalt and concrete, is approximately 425,000 square feet. As shown in Figure 4.22, it is centrally located on the airfield and is situated along Taxiway A.

Figure 4.22: Commercial Terminal Apron

Source: Ardurra.

The commercial terminal apron is marked with six aircraft parking stands, a vehicle service road, and a security identification display area (SIDA) boundary line. There is a concrete deicing pad on the south side of the apron.

4.5.5. Air Cargo Facilities

The air cargo apron is approximately 55,000 square feet and has one marked aircraft parking space. It is located between the car rental parking area and the aircraft rescue and fire fighting (ARFF) station. As shown in Figure 4.23, the cargo facility is operated by FedEx. This facility has approximately 30,000 square feet of warehouse space along with additional room for receiving and office space. There are three dedicated cargo operators at IDA. As shown in Table 4.10, all three operate between IDA and Salt Lake City.

Figure 4.23: Air Cargo Apron

Source: Ardurra.

Table 4.10: Cargo Service

Airline	Destination	Aircraft (ARC)
Alpine Air	Salt Lake City	Beech 1900 (B-II)
Corporate Air	Salt Lake City	Cessna 208 (A-II)
Empire	Salt Lake City	ATR-72 (B-II)

Source: FlightAware

4.5.6. Airport Traffic Control Tower

IDA has an airport traffic control tower (ATCT) located above the commercial terminal building (Figure 4.24). It operates daily from 7 a.m. to 8 p.m. and provides air traffic control services to airport users. These services include weather reports, clearance delivery, ground control, and local control within the Class D airspace surrounding the airport. The tower, which was constructed in 1960, is approximately 85 feet tall and managed by Serco under the FAA Federal Contract Tower (FCT) program.

Figure 4.24: Airport Traffic Control Tower

Source: Ardurra.

4.5.7. Airfield Signage

Airfield signs provide visual cues and instructions to pilots and vehicle operators that enhance safe and efficient movement on the runways and taxiways. As shown in Figure 4.25, elevated signs protect aeronautical surfaces and convey ground navigation information that enhances situational awareness when maneuvering on the airfield. The runways and taxiways at IDA are equipped with a combination of mandatory instruction signs, location signs, destination signs, information signs, and boundary signs.

Figure 4.25: Airport Signage

Source: Ardurra.

4.5.8. Aircraft Fuel Facilities

Fuel services at IDA are provided by Aero Mark. There is one fuel farm, which is adjacent to the SRE building, located at the end of Borah Avenue. It has two 25,000-gallon underground storage tanks for Jet A fuel and one 25,000-gallon underground storage tank for Aviation Gasoline (avgas). Aero Mark is planning to add an additional 25,000-gallon underground storage tank for Jet A fuel to meet new air service demand.

There are two self-serve fuel islands at the airport for dispensing avgas. One is located at the east general aviation area south of the Red Baron Hangar, and the other is next to the Aero Mark FBO building. The fuel pumps near the Red Baron Hangar are supplied by a 12,000-gallon underground storage tank, while the fuel pumps next to the FBO are fed by a direct line from the fuel farm.

Aero Mark also operates six fuel trucks. Three are for Jet A fuel; one with a capacity of 3,000 gallons, and two with a capacity of 5,000 gallons. The other three trucks are for avgas and have capacities of 900 gallons, 1,200 gallons, and 1,500 gallons.

4.5.9. Hot Spots

At an airport, a hot spot is a location within the movement area that has been identified by the FAA as having a history or potential risk of collisions or runway incursions. Pilots and drivers of ground support vehicles need to pay close attention while traveling in these areas.

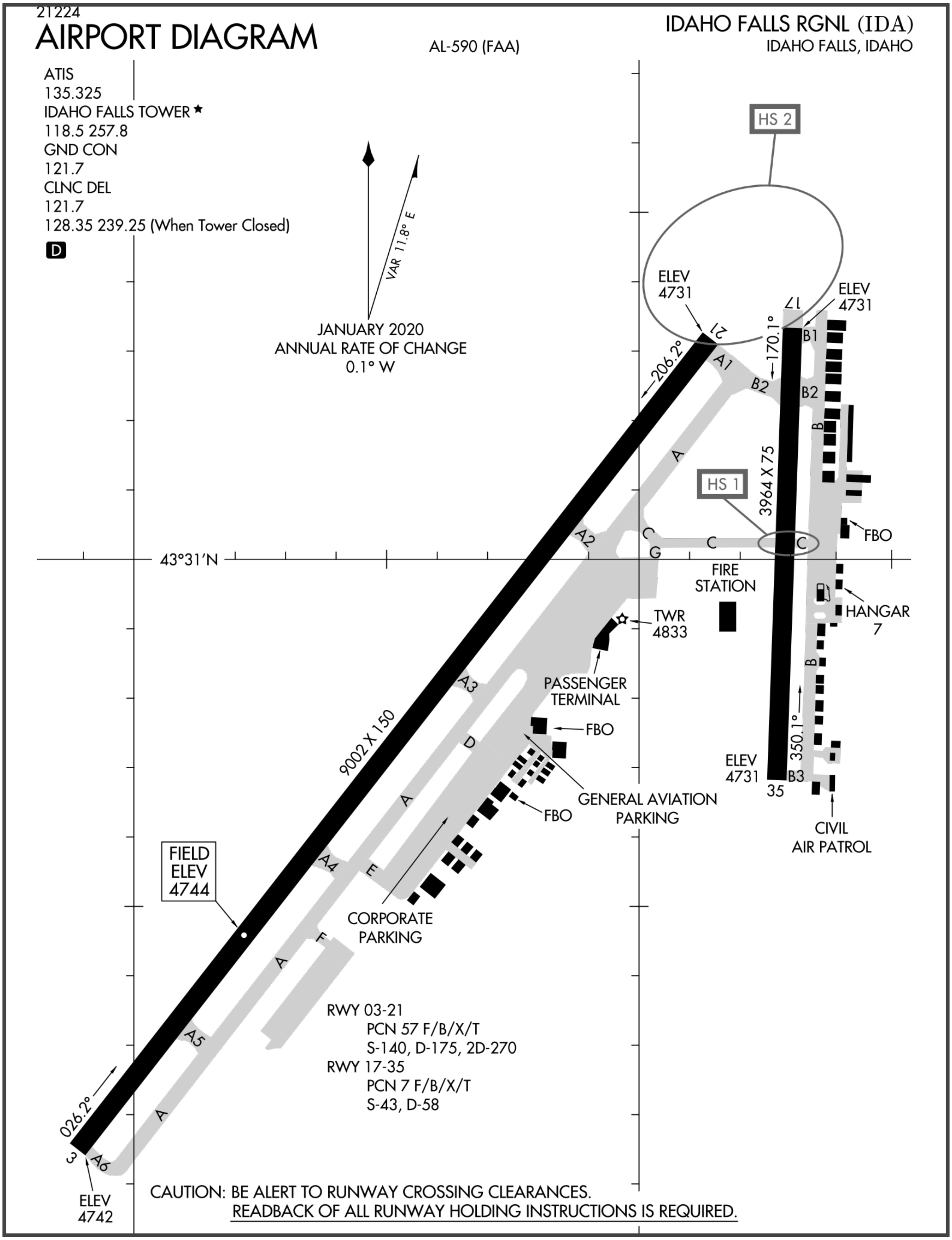
As shown in Figure 4.27, there are two hot spots, identified as HS 1 and HS 2, that are noted in the Chart Supplement for IDA. HS 1 is the intersection of Taxiway C and Runway 17/35. According to the Chart Supplement, pilots should use caution and look carefully for the runway hold line when using Taxiway C, as Runway 17/35 does not have runway edge markings and can be mistaken for a taxiway. However, in contradiction to the Chart Supplement, Runway 17/35 does have runway edge markings (Figure 4.26).

HS 2 is near the approach end of Runways 17 and Runway 21. Pilots often line up for Runway 17 when cleared to land on Runway 21.

Figure 4.26: Runway Edge Markings, Runway 17/35

Source: Ardurra.

Figure 4.27: Hot Spots



Source: FAA.

4.6. Navigational Aids and Lighting Systems

The airport is outfitted with multiple types of navigational aids (NAVAIDS) to assist pilots in obtaining the visual environment of the airport and enhance situation awareness.

4.6.1. Instrument Landing System

An instrument landing system (ILS) is a ground-based electronic NAVAID that enables pilots to execute a precision instrument approach procedure to a runway end. It consists of a localizer (LOC), glideslope (GS), and an approach lighting system. The localizer provides horizontal (left/right) guidance along the extended runway centerline, and the glideslope provides vertical (up/down) guidance to the runway touchdown point—typically at a three-degree glide path angle. Approach lights assist the pilot while transitioning from instrument to visual flight when close to the runway. This is in addition to distance measuring equipment (DME) which provides positive distance information to the touchdown point (if collocated with the GS) or another NAVAID listed in the approach procedure.

Instrument landing system approaches are categorized into three types of precision approaches based on the equipment at the airport and the experience level of the pilot. Category I approaches provide for an approach height above touchdown of not less than 200 feet. Category II approaches provide for an approach height above touchdown of not less than 100 feet. Category III approaches provide for an approach with no height minimum. Category II and III approaches require special equipment and pilot certification.

Runway 3/21 at IDA is equipped with an ILS that provides for Category I precision or non-precision approaches to Runway 21, and a non-precision approach to Runway 3 by way of a back course localizer. Runway 21 is equipped with a medium intensity approach lighting system with runway alignment indicator lights (MALSR) suited for a Category I approach.

4.6.2. Runway End Identifier Lights

Runway end identifier lights (REIL) are installed at runway ends to provide positive identification of that runway. The system consists of a pair of synchronized flashing lights placed laterally on each side of the runway threshold facing the approach to the runway. Runway 3 at IDA is the only runway equipped with REIL.

4.6.3. Precision Approach Path Indicators

Precision Approach Path Indicator (PAPI) systems aid pilots by providing visual glideslope guidance during landing. They consist of one row of two or four lights located on the left side of the landing runway at the approximate touchdown point. All runways at IDA are equipped with PAPI systems. Runway 17 is equipped with a two-light PAPI, and the others have four lights.

4.6.4. Segmented Circle and Wind Cones

A segmented circle helps pilots identify the aerial traffic pattern when flying under visual flight rules (VFR). Each airport has an established traffic pattern which has been developed to help pilots avoid obstacles like mountains, towers, and other aircraft. Runways 3/21 and 17/35 both have standard left-hand patterns. The segmented circle is typically centrally located on the airfield alongside the airport's primary wind cone. At IDA, they are both located just north of Taxiway C between Runway 17/35 and the approach end of Runway 21. It is lighted at night for improved visibility (Figure 4.28).

Federal regulation (14 CFR Part 139.323) requires commercial service airports to have supplemental wind cones located at the end of each runway available for air carrier use. Runway 3/21 is the only runway at IDA suitable for use by an air carrier. As such, it has supplemental wind cones located at each end.

Figure 4.28: Segmented Circle and Lighted Wind Cone

Source: Ardurra.

4.6.5. Very High Frequency Omnidirectional Range with Distance Measuring Equipment

A very high frequency omnidirectional range (VOR) is a ground-based NAVAID that is widely used within the National Airspace System (NAS). It is aligned with magnetic north and transmits azimuth information for high and low altitude routes and airport approaches. When the VOR is located alongside distance measuring equipment (DME), it is referred to as a VOR-DME. Together, they transmit both azimuth and distance information to aircraft.

There is a federally-owned VOR-DME located on the airfield between the approach ends of Runways 17 and 21 (Figure 4.29). Its identifier, IDA, is the same as the airport's. The VOR-DME is surrounded by a circular area with a 1,000-foot radius. This area is designated as critical, and structures are not permitted.

4.6.6. Airport Beacon

Airport beacons are rotating omni-directional lights mounted on tall towers or structures that indicate the location of the airport. Airport beacons normally operate from dusk until dawn or during the day when the airport is operating under instrument flight rules. In the United States, different types of airports, such as civilian land, water, or military, are represented by specific color combinations of the beacon. At civilian land airports, the beacon alternates between green and white lights. At IDA, the beacon is located atop the ATCT at the passenger terminal. There is also a historic beacon tower located at the east general aviation apron which is no longer in use.

Figure 4.29: **Very High Frequency Omnidirectional Range**

Source: Ardurra.

4.6.7. Automated Surface Observing System

An automated surface observing system (ASOS) is a weather sensing suite designed to assist pilots and flight planners by automatically providing up-to-date meteorological observations. These systems, which can have a variety of sensors, typically measure wind direction and speed, cloud ceiling height, visibility, air temperature, precipitation, dew point, barometric pressure, and humidity. An ASOS may be accessible via telephone, online, radio, or local computer terminal. The ASOS at IDA, which is federally owned, is located approximately 1,000 feet west of the approach end of Runway 21 next to the glideslope antenna. It is surrounded by a circular critical area with a 500-foot radius. The wind data collected by this system was used to create the wind roses and wind overlays included in Section 4.1.4. Wind Coverage.

4.6.8. Wind Equipment F-420 Wind System

The wind equipment F-420 (WEF) wind system provides a second source of required wind observations at towered airports. At IDA, the system is in the infield at the intersection of Taxiways A and C. It receives its power from the VOR-DME.

4.6.9. Runway Visual Range System

The runway visual range (RVR) system measures visibility, background luminance, and runway light intensity to determine how far a pilot should be able to see down the runway while taking off or landing. RVR is one of the components used in determining what the ILS minimums will be for each landing category. The RVR system at IDA consists of a single sensor array positioned on the west side of Runway 3/21 located approximately 1,500 feet from the Runway 21 threshold.

4.7. Airport Support Facilities

Support facilities at the airport consist of infrastructure and equipment used for airport maintenance, airfield lighting, access control, emergency response, and snow removal.

4.7.1. Snow and Ice Control

According to 14 CFR Part 139.313, a commercial service airport that is in an area where snow and ice conditions occur must prepare, maintain, and carry out a snow and ice control plan that is approved by the FAA. The plan must include provisions for prompt removal or control of snow, ice, and slush on the movement area; positioning of snow off the movement area to allow clearance for air carrier aircraft; selection and application of authorized materials to control ice and snow while minimizing engine ingestion; timely commencement of snow and ice control operations; and prompt airfield condition reporting to air carriers. FAA AC 150/5220-20A, *Airport Snow and Ice Control Equipment*, provides guidance to assist airport operators with selecting the type and quantity of snow and ice control equipment and with establishing priority areas for snow removal.

In 2010, the airport completed construction of a new 15,000-square-foot snow removal equipment (SRE) building (Figure 4.30). It is located on Borah Avenue between the long-term parking lot and the Aero Mark FBO building. In addition, there are two above-ground glycol storage tanks used for deicing aircraft. Both are located at the south end of the terminal apron and are adjacent to the employee parking lot. One belongs to Allegiant and holds 4,000 gallons. The other belongs to SkyWest and holds 6,000 gallons. Application of glycol is performed on the terminal apron.

Figure 4.30: Snow Removal Equipment Facility

Source: Ardurra.

4.7.2. Aircraft Rescue and Fire Fighting

IDA is an aircraft rescue and fire fighting (ARFF) Index B airport. This determination is made based on there being a minimum of five daily departures of air carrier aircraft measuring at least 90 feet but less than 126 feet in length (e.g., an Airbus 320 or Embraer 175).

As an ARFF Index B facility, the airport must meet **one** of the following two requirements:

- One vehicle capable of carrying at least 500 pounds of sodium based dry chemical, halon 1211, or clean agent and 1,500 gallons of water and the commensurate quantity of aqueous film forming foam (AFFF) for foam production.

Or two vehicles:

- One capable of carrying at least 500 pounds of sodium-based dry chemical, halon 1211, or clean agent; or 450 pounds of potassium-based dry chemical and water with a commensurate quantity of AFFF to total 100 gallons for simultaneous dry chemical and foam application.
- One capable of carrying an amount of water and the commensurate quantity of AFFF so the total quantity of water for foam production by both vehicles is at least 1,500 gallons.

According to 14 CFR Part 139.319, at least one ARFF vehicle must reach the midpoint of the farthest runway from its assigned position and begin application of the extinguishing agent within three minutes of the time of the alarm. Within four minutes of the time of the alarm, all other ARFF vehicles must reach the same point and begin application of the extinguishing agent.

ARFF, structural fire, and ambulance services are provided by the operations division of the City of Idaho Falls Fire Department. The ARFF station is located at the airport and is just east of the air cargo and rental car facilities at the end of Federal Way. This station, Fire Station 3, serves as both an ARFF station and a municipal station. There are two hospitals in Idaho Falls. Eastern Idaho Regional Medical Center (EIRMC) has 318 licensed beds and 399 physicians on staff.[10] Mountain View Hospital has 43 licensed beds.[11]

4.7.3. Fencing and Gates

The airport is fully fenced with a combination of six-foot and eight-foot fencing topped with a triple strand of barbed wire. The fence, which is approximately 5.7 miles long, serves the dual purpose of providing physical security for the airport and helping to prevent wildlife from entering airport property. Access points include 11 automatic vehicle gates and 10 pedestrian gates operated by keypads. There are 14 manual gates locked with padlocks.

4.7.4. Lighting Vault and Emergency Generator

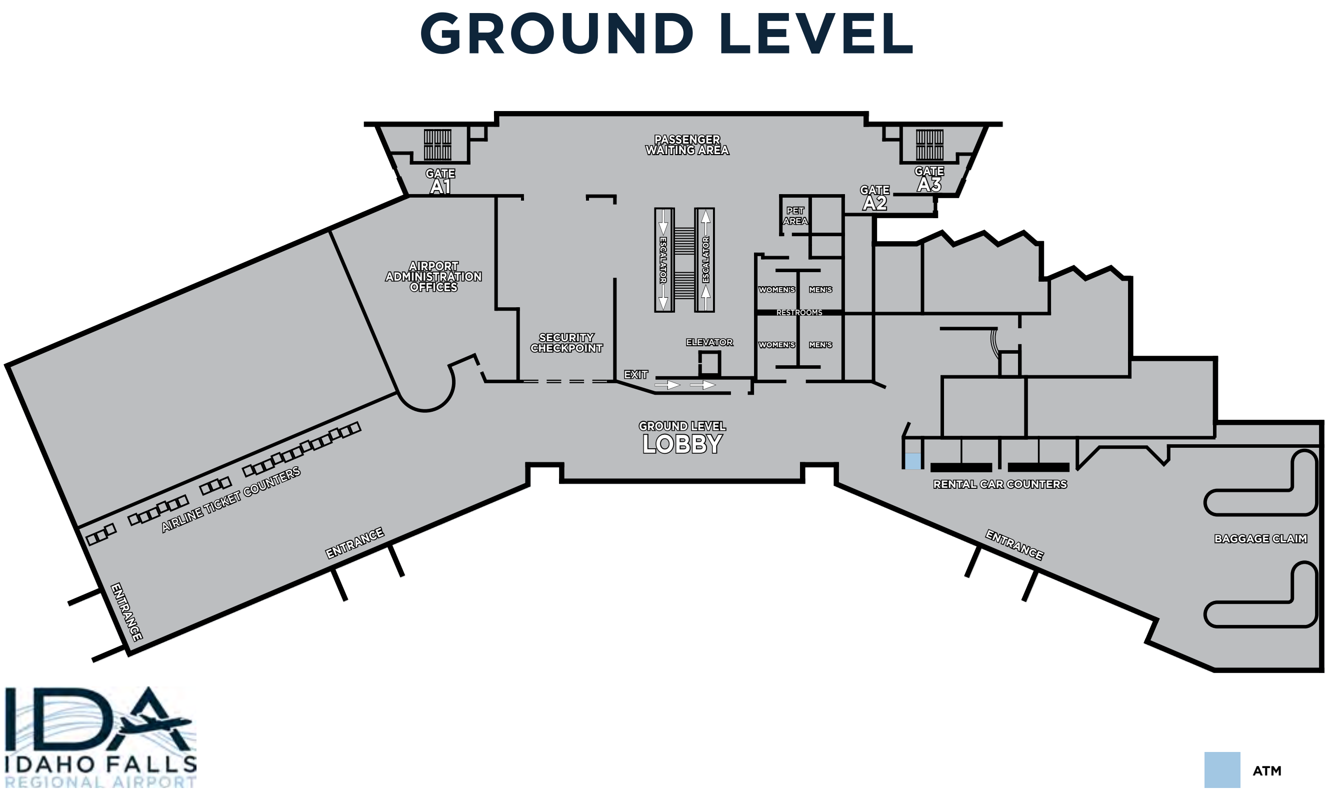
The airfield lighting vault is located inside the commercial terminal. There is also an emergency generator in the concrete structure located at the north end of the commercial terminal building along with a 1,000-gallon, above-ground, diesel fuel storage tank.

4.8. Commercial Terminal

The terminal is located at the end of North Skyline Drive. It was originally constructed in the late 1950s and opened in 1960. It has since gone through many upgrades and expansions. The most recent expansion, which is currently underway, will increase its size to approximately 72,000 square feet. This includes 51,000 square feet that is dedicated to passenger use. These renovations have an estimated completion date of spring 2022.

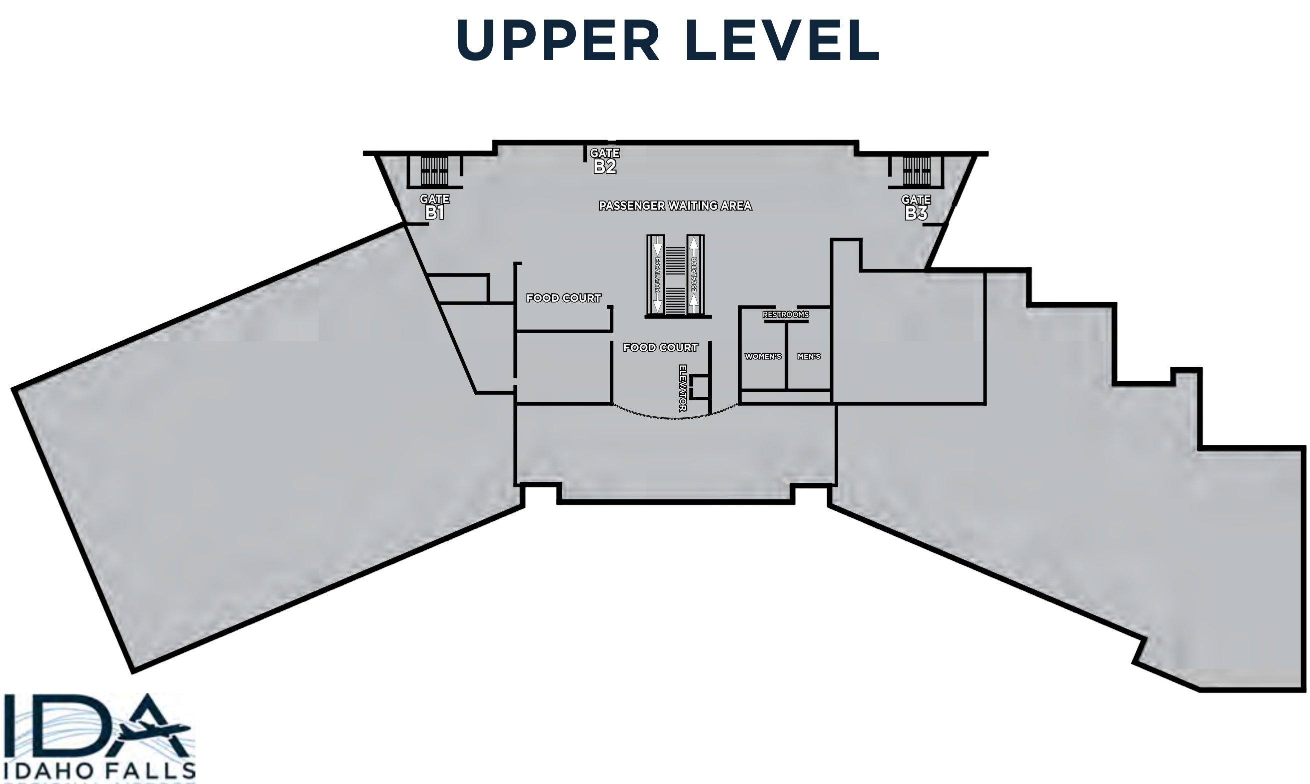
As shown in Figure 4.31 and Figure 4.32, the terminal is a two-story structure. There are three passenger gates on the first floor with covered walkways that allow passengers all-weather access when boarding and disembarking aircraft. There are also three passenger gates on the second floor with jet bridges that extend from the terminal gate to the aircraft.

Figure 4.31: Terminal Map, Ground Level



Source: Ardurra.

Figure 4.32: Terminal Map, Upper Level



Source: Ardurra.

Passenger processing occurs on the first floor. This includes curbside drop-off (Figure 4.33) and pick-up (Figure 4.34) as well as airline ticketing, security screening (Figure 4.35), baggage claim, and car rental check-out.

Figure 4.33: Departure Curbside

Source: Ardurra.

The airport administration offices are also on the first floor and are located behind the passenger access areas. This includes office space used by law enforcement, the Transportation Security Administration (TSA), and the airlines.

Figure 4.34: Arrival Curbside

Source: Ardurra.

Figure 4.35: Security Screening Area

Source: Ardurra.

The airline ticket counters are located in the south wing of the first floor near the airline and airport administration offices (Figure 4.36). As of July 2021, five airlines operating at IDA with nonstop service to 11 destinations. As shown in Table 4.11, three of these are currently seasonal routes.

Figure 4.36: Airline Ticket Counters

Source: Ardurra.

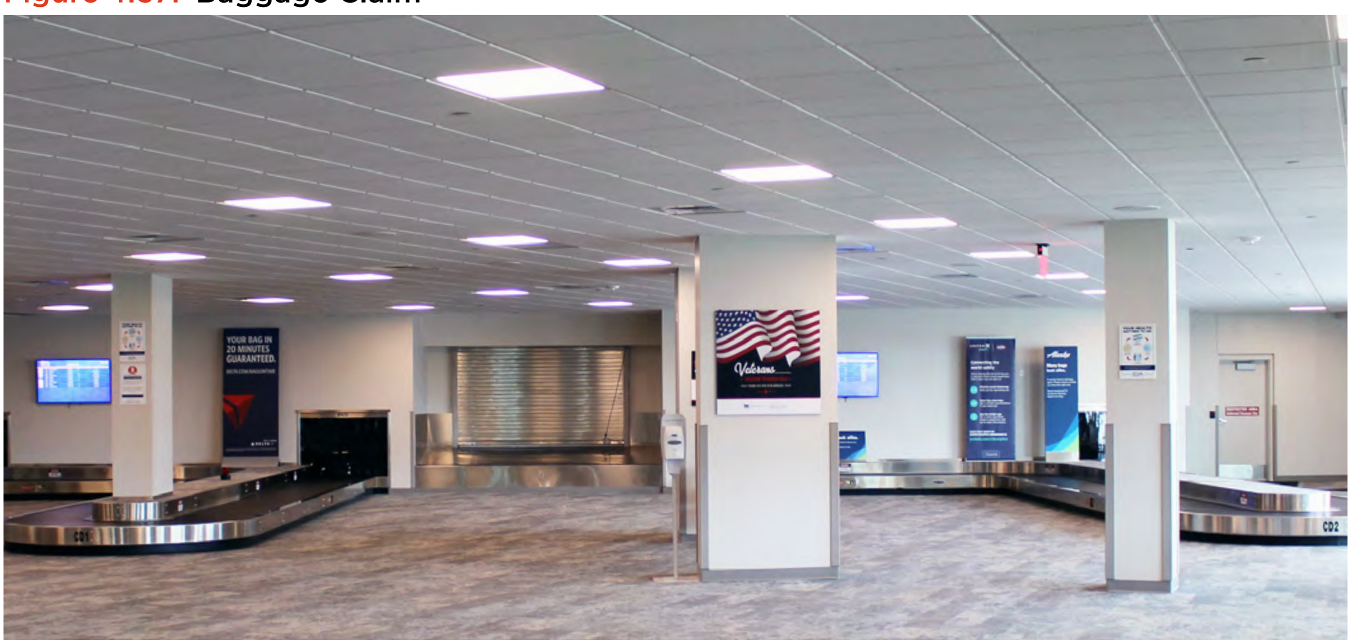
Table 4.11: Airline Service

Airline	Destination	Aircraft	ARC
Alaska (Horizon)	Seattle (SEA)	Q400	B-III
Allegiant	Las Vegas (LAS)	A319 & A320	C-III
Allegiant	Los Angeles (LAX)*	A319 & A320	C-III
Allegiant	Oakland/San Francisco (OAK)*	A319 & A320	C-III
Allegiant	Phoenix/Mesa (AZA)	A319 & A320	C-III
Allegiant	Portland (PDX)	A319 & A320	C-III
Allegiant	San Diego (SAN)*	A319 & A320	C-III
American (SkyWest)	Dallas/Fort Worth (DFW)	CRJ700	C-II
American (SkyWest)	Phoenix (PHX)	CRJ700	C-II
Delta (SkyWest)	Salt Lake City (SLC)	CRJ200 & CRJ700	C-II
United (SkyWest)	Denver (DEN)	CRJ200 & E175	C-II & C-III

*Seasonal
Source: Idaho Falls Regional Airport

The baggage claim area (Figure 4.37) and the car rental counters (Figure 4.38) are both located in the north wing of the first floor of the terminal. There are six rental car agencies at IDA which include Alamo, Avis, Budget, Enterprise, Hertz, and National.

Figure 4.37: Baggage Claim



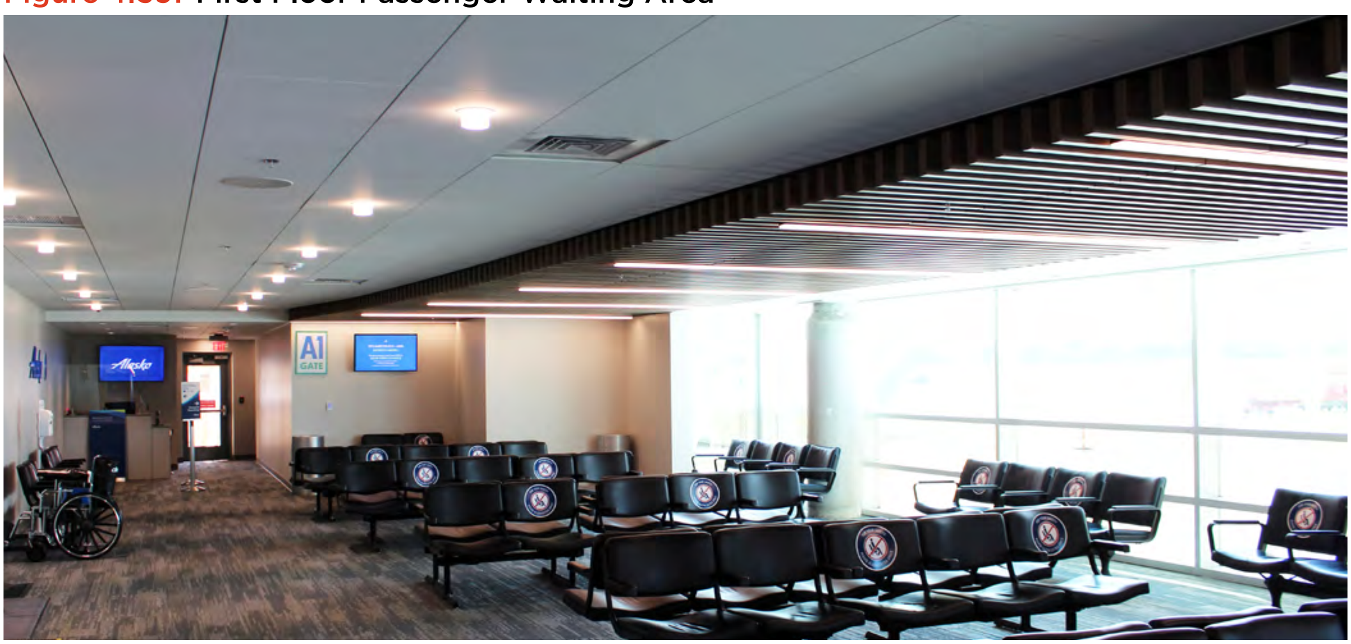
Source: Ardurra.

Figure 4.38: Rental Car Services

Source: Ardurra.

There are passenger waiting areas located at the passenger gates for each floor. The waiting area located on the first floor is shown in Figure 4.39.

Figure 4.39: First Floor Passenger Waiting Area



Source: Ardurra.

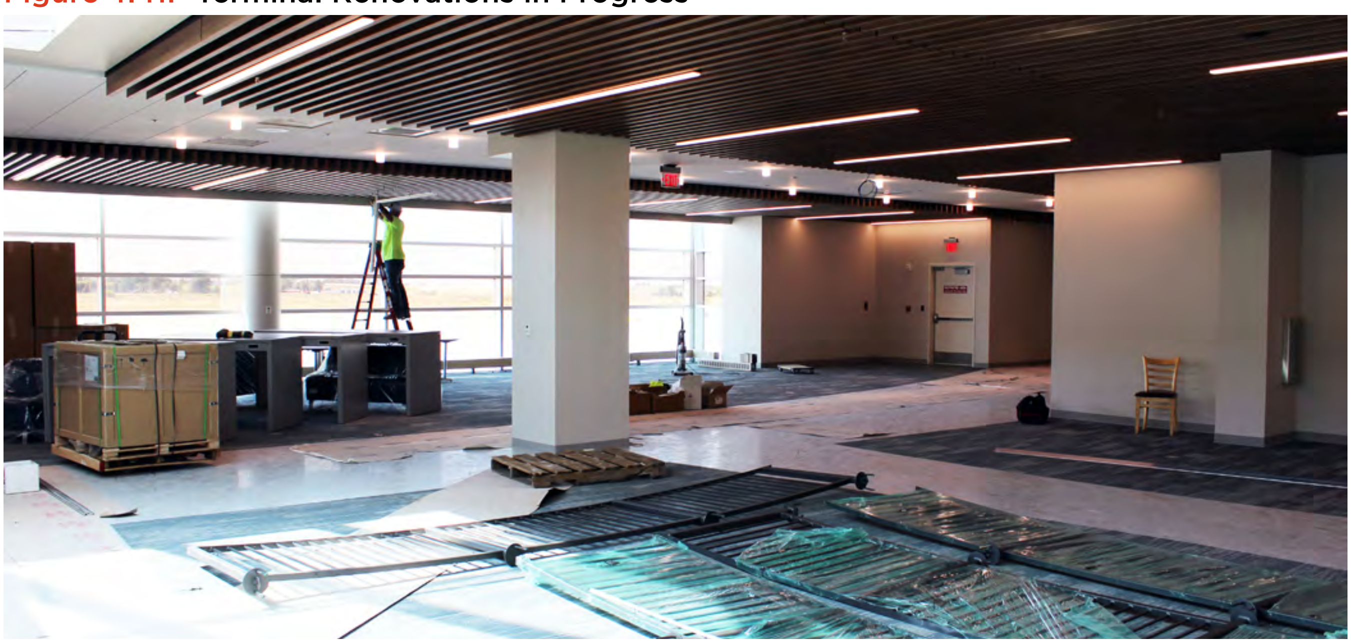
Passenger amenities in the terminal waiting areas include a restaurant, food court, restrooms, a pet relief area, an ATM, free Wi-Fi, and electronic charging stations. The majority of the concessions are closed during the terminal renovations. The temporary concession stand is shown in Figure 4.40.

Figure 4.40: Terminal Amenities

Source: Ardurra.

The terminal renovations, which are shown in Figure 4.41, have an estimated completion date of spring 2022.

Figure 4.41: Terminal Renovations in Progress



Source: Ardurra.

4.9. Commercial Terminal Parking Areas

Parking for the terminal is separated into short-term hourly, short-term daily, and long-term parking. These lots are all accessed via North Skyline Drive (Figure 4.42). The short-term parking lot has approximately 435 spaces and the long-term parking lot has approximately 478 spaces for a combined total of 913 spaces. Parking services are managed under contract by SP Plus Corporation (SP+).

The employee parking lot, which is located south of the terminal between North Skyline Drive and the terminal apron, has approximately 72 parking spaces. This lot is accessed via Borah Avenue.

Figure 4.42: Parking Signage

Source: Ardurra.

4.10. Car Rental Parking Facilities

The car rental parking lots are located just outside the terminal building and are adjacent to the north parking apron next to the air cargo facility.[4] The total parking area is approximately 3.5 acres in size, and most of this space is used as a staging area for the rental fleet.

Enterprise uses a large vehicle washing building which is located to the south of the cargo facility. It can be accessed via Federal Way, Skyline Drive, or the rental car staging area. Hertz and Avis/Budget have their own wash stations in their respective areas within the staging area.

4. The north parking apron is currently being used as an equipment staging area.

4.11. Fixed Base Operator

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

Aero Mark, which is the only FBO at the airport, has three on-site locations. The two main buildings are located at the FBO apron with the primary building situated near the apron midpoint, and the other building is located at the north end of the apron just west of the snow removal equipment building (Figure 4.43). Aero Mark also operates a third location out of the Red Baron Hangar located at the east general aviation area. While the FBO serves the majority of its customers from one of the two main buildings, this third location mainly caters to local GA customers.

Figure 4.43: FBO Building

Source: Ardurra.

4.12. East General Aviation Area and Airport Historic District

The east general aviation area, which is located east of Runway 17/35 and Taxiway B, is accessed from Foote Drive. The Idaho Falls Airport Historic District, which consists of the Red Baron Hangar (Figure 4.44), caretaker's cabin, and beacon tower, is located here. Together, these historically significant buildings are rare surviving examples of the 1930s pioneering era of aviation.

The remainder of the east general aviation area extends north and south of the historic district along the full length of Taxiway B and Runway 17/35. There is a self-serve fuel island at the south end of the main parking apron, as well as a compass calibration pad (Figure 4.45). As shown in Figure 4.46, there are 45 hangar structures of various sizes.

Figure 4.44: Historic Red Baron Hangar

Source: Ardurra.

4.13. Non-Aeronautical Areas

There are numerous non-aeronautical uses within the IDA property. Some directly support aeronautical uses, such as car rental facilities, while others provide the airport with additional sources of revenue through leases and use agreements. It is important to note that the airport flight areas cannot be directly accessed from these non-aeronautical use areas.

Figure 4.45: East General Aviation Apron and Compass Rose

Source: Ardurra.

Figure 4.46: Hangars

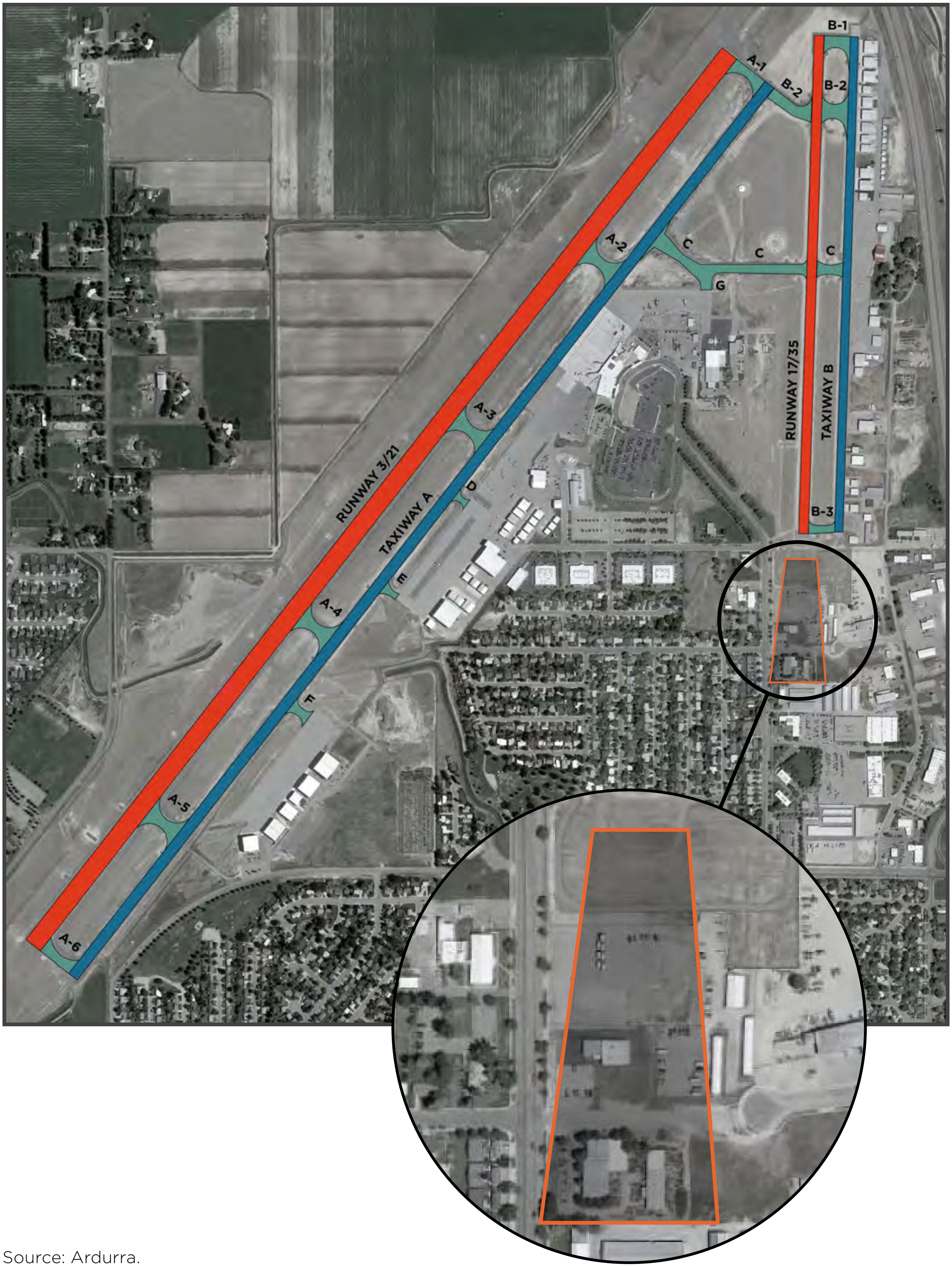
Source: Ardurra.

Non-aeronautical uses at IDA include the Old Butte Park and Soccer Complex, the Idaho Falls Dog Park, the Snake River Animal Shelter, railroad tracks, a community garden, farming, a storage facility, an air resources laboratory, and a parking lot used by people employed at an off-site commercial complex. There is also an educational software company located on airport property just east of this parking lot (Figure 4.47). In addition, there is an industrial park located to the south of the Runway 35-end. As shown in Figure 4.48, portions of this complex are within the runway protection zone (RPZ) for Runway 35.

Figure 4.47: Commercial Building

Source: Ardurra.

Figure 4.48: Runway 35 Runway Protection Zone



Source: Ardurra.

4.14. Utilities

The airport is served by common utilities including water, sewer, communications, power, and gas. Idaho Falls Fiber provides internet services to the city offices located in the terminal building, and, by extension, this includes telephone service because the city uses voice over internet protocol (VoIP). Each of the tenants located within the terminal building (e.g., airlines and car rental agencies) use their own internet service providers. The public Wi-Fi service is provided by Silver Star Communications. Electricity is provided by Idaho Falls Power, and natural gas is provided by Intermountain Gas Company. The terminal cooling system is electric, and the heating system is a natural gas-powered boiler. Water and sewer services are provided by the City of Idaho Falls via two eight-inch pipes. The terminal apron deicing pad which drains into a separator and then to the sanitary sewer. The airport provides on-site dumpsters for waste management which are then serviced by the City of Idaho Falls Sanitation Department. Stormwater is handled through a series of inlets, swales, and retention basins on the airport property. No stormwater is discharged off-airport.

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FORECAST OF AVIATION ACTIVITY

5

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CHAPTER FIVE

FORECAST

The forecast is a critical component of the airport master planning process. It is used to help understand and anticipate the commercial service and general aviation (GA) activity that is expected to occur at the airport during the 20-year planning period of 2021-2041. It also provides the basis for guiding airport development needed to meet future demand.

5.1. Introduction

An effective forecast should be realistic, based on current data, and developed using appropriate methods. Developing a forecast for an airport master plan involves considering a variety of factors that can vary in complexity—such as the size and location of the airport, the type of aircraft using the airport, and activity levels. However, every forecast is developed using the same series of basic steps. As outlined in FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*, these steps 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 this airport master plan includes projections of aviation activity for Idaho Falls Regional Airport for the 20-year planning period of 2021–2041. It also includes projections for a short-term planning horizon of five years and for a medium-term planning horizon of ten years. Each of these projections uses 2021 as the base year when applying the selected forecasting methodology.

5.2. Existing Aviation Activity and Forecast Summary

It is important to first identify existing aviation activity in order to make sure the forecast includes all relevant activities likely to affect airport facilities. Idaho Falls Regional Airport is a primary, non-hub, commercial service airport that also supports significant general aviation activity as well as military operations. This forecast will address aircraft operations (i.e., takeoffs and landings), passenger enplanements, and based aircraft as well as the aircraft fleet mix and critical aircraft.

5.2.1. Aircraft Operations

Aircraft operations are separated into three main categories—commercial service, general aviation, and military operations. These operations are then classified as either itinerant or local. In general, local operations are flights that originate and terminate at the same airport while itinerant operations are flights that originate and terminate at different airports.

a. Commercial Service

Commercial service operations can include air carrier, commuter, and air taxi operations. In general, air carrier operations are conducted using aircraft with more than 60 seats while both commuter and air taxi operations are conducted using aircraft with less than 60 seats. The difference between commuter and air taxi operations is that commuter service is scheduled, and air taxi service is not scheduled.[1] In other words, air carrier operations are regularly scheduled flights on larger aircraft, commuter operations are typically shorter flights on smaller aircraft, and air taxi operations are typically shorter flights provided by smaller, boutique airlines on an on-demand basis (e.g., sightseeing or charter flights).

It is important to note that these three types of commercial operations are not handled the same way in every forecast. For example, in the TAF, the FAA considers air taxi and commuter operations to be one category because they both involve smaller aircraft while the IASP combines all three types into one category. However, in preparing the forecast for this airport master plan, air carrier and commuter operations are considered to be commercial service because they are both scheduled service while air taxi operations are considered to be general aviation operations because they are not scheduled.

Commercial service passenger operations are expected to increase from 7,856 in 2021 to 9,570 in 2041 with a compound annual growth rate (CAGR) of 0.99%. All-cargo operations are expected to increase from 676 in 2021 to 1,071 in 2041 with a CAGR of 2.33%. Overall, commercial service operations are expected to increase from 8,532 in 2021 to 10,641 in 2041 with a CAGR of 1.11%.

b. General Aviation

General aviation typically includes all operations that are not scheduled commercial service or military operations. These are typically charter flights, privately owned aircraft used for business or personal travel, flight training, recreation, and medical transport or other types of emergency services.

Itinerant GA operations are expected to increase from 17,228 in 2021 to 20,610 in 2041 with a CAGR of 0.90%. Local GA operations are expected to increase from 7,402 in 2021 to 8,244 in 2041 with a CAGR of 0.54%. Overall, GA operations are expected to increase from 24,630 in 2021 to 28,854 in 2041 with a CAGR of 0.79%.

c. Military

Unless there is specific knowledge of an upcoming change, military operations are typically forecast at existing levels because the Department of Defense provides limited details regarding future activity levels. IDA supports frequent yet unpredictable levels of military operations, and there are no reliable indicators suggesting military operations will increase during the 20-year planning period.

Based on the TAF forecast, itinerant military operations are expected to increase from 259 operations in 2021 to 389 in 2041 with a CAGR of 2.05%, and local military operations are expected to remain at 235 operations for an overall total of 624 annual military operations.

5.2.2. Passenger Enplanements

The passenger enplanements forecast is particularly important because it will help determine future requirements for airport facilities necessary for accommodating passengers such as the size of the terminal and parking facilities. A variety of factors and trends must be taken into consideration in order to develop an effective forecast for passenger enplanements such as socioeconomic trends as well as the airline and aviation industry trends that affect the airport.

The forecast for passenger enplanements was determined by examining historical activity levels at the airport, examining the impacts of COVID-19, and determining how industry trends will affect passenger retention rates at IDA. Overall, passenger enplanements are expected to increase from 223,741 in 2021 to 326,041 in 2041 with a CAGR of 1.90%.

5.2.3. Air Cargo by Volume

The forecast for cargo by volume was developed based on increased demand due to the rise in online shopping. Total annual cargo volumes are forecast to grow from approximately 6.29 million pounds in 2021 to approximately 13.49 million pounds in 2041, a CAGR of 3.89%.

5.2.4. Based Aircraft

The type, size, and number of aircraft based at an airport are important factors to consider when analyzing airport capacity, facility requirements, and planning future development. This is because the forecast of based aircraft can indicate a need for new hangar space as well as new or expanded services. It can also impact facility requirements for runways, taxilanes, and aprons.

The forecast for based aircraft is based on the historical trend for based aircraft from 2010 to 2019. Overall, based aircraft are expected to increase from 125 in 2021 to 165 in 2041 with a CAGR of 1.39%.

5.2.5. Critical Aircraft

The critical aircraft is the most demanding type of aircraft, or group of aircraft with similar characteristics, that regularly use the airport. (Regular use is defined as a minimum of 500 annual operations; excluding touch-and-go operations).[2] The critical aircraft is often referred to as the design aircraft because is used to determine the correct design standards for certain areas of the airport, such as the separation distance between taxiways and runways.

For airports like IDA where the infrastructure must support a wide range of aircraft and operations, it is wise to identify separate commercial service, air cargo, and general aviation critical aircraft. Although the commercial service critical aircraft will be the driver for the runway and primary taxiway design standards, the general aviation and cargo critical aircraft will aid in planning and developing the areas of the airport that cater to general aviation and cargo operations.

a. Commercial Service

The critical aircraft for commercial service is the Airbus A320. However, the Bombardier Q-400 will be used to determine the standard for taxiway design because this aircraft is the most demanding aircraft relating to taxiway requirements.

b. Air Cargo

The critical aircraft for air cargo is the ATR 72.

c. General Aviation

The critical aircraft for general aviation is the Bombardier Challenger 300 (CL30).

5.2.6. Forecast Summary

Table 5.1 summarizes the forecast of aircraft operations, passenger enplanements, cargo volumes, and based aircraft that have been developed for this airport master plan. However, 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 developments at the local, regional, and national levels. A copy of the FAA approval of this airport master plan forecast is included as **Appendix B: Forecast Approval**.

Table 5.1: Forecast Summary

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
Operations							
Passenger Aircraft	7,856	9,468	9,484	9,570	3.80%	1.90%	0.99%
All-Cargo Aircraft	676	843	918	1,071	4.51%	3.11%	2.33%
Total Commercial	**8,532**	**10,311**	**10,402**	**10,641**	**3.86%**	**2.00%**	**1.11%**
Itinerant GA	17,228	18,017	18,843	20,610	0.90%	0.90%	0.90%
Local GA	7,402	7,604	7,812	8,244	0.54%	0.54%	0.54%
Total GA	**24,630**	**25,621**	**26,655**	**28,854**	**0.79%**	**0.79%**	**0.79%**
Itinerant Military	259	286	319	389	2.00%	2.11%	2.05%
Local Military	235	235	235	235	0.00%	0.00%	0.00%
Total Military	**494**	**521**	**554**	**624**	**1.07%**	**1.15%**	**1.17%**
Total Operations	**33,656**	**36,453**	**37,611**	**40,119**	**1.61%**	**1.12%**	**0.88%**
Passengers							
Total Enplanements	**223,741**	**289,508**	**300,869**	**326,041**	**5.29%**	**3.01%**	**1.90%**
Cargo							
Total Weight	**6,288,882**	**9,952,995**	**11,072,550**	**13,488,226**	**9.62%**	**5.82%**	**3.89%**
Based Aircraft							
Single-Engine	93	101	109	123	1.66%	1.60%	1.41%
Multi-Engine	20	22	24	28	1.92%	1.84%	1.70%
Jet	5	5	5	6	0.00%	0.00%	0.92%
Helicopter	4	4	4	5	0.00%	0.00%	1.12%
Glider	3	3	3	3	0.00%	0.00%	0.00%
Total Based Aircraft	**125**	**135**	**145**	**165**	**1.55%**	**1.50%**	**1.39%**

Source: IDA, U.S. Department of Transportation, FAA, Ricondo & Associates, Inc., Ardurra.

5.3. Historical Aviation Activity

It is important to assemble the airport's historical aviation activity and identify past trends before preparing the forecast. Understanding the airport's usage patterns and historical demand for aviation services is used to help analyze the accuracy of previous forecasts, develop the forecast, and evaluate the results. Table 5.2 summarizes the historical activity levels at the airport for 2011-2020.

Table 5.2: Historical Aviation Activity, 2011–2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Operations										
Air Carrier	594	806	1,098	973	1,218	1,325	1,268	1,349	2,002	2,029
Air Taxi & Commuter	8,982	8,318	8,502	10,740	10,060	11,102	11,258	6,070	5,398	3,978
Total Commercial	**9,576**	**9,124**	**9,600**	**11,713**	**11,278**	**12,427**	**12,526**	**7,419**	**7,400**	**6,007**
Itinerant GA	13,612	13,916	12,517	13,123	13,695	10,055	9,644	12,240	13,565	11,046
Local GA	14,097	15,816	13,516	8,696	8,881	5,514	5,931	6,680	6,170	7,034
Total GA	**27,709**	**29,732**	**26,033**	**21,819**	**22,576**	**15,569**	**15,575**	**18,920**	**19,735**	**18,080**
Itinerant Military	176	112	128	163	214	288	259	243	249	181
Local Military	8	32	74	14	92	142	137	96	235	168
Total Military	**184**	**144**	**202**	**177**	**306**	**430**	**396**	**339**	**484**	**349**
Total Operations	**37,469**	**39,000**	**35,835**	**33,709**	**34,160**	**28,426**	**28,497**	**26,678**	**27,619**	**24,436**
Passengers										
Air Carrier	41,842	50,443	47,779	48,242	45,816	39,946	41,901	42,858	46,160	31,083
Air Taxi & Commuter	104,624	108,724	104,426	111,891	108,934	105,971	104,451	113,266	129,485	81,973
Total Enplanements	**146,466**	**159,167**	**152,205**	**160,133**	**154,750**	**145,917**	**146,352**	**156,124**	**175,645**	**113,056**
Based Aircraft										
Total Based Aircraft	**166**	**170**	**170**	**170**	**167**	**171**	**168**	**171**	**171**	**171**

CAGR	Operations	Passengers	Based Aircraft
2011–2020	-4.64%	-2.84%	0.33%

Source: FAA, TAF

5.3.1. Aircraft Operations

Airport traffic control tower (ATCT) personnel collect operations data when the tower is open. The following sections summarize the historical data for each of the three main categories of aircraft operations.

a. Commercial Service Operations

Commercial service operations at the airport have fluctuated between a high of 12,526 in 2017 to a low of 6,007 in 2020. The CAGR was 14.62% for air carrier operations, -8.65% for air taxi and commuter operations, and -5.05% overall for 2011 to 2020.

b. General Aviation Operations

General aviation operations make up the majority of the operations flown at IDA. General aviation operations have fluctuated between a high of 29,732 in 2012 to a low of 15,575 in 2017. This generally echoes national trends for general aviation activity, and it reflects how closely tied GA activity is to the U.S. economy. The CAGR was -2.29% for itinerant general aviation operations, -7.43% for local general aviation operations, and -4.63% overall for 2011 to 2020.

c. Military Operations

Military operations at the airport have fluctuated between a high of 484 in 2019 to a low of 144 in 2012. It is typical to see this type of variance in military operations as the Department of Defense alters its operational requirements. The CAGR was 0.31% for itinerant military operations, 40.25% for local military operations, and 7.37% overall for 2011 to 2020.

5.3.2. Passenger Enplanements

Passenger activity levels have fluctuated between a high of 175,645 in 2019 and a low of 113,056 in 2020. The CAGR was -3.25% for air carrier passengers, -2.67% for air taxi and commuter passengers, and -2.84% overall for 2011 to 2020.

5.3.3. Based Aircraft

A based aircraft is any operational and airworthy aircraft that is based at the airport for the majority of the year.[3] The number of aircraft based at the airport has fluctuated between a high of 171 to a low of 166. The overall CAGR for based aircraft was 0.33% for 2011-2020.

The airport provides the FAA with an annual inventory of based aircraft which is then used by the FAA to update the TAF forecast for the airport. The Airport Master Record, FAA Form 5010-1 for Idaho Falls Regional Airport, indicates a total of 171 aircraft were based at the airport for 2021. However, airport management reports 125 aircraft were actually based at the airport for 2021. The airport records, which show approximately 93 single engine piston aircraft, 20 multi-engine, five jets, four helicopters, and three gliders, will be used as the baseline in this forecast.

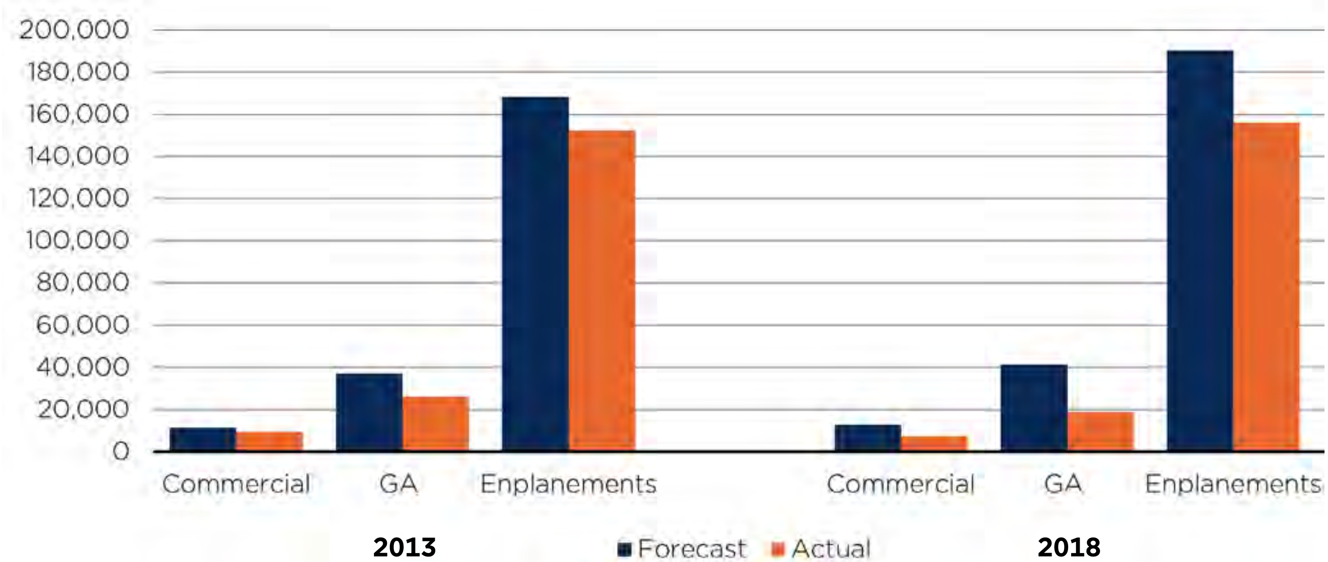
5.4. Review of Previous Forecasts

When preparing a forecast of aviation demand, it is important to examine previous forecasts that have been prepared for the airport. This includes the forecast prepared as part of the previous airport master plan, the Terminal Area Forecast prepared for the airport by the FAA, and the forecast included with the 2020 Idaho Airport System Plan Update. These forecasts should be examined in terms of the assumptions made at the time as well as the actual projections. Analyzing the accuracy of previous forecasts can be helpful in identifying past trends and changes in the aviation industry that have affected the airport's usage patterns.

5.4.1. 2010 Airport Master Plan Forecast

The previous airport master plan for Idaho Falls Regional Airport, which uses 2008 as the base year, was completed in 2010. A comparison of the 2010 forecast to actual operations data is shown in Figure 5.1.

Figure 5.1: 2010 Airport Master Plan Forecast



Source: 2010 Airport Master Plan; FAA, TAF

The previous forecast was based on the assumption that enplanement rates would grow at a slower rate than the population projections. It was also based on the economy, which was expected to slow down during the forecast period.

Based on these assumptions, commercial operations were forecast to increase from 10,392 in 2008 to 12,938 in 2018 while the TAF reflects 7,419 commercial service operations in 2018. General aviation operations were forecast to increase from 33,404 in 2008 to 41,448 in 2018 while the TAF shows 18,920 GA operations in 2018. Passenger enplanements were forecast to increase from 148,798 in 2008 to 190,473 in 2018 while the TAF reflects 156,124 passenger enplanements in 2018.

5.4.2. Terminal Area Forecast for Idaho Falls Regional Airport

The Terminal Area Forecast (TAF) is the FAA's official forecast of aviation activity for all U.S. airports included in the National Plan of Integrated Airport Systems (NPIAS). This forecast is published annually, and the current edition is *Terminal Area Forecast, Fiscal Years 2021–2045*. This report contains historical and forecast data for itinerant and local operations as well as enplanements (i.e., revenue paying passengers boarding commercial flights) and based aircraft. This forecast is developed based on local and national economic conditions as well as conditions affecting the aviation industry.[4] The FAA's TAF projection for Idaho Falls Regional Airport provides an important point of comparison when developing local forecasts and is discussed throughout this chapter.

As shown in Table 5.3, the TAF shows Idaho Falls Regional Airport had an estimated 2,145 commercial operations in 2021. These are expected to increase at a CAGR of 2.96% and are expected to reach 3,843 in 2041. The airport also had approximately 25,800 general aviation operations and 494 military operations in 2021. General aviation operations are forecasted to decrease at a CAGR of -0.09% and are expected to total 25,327 in 2041 while military operations are expected to total 624 in 2041. The airport had an estimated 149,954 passenger enplanements in 2021. These are forecasted to increase at a CAGR of 2.49% and are expected to reach 245,318 in 2041. According to the TAF, the airport is expected to have 171 based aircraft in 2041.

Table 5.3: Terminal Area Forecast, Idaho Falls Regional Airport, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
Operations							
Total Commercial Svc.	2,145	2,933	3,217	3,843	6.46%	4.14%	2.96%
Total General Aviation	25,800	24,086	24,485	25,327	-1.37%	-0.52%	-0.09%
Total Military	494	521	554	624	1.07%	1.15%	1.17%
Total Operations	**28,439**	**27,540**	**28,256**	**29,794**	**-0.64%**	**-0.06%**	**0.23%**
Passengers							
Total Enplanements	**149,954**	**183,637**	**203,658**	**245,318**	**4.14%**	**3.11%**	**2.49%**
Based Aircraft							
Total Based Aircraft	**171**	**171**	**171**	**171**	**0.00%**	**0.00%**	**0.00%**

Source: FAA, TAF

5.4.3. Idaho Airport System Plan Forecast for Idaho Falls Regional Airport

The Idaho Transportation Department Division of Aeronautics provides a statewide forecast for both commercial service and general aviation airports. This report is published annually, and *2020 Idaho Aviation System Plan (IASP) Update* is the current edition.[5] The 2020 IASP Update used 2017 as the base year with a 20-year planning horizon ending in 2037. This forecast uses a combination of national, state, and local data to examine three main indicator categories—annual operations, enplanements, and based aircraft. While the agency uses data from the FAA, individual airport reports, and aviation industry reports to help develop its forecast, it uses the TAF as the common baseline, rather than data reported by the individual airports, to help ensure consistency. The agency did note some differences between the TAF and the airport-reported data, but they are relatively minor with an approximate statewide difference of less than 1%.

As shown in Table 5.4, Idaho Falls Regional Airport had 12,526 commercial operations in 2017. According to the 2020 IASP Update, these are forecasted to increase at a CAGR of 0.34% and are expected to reach 13,394 in 2037. The airport also had 15,575 general aviation operations and 396 military operations in 2017. General aviation operations are forecasted to increase at a CAGR of 0.41% and are expected to reach 16,911 in 2037. Military operations are forecasted to increase at a CAGR of 1.46% and are expected to reach 529 in 2037. The airport had 145,730 passenger enplanements in 2017. These are forecasted to increase at a CAGR of 1.74% and are expected to reach 205,584 in 2037. The airport had 171 based aircraft in 2017, and based aircraft are expected to remain at 171 during the forecast period.

Table 5.4: Idaho Airport System Plan, Idaho Falls Regional Airport, 2017–2037

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2017	2022	2027	2037	5-Year	10-Year	20-Year
Operations							
Total Commercial Svc.	12,526	11,795	12,304	13,394	-1.20%	-0.18%	0.34%
Total General Aviation	15,575	16,343	16,530	16,911	0.97%	0.60%	0.41%
Total Military	396	421	449	529	1.23%	1.26%	1.46%
Total Operations	**28,497**	**28,559**	**29,283**	**31,374***	**0.04%**	**0.27%**	**0.39%**
Passengers							
Total Enplanements	**145,730**	**154,619**	**170,401**	**205,584**	**1.19%**	**1.58%**	**1.74%**
Based Aircraft							
Total Based Aircraft	**171**	**171**	**171**	**171**	**0.00%**	**0.00%**	**0.00%**

*Table 4-14, 2020 IASP includes this math error.

Source: 2020 IASP Update

5.5. Factors Affecting Aviation Activity

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

5.5.1. National Aviation Forecast, FAA Aerospace Forecast, Fiscal Years 2021–2041

Local aviation trends generally follow national trends. Therefore, it is necessary to analyze the industry from a broad perspective and then apply local socioeconomic factors to refine the forecast. The FAA publishes an annual update of the agency's national aviation forecast. While the forecast is prepared to the meet budget and planning needs of the FAA, it is also widely used by state and local authorities, the aviation industry, and the general public. It is developed using statistical models to explain and incorporate emerging trends for each segment of the aviation industry including commercial airlines, cargo operations, GA, unmanned aircraft systems, and commercial space travel. The following discussion is summarized from the current edition, *FAA Aerospace Forecast, Fiscal Years 2021–2041*.[6]

The U.S. airline industry, which has a long history of volatility, has experienced steady and significant growth since the end of the Great Recession in 2009. The recession required the airlines to refine their business models and minimize losses by lowering operating costs, eliminating unprofitable routes, and grounding older, less fuel-efficient aircraft. The results of these efforts were impressive, and 2019 marked the eleventh consecutive year of profitability for the industry. However, this was brought to a rapid end in 2020 by the COVID-19 pandemic. Despite this significant blow, the FAA's forecast anticipates a return to the long-term growth trend for the U.S. airline industry. The agency also notes that recent data indicates the potential pace of recovery for the aviation industry is faster than previously expected. This is due, in part, to COVID-19 relief bills, the rapid availability of vaccinations, reduced rates in transmissions, and pent-up demand.[7]

a. National Forecast for Commercial Service

The recovery from the pandemic will drive the near-term growth. Consequently, elevated growth is predicted to last until around 2025 and 2026. After operations reach pre-pandemic levels, the longer term economic health, along with the growth in air travel demand, will drive the long-term growth in operations at FAA facilities for the rest of the forecast period. The FAA's domestic baseline forecast assumes that economic growth rebounds moderately in 2021 and then remains slightly above trend in the medium-term. The unemployment rate retreats gradually, reaching its pre-pandemic rate in 2024. Oil prices remain moderate by historic standards and there are no external shocks.[8]

The following points are also of particular importance:

- Economic Growth: According to forecasts by IHS Markit, real gross domestic product (GDP) in the U.S. is anticipated to grow 2.4% per year.
- Enplanements: Domestic enplanements are expected to grow at an average annual rate of 4.9% per year.
- Load Factors: The domestic load factor is expected to increase from 68.7% to 86.6%.
- Seat Capacity: Expected to increase an average of 4.0% per year for domestic markets.
- Air Carriers: Average seats per aircraft mile is expected to increase from 171 in 2021 to 177.4 in 2041.
- Air Carrier: Operations are expected to increase at an average rate of 4.2%.
- Regional Carriers: Average seats per aircraft mile is expected to increase from 66.4 in 2021 to 68.9 in 2041.
- Regional Carriers: The overall fleet is expected to grow at an average rate of 0.4% per year. This includes an average decrease of 6.2% for non-jet aircraft and an increase of 1.3% for jet aircraft each year.
- Air Taxi and Commuter: Operations are expected to increase at an average rate of 1.1% per year.
- Air Cargo: Revenue ton miles are expected to increase at an average rate of 1.6% domestically for all-cargo carriers and 1.7% for passenger carriers.

b. National Forecast for General Aviation

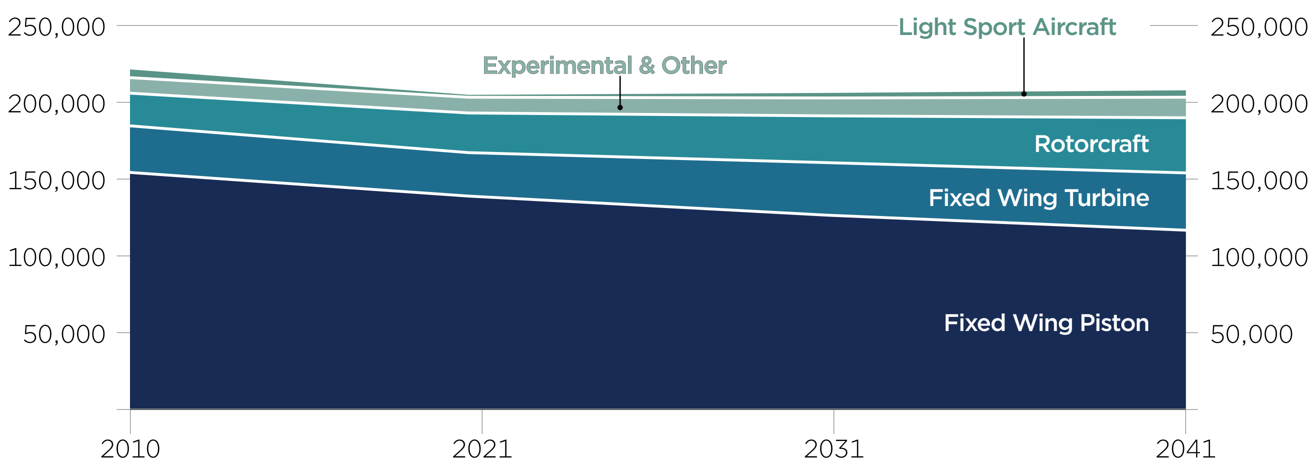
The FAA Aerospace Forecast includes projections for fleet mix and hours flown for GA aircraft such as fixed wing piston, fixed wing turbine, rotorcraft, light sport aircraft (LSA), experimental aircraft, and others. These forecasts use the results of the agency's annual surveys to establish a baseline 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.

General aviation was not as severely affected by the pandemic as the airlines, and the FAA is predicting a promising long-term outlook for GA. The agency expects growth at the high end will offset continuing aircraft retirements at the low end of the market. GA operations, which accounted for 51.4% of total U.S. operations in 2019, declined approximately 17% in 2020. They are projected to increase at an average rate of 0.4% per year through 2041 and are expected to return to pre-pandemic levels by 2026.

National Forecast for the General Aviation Fleet Mix

The results of the FAA's most recent General Aviation and Part 135 Activity Survey, which was completed in 2019, shows an estimated 210,981 active aircraft (a decline of 0.4% from 2018). The data also reflects an increase in fixed wing turbine, rotorcraft, lighter-than-air, and light sport aircraft that is offset by a corresponding decrease in fixed wing piston, experimental aircraft, and gliders. There was an overall decrease of 12.4% in deliveries of GA aircraft for 2020 from the previous year. This includes a 46.6% decrease for multi-engine piston aircraft and a 3.2% increase for single engine piston aircraft. This equates to an overall 0.1% decline in deliveries of fixed wing piston aircraft. Additionally, shipments of business jets declined by 29.8% while turboprop deliveries declined by 17.7%. This equates to a 24.5% decrease for fixed wing turbine aircraft. The national forecast for active GA aircraft is shown in Figure 5.2.

Figure 5.2: National Forecast for the General Aviation Fleet Mix

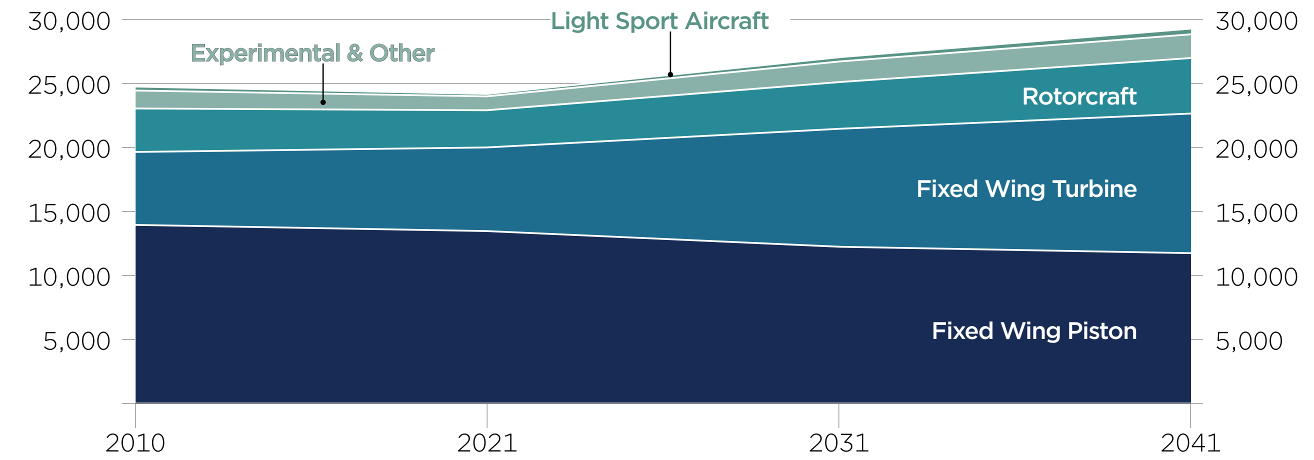


Source: FAA Aerospace Forecast, 2021–2041

National Forecast for General Aviation Hours Flown

Despite the marginal decline projected for the GA fleet, the FAA has projected the number of GA hours flown to increase by an average of 0.6% per year with total hours flown increasing from 25.6 million for 2019 to 29.4 million for 2041. This increase is partly due to an anticipated increase in hours flown for newer aircraft. It also reflects a 0.9% decrease projected for fixed wing piston aircraft which is more than offset by the 2.2% increase projected for fixed wing turbine aircraft, a 1.7% increase projected for rotorcraft, and a 4% increase projected for light sport aircraft. The national forecast for GA hours flown is shown in Figure 5.3.

Figure 5.3: National Forecast for General Aviation Hours Flown

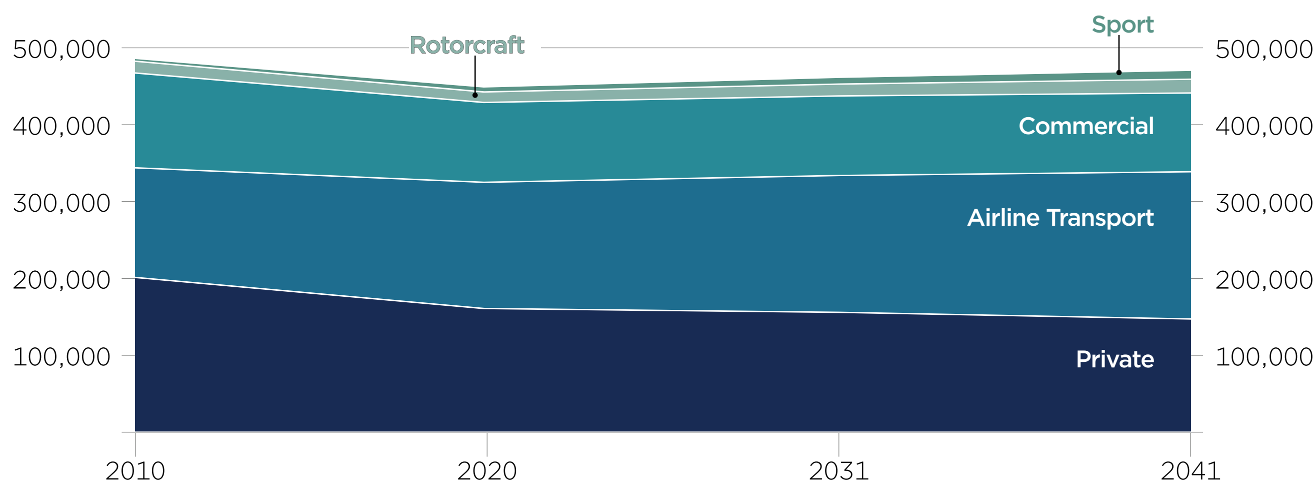


Source: FAA Aerospace Forecast, 2021–2041

National Forecast for Active Pilots by Certificate Type

The FAA forecast indicates that the type of certifications pilots are earning is still changing. This transition is largely the result of legislative and regulatory changes that have taken place in recent years. Overall, there were 691,691 active pilots at the end of 2020 which reflects a decrease in air transport pilot (ATP) and rotorcraft certifications and an increase in commercial pilot and sport pilot certifications. The FAA has forecasted a 0.06% decrease for commercial pilot certifications, a 0.04% decrease for general aviation certifications, and a 0.42% decrease for private pilot certifications. It also projects a 0.7% increase for ATP certifications and a 2.7% increase for sport pilot certifications. The national forecast for active general aviation pilots by certificate type is shown in Figure 5.4.

Figure 5.4: National Forecast for General Aviation Pilots by Certificate Type



Source: FAA Aerospace Forecast, 2021–2041

5.5.2. National Factors Affecting Aviation Activity

It is important to take national factors relating to commercial service, general aviation, and air cargo into consideration when developing local aviation forecasts. The following factors were considered, either directly or indirectly, in developing the aviation activity forecasts for Idaho Falls Regional Airport.

a. National Economy

Trends in airline travel have historically been closely correlated with national economic trends, especially changes in gross domestic product (GDP). The national GDP is expected to increase approximately 2% annually through the forecast period. This should result in a general increase in demand for air service. Actual economic activity may differ from this expectation, especially on a year-to-year basis, and demand for air travel may be impacted by changes in economic performance.

b. Mergers, Acquisitions, and New Airlines

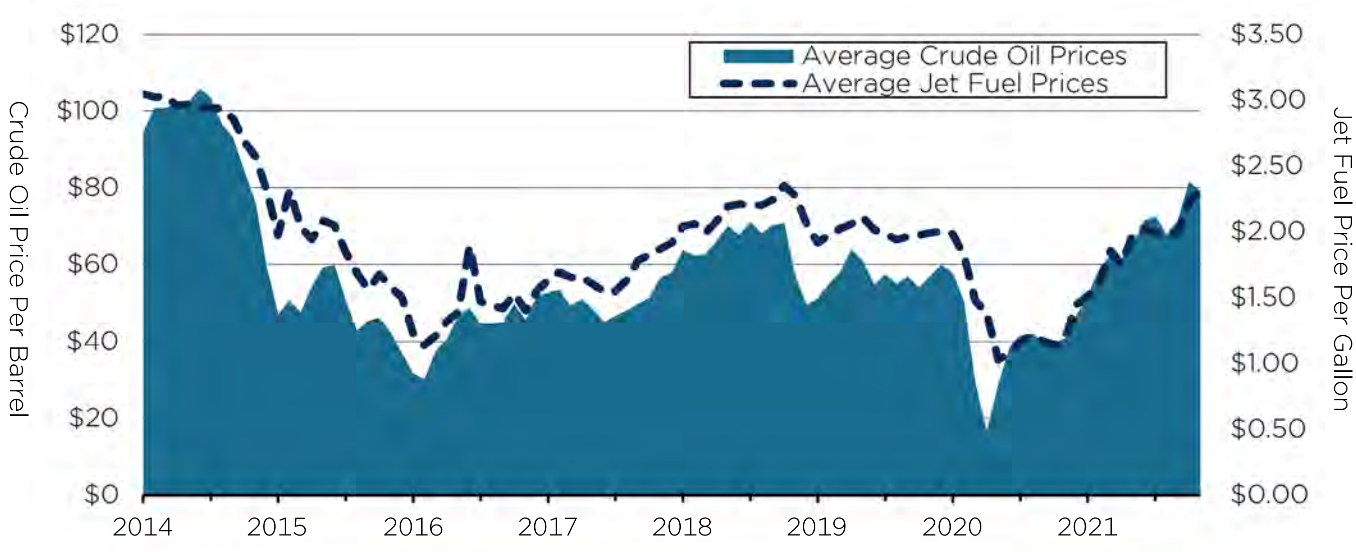
U.S. airlines have a long history of merging or acquiring competitors in order to achieve operational and commercial value and to improve financial performance. This consolidation has resulted in the realignment of several airline route networks as airlines have sought efficiencies in their service. Further consolidation of the U.S. airline industry could affect the capacity offered at IDA and could alter the competitive landscape.

For example, two new airlines began operating in the U.S. in 2021; Avelo Airlines and Breeze Airways. These airlines are not currently in direct competition with established airlines because they provide service between cities that did not previously have nonstop connections. As these airlines grow, they may begin to compete with established airlines by creating new nonstop routes. These new nonstop flights could then stimulate additional demand at airports like IDA and other locations.

c. Cost of Aviation Fuel

As of the second quarter of 2021, jet fuel accounted for 15.1% of total airline operating costs. According to Airlines for America, this was second only to labor costs.[9] The average price of jet fuel has increased steadily since April 2020, and, as of November 2021, the average price of jet fuel was $2.31 per gallon. However, this is still below the high prices previously sustained in 2014. Figure 5.5 shows the monthly averages for jet fuel and crude oil prices from January 2014 through November 2021. Fluctuating fuel costs continue to affect airline profitability and could lead to changes in air service.

Figure 5.5: Historical Averages of Jet Fuel and Crude Oil Prices, 2014–2021



Source: U.S. Bureau of Transportation Statistics, U.S. Energy Information Administration, January 2022

d. Threat of Terrorism

The potential recurrence of terrorism incidents against either domestic or international flights has been a risk since September 11, 2001. Tighter security measures restored the public's confidence in the integrity of both the U.S. and global aviation security systems. However, any terrorist incident targeting aviation could have an immediate and significant impact on the demand for air travel.

e. COVID-19 Pandemic

According to the International Air Transport Association (IATA), the COVID-19 pandemic severely curbed global aviation demand. Globally, airlines experienced an operating loss of $137.7 billion in 2020 and are projected to lose an additional $52.3 billion in 2021. Domestic airlines are projected to record a slight profit for 2022 while international airlines are expected to lose another $21.5 billion. IATA airline profitability estimates for 2009 to 2022 are shown in Figure 5.6.[10]

Figure 5.6: Net Profit of Commercial Airlines Worldwide, 2016–2022

Note: 2021E = IATA estimates; 2022F = IATA forecast for 2022; Bankruptcy reorganization & large non-cash costs are excluded. Includes all commercial airlines. Historical data is subject to revision.

Source: International Air Transport Association, October 2021

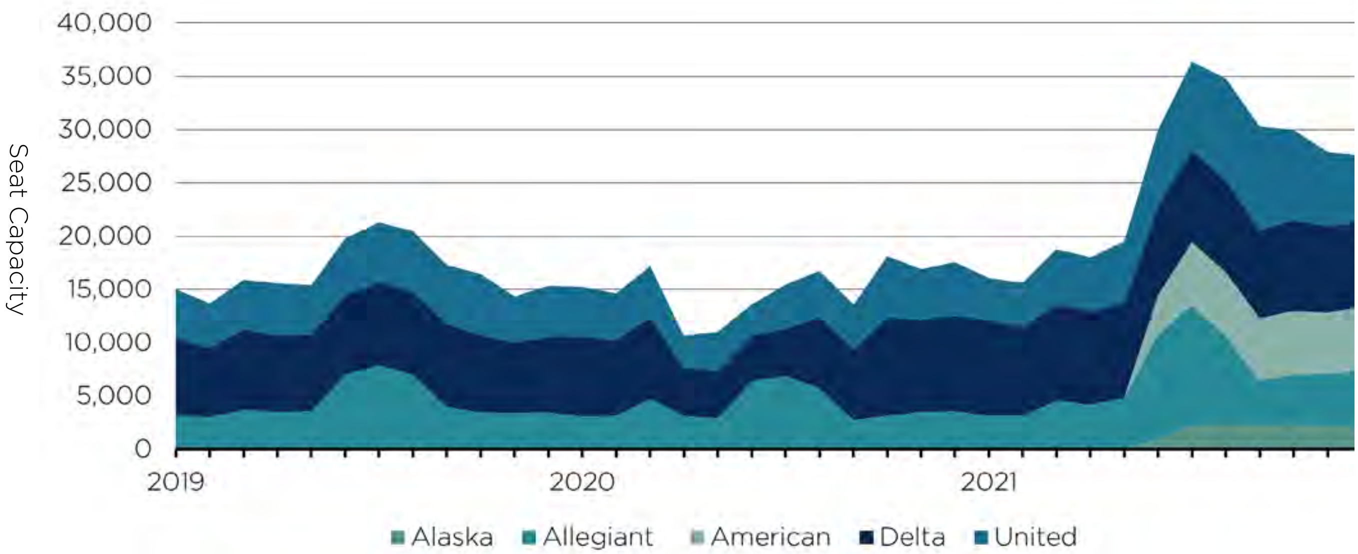
The Pandemic's Impact on Idaho Falls Regional Airport

The COVID-19 pandemic first began to impact air travel within East Asia in December 2019, and other regions were being affected by March and April 2020. Airlines responded by reducing capacity across their networks due to decreased demand, travel restrictions, and border closures. However, following an initial reduction in capacity in May 2020, IDA experienced robust growth during the pandemic.

Airline capacity began its industry-wide recovery in June 2020. Areas with access to sun and leisure activities, like eastern Idaho, saw capacity restored at a greater rate than the rest of the country. Demand for air service was concentrated on destinations people could visit while remaining socially distanced.

By December 2020, nationwide departing seat capacity increased to 51.6% of December 2019 capacity while IDA saw capacity increase by 14% compared to December 2021. Demand for travel to or from IDA continued to outpace the rest of the nation through 2021. By June of 2021, Alaska Airlines and American Airlines both initiated service at IDA to take advantage of the increased demand for destinations with access to outdoor leisure activities. Existing airlines also increased capacity, and, by February 2021, all airlines had exceeded pre-pandemic levels for seating capacity at IDA (Figure 5.7).

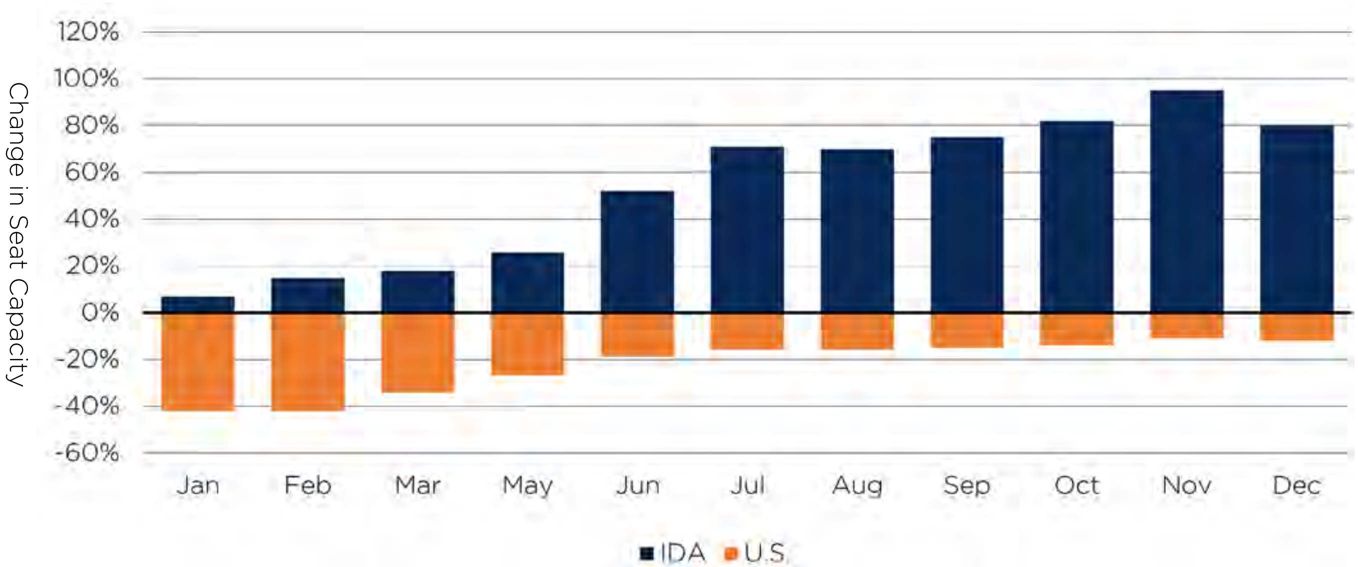
Figure 5.7: Monthly Seat Capacity, 2019–2021



Source: Innovata, October 2021

By December 2021, scheduled departing seats at IDA were approximately 180% of the seats available in December 2019, while nationwide seat capacity was only approximately 88%. Figure 5.8 shows IDA's seat capacity for 2021 in relation to 2019 seat capacity alongside the nationwide recovery rate.

Figure 5.8: Seat Capacity Recovery, 2021 vs. 2019



Source: Innovata, October 2021

Published airline schedules do not necessarily represent actual capacity because airlines may cancel scheduled flights or switch to an aircraft with a different seat capacity. While flight cancellation rates have decreased from their peak in 2020, future schedules are likely to remain volatile until the demand environment stabilizes. Ultimately, the pandemic's lasting impact on demand and airline profitability may result in increased uncertainty in future activity throughout the industry—including IDA.

5.5.3. Statewide Aviation Industry Forecast, 2020 Idaho Airport System Plan Update

The IASP forecast indicates an overall positive outlook, and the agency anticipates growth in all three indicator categories (i.e., operations, enplanements, and based aircraft) through 2037.

According to the IASP, Idaho's commercial service airports reported a total of 280,904 operations—including commercial, GA, and military operations—for 2017. Boise Air Terminal/Gowen Field accounts for approximately 44% of these operations with the remaining taking place at Joslin Field-Magic Valley Regional, Idaho Falls Regional, Pullman-Moscow Regional, Lewiston-Nez Perce County, Friedman Memorial, and Pocatello Regional, respectively. Overall aviation demand at these airports is expected to grow, and annual aircraft operations are expected to increase at a CAGR of 0.8%, enplanements at 2.3%, and based aircraft at 0.8% through 2037.[11]

a. Statewide Forecast for Commercial Operations

According to the 2020 IASP, there were 100,268 commercial service operations at Idaho's commercial service airports in 2017. Boise Air Terminal/Gowen Field accounts for approximately 55% of these operations with the remaining taking place at Idaho Falls Regional, Friedman Memorial, Pocatello Regional, Lewiston- Nez Perce County, Joslin Field-Magic Valley Regional, and Pullman-Moscow Regional, respectively. Overall, commercial operations are expected to grow 1.5% annually with 136,337 operations projected for 2037.[12]

b. Statewide Forecast for General Aviation and Military Operations

Most commercial service airports are also used by GA customers and the military. GA activity can include helicopters, personal, or business aircraft that support a wide variety of industries such as recreation, agriculture, and various emergency services as well as corporate and business travel.

There were 167,673 GA operations and 12,566 military operations at Idaho's commercial service airports in 2017. Once again, the majority of these operations took place at Boise Air Terminal/Gowen Field. An overall annual increase of 0.4% is projected for GA operations with 180,764 operations projected for 2037. Only a slight increase of 0.1% annually is projected for military operations because these are typically determined by national security issues and are generally unknown for the future.[13]

c. Statewide Forecast for Passenger Enplanements

Idaho's commercial service airports experienced nearly 2.2 million enplanements in 2017. Approximately 79% of these enplanements occurred at Boise Air Terminal/Gowen Field with the remaining taking place at Idaho Falls Regional, Friedman Memorial, Lewiston-Nez Perce County, Pullman-Moscow Regional, Joslin Field-Magic Valley Regional, and Pocatello Regional, respectively. Enplanements are expected to continue to grow at a steady rate with a projected annual increase of 2.3% and are projected to reach nearly 3.5 million by 2037.[14]

d. Statewide Forecast for Based Aircraft

There were a total of 978 aircraft based at Idaho's commercial service airports in 2017. Nearly 28% of these were based at Boise Air Terminal/Gowen Field with the remaining based at Idaho Falls Regional, Friedman Memorial, Lewiston-Nez Perce County, Joslin Field-Magic Valley Regional, Pullman-Moscow Regional, and Pocatello Regional, respectively. These are projected to increase at an annual rate of 0.8% and are forecasted to reach 1,137 in 2037.[15]

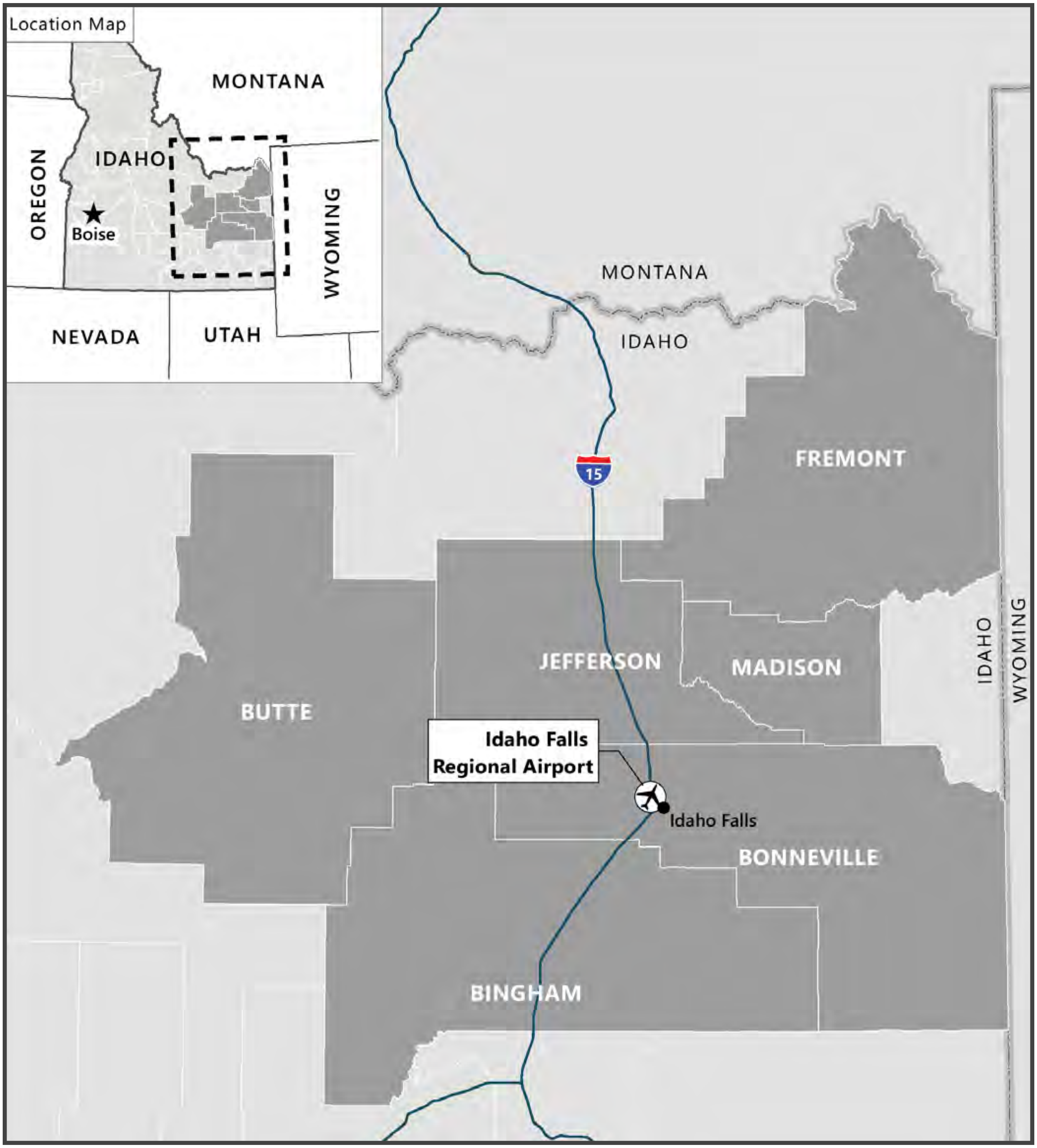
5.5.4. Local Factors With Potential to Affect Aviation Demand and Activity

The following local factors were considered in developing the aviation activity forecasts for IDA.

a. Air Trade Area

The airport is supported by an air trade area (ATA) comprised of six counties surrounding Idaho Falls (Figure 5.9). The MSA, which was used for the GA forecast, presents a localized socioeconomic outlook that is more closely associated with GA than commercial service. For the commercial service forecast, the ATA is a more relevant study area because it presents a more complete representation of the geographic area from which the airport can expect to draw commercial air service passengers.

Figure 5.9: Air Trade Area for Idaho Falls Regional Airport



Source: 2016 TIGER/Line Shapefiles; Ricondo & Associates, Inc.

b. Competing Airports

There are five competing airports located within driving distance of IDA's ATA. The airport conducted a retention and leakage study in 2019 to identify the percentage of passengers traveling to or from the Idaho Falls area that use these other airports instead of IDA. The study found that 53.5% of the passengers located in or around Idaho Falls use IDA for air travel. Approximately 38.1% use SLC. The remaining 8.4% use either Boise Airport (BOI), Pocatello Regional Airport (PIH), Jackson Hole Airport (JAC), or Bozeman Yellowstone International Airport (BZN).[16] Table 5.5 lists each of these competing airports along with their distance from IDA, the percentage of Idaho Falls area passengers who use each airport, and the average cost of a one-way fare from each airport to IDA's 50 largest origin or destination (O&D) markets.

Table 5.5: Retention and Leakage Study, 2019

Airport	Distance	% of Passengers	Average Fare
Idaho Falls Regional Airport (IDA)	—	53.50%	$228
Salt Lake City International Airport (SLC)	200 Miles	38.10%	$175
Boise Airport (BOI)	280 Miles	4.60%	$146
Pocatello Regional Airport (PIH)	55 Miles	2.20%	$186
Jackson Hole Airport (JAC)	100 Miles	1.50%	
Bozeman Yellowstone International (BZN)	200 Miles	0.10%	

Source: Volaire Aviation Consulting, May 2020

Passengers are choosing other airports due to the availability of multiple flights—most of which are nonstop—along with the lower average fares offered at these airports. For example, SLC, which is located approximately 200 miles south of Idaho Falls, serves as a hub for Delta. As of November 2021, Delta provided service to 83 domestic destinations and seven international destinations from SLC, and many of these destinations were served by multiple daily flights. However, the study also found that leakage to SLC has fallen from 50% in 2017 to 38% in 2019 while IDA's retention grew from 40% in 2017 to 54% in 2019. The improved retention rate is likely due in part to the new services and seat capacity added at IDA during this period.

Allegiant, Delta, and United have provided service at the airport since 2012 while Alaska and American both began providing service at the airport in 2021. For Delta and United, the airport serves as an origin or destination (O&D) within their route networks. This allows passengers to fly to connecting hubs or focus cities which enables them to reach many destinations with one stop. While Allegiant Air offers service to larger destinations in the western United States on a point-to-point basis, it does not offer connecting itineraries.

As of January 2022, regularly scheduled service was provided to eight domestic destinations. Alaska provided service to Seattle (SEA); Allegiant provided service to Phoenix/Mesa (AZA), Las Vegas (LAS), and Portland (PDX); American provided service to Dallas/Ft. Worth (DFW) and Phoenix-Sky Harbor (PHX); Delta provided service to Salt Lake City (SLC); and United provided service to Denver (DEN).

As shown in Table 5.6, an average of approximately 15 daily flights and 1,212 daily departing seats were offered from IDA during July 2021; the busiest month in 2021 with seasonal service. Eleven destinations were served at least once daily, and three destinations were served by multiple daily flights (DEN, SLC, and DFW).

Table 5.6: Scheduled Nonstop Service, July 2021

Destination	Average Daily Departures	Average Daily Seats	Number Of Airlines
Phoenix/Mesa (AZA)	0.6	108	1
Denver (DEN)	5.0	290	1
Dallas/Ft. Worth (DFW)	2.0	135	1
Las Vegas (LAS)	0.3	45	1
Los Angeles (LAX)*	0.3	54	1
Oakland (OAK)*	0.3	54	1
Portland (PDX)	0.3	54	1
Phoenix (PHX)	1.0	70	1
Seattle (SEA)	1.0	76	1
Salt Lake City (SLC)	4.0	290	1
Total	**15**	**1,212**	

Note: *Denotes seasonal service. Average is calculated as the number of seats or departures scheduled in July 2021 divided by the number of days in the month (31).

Source: Idaho Falls Regional Airport

The top domestic O&D markets at IDA, measured as passengers per day each way (PDEW), for the four quarters ending June 2021 are listed in Table 5.7. During this period, approximately 40%, or 137 PDEW, traveled between IDA and one of the top five destinations. The top 25 markets comprised approximately 72%, or 247 PDEW, of the domestic O&D market. Six of the top nine O&D markets have nonstop service.

Table 5.7: Top 25 Domestic O&D Markets at Idaho Falls Regional Airport

Rank	Destination	Average Fare	Rank	Destination	Average Fare
1	Phoenix (PHX & AZA)	$76	13	Washington, D.C.[1]	$250
2	Las Vegas	$50	14	Sacramento	$213
3	Southern California[2]	$183	15	Salt Lake City	$134
4	San Francisco[3]	$122	16	Minneapolis/St. Paul	$191
5	Denver	$183	17	Austin	$212
6	Seattle	$170	18	Nashville	$215
7	Dallas (DFW & DAL)	$194	19	Kansas City	$187
8	San Diego	$102	20	San Antonio	$203
9	Portland	$133	21	New York City[4]	$266
10	Houston (IAH & HOU)	$193	22	Chicago (ORD & MDW)	$219
11	Atlanta	$241	23	Spokane	$177
12	Orlando	$219	24	St. Louis	$184
			25	Detroit	$248

1 Includes Ronald Reagan (DCA), Dulles International (IAD), and Baltimore/Washington International (BWI) Airports.
2 Includes Los Angeles (LAX), Ontario (ONT), Burbank (BUR), Long Beach (LGB), and John Wayne (SNA) Airports.
3 Includes San Francisco International, Oakland International, and San Jose International (SJC) Airports.
4 Includes John F. Kennedy International (JFK), Newark Liberty International (EWR), and LaGuardia (LGA) Airports.

Source: U.S. Department of Transportation, DB1B Survey, October 2021

c. Socioeconomic Trends

There is typically a strong connection between socioeconomic trends and aviation demand. Local socioeconomic conditions—especially population, employment, and income—can have either an upward or downward influence on aviation activity. In addition to providing a general understanding of the socioeconomic conditions surrounding Idaho Falls Regional Airport, local and regional socioeconomic trends can provide an important indicator of future demand for aviation services.

Table 5.8 summarizes the socioeconomic projections for the Idaho Falls metropolitan statistical area (MSA) by Woods and Poole Economics, Inc., an independent firm specializing in long-term economic and demographic projections.

Table 5.8: Socioeconomic Forecast, Metropolitan Statistical Area, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
Population							
Population Forecast	154,999	164,672	174,469	193,970	1.22%	1.19%	1.13%
Employment							
Employment Forecast	100,483	108,241	116,116	132,244	1.50%	1.46%	1.38%
Per Capita Income							
Income Forecast	$50,559	$61,711	$77,223	$122,406	4.07%	4.33%	4.52%

Source: Woods and Poole Economics, Inc.

As previously mentioned, the ATA is a more relevant study area for the commercial service forecast because it is a more complete representation of the area from which the airport can expect to draw commercial air service passengers. Socioeconomic projections for the ATA are summarized in Table 5.9

Table 5.9: Socioeconomic Characteristics, Airport Air Trade Area, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
ATA Population							
Population Forecast	255,000	268,000	281,000	305,000	1.00%	0.98%	0.90%
ATA Employment							
Employment Forecast	154,800	166,400	178,100	201,700	1.46%	1.41%	1.33%
ATA Per Capita Income							
Income Forecast	$39,076	$42,255	$45,483	$52,307	1.58%	1.53%	1.47%
ATA Earnings							
Earnings Forecast	$6.7M	$7.5M	$8.3M	$10.0M	2.14%	2.08%	2.00%
ATA GRP							
GRP Forecast	$10.2M	$11.3M	$12.6M	$15.2M	2.19%	2.12%	2.03%

Source: Woods and Poole Economics, Inc.

Table 5.10 summarizes the national projections used in developing the commercial service forecasts.

Table 5.10: Socioeconomic Characteristics, United States, 2021–2041

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
U.S. Per Capita Income							
Income Forecast	$53,188	$57,922	$62,781	$73,147	1.72%	1.67%	1.61%
U.S. GDP							
GDP Forecast	$20.3M	$22.5M	$24.7M	$29.6M	2.08%	2.01%	1.91%

Source: Woods and Poole Economics, Inc.

5.6. Aviation Forecast Methodologies

There are several methods for forecasting aviation activity. Selecting the most appropriate method is typically a matter of professional judgment and experience based on the analyst's industry knowledge and assessment of local conditions. Quite often, the most reliable approach for generating a reasonable estimate involves using multiple methods. As stated in FAA AC 150/5070-6B, *Airport Master Plans*, the most common techniques are regression analysis, trend analysis, market share analysis, and smoothing.

5.6.1. Regression Analysis

Regression analysis is a statistical technique used to identify trends in data by measuring the relationship between dependent variables (e.g., aviation demand) and independent variables (e.g., population, income). This method is effective when using relatively simple data sets, a strong statistical correlation is evident, and reliable data is available for the independent variables.

5.6.2. Trend Analysis

Trend analysis uses historical patterns to project future activity. This approach is useful when local conditions are unusual enough to differentiate the study airport from other airports in the region.

5.6.3. Market Share Analysis

This technique assumes a top-down relationship between national, regional, and local forecasts. It involves conducting a historical review of the airport activity and identifying its percentage, or share, of a larger regional, state, or national aviation market. The historical market share trend is then used to project the future market share based on forecasts developed for the larger geographical area. This type of forecast is useful when the activity has a constant share of a larger market.

5.6.4. Smoothing

Smoothing is a statistical technique used to make predictions based on applying recent trends and conditions to historical data. It is most effective for generating short-term forecasts.

5.6.5. Forecasting Methodology and Approach Used

Several methodologies were used to establish the most reasonable forecast for each element of the airport master plan forecast. The assumptions and methodologies used to develop the forecasts for GA and military forecasts are discussed alongside the presentation of the GA and military forecasts. The methodologies used to develop the commercial forecasts are described in the following sections.

a. Commercial Forecast Methodology

A bottom-up methodology was used to forecast demand for the short-term (2022–2025), and a top-down approach was used to forecast demand for the long term (2026–2041).

Short Term Methodology (2022-2025)

The airport's records were used to determine baseline activity levels through December 2021. For the first quarter of 2022, published airline schedules were considered and flight segment-level estimates of performance were developed based on airline-specific load factor trends and completion rates (i.e., the number of flights scheduled compared to the number flown). Due to the volume of new capacity being introduced, it is expected that load factors will decline in the near term and then slowly return to normal.

As previously discussed, future schedules have been increasingly subject to change during the COVID-19 pandemic. Therefore, to estimate the remaining nine months of 2022, the historical share of enplaned passengers and passenger airline operations for January through March were compared to flights scheduled for the full year. This information was then used to forecast enplaned passengers and passenger airline operations for the rest of 2022. New air services introduced during 2021 were assumed to remain in place at similar levels of capacity and frequency throughout 2022. While planned runway closures at surrounding airports in 2022 may have a temporary impact on the activity at IDA, they are not expected to result in a significant or lasting change in demand. Therefore, this was not analyzed as part of these forecasts. For 2023 through 2025, the passenger activity estimated for 2022 was used to estimate growth rates using socioeconomic regression analysis.

Long Term Methodology (2026-2041)

Forecasts of passenger demand for the long term were also developed using socioeconomic regression analysis. Forecasts of passenger demand were combined with estimates of airline capacity deployment which resulted in forecasts of passenger airline operations. The expectations of airline capacity deployment were developed through an analysis of fleet plans, airline industry performance trends, and an analysis of possible new air service opportunities.

Socioeconomic Regression Analysis to Estimate Future Growth

Several methodologies were explored for developing the long-term growth forecast of enplaned passengers at the airport. These methodologies included market share analyses, trend analyses, and single and multi-variable socioeconomic regression analyses.

A standard measure of how well each socioeconomic variable explains passenger demand is the regression model's coefficient of determination or r-squared. A result of 100% is the maximum value possible for a coefficient of determination and represents a perfect fit among the variables analyzed. For the purposes of this analysis, a r-squared value of 70% or better was considered adequate. The socioeconomic characteristics used in these analyses are listed in Table 5.9 and Table 5.10. Outputs of the regression analyses are listed in Table 5.11.

1. Market Share: This approach considers how IDA will grow relative to the rest of the industry. IDA's share of total U.S. enplaned passengers has varied significantly during the past ten years. It declined from 0.022% of total U.S. passengers in 2017 down to 0.017% in 2017 before growing to 0.027% in 2020. This approach was eliminated due to the lack of an identifiable trend.

2. Trend Analysis: A trend analysis was conducted as a time series model forecast which involved the extrapolation of existing activity levels. Activity at IDA has experienced years of growth followed by years of decline. While IDA recorded growth in each year between 2016 and 2019, the rate of growth in each year varied significantly—from 0.4% in 2017 to 9.4% in 2018. This approach was eliminated due to the variation in annual growth rates.

3. Single Variable Regression Analysis: A function of regression analysis was used to analyze the relationship between passenger volumes as the dependent variable and socioeconomic trends as independent variables. This approach yielded multiple predictive relationships with r-squared values exceeding 70% and was identified as the most appropriate method.

Table 5.11: Regression Model Outputs and Implied Growth of Passenger Volumes

Dependent Variable	Independent Variable	R-Squared (Times 100)	Passenger Growth (2019–2041 CAGR)
Passenger Volumes	ATA Total Employment	78.5%	1.7%
	ATA Total Earnings	76.9%	1.8%
	ATA Gross Regional Product	80.1%	2.0%
	U.S. Gross Domestic Product	73.2%	1.9%
		Average	**1.9%**

Source: Woods and Poole Economics, Inc.; Ricondo & Associates, Inc.

The socioeconomic regression analysis was selected to serve as the baseline forecast approach. These analyses were conducted to identify relationships between IDA passenger demand and socioeconomic variables at the national level and for the IDA air trade area, using historical data from 1994 through 2020.

The forecasts were developed using these regression models that incorporated independent projections of the relevant socioeconomic variables. While all socioeconomic variables were analyzed, the four socioeconomic variables that showed the most correlation with passenger demand at IDA were total employment, total earnings, gross regional product within the ATA, and national gross domestic product. Historical and projected data for these independent variables were obtained from Woods & Poole Economics, Inc. The forecasts resulting from the application of each of these regression results to the projected socioeconomic variables were averaged to develop the baseline passenger forecast.

b. Cargo Forecast Methodology

The forecast of cargo activity was developed using a socioeconomic regression analysis to evaluate the relationship between total cargo weight being moved at IDA and several local and national socioeconomic variables. Multiple predictive relationships were identified between the socioeconomic variables and total cargo weights. The resulting forecast from each identified relationship was then averaged to develop the average annual growth rate of total cargo weight at IDA. As shown in Table 5.12, cargo by volume is expected to grow at an average of 2.4% for 2021-2041.

Table 5.12: Regression Model Outputs and Implied Growth of Cargo Volumes

Dependent Variable	Independent Variable	R-Squared (Times 100)	Cargo Growth (2021–2041 CAGR)
IDA Cargo Weight	ATA Gross Regional Product	86.7%	2.5%
	ATA Total Earnings	82.7%	2.3%
	U.S. Total Per Capita Income	76.1%	2.6%
		Average	**2.4%**

Source: Woods & Poole Economics, Inc.; Ricondo & Associates, Inc.

5.7. Sources of Data

The following sources of operations and aircraft data were used, in addition to the TAF, in developing the forecast for this airport master plan.

5.7.1. Operations Network

The Operations Network, typically referred to as OPSNET, is the FAA's official source of air traffic operations and delay data for the National Airspace System (NAS). Air traffic control (ATC) personnel are required to collect operational data when the tower is open, and this information is reported daily to OPSNET. The report provides a historical account of both itinerant and local arrivals and departures.[17]

The airport traffic control tower (ATCT) collects operational data when the tower is open between the hours of 7 a.m. and 8 p.m. The OPSNET report for IDA was used to help establish an accurate historical account of the number of operations occurring at the airport for the past decade.

5.7.2. FAA Traffic Flow Management System Counts

A limitation of OPSNET data is that it does not indicate the specific type of aircraft or model information. One of the best sources of this information is the FAA's Traffic Flow Management System Counts (TFMSC) database. One of the main sources of TFMSC data is the information provided by pilots when they file a flight plan.

This database typically includes all commercial operations because they operate under Instrument Flight Rules (IFR) and are therefore required to file a flight plan. However, it only captures a small portion of general aviation activity because they typically operate under visual flight rules (VFR) and are therefore not required to file a flight plan.[18] Despite this limitation, this data is helpful in identifying general trends in airport activity and provides a good starting point for determining aircraft types for total operations. The TFMSC data for IDA was used to help establish a historical record of the types and classes of aircraft using the airport for the past decade.

5.7.3. U.S. Department of Transportation T-100 Data

The Air Carrier Statistics database, also known as the T-100, contains domestic and international airline market and segment data. This report contains carrier, origin, destination, and service class for enplaned passengers as well as freight and mail data for domestic markets. It also includes carrier, origin, destination, aircraft type, available capacity, scheduled departures, departures performed, aircraft hours, and load factors as well as service class for passengers, freight, and mail for domestic non-stop segments. U.S. air carriers report this information to the U.S. Bureau of Transportation Statistics Office of Airline Information on a monthly basis.[19]

This database is frequently used by the aviation industry, the press, and the legislature to produce reports and analyses on air traffic patterns and carrier market shares as well as passenger, freight, and mail cargo flow. The T-100 data for IDA was used to help establish a historical record of the commercial operations and passenger activity levels for the past decade.

a. T-100 Data for Idaho Falls Regional Airport

An examination of T-100 data for IDA was taken into consideration when developing the commercial forecasts for passenger aircraft operations and passenger enplanements.

- Enplaned passenger activity at the airport increased at a CAGR of 1.47% from 2012 to 2019.
- In 2012, enplaned passengers increased 7.5% while passenger airline operations declined 8.4% despite United discontinuing service to San Francisco International Airport (SFO) mid-year. This was mainly due to Allegiant's service to Los Angeles International Airport (LAX) and Oakland International Airport (OAK) using a 166-seat McDonnell Douglas MD-83 aircraft which is significantly larger than the 50-seat regional jets used by the other airlines to service the airport at the time.

- In 2013, Allegiant reduced seasonal service to LAX and OAK which resulted in an 8.3% decline in enplaned passengers and an 8.4% decline in aircraft operations.
- In 2014, enplaned passengers grew 13.5% while aircraft operations grew 4.7% despite Delta discontinuing some regional jet flights to Salt Lake City International Airport (**SLC**). This was due to Frontier adding service to Denver International Airport (**DEN**) using an Airbus A319 mainline aircraft.
- In 2015, enplaned passengers declined 11.4% and aircraft operations declined 17.2%. Frontier discontinued the service to DEN it introduced the prior year.
- In 2016, enplaned passengers declined 1.2% while aircraft operations grew 0.2%. Delta reduced the number of flights it offered to Minneapolis/St. Paul International Airport (**MSP**) while also switching to larger regional jet aircraft for its existing flights to SLC.
- In 2017, enplaned passenger volumes grew 2.9% while aircraft operations declined 1.4%. Allegiant increased the number of flights to Phoenix/Mesa Airport (**AZA**), and Delta reduced capacity by switching to smaller regional jets for some of its flights to SLC.
- In 2018, enplaned passengers grew 6.6% while aircraft operations grew 3.8%. United increased the number of flights to DEN, and Allegiant added flights to AZA.
- In 2019, enplaned passengers grew 10.9% and passenger airline operations grew 3.3%. United increased service to DEN, and Allegiant increased flights to AZA.
- In 2020, enplaned passengers declined 41.5% and aircraft operations declined 23.2% as a result of the COVID-19 pandemic. This included Allegiant pausing its LAX service. However, airlines began restoring capacity at IDA as demand started to recover during the summer.
- In 2021, enplaned passengers grew 115.1% and aircraft operations grew 76.5%. American introduced service to Dallas/Ft. Worth International Airport (**DFW**) and Phoenix Sky Harbor International Airport (**PHX**). Alaska introduced service to Seattle/Tacoma International Airport (**SEA**). Allegiant restored service to LAX and began service to Portland International Airport (**PDX**).
- The airport's share of total U.S. enplaned passengers decreased from 0.022% in 2011 to 0.019% in 2019. However, the airport saw an increase for 2020 (the latest full year U.S. enplaned passenger data was available) when the airport's share grew to 0.027% as the recovery of passenger activity at the airport outpaced the rest of the country during the COVID-19 pandemic (Figure 5.10).

Figure 5.10: Market Share of Enplaned Passengers, 2012–2021

Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100, January 2022

5.8. Aircraft Operations Forecast

This section presents the forecast for aircraft operations. The projections for commercial service operations, general aviation operations, and military operations are each discussed separately.

5.8.1. Commercial Service Operations

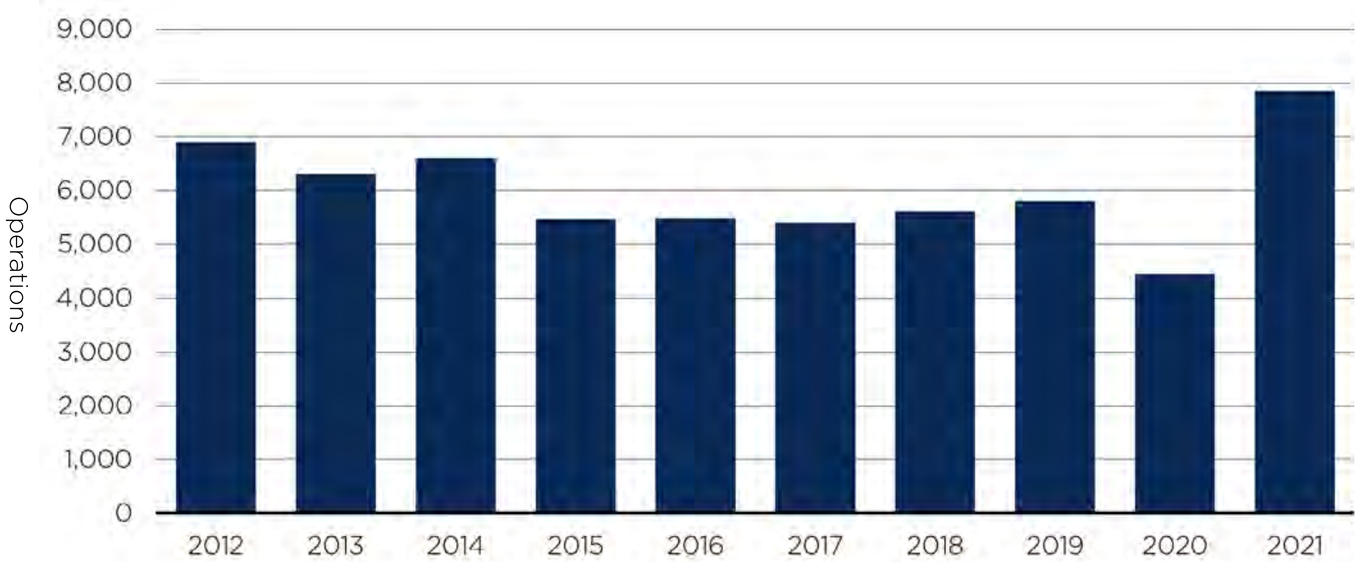
Commercial service operations are influenced by a variety of national and local factors, airline and aviation industry trends, and socioeconomic trends. The forecast for commercial service operations, along with the passenger enplanements forecast, will help determine future requirements for airport facilities—especially those necessary for accommodating passengers.

While 2021 is the base year for the forecast, partial year actual and scheduled data for 2022 were incorporated in the development of these forecasts. Additionally, some comparisons to 2019 activity levels are also included to provide a point of comparison to pre-pandemic activity levels.

a. Passenger Aircraft Operations

Figure 5.11 shows historical rates of commercial service operations for 2012-2021 as reported by the U.S. Department of Transportation. This data shows there were 7,856 passenger aircraft operations at the airport in 2021. This was the highest activity level on record for the airport. Overall, passenger aircraft operations grew at a CAGR of 1.46% for 2012–2021. This growth was mainly the result of new air service added in 2021.

Figure 5.11: Passenger Airline Operations, 2012–2021

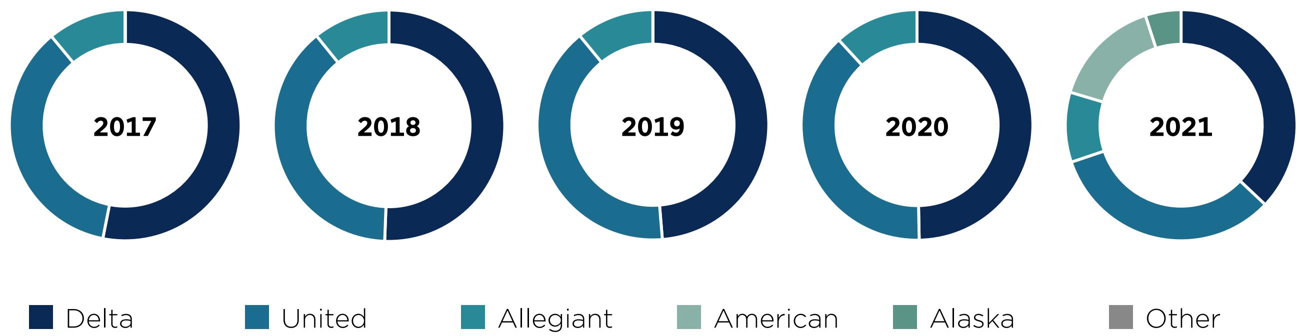


Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100

b. Passenger Airline Service Levels

As of January 2022, five passenger airlines operate at the airport; Alaska Airlines, Allegiant Air, American Airlines, Delta Airlines, and United Airlines. As shown in Figure 5.12, Delta has maintained the largest share of operations at the airport from 2017 to 2021. However, the airline's share of the market has declined from 53.1% in 2017 to 37.1% in 2021 as a result of growth by existing and new entrant airlines. United and Allegiant both increased their shares between 2017 and 2020 but also saw declines in 2021 when American Airlines and Alaska Airlines began providing service at IDA. While Allegiant operated approximately 10% of passenger airline operations in 2021, the airline's share of enplaned passengers was 21% because of the airline's use of Airbus A319 and A320 aircraft which have a larger capacity than aircraft used by other airlines.

Figure 5.12: **Historical Share of Aircraft Operations by Airline, 2017–2021**

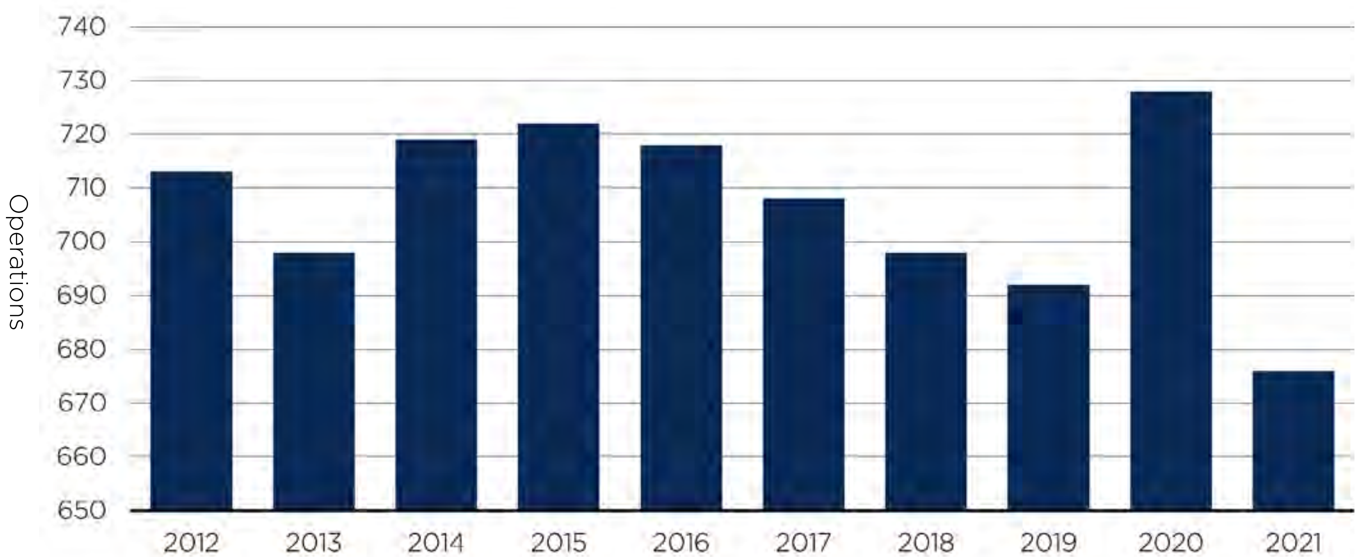


Source: U.S. Department of Transportation, T-100

c. Air-Cargo Operations

Figure 5.13 shows historical rates of all-cargo aircraft operations for 2012–2021. All-cargo operations have remained relatively steady throughout the historical period and have ranged from a low of 676 operations in 2021 to a high of 728 operations in 2020. Recent growth in all-cargo operations has been supported in part by the nationwide increase in e-commerce activity. Overall, all-cargo operations declined at a CAGR of -0.59% for 2012–2021.

Figure 5.13: **All-Cargo Operations, 2012–2021**



Note: Cargo aircraft operations based on airport records (2018 through 2021), and airport records and U.S. Department of Transportation data (2012 through 2017)
Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100; FAA, OPSNET

d. All-Cargo Service Levels

As of January 2022, three all-cargo airlines operate at the airport; Ameriflight, Corporate Air, and Empire. These cargo operators use single-engine or twin-engine propeller aircraft rather than jet aircraft.

e. Commercial Service Operations Forecast Scenarios

A series of forecast scenarios were prepared for both passenger airline and all-cargo operations and then compared to determine the most suitable forecast.

Passenger Airline Forecast Scenarios

- Scenario #1: As previously discussed, this forecast uses a bottom-up methodology for the short-term (2022–2025) and a top-down approach for the long term (2026–2041) using a socioeconomic regression analysis. As noted in Table 5.11, the variables used for this analysis included total employment, total earnings, and gross regional product for the ATA, along with the national gross domestic product, which were averaged to determine the annual growth rate. This forecast shows passenger aircraft operations increasing at a CAGR of 0.38%.
- Scenario #2: A forecast that assumes airlines will introduce additional flights to new markets (e.g., Portland and Chicago-O'Hare) and new entrant airlines will begin service at IDA as a result of the increased demand and socioeconomic growth shown in Scenario #1. This forecast shows passenger aircraft operations increasing at a CAGR of 0.99%.

All-Cargo Forecast Scenarios

- Scenario #1: A forecast that uses a socioeconomic regression analysis to predict future activity levels. As previously discussed, the variables used for this analysis are total earnings and the gross regional product for the ATA, along with per capita income for the U.S., which were averaged to determine the annual growth rate. This forecast shows all-cargo operations increasing at a CAGR of 1.75%.
- Scenario #2: A forecast that assumes FedEx, UPS, or other cargo carrier will introduce new scheduled service beginning in 2022 as a result of the increased demand and socioeconomic growth shown in Scenario #1. This forecast shows all-cargo operations increasing at a CAGR of 2.33%.

As shown in Table 5.13, the preferred forecast is Scenario #2 for both passenger and cargo operations.

Table 5.13: Commercial Service Operations Forecast Scenarios

Passenger Airline Operations		
Year	Scenario #1	Scenario #2
2021	7,856	7,856
2026	8,323	9,468
2031	8,358	9,484
2041	8,476	9,570
CAGR	Scenario #1	Scenario #2
2021-2041	0.38%	0.99%

All-Cargo Operations		
Year	Scenario #1	Scenario #2
2021	676	676
2026	748	843
2031	817	918
2041	957	1,071
CAGR	Scenario #1	Scenario #2
2021-2041	1.75%	2.33%

Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

f. Commercial Service Operations Forecast Assumptions

These commercial service forecasts are based on several assumptions of national aviation trends as well as national and regional economic conditions.

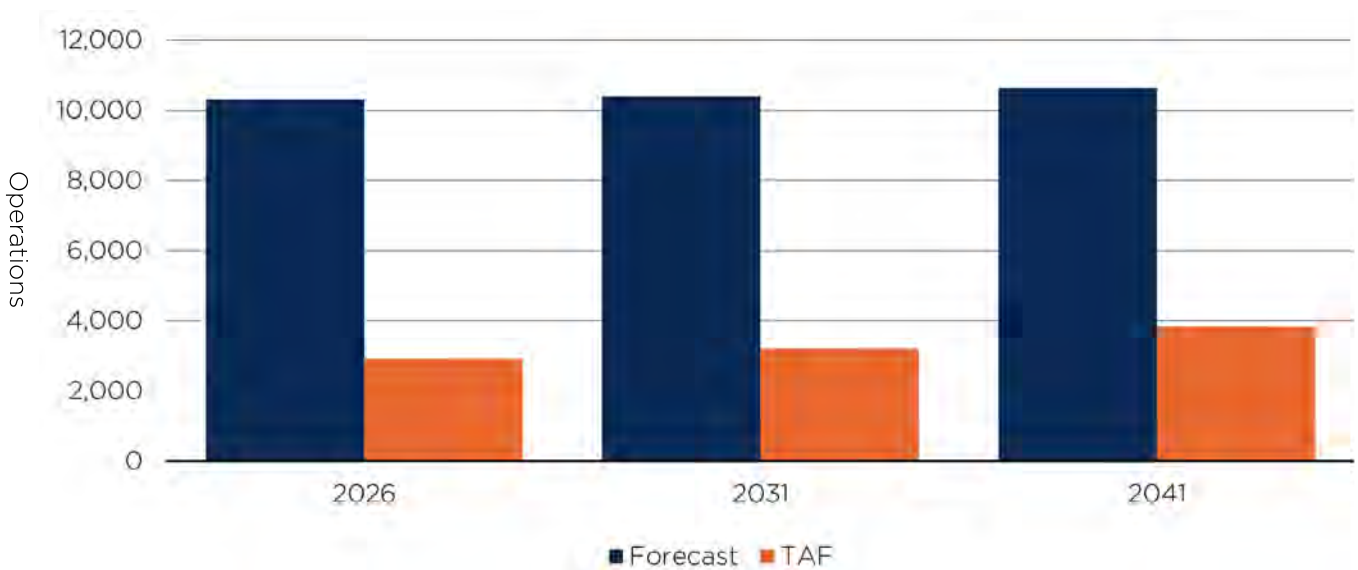
- IDA will continue to primarily serve O&D passengers and no airlines will develop a base of operations at IDA with the goal of serving a combination of O&D and connecting passengers.
- Competition with other airports in or near the IDA ATA is expected to remain stable with no structural advantages or disadvantages occurring relative to other regional airports.
- Additional airline consolidations and mergers that may occur during the forecast period are not likely to negatively affect the number of enplaned passengers at IDA. New airline alliances, should they develop, would be restricted to code-sharing and loyalty program reciprocity and would not reduce airline competition at IDA.
- Similar to the FAA's nationwide forecasts, it was assumed that no terrorist incidents would occur during the forecast period that would have significant negative and prolonged effects on demand at IDA.
- Economic disturbances will occur during the forecast period which will cause year-to-year variations in airline traffic. However, traffic at IDA is expected to increase for the long term.

Many of the factors influencing aviation demand cannot be readily quantified, and any forecast is subject to uncertainties. As a result, the forecast process should not be viewed as precise. Actual airline traffic at IDA may differ from the forecasts presented herein because events and circumstances may not occur as expected and these differences may be significant.

g. Commercial Service Operations Forecast Evaluation

Figure 5.14 shows a comparison of these two forecast scenarios. The preferred forecast for commercial service operations differs from the TAF by 251.55% for the five-year forecast, 223.34% for the ten-year forecast, and 176.89% for the 20-year forecast.

Figure 5.14: Commercial Service Operations Forecast Comparison



Source: FAA, TAF; Ricondo & Associates, Inc.

5.8.2. General Aviation Operations

General aviation includes all operations that are not scheduled commercial service or military operations. This includes charter flights, air taxi, emergency services, and recreational operations. The forecast for general aviation operations, along with the based aircraft forecast, will aid in planning and developing the areas of the airport that cater to GA customers.

This forecast uses OPSNET data as the baseline for both itinerant and local GA operations. A review of historical TAF and OPSNET data showed that these reports reflected nearly identical numbers of operations for IDA, but the OPSNET report included more recent data than the TAF. At the time of this forecast, the OPSNET report included data through 2021 while the TAF only included data through 2019. However, it is important to understand that any operations occurring when the tower is closed are not accounted for in the OPSNET data.

a. Historical Itinerant General Aviation Operations

Itinerant operations are all operations that originate or terminate at different airports. Figure 5.15 shows historical rates of itinerant general aviation operations for 2011–2021 as reported by OPSNET. This data shows the CAGR for itinerant GA operations was -2.70% for 2011 to 2021.

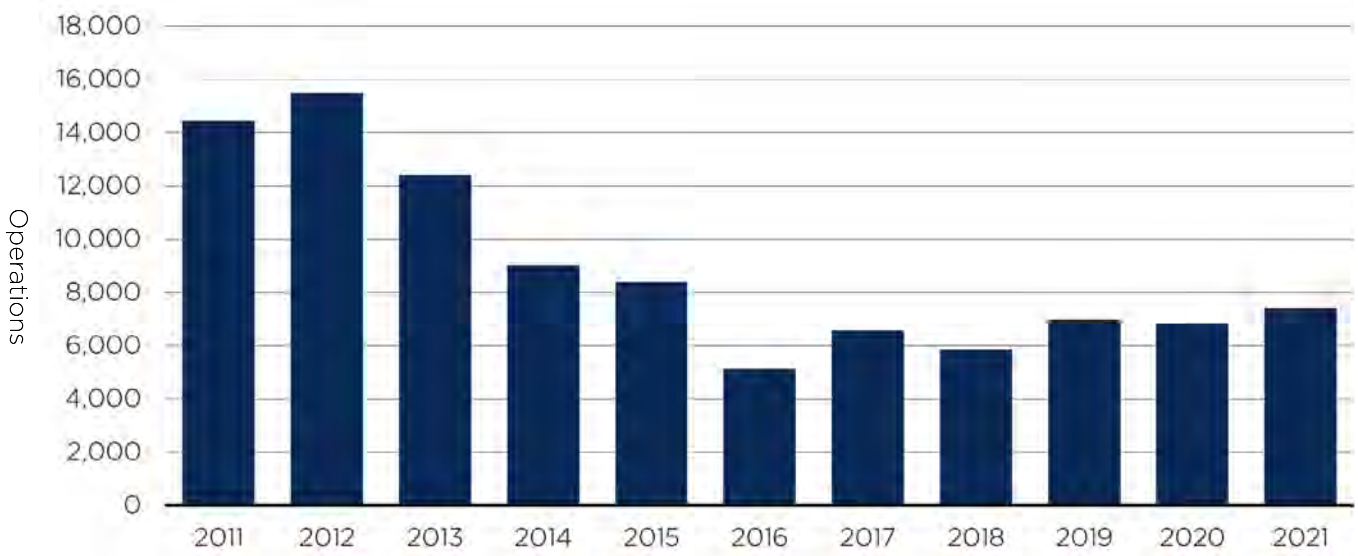
Figure 5.15: Itinerant General Aviation Operations, 2011–2021

Source: FAA, OPSNET

b. Historical Local General Aviation Operations

The FAA defines local GA operations as those operating in the local traffic pattern, within the airport line of sight, are known to be departing for or arriving from a flight in the local practice area, or those that execute simulated instrument approaches or low passes at the airport. Figure 5.16 shows historical rates of local general aviation operations for 2011–2021 as reported by OPSNET. This data shows the CAGR for local GA operations was -6.46% for 2011 to 2021.

Figure 5.16: Local General Aviation Operations, 2011–2021



Source: FAA, OPSNET

c. General Aviation Operations Forecast Scenarios

Due to the weak statistical correlation between local general aviation operations and the socioeconomic profile of the IDA MSA, a regression analysis was not a suitable method for forecasting operations. Instead, a series of scenarios were prepared and then compared to the TAF to determine the most suitable forecast.

- Scenario #1: The FAA's TAF forecast for IDA, with a CAGR of -0.26% for itinerant GA and 0.34% for local GA, used as the base case.
- Scenario #2: A forecast that assumes the ten-year OPSNET trend, with a CAGR of -1.00% for itinerant GA operations and -5.98% for local GA operations, will continue through 2041.
- Scenario #3: A forecast that assumes itinerant GA operations would follow the FAA's Aerospace projections with a CAGR of 0.90%.[20]
- Scenario #4: A forecast that assumes local GA operations will continue to follow the ten-year trend for operations per based aircraft (OPBA) with a CAGR of 0.54%. The ten-year historical median of 50 OPBA was applied to the based aircraft forecast to determine the forecast for local GA operations.

As shown in Table 5.14, the preferred forecast for itinerant GA operations is Scenario #3 and the preferred forecast for local GA operations is Scenario #4.

Table 5.14: General Aviation Operations Forecast Scenarios

Itinerant General Aviation Operations			
Year	**Scenario #1**	**Scenario #2**	**Scenario #3**
2021	18,975	17,228	17,228
2026	17,141	15,985	18,017
2031	17,420	15,120	18,843
2041	18,017	14,100	20,610
CAGR	**Scenario #1**	**Scenario #2**	**Scenario #3**
2021-2041	-0.26%	-1.00	0.90%
Difference From TAF	**Scenario #1**	**Scenario #2**	**Scenario #3**
	0%	-21.74%	14.39%

Local General Aviation Operations			
Year	**Scenario #1**	**Scenario #2**	**Scenario #4**
2021	6,825	7,402	7,402
2026	6,945	5,459	7,604
2031	7,065	4,006	7,812
2041	7,312	2,157	8,244
CAGR	**Scenario #1**	**Scenario #2**	**Scenario #4**
2021-2041	0.34%	-5.98%	0.54%
Difference From TAF	**Scenario #1**	**Scenario #2**	**Scenario #4**
	0%	-70.49%	12.78%

Source: FAA, TAF; Ardurra.

d. General Aviation Operations Forecast Evaluation

The FAA requires the forecast for non-hub commercial service airports to be within 10% of the TAF for the five-year forecast and within 15% for the ten-year forecast. Figure 5.17 shows the airport master plan forecast for general aviation operations alongside the TAF forecast.

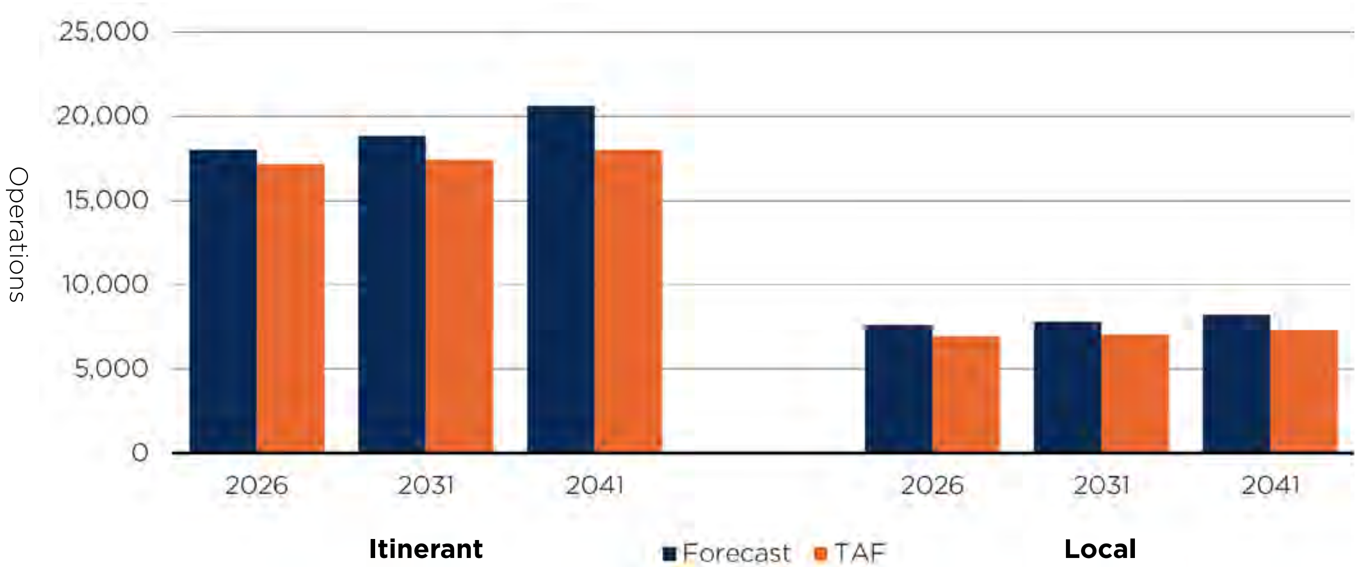
Itinerant GA operations have fluctuated drastically during the decade in response to changes in the national economy, shifting aviation trends, and the COVID-19 pandemic. These events have caused the ten-year OPSNET trend to be negative. However, a negative growth rate is not a reasonable application to determine future levels. Especially with the IDA MSA having such a healthy economy and growth is forecasted in every socioeconomic sector for the MSA. Therefore, the OPSNET ten-year trend scenario was eliminated.

The FAA Aerospace Forecast is based on the assumption that an overall economic recovery will enable the industry to recover to pre-pandemic levels.[21] With economic recovery evident in the region, it was assumed the FAA Aerospace Forecast's 0.90% growth rate was a reasonable application for itinerant operations. Additionally, the forecast for itinerant GA operations differs from the TAF by 5.11% for the five-year forecast, by 8.17% for the ten-year forecast, and by 14.39% for the 20-year forecast which means this forecast is considered to be consistent with the TAF.

The preferred forecast for local GA operations is the OPBA scenario with a growth rate of 0.54%. This forecast differs from the TAF by 9.49% for the five-year forecast, 10.57% for the ten-year forecast, and 12.75% for the 20-year forecast. This forecast is considered to be consistent with the TAF.

Overall, the forecast for general aviation operations differs from the TAF by 6.37% for the five-year forecast, 8.86% for the ten-year forecast, and 13.92% for the 20-year forecast. The overall CAGR for GA operations is approximately 0.79% for the 20-year planning period.

Figure 5.17: General Aviation Operations Forecast Comparison



Source: FAA, TAF; Ardurra.

5.8.3. Military Operations

Figure 5.18 shows historical rates of both itinerant and local military operations for 2011–2021 as reported by OPSNET. As previously mentioned, military operations tend to fluctuate as the Department of Defense alters its operational requirements. The CAGR was 3.12% for itinerant military operations, 28.21% for local military operations, and an overall CAGR of 7.40% for 2011 to 2021.

Figure 5.18: Military Operations, 2011–2021

Source: FAA, TAF

a. Historical Itinerant Military Operations Forecast

As previously mentioned, military operations are typically forecast at existing levels unless there is specific knowledge of an upcoming change that would affect future activity levels at the airport. While Idaho Falls Regional Airport supports frequent itinerant military operations, they are somewhat unpredictable, and there are no reliable indicators suggesting military operations will increase during the 20-year planning period. As a result, the TAF is the selected forecast (Table 5.15).

Table 5.15: Itinerant Military Operations Forecast Scenarios

Year	TAF	Itinerant Military Forecast
2021	259	259
2026	286	286
2031	319	319
2041	389	389
CAGR	**TAF**	**Itinerant Military Forecast**
2021-2041	2.05%	2.05%
Difference From TAF	**TAF**	**Itinerant Military Forecast**
	0%	0%

Source: FAA, TAF

b. Historical Local Military Operations Forecast

As with itinerant military operations, local military operations are also typically forecast at existing levels unless there is specific knowledge of an upcoming change that would affect future activity levels at the airport. There are no reliable indicators that suggest local military operations will increase during the 20-year planning period. As a result, the TAF is the selected forecast (Table 5.16).

Table 5.16: Local Military Operations Forecast Scenarios

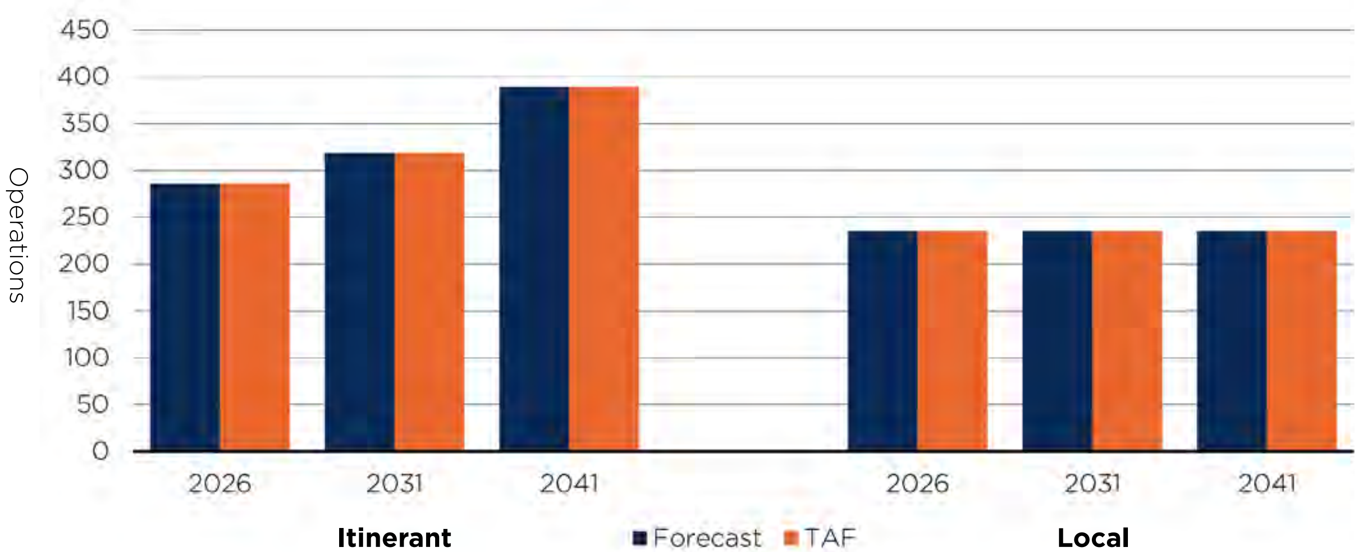
Year	TAF	Itinerant Military Forecast
2021	235	235
2026	235	235
2031	235	235
2041	235	235
CAGR	**TAF**	**Itinerant Military Forecast**
2021-2041	0%	0%
Difference From TAF	**TAF**	**Itinerant Military Forecast**
	0%	0%

Source: FAA, TAF

c. Military Operations Forecast Evaluation

The overall forecast for both local and itinerant military operations is presented in Figure 5.19. As shown, this forecast is consistent with the TAF.

Figure 5.19: Military Operations Forecast Comparison



Source: FAA, TAF; Ardurra.

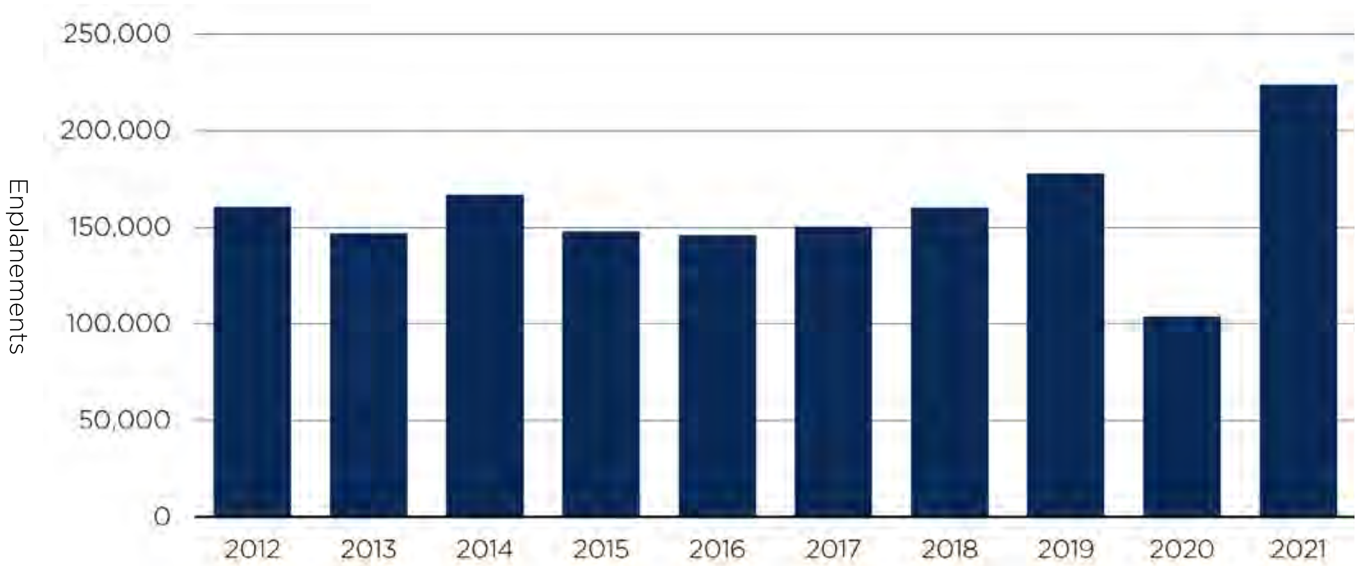
5.9. Passenger Enplanements Forecast

This section presents the forecast for passenger enplanements. As previously discussed, the forecast for passenger enplanements, along with the forecast for commercial service operations, will help determine future requirements for airport facilities necessary for accommodating passengers.

5.9.1. Historical Passenger Enplanements

Figure 5.20 shows historical passenger activity levels for 2012–2021, as reported by the U.S. Department of Transportation. This data shows there were 223,741 enplaned passengers at the airport in 2021. This was the highest activity level on record for the airport. Overall, the CAGR for passenger enplanements was 3.76% for 2012–2021.

Figure 5.20: Passenger Enplanements, 2012–2021

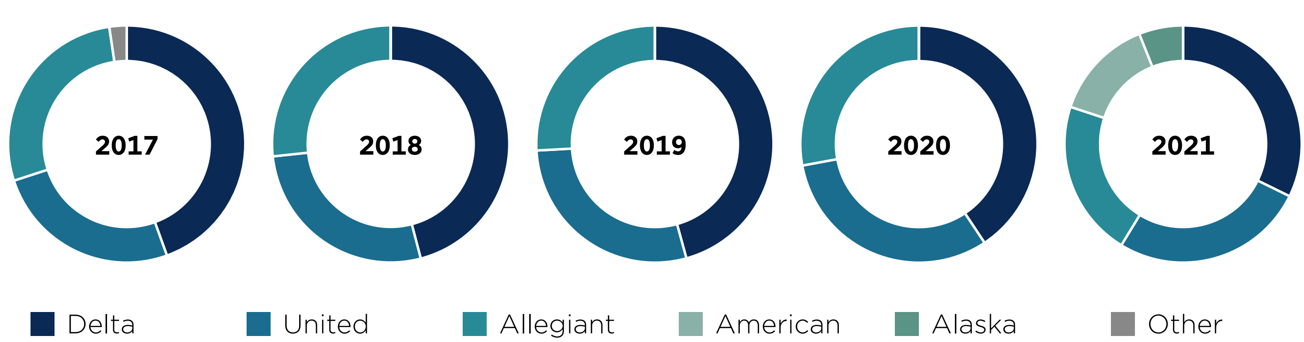


Source: U.S. Department of Transportation, T-100, January 2022

5.9.2. Passenger Service Levels

As previously discussed, five passenger airlines currently operate at the airport; Alaska Airlines, Allegiant Air, American Airlines, Delta Airlines, and United Airlines. As shown in Figure 5.21, Delta maintained the largest market share of enplaned passengers from 2017 to 2021 despite losing some market shares to United and Allegiant as well as the initiation of service by American and Alaska in 2021.

Figure 5.21: Market Share of Enplaned Passengers by Airline, 2017–2021



Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100, January 2022

5.9.3. Passenger Enplanements Forecast Scenarios

Similar to the forecast for commercial service operations, a series of scenarios were prepared for the forecast of enplaned passengers.

- Scenario #1: As previously discussed, this forecast uses a bottom-up methodology for the short-term (2022–2025) and a top-down approach for the long term (2026–2041) using a socioeconomic regression analysis to predict future growth. As noted in Table 5.12, the variables used for this analysis included total employment, total earnings, and gross regional product for the ATA, along with the national gross domestic product, which were averaged to determine the annual growth rate. This forecast shows enplaned passengers growing a CAGR of 0.97% for 2021–2041.

- Scenario #2: This forecast assumes IDA will continue to increase its passenger retention rate within the ATA through 2024 as a result of the increased demand and socioeconomic growth shown in Scenario #1 as well as the greater seat capacity allocated to IDA by the airlines, increased competition from added service resulting in reduced airfares, and population migration patterns occurring in the region making it a more convenient and economical choice for air travel. This forecast shows enplaned passengers growing at a CAGR of 1.90% for 2021–2041.

As shown in Table 5.17, the preferred forecast for itinerant GA operations is Scenario #2.

Table 5.17: Passenger Enplanement Forecast Scenarios

Scenario #1				
Year	Passengers	Departing Seats	Load Factor	Seats/Departure
2021	223,741	305,282	73%	77.7
2026	240,871	322,519	75%	77.5
2031	250,313	325,973	77%	78.0
2041	271,189	334,801	81%	79.0
CAGR	Passengers	Departing Seats	Load Factor	Seats/Departure
2021-2041	0.97%	0.46%	0.52%	0.08%

Scenario #2				
Year	Passengers	Departing Seats	Load Factor	Seats/Departure
2021	223,741	305,282	73%	77.7
2026	289,508	372,081	78%	78.6
2031	300,869	377,477	80%	79.6
2041	326,041	390,468	84%	81.6
CAGR	Passengers	Departing Seats	Load Factor	Seats/Departure
2021-2041	1.90%	1.24%	0.70%	0.25%

Source: Idaho Falls Regional Airport; U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.9.4. Passenger Enplanement Forecast Assumptions

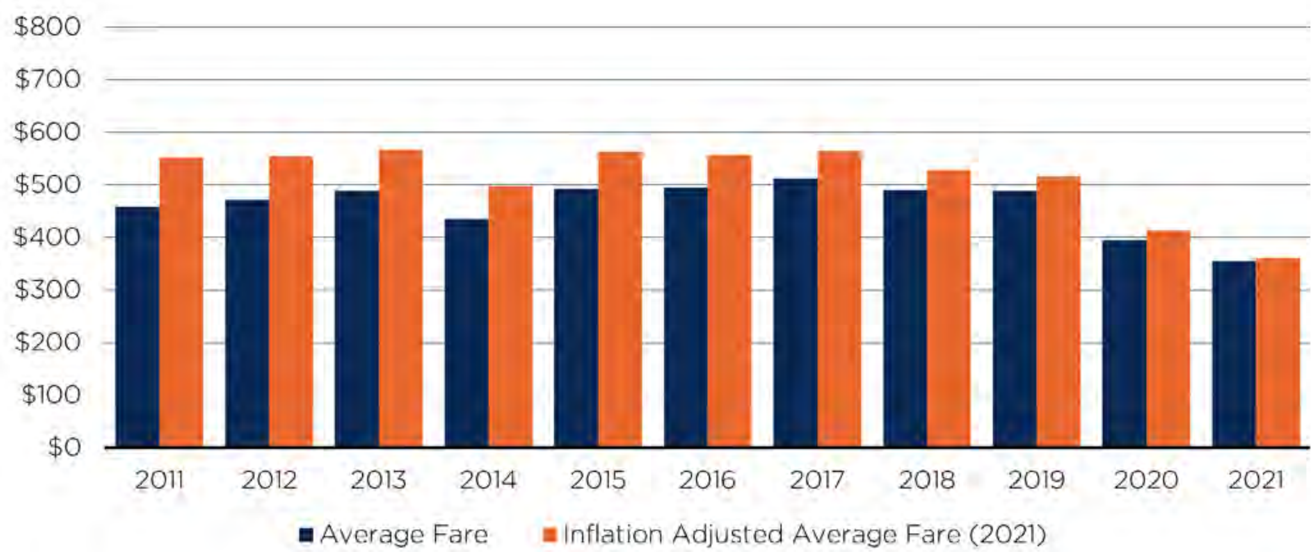
a. Scenario #1:

- At the onset of the pandemic, airlines reallocated larger regional jets and small narrowbody aircraft to destinations that were experiencing increased demand but were previously served by 50-seat regional jets. Some of these flights are expected to return to smaller aircraft as the rest of the industry returns to pre-pandemic levels of activity. As a result, the average aircraft size will decline slightly through 2024 but will remain higher than historic levels.
- Airlines are expected to retire their 50-seat regional jets by 2030 and will switch to using larger regional jets and narrowbody mainline aircraft to service IDA.
- Overall, the industry-wide trend of switching to aircraft with a higher seating capacity is expected to continue throughout the forecast period, and an average of 79 seats per departure is forecast by 2041.

b. Scenario #2:

- Increased retention is expected as a result of greater seat capacity allocated to IDA by the airlines, increased competition from added service resulting in reduced airfares, and population migration patterns occurring in the region making it a more convenient and economical choice for air travel. Figure 5.22 illustrates the decrease in average fares at IDA.

Figure 5.22: Average Fares at IDA, 2011–2021



Source: Bureau of Transportation Statistics, Average Domestic Airline Itinerary Fares

- Robust growth is expected in 2022 as a result of new services and new flights initiated in mid-2021 once they have been operating for the entire year.
- IDA is expected to retain an additional 20% of passengers from SLC and BOI through 2024 due to the additional flights and nonstop routes offered at the airport.
- Demand is expected to grow as a result of socioeconomic growth. As a result, airlines will offer additional flights to new markets (e.g., Portland [PDX] and Chicago-O'Hare [ORD]), and new entrant airlines will begin service at IDA.

c. Additional Assumptions

Both forecast scenarios are based on several assumptions of national aviation trends as well as national and regional economic conditions.

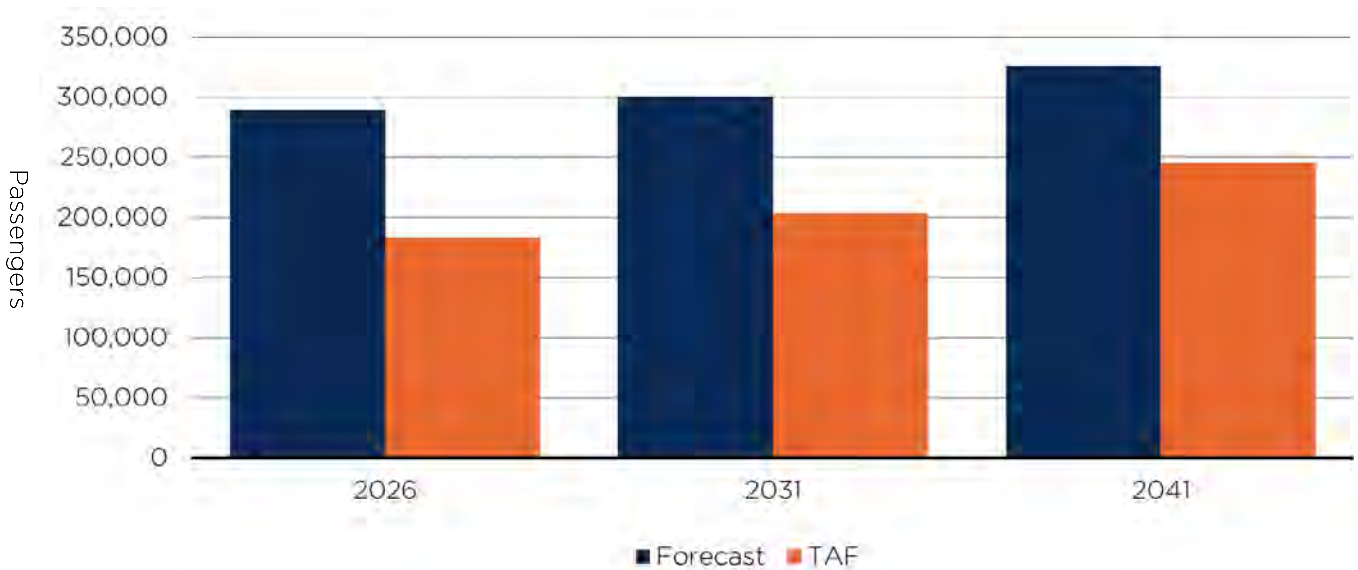
- IDA will continue to primarily serve O&D passengers and no airlines will develop a base of operations at IDA with the goal of serving a combination of O&D and connecting passengers.
- Competition with other airports in or near the IDA ATA is expected to remain stable with no structural advantages or disadvantages occurring relative to other regional airports.
- Additional airline consolidations and mergers that may occur during the forecast period are not likely to negatively affect the number of enplaned passengers at IDA. New airline alliances, should they develop, would be restricted to code-sharing and loyalty program reciprocity and would not reduce airline competition at IDA.
- Similar to the FAA's nationwide forecasts, it was assumed that no terrorist incidents would occur during the forecast period that would have significant negative and prolonged effects on demand at IDA.
- Economic disturbances will occur during the forecast period which will cause year-to-year variations in airline traffic. However, traffic at IDA is expected to increase for the long term.

Many of the factors influencing aviation demand cannot be readily quantified, and any forecast is subject to uncertainties. As a result, the forecast process should not be viewed as precise. Actual airline traffic at IDA may differ from the forecasts presented herein because events and circumstances may not occur as expected and these differences may be significant.

5.9.5. Passenger Enplanements Forecast Evaluation

The FAA requires the forecast for non-hub commercial service airports to be within 10% of the TAF for the five-year forecast and within 15% for the ten-year forecast. The preferred forecast for passenger enplanements, which is shown alongside the TAF forecast in Figure 5.23, differs substantially from the TAF and exceeds these thresholds. Overall, the forecast for enplaned passengers differs from the TAF by 57.65% for the five-year forecast, 47.73% for the ten-year forecast, and 32.91% for the 20-year forecast.

Figure 5.23: Passenger Enplanement Forecast Comparison

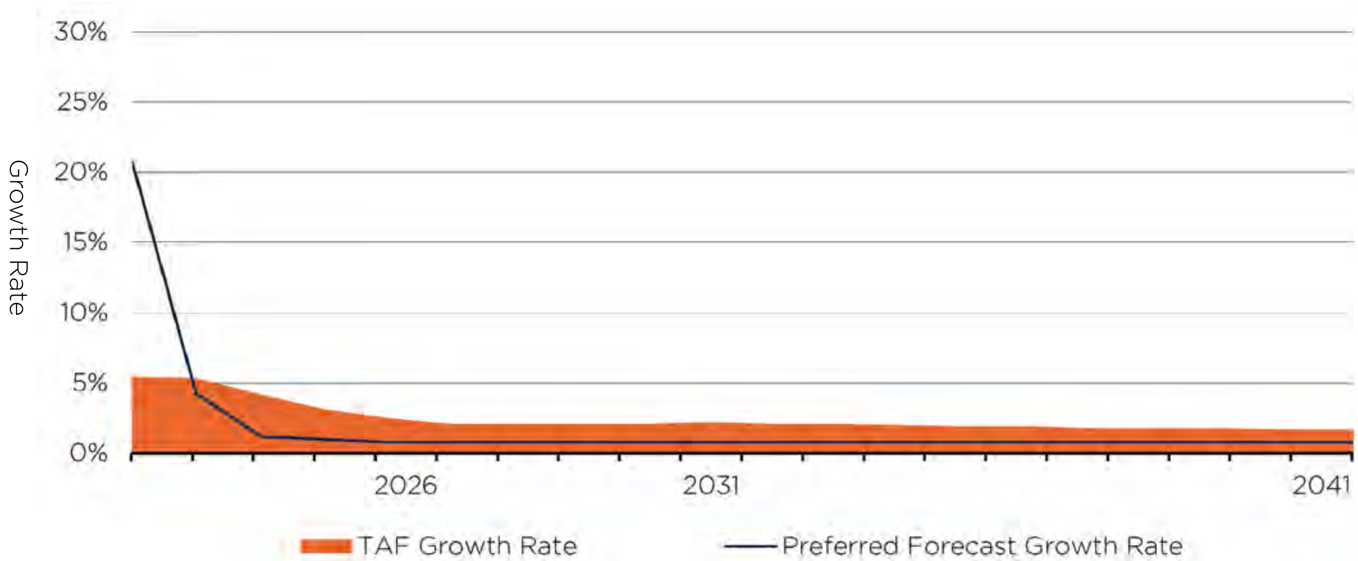


Source: U.S. Department of Transportation, T-100; FAA, TAF, May 2021; Ricondo & Associates, Inc.

This difference is due, in part, to the preferred forecast including nonrevenue passengers while the TAF excludes nonrevenue passengers. Additionally, the preferred forecast is based on a calendar year while the TAF is based on the federal government's fiscal year (i.e., October 1 through September 30). Furthermore, the preferred forecast, which uses 2021 as the base year, uses actual data from 2021 while the TAF, which was published May 2021, uses estimates for 2021. The airport reported approximately 223,741 enplaned passengers in 2021 while the TAF shows an estimated 149,954 enplaned passengers; not nearly enough to account for the significant growth experienced during the entirety of 2021.

While the near-term projections differ substantially for the forecast period, the sponsor's preferred forecast actually reflects a lower growth rate than TAF (Figure 5.24). The preferred forecast indicates an overall CAGR for enplaned passengers of approximately 1.90% for the 20-year planning period while the TAF indicates a CAGR of approximately 2.49%.

Figure 5.24: Passenger Enplanement Forecast and TAF Growth Rates



Source: U.S. Department of Transportation, T-100; FAA 2020 TAF; Ricondo & Associates, Inc.

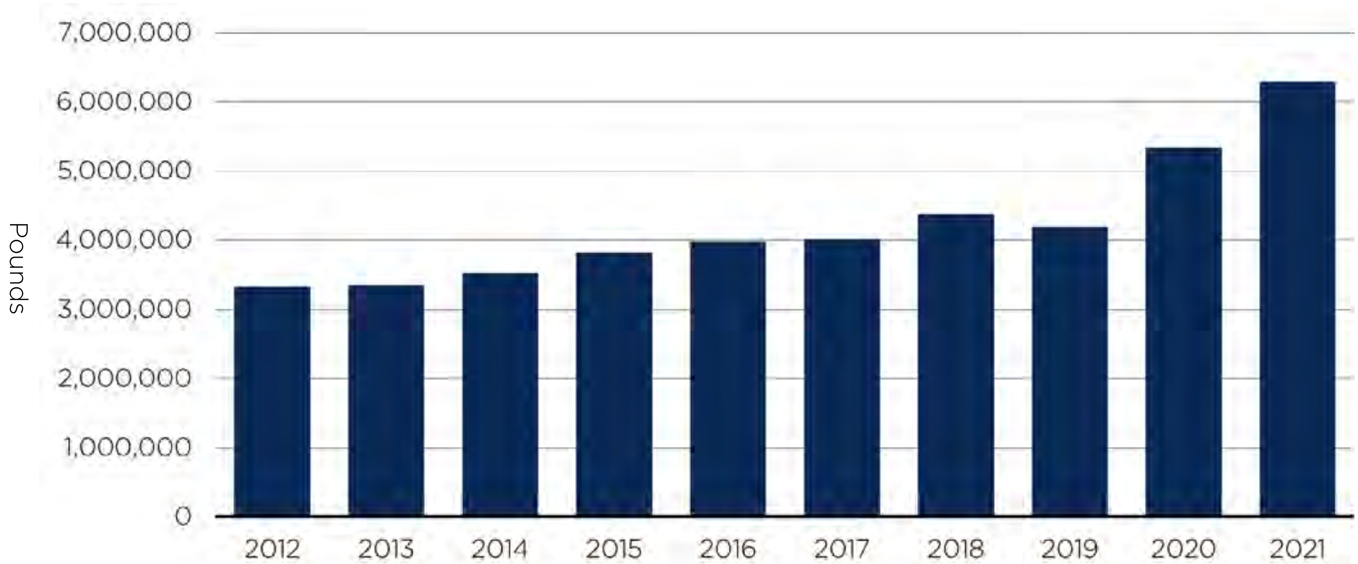
5.10. Air Cargo by Volume Forecast

This section presents the forecast for cargo by volume. The methodologies used to develop these projections are discussed in 5.6.5. Forecasting Methodology and Approach Used. The forecast for air cargo by volume will help determine if the cargo facilities at IDA are sufficient to handle cargo volumes throughout the forecast period.

5.10.1. Historical Air Cargo by Volume

Figure 5.25 shows historical rates of cargo by volume for 2012–2021. Overall, the CAGR for cargo by volume was 7.32% for 2012–2021. This growth has been supported, in part, by the nationwide increase in e-commerce activity.

Figure 5.25: Air Cargo by Volume, 2012–2021



Source: U.S. Department of Transportation, T-100, November 2021; Ricondo & Associates, Inc.

5.10.2. Air Cargo by Volume Forecast Scenarios

A series of scenarios were prepared and then compared to determine the most suitable forecast.

- Scenario #1: A forecast that uses a socioeconomic regression analysis. As previously discussed, the variables used for this analysis are total earnings and the gross regional product for the ATA, along with per capita income for the U.S., which were averaged to determine the annual growth rate of 2.4%.
- Scenario #2: A forecast that assumes FedEx, UPS, or another cargo carrier will introduce new scheduled service using a B757F aircraft beginning in 2022 as a result of the increased demand and socioeconomic growth shown in Scenario #1. This forecast is based on other markets with similar levels of B757F activity.

As shown in Table 5.18, the preferred forecast is Scenario #2.

Table 5.18: Air Cargo by Volume Forecast Scenarios

Air Cargo Volumes		
Year	Scenario #1	Scenario #2
2021	6,288,882	6,288,882
2026	7,198,948	9,952,995
2031	8,142,017	11,072,550
2041	10,170,069	13,488,226
CAGR	Scenario #1	Scenario #2
2021-2041	2.4%	3.89%

Source: U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.10.3. Air Cargo by Volume Forecast Assumptions

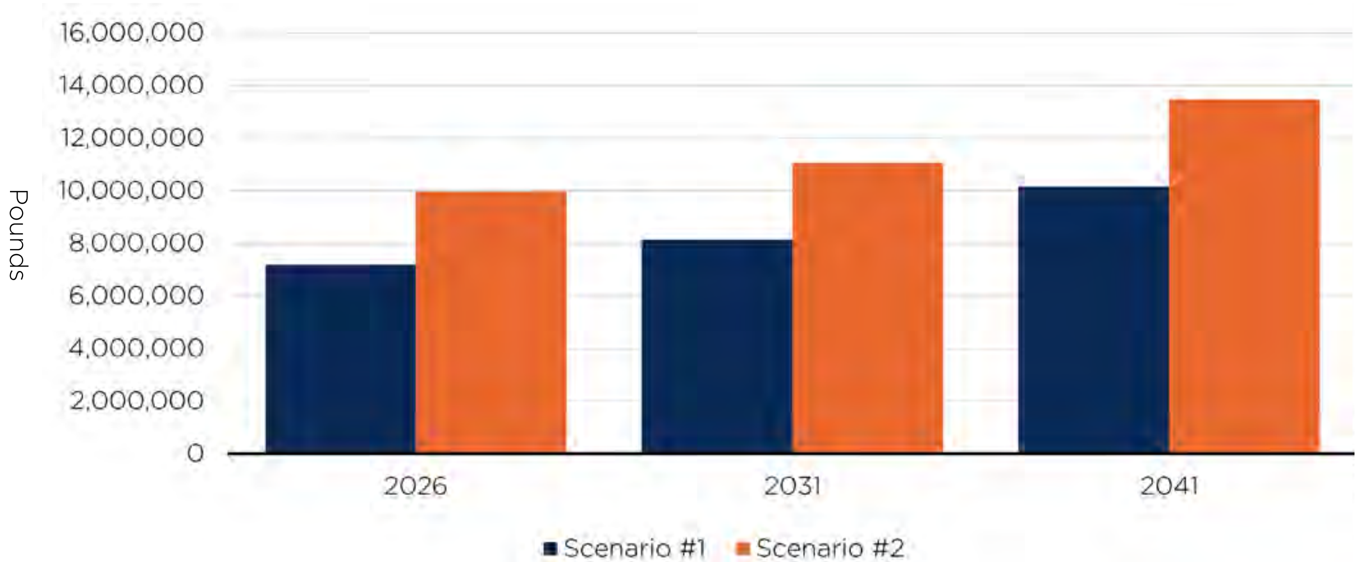
- Scenario #1: This forecast is based on the assumption that the average carrying capacity of all-cargo aircraft serving the airport would increase during the forecast period. Cargo is currently carried by a combination of single-engine and multi-engine turboprop aircraft. Operations by multi-engine turboprop aircraft are expected to increase during the forecast period; specifically the ATR 72-600F operated by Empire Air (a FedEx feeder airline). This forecast does not assume regular jet aircraft cargo service will occur at IDA during the forecast period.

- Scenario #2: This forecast assumes the new service will supplement rather than replace the existing cargo feeder service because it will serve peak-period demand. The new service is assumed to operate three to four times weekly during the three peak cargo months of the year to accommodate increased demand in eastern Idaho.

5.10.4. Air Cargo by Volume Forecast Evaluation

Figure 5.26 shows a comparison of these two forecast scenarios for cargo by volume.

Figure 5.26: Comparison of Air Cargo by Volume Forecasts

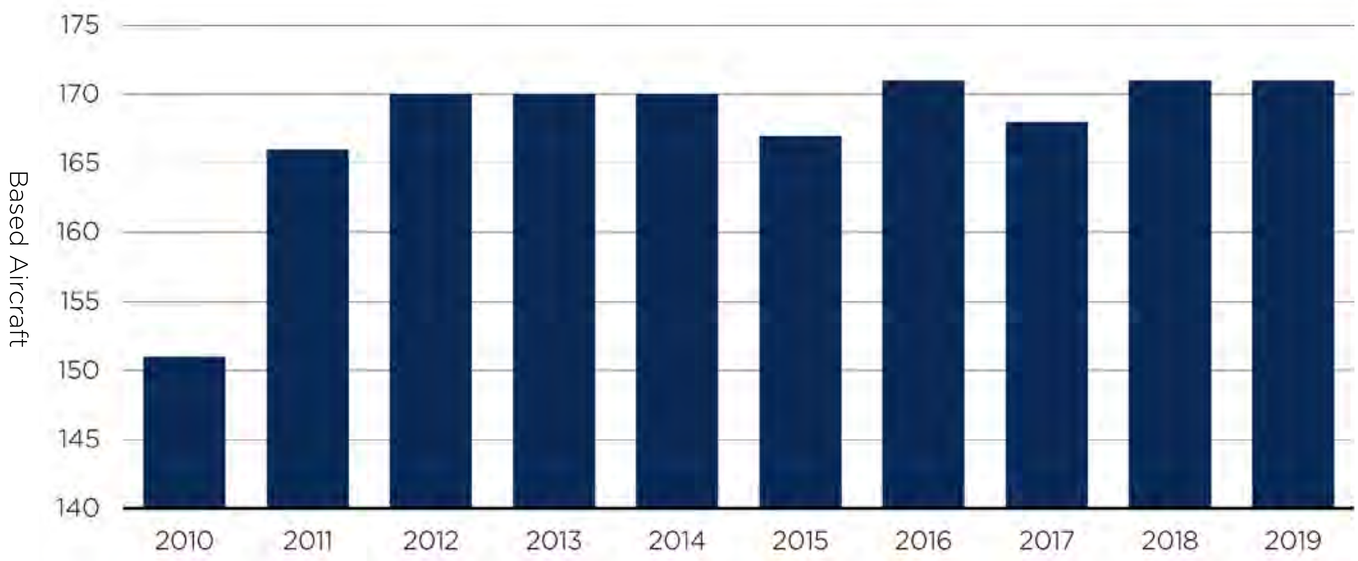


Source: U.S. Department of Transportation, T-100, November 2021; Ricondo & Associates, Inc.

5.11. Based Aircraft Forecast

The FAA defines based aircraft as any operational and airworthy aircraft that is based at the airport for the majority of the year. The forecast for based aircraft is essential in planning the development of GA infrastructure such as aircraft hangars and tiedowns. Additionally, based aircraft serves as a key indicator for the growth of local GA operations. Figure 5.27 shows the historical rates of based aircraft, as reported in the TAF, which shows they have increased at a CAGR of 1.39% from 2010 to 2019.

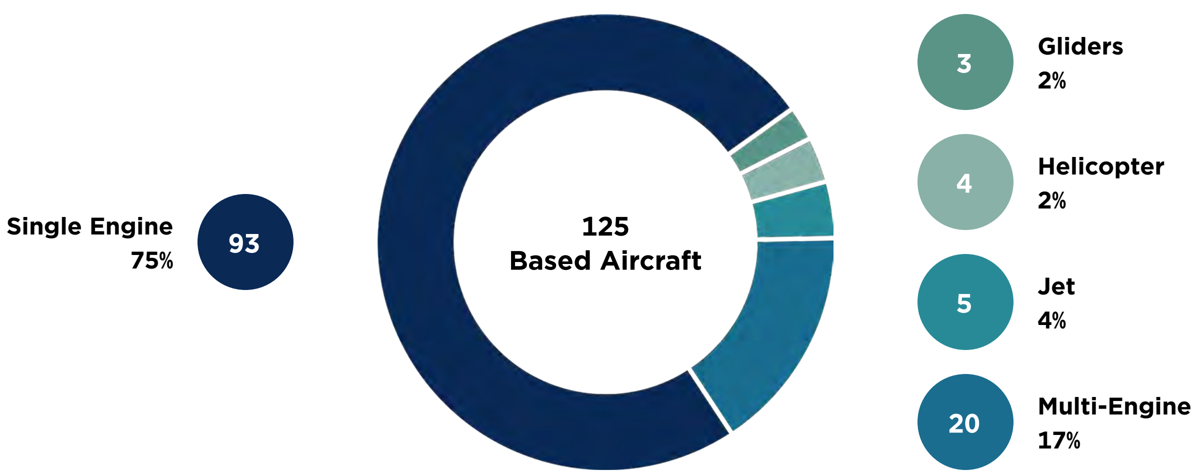
Figure 5.27: Based Aircraft, 2010–2019



Source: FAA, TAF

The airport provides the FAA with an annual inventory of based aircraft which is then used by the FAA to update the TAF forecast for the airport. The airport master record (FAA Form 5010-1) for IDA indicates a total of 171 aircraft were based at the airport for 2021. However, airport management reports 125 aircraft were actually based at the airport during 2021. The airport records will be used as the baseline in this forecast. As shown in Figure 5.28, approximately 93 of these aircraft were single engine piston aircraft, 20 were multi-engine, five were jets, four were helicopters, and three were gliders.

Figure 5.28: Based Aircraft Inventory, 2021



Source: Idaho Falls Regional Airport

5.11.1. Based Aircraft Forecast Scenarios

The number of aircraft based at the airport has increased from 151 in 2010 to 171 in 2019. The number of based aircraft could not be statistically correlated to any specific socioeconomic factor, so a regression analysis was determined to not be a suitable forecasting methodology. Instead, the following series of scenarios were compared to determine the most suitable forecast:

- **Scenario #1:** The FAA's TAF forecast for IDA, with a CAGR of 0%, used as the baseline.
- **Scenario #2:** A forecast based on the historical ten-year trend (2010–2019) of 1.39% for based aircraft.

As shown in Table 5.19, the preferred forecast is the ten-year trend with a CAGR of 1.39%.

Table 5.19: Based Aircraft Forecast Scenarios

Year	TAF	10-Year Trend
2021	171	125
2026	171	135
2031	171	145
2041	171	165
CAGR	**TAF**	**10-Year Trend**
2021-2041	0%	1.39%
Difference From TAF	**TAF**	**10-Year Trend**
	0%	-3.51%

Source: FAA, TAF; Ardurra.

5.11.2. Based Aircraft Forecast Evaluation

The FAA requires the forecast for non-hub commercial service airports to be within 10% of the TAF forecast for the five-year forecast and within 15% for the ten-year forecast. This forecast is not within those limits. However, this is because this forecast uses 125 aircraft as the baseline which reflects the actual number of based aircraft.

5.11.3. Based Aircraft Forecast by Category

It is assumed the percentages of based aircraft will remain roughly the same throughout the planning period so applying current percentages to the forecast provides the forecast for based aircraft by category (Table 5.20).

Table 5.20: Based Aircraft Forecast by Category

Year	Single Engine	Multi-Engine	Jet	Helicopters	Gliders	Total
	75%	17%	4%	2%	2%	
2021	93	20	5	4	3	125
2026	101	22	5	4	3	135
2031	109	24	5	4	3	145
2041	123	28	6	5	3	165

Source: Ardurra.

5.12. Peak Period Activity Forecast

The commercial activity forecasts presented in this chapter were developed as annual activity levels, which may not adequately describe the requirements for individual airport facilities. Annual metrics provide average demand levels for an entire year, although most airports experience peak periods during which demand far surpasses those averages. Therefore, master plan forecasts must include peak period activity levels for facilities planning purposes.

Peak operational activity, such as peak month and peak month average day (PMAD) operations, is typically used in airport facilities planning to determine the facilities needed to accommodate forecast demand and for sizing of facilities. Peak analyses need to include enplaned passenger forecasts to adequately plan, size, and design passenger terminal facilities. Annual aircraft operations should be considered in evaluating airfield facilities and infrastructure, while only those operations associated with commercial passenger airlines need to be considered in passenger terminal facilities planning. Commercial service airports experience peaks in both enplaned passengers and passenger airline aircraft operations. Therefore, each of these peak elements must be evaluated separately, because peaks in airline aircraft operations define the demand for airside facilities (gates, ramp, remote parking areas), while peak numbers of enplaned passengers directly affect terminal and landside facilities planning, such as roads and parking facilities.

5.12.1. Peak Period Forecast for Aircraft Operations

The peak month for commercial aircraft operations occurs during the summer, typically July or August. Averaging the peak month percentages of annual commercial aircraft operations yields an average of 10.2%. The average percentage was applied to total annual operations to determine the peak month volume of operations. Forecasts of annual, peak month, PMAD, and peak hour commercial aircraft operations are presented in Table 5.21. The peak hour of commercial aircraft operations was calculated by averaging the past five years of peak hour percentages and assumes that percentage will remain constant throughout the forecast period. As the addition of one or two flights in the peak hour at an airport the size of IDA can have substantial impacts on passenger level of service, peak hour volumes should be closely monitored when planning terminal improvements.

Table 5.21: Peak Activity Profile, Commercial Aircraft Operations

Year	Annual Operations	Peak Month	Peak Month Operations	% of Annual Operations	Peak Month Avg. Day	Peak Hour % of Avg. Day	Peak Hour Operations
2017	6,366	August	662	10.4%	21	18.8%	4
2018	6,542	August	698	10.7%	23	16.7%	4
2019	6,714	August	638	9.5%	21	21.4%	5
2020	5,530	October	538	9.7%	17	21.4%	4
2021	8,532	July	928	10.9%	30	13.3%	4
Forecast							
2026	10,216		1,046	10.2%	33	18.3%	6
2031	10,301		1,054	10.2%	34	18.3%	6
2041	10,527		1,078	10.2%	35	18.3%	6

Source: U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.12.2. Peak Period Forecast for Enplaned Passengers

Historical monthly enplaned passenger data for 2017 through 2021 were reviewed to identify the peak month for passenger activity at IDA. As shown in Table 5.22, the peak month was typically August. However, the peak month was October 2020 and July 2021 because airlines reduced service during the spring and summer months due to the effect the pandemic had on demand.

The peak month percentages of annual enplaned passengers for each year were averaged to determine an appropriate peak factor. An average of 11.1% was calculated based on the historical data from 2017 through 2021. This was assumed to be constant for determining future peak month activity at the airport. The peak month average day passenger volumes are based on an assumed 31-day peak month. The peak hour percentage of peak month average day enplaned passengers was calculated by averaging the latest five years of peak hour percentages with the assumption that the percentage will remain constant throughout the forecast period.

Table 5.22: Peak Activity Profile, Enplaned Passengers

Year	Annual Passengers	Peak Month	Peak Month Passengers	% of Annual Passengers	Peak Month Avg. Day	Peak Hour % of Avg. Day	Peak Hour Passengers
2017	147,544	August	16,510	11.2%	533	26.8%	143
2018	161,483	August	17,980	11.1%	581	25.1%	146
2019	177,340	August	18,329	10.3%	592	24.9%	147
2020	101,538	October	10,283	10.1%	332	29.6%	98
2021	223,741	July	28,178	12.6%	909	24.3%	221
Forecast							
2026	289,508		32,016	11.1%	1,033	26.2%	270
2031	300,869		33,273	11.1%	1,073	26.1%	280
2041	326,041		36,056	11.1%	1,163	26.2%	304

Source: U.S. Department of Transportation, T-100; Ricondo & Associates, Inc.

5.13. Fleet Mix Forecast

The airport reference code (ARC) is a system developed by the FAA to relate airport design criteria to the operational and physical characteristics of the airplane types that will operate at a particular airport. The ARC has two components relating to the critical aircraft. The first component, depicted by a letter, is the aircraft approach category which relates to aircraft approach speed. The second component, depicted by a Roman numeral, is the airplane design group which relates to wingspan and tail height.

5.13.1. Commercial Service Fleet Mix Forecast

The passenger aircraft fleet mix forecast is listed in Table 5.23. It is expected that by 2030, 50-seat regional jet aircraft will no longer operate at IDA and those passenger airline operations will be conducted in larger regional jets like the Embraer 170/175.

Table 5.23: Passenger Aircraft Fleet Mix Forecast

Seat Capacity	Representative Aircraft	Base Year	Forecast Years		
		2021	2026	2031	2041
<51	Canadair CRJ-200	1,289	1,136	0	0
51–76	Embraer 170/175	5,794	7,101	8,156	8,135
77–100	Embraer 190	0	0	0	0
101–130	Airbus A319	307	568	664	766
131–150	Airbus A320	467	663	664	670
151+	Airbus A321	0	0	0	0
	Subtotal	**7,857**	**9,468**	**9,484**	**9,571**

Note: Totals may not sum due to rounding. The representative aircraft are provided as an example of aircraft operating at the airport in 2021. This is not an exhaustive list and does not imply any particular aircraft will operate at the airport in the future.

Source: U.S. Department of Transportation, T-100; FAA, OPSNET; Innovata; Ricondo & Associates, Inc.

5.13.2. General Aviation Fleet Mix Forecast

Several sources of 2021 operations data were used to determine the types of general aviation aircraft that use the airport. This includes OPSNET data, which consists of traffic counts as recorded by air traffic control (ATC) personnel, and TFMSC data which includes the ARC category for each aircraft. These records were compared to TAF data to determine usage percentages for each ARC category.

As previously mentioned, TFMSC data is only useful in helping to identify general trends in aircraft activity because GA aircraft typically operate under VFR and are therefore not required to file a flight plan. In order to account for total GA operations, the ARC percentages identified using the TFMSC data were then applied to OPSNET data, and a 4% modifier was applied to account for any operations occurring when the airport control tower is closed as well as helicopter operations. The results were then used to determine baseline percentages and those percentages were applied to the airport master plan forecast to determine the GA fleet mix forecast (Table 5.24).

Table 5.24: General Aviation Fleet Mix Forecast

ARC	Percentages	Base Year	Forecast Years		
		2021	2026	2031	2041
A-I	72.19%	18,666	19,417	20,200	21,867
A-II	5.45%	1,409	1,466	1,525	1,650
B-I	6.93%	1,793	1,865	1,940	2,101
B-II	9.41%	2,433	2,531	2,633	2,851
B-III	3.27%	845	879	915	990
C-I	0.51%	131	136	141	153
C-II	1.38%	356	370	385	417
C-III	0.59%	152	158	164	178
D-I	0.07%	18	19	19	21
D-II	0.07%	18	19	19	21
D-III	0.14%	36	37	39	42

Note: Due to rounding and unknown TFMSC operations, the total annual operations do not precisely align with the master plan forecast. The breakdown is provided for generalized data analysis and planning purposes.
Source: FAA, OPSNET, TFMSC, TAF; Ardurra.

a. General Aviation Fleet Mix Forecast Assumptions

An assumption was made that the ARC percentages would remain relatively consistent throughout the planning period because there are no significant indicators to suggest these will shift.

5.14. Critical Aircraft

The commercial service critical aircraft will be the driver for the runway, primary taxiway, and safety area standards, and the GA critical aircraft will aid in planning and developing the areas of the airport that cater to GA customers.

5.14.1. Commercial Service Critical Aircraft

Based on current and scheduled operations, the critical aircraft for commercial service is a C-III aircraft, such as the Airbus A319 or A320 (Figure 5.29). More than 750 operations were scheduled at IDA in 2021 by a C-III aircraft.[22] Based on the forecast analyses, and the fleet mix expected to operate at the airport during the planning period, it is expected that a C-III aircraft, such as the Airbus A320, will remain the critical aircraft throughout the planning period. Specifications for the Airbus A320 are listed in Table 5.25.

Figure 5.29: Commercial Service Critical Aircraft, Airbus A320

Source: The Points Guy

Table 5.25: Airbus A320 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	C
Airport Design Group (ADG)	III
Taxiway Design Group (TDG)	3
Approach Speed	136 Knots of Indicated Airspeed (KIAS)
Wingspan	111.88 Feet
Length	123.27 Feet
Tail Height	39.63 Feet
Cockpit to Main Gear (CMG)	50.20 Feet
Outer to Outer Main Gear Width (MGW)	29.36 Feet
Maximum Takeoff Weight	171,961 Pounds

Source: FAA Aircraft Characteristics Database

Once a more demanding category of aircraft makes at least 350 operations at an airport, that airport should prepare for a shift in ARC and plan for a change in FAA design standards. Alaska Airlines, which began air service at IDA in June 2021, uses the Bombardier Q-400 aircraft. Approximately 394 Bombardier Q-400 operations took place at IDA just during the last half of 2021. The Bombardier Q-400 has a taxiway design group (TDG) of 5, and this makes it the most demanding aircraft for taxi operations. Therefore, the Q-400 will drive the design standard for taxiway design.

While Alaska Airlines is expected to begin to phase out the Q-400 by 2023, the airport has had discussions with other operators about potentially starting service using TDG 5 aircraft. Therefore, the critical aircraft for taxiway design should remain the Q-400, but this should be reexamined as part of future taxiway projects. Currently, taxiway intersections are designed to TDG 5 standards. At 60 feet wide, Taxiway A exceeds the standards for TDG 3/4 but it is not wide enough to meet TDG 5 standards.

5.14.2. Air Cargo Critical Aircraft

Based on the projected fleet mix, the critical aircraft for air cargo will be the ATR 72 (Figure 5.30). Specifications for the ATR 72 are listed in Table 5.26.

Figure 5.30: Air Cargo Critical Aircraft: ATR 72

Source: Ardurra.

Table 5.26: ATR 72 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	B
Airport Design Group (ADG)	III
Taxiway Design Group (TDG)	1B
Approach Speed	114 Knots of Indicated Airspeed (KIAS)
Wingspan	88.75 Feet
Length	89.13 Feet
Tail Height	25.08 Feet
Cockpit to Main Gear (CMG)	35.33 Feet
Outer to Outer Main Gear Width (MGW)	>13.4 Feet
Maximum Takeoff Weight	49,603 Pounds

Source: FAA Aircraft Characteristics Database

5.14.3. General Aviation Critical Aircraft

The majority of the general aviation operations in 2021, excluding cargo operations, involved ARC category C-II aircraft with approximately 356 operations. The representative critical aircraft is identified as the Bombardier Challenger 300 (CL30) (Figure 5.31). This is one of the most common air taxi and charter aircraft that use the airport and one of the FAA's 2021 top ten aircraft for domestic business jet operations.[23] Specifications for the general aviation critical are listed in Table 5.27.

Figure 5.31: General Aviation Critical Aircraft: Bombardier Challenger 300

Source: Bombardier.

Table 5.27: Bombardier Challenger 300 Specifications

Characteristic	Specification
Aircraft Approach Category (AAC)	C
Airport Design Group (ADG)	II
Taxiway Design Group (TDG)	1B
Approach Speed	125 Knots of Indicated Airspeed (KIAS)
Wingspan	63.83 Feet
Length	68.75 Feet
Tail Height	20.33 Feet
Cockpit to Main Gear (CMG)	27.75 Feet
Outer to Outer Main Gear Width (MGW)	12.64 Feet
Maximum Takeoff Weight	38,850 Pounds

Source: FAA Aircraft Characteristics Database

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FACILITY REQUIREMENTS

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CHAPTER SIX

REQUIREMENTS

To properly plan for the future of Idaho Falls Regional Airport (IDA), it is necessary to determine if the existing airport facilities are able to safely and efficiently accommodate current and forecasted levels of activity. Each of the facilities described in Chapter 4, Airside and Landside Inventory 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. This analysis will also be used to help determine if any new facilities are needed as a result of the sponsor's comprehensive plan or strategic vision and mission statements.

The main goal of this analysis will be to identify if improvements are needed, when they will be needed, and the purpose and need for these improvements. Each facility will be analyzed to determine its ability to safely and efficiently accommodate the forecasted activity levels discussed in Chapter 5, Forecast of Aviation Activity. They 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 7, Development Alternatives.

6.1. Summary of Existing Facilities and Recommendations

The following summarizes the airport facilities that were examined in this evaluation as well as the outcomes and recommendations that are discussed in this chapter.

a. Airfield and Airspace Requirements

Airfield Capacity

- Demand is expected to remain within 15–19% of the annual service volume (ASV) for the 20-year planning period which means there is not a need to begin planning for capacity improvements.
- Runway 17/35 does not meet the requirements for a crosswind or secondary runway unless the FAA makes a specific determination stating the runway is required.

Runway Requirements

- Orientation and Designation: Runway designations for Runway 3/21 and Runway 17/35 do not need to change during the planning horizon.
- Length: The current length of Runway 3/21 and Runway 17/35 is adequate to support the critical aircraft throughout the 20-year planning horizon.
- Width: Runway 3/21 width meets design standards. Runway 17/35 width exceeds design standards by 15 feet.
- Displaced Thresholds and Declared Distances: IDA does not have any displaced thresholds or need to use declared distances for any runway.
- Runway line of sight: These requirements are met for individual runways but not for the two runways combined.
- Pavement Strength: The existing weight bearing capacity of Runway 3/21 and Runway 17/35 is adequate to support the critical aircraft.
- Potential Change in Critical Aircraft: Some design standards for Runway 3/21 would change if a Boeing 757F, or other ADG-IV aircraft, were to become the critical aircraft for air cargo operations.
- Runway Incursion Mitigation: The intersection of Runway 17/35 and Taxiway C should be reviewed for alternatives to eliminate Hot Spot 1.

Taxiway System Requirements

- Design Standards: IDA meets appropriate design standards for all design criteria *except* taxiway width and taxiway shoulder width. Due to the varying widths along the length of the taxiways, there are areas of the taxiway that meet appropriate design standards. However, the narrowest sections do not meet the minimum requirements for FAA design.
- Object Free Areas and Safety Areas: All object free areas and safety areas are within standards and contain no penetrations or incompatible land uses.
- Potential Change in Critical Aircraft: Some design standards would change if a Boeing 757F, or other ADG-IV aircraft, were to become the critical aircraft for taxiway design.

Airspace Requirements

- There are known penetrations in the airport's airspace. All penetrating objects depicted on the ALP should be eliminated.

Precision Approach Path Indicator Clearance Surfaces

- All Part 77, approach and departure, and PAPI OCS/LSCS surfaces should be protected to the maximum extent possible.
- Existing obstructions should be eliminated or marked and lighted.

Electronic, Visual, and Satellite Navigation Aids

- The 1,000-foot critical area for the VOR-DME contains general aviation hangars. This is preventing development of the cargo apron and the installation of a holding bay at the Runway 21 end.
- The VOR-DME should be either relocated or upgraded to a Doppler VOR, which would reduce the size of the critical area by half.

Air Traffic Control Tower

- Consideration should be given to finding an alternate site for the airport traffic control tower.

Instrument Approach Procedures

- The current instrument approaches to Runway 3/21 at IDA are adequate to support aircraft operations through the 20-year planning period.
- Minimums can be improved by eliminating terrain obstructions for Runway 21 and adding an approach lighting system to Runway 3.

b. Commercial Service Passenger Terminal Complex

Commercial Apron Requirements

- Two gates will need to be added by 2026 to accommodate peak hour operations which would require an expansion of the terminal building and two additional aircraft parking spaces on the terminal apron.
- The additional parking spaces should accommodate the full range of aircraft expected to be used by the airlines during the planning horizon. This includes sufficient clearance for an ADG-IV aircraft taxiing on Taxiway A which may require shifting the vehicle service road.
- The deicing pad should be relocated outside the envelope of the gate parking positions.
- A covered lavatory dump should be considered.

Passenger Terminal Building

- Virtually all of the functional areas in the terminal building need to be expanded or renovated if delays are to be avoided during peak hour activity.
- Multiple large aircraft operating within the peak hour—due to airline scheduling or due to system delays—will significantly impact the airport's ability to safely and comfortably process passengers through the terminal building.

On-Airport Circulation Roadways

- Consideration should be given to widening North Skyline Drive and reconfiguring the entry points to the parking lots to avoid extra traffic passing through the congested passenger pick-up and drop-off zones.
- Consideration should also be given to mitigating the sharp right turn vehicles have to navigate to exit the terminal circulation loop.

Public Parking Facilities

- Reconfiguration of the existing hourly and daily lots to allocate more spaces to economy will help relieve some pressure in the immediate term.
- By 2026, reconfiguration of the existing lots alone will not be adequate to support demand.
- Other parking lot locations, along with vertical development options, should be a priority.

Employee Parking Facilities

- The employee parking lot should be expanded, or other locations sought, in order to meet the estimated 305 spaces that will be needed by 2041.

Rental Car Facilities

- All of the functional areas related to the rental car ready/return and quick turnaround areas will exceed existing capacity by 2026.
- Alternative areas should be sought that will enable growth without impeding aeronautical development.

c. General Aviation Requirements

Aircraft Hangar Storage

- Additional hangar space is needed at IDA through the entire planning horizon.

Aircraft Tiedowns

- There are adequate tiedowns to meet demand through 2031.
- Beyond 2031, the tiedown deficiencies could be met by reconfiguring the existing apron space with more efficient markings.

d. Air Cargo Requirements

- The existing FedEx apron is adequate for the ATR-72.
- The current configuration of the cargo apron makes it difficult to maneuver a 757F; a type of aircraft frequently used by air cargo operators.
- Air cargo operators that use a 757F would need to either use a different facility or a new facility would need to be built.
- Additional apron space is needed for storage of ground service equipment (GSE).
- The capacity of the building will need to be expanded during the planning horizon.

e. Support Facilities

Aircraft Rescue and Firefighting

- Consideration should be given to finding an alternate site for the ARFF station.
- Future locations should consider a live fire discharge area to properly contain and eliminate chemicals associated with firefighting operations.

Fuel Storage

- There is adequate fuel storage.

Snow and Ice Control

- Space should be reserved for future expansion of the snow removal equipment (SRE) building.

Ground Service Equipment Storage

- The size of the apron used to store GSE is adequate.
- Adding markings to delineate the GSE area would enhance circulation and efficiency.
- Future terminal expansions should include extra space and reconfiguration of the baggage makeup area to eliminate constraints.

Fencing and Gates

- Airport fencing and gates may need to be added or relocated as development progresses.

Lighting Vault and Emergency Generator

- The capacity and location of the lighting vault and emergency generator will need to be assessed periodically as lighting is added to the airfield and as the terminal is expanded.

f. Utilities

- Additional service connections may be required for new development.
- Consideration should be given to adding EV charging stations at the airport.

g. Stormwater

- Stormwater infrastructure should be improved as more impervious surface is added.
- Pipes dating to the 1940s should be replaced and the capacity increased.
- The main retention basin east of Foote Drive should be reviewed to determine if it is capable of accommodating airport development.

h. Land Use

- Federal and State Requirements: The city of Idaho Falls is compliant with federal and state requirements regarding airport land use policies and zoning. All policies and regulations should be reviewed periodically to ensure they are current and relevant as the airport experiences growth and changes.
- County Protections: The city and the airport should continue to work with Bonneville County to update its existing height restriction zoning ordinance and to adopt land use zoning that protects both the airport and surrounding community from incompatible land uses.
- Existing Incompatible Land Uses: There are incompatible land uses known to be located within the airport's RPZs.
- Potential Incompatible Land Uses: The airport should continue to seek ways to eliminate or mitigate existing incompatible land uses within the RPZ, and prohibit the introduction of new incompatible uses.
- On-Airport Wildlife Hazard Attractants: On-airport retention basins should be modified so they do not detain water for more than 48 hours.
- Off-Airport Wildlife Hazard Attractants: Proposed off-airport uses that may create a wildlife

attractant should be reviewed by airport staff to assess if they comply with FAA guidance.

i. Strategic Vision

- Any development at IDA should support the city's strategic vision and mission.

j. Primary Management and Compliance Documents

- These documents should be reviewed annually and updated as necessary to remain valid. The city of Idaho Falls is currently updating the minimum standards as well as the rules and regulations for the airport.

k. Emerging Trends

- Airport management should remain aware of newly emerging industry trends and how they might affect the airport.

6.1.1. Recommendations

- Relocate the ATCT to allow for terminal expansion.
- Relocate the ARFF station to allow for cargo expansion.
- Eliminate terrain obstruction at the Runway 21 end.
- Add approach lighting system to Runway 3 end.
- Assess drainage infrastructure capacity and structural integrity.
- Reconfigure parking lot access points from N. Skyline Drive.
- Add electric vehicle (EV) charging stations to parking lot expansions.

6.2. Airport Design and FAA Standards

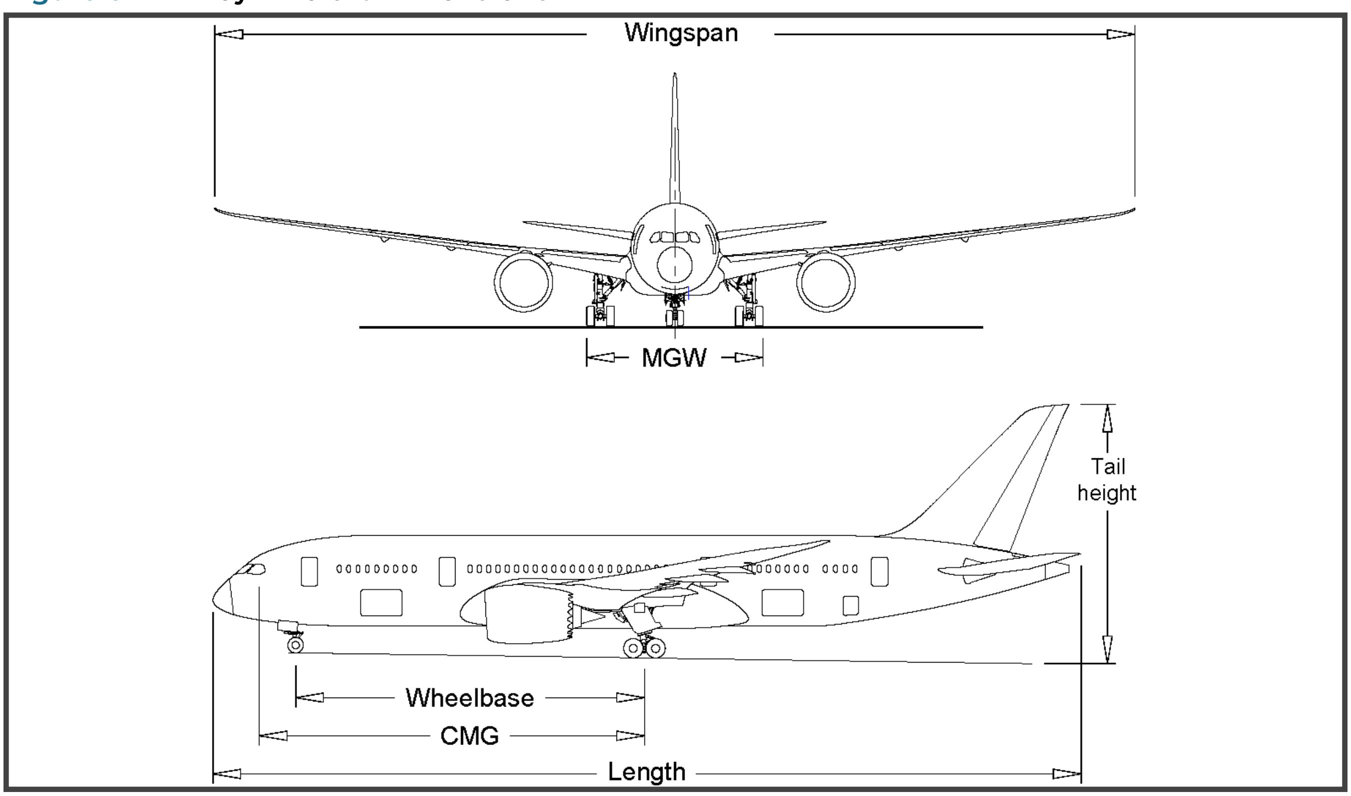
Effective airport design and planning help to ensure airport facilities are able to meet current and future aviation needs and environmental considerations while maintaining acceptable levels of safety, efficiency, and capacity. The airport design process involves a series of steps to identify aviation demand at an airport and then apply the corresponding FAA standards to each of the airport's facilities. These steps generally include the following:

1. Identify the size, aircraft approach category, airport design group, and taxiway design group of the critical aircraft.
2. Identify reasonably attainable visibility minimums.
3. Identify the applicable runway design code.
4. Apply appropriate design standards contained within FAA Advisory Circular (AC) 150/5300-13B, *Airport Design*.[1]

6.2.1. 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 (Figure 6.1). The critical aircraft is the most demanding type of aircraft, or grouping of aircraft with similar characteristics, that make regular use of the airport. It can be a single aircraft or a composite of the most demanding characteristics from different aircraft. Incorporating the use of these characteristics as part of the coding system in this way helps airport planners and engineers design the airport to meet both current and future needs while also ensuring the correct design standards are applied.

Figure 6.1: Key Aircraft Dimensions



Source: FAA, AC 150/5300-13B, Figure A-1.

a. Size, Weight, and Wake Turbulence Classifications

For capacity planning, the FAA uses four classifications based on an aircraft's physical aspects including its maximum certificated takeoff weight (MTOW), number of engines, and wake turbulence effect (Table 6.1).[2]

Table 6.1: Aircraft Size, Weight, and Wake Turbulence Classifications

Aircraft Class	Maximum Certificated Takeoff Weight (MTOW)	Number of Engines	Wake Turbulence Classification
A	12,500 pounds or less	Single	Small
B	12,500 pounds or less	Multi	Small
C	12,500 to 300,000 pounds	Multi	Large
D	More than 300,000 pounds	Multi	Heavy

Source: FAA, AC 150/5060-5 *Airport Capacity and Delay*, Table 1-1.

b. Aircraft Approach Category

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 (Table 6.2). It is generally used to help ensure an airport's runway safety areas can safely accommodate the critical aircraft.[3] (Like the aircraft size, weight, and wake turbulence classifications listed in Table 6.1, these are also designated by a letter so it is important to understand the distinction between the two.)

Table 6.2: 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*, Table 1-1.

c. Airplane Design Group

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 (Table 6.3). It is typically used to establish dimensional standards needed for adequate clearances.[4]

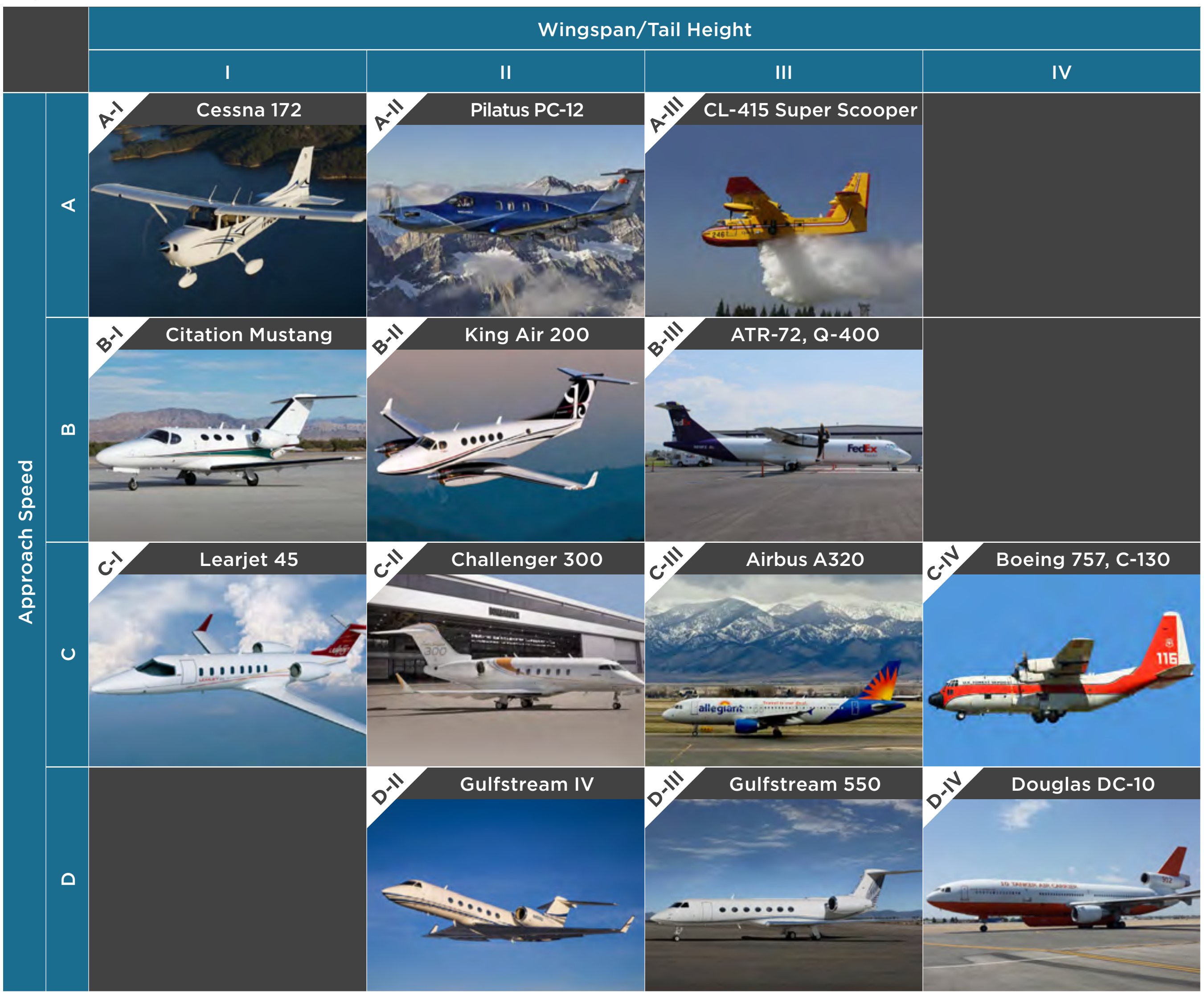
Table 6.3: Airplane Design Groups

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*, Table 1-2.

Figure 6.2 illustrates representative aircraft for several AAC and ADG combinations.

Figure 6.2: Representative Aircraft

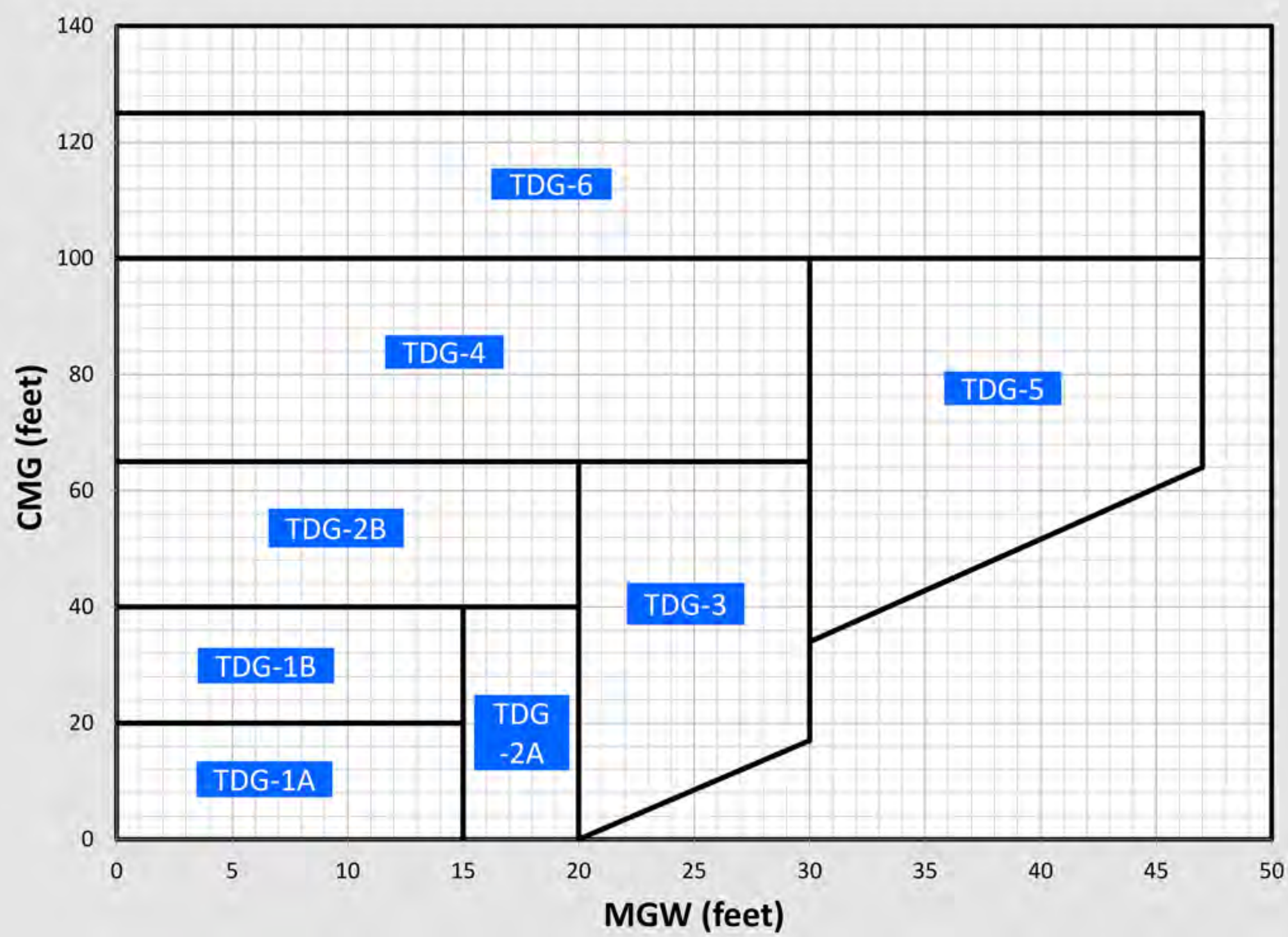


Source: Ardurra.

d. Taxiway Design Group

The taxiway design group (TDG) is used to establish the correct design factors for taxiway width. As shown in Figure 6.3, it is based on the dimensions of an aircraft's landing gear. This includes the distance from the cockpit to the main gear (CMG) and the main gear width (MGW). Each taxiway at an airport can have a different TDG classification based on the size and type of aircraft expected to use a particular taxiway.[5]

Figure 6.3: Taxiway Design Groups



Note: Values in the graph are rounded to the nearest foot. 1 foot = 0.305 meters.

Source: FAA, AC 150/5300-13B, *Airport Design*, Figure 1-1.

e. Visibility Minimums and Runway Visual Range Values

A runway's lowest visibility published on an instrument approach chart is used to determine its runway visual range (RVR) value. As shown in Table 6.4, a runway that does not have an instrument approach is classified as a visual runway and does not have an RVR value.

Table 6.4: Visibility Minimums and Runway Visual Range Values

Runway Visual Range Value	Instrument Flight Visibility Category (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 3/4 mile
2,400 feet	Lower than 3/4 mile but not lower than 1/2 mile
1,600 feet	Lower than 1/2 mile but not lower than 1/4 mile
1,200 feet	Lower than 1/4 mile

Source: FAA, AC 150/5300-13B *Airport Design*, Table 1-3.

f. Runway Design Code

The runway design code (RDC) is used to establish the design characteristics for each runway. It is comprised of three components; AAC, ADG, and RVR. These are applied to individual runways which means each runway at an airport can have a different RDC.[67]

6.2.2. Critical Aircraft and Applied Airfield Design Criteria

a. Commercial Service Critical Aircraft

The Airbus A320 was identified as the commercial service critical aircraft. As shown in Table 6.5, the A320 is a large aircraft with an AAC of C, an ADG of III, and a TDG of 3.

However, as previously mentioned in Section 5.14, Alaska Airlines recently began providing air service at IDA using the Bombardier Q-400 aircraft. The Q-400 has an AAC of B, an ADG of III, and a TDG of 5 which makes it the most demanding aircraft for taxiway design.

Therefore, design criteria associated with an AAC of C, an ADG of III, and a TDG of 5 were used for Runway 3/21; the commercial apron; and Taxiways A, A1–A6, C, and G because these areas are intended for use by commercial aircraft.

b. Air Cargo Critical Aircraft

The ATR 72 was identified as the air cargo critical aircraft. The ATR 72 has an AAC of B, an ADG of III, and a TDG of 1B. These design standards were applied to the cargo apron.

However, as previously mentioned in Section 5.10.2, increasing levels of air cargo activity at the airport indicate there is a possibility that FedEx, UPS, or similar air cargo carrier will introduce new scheduled service at IDA using a Boeing B757F aircraft. The B757F has an AAC of C, an ADG of IV, and a TDG of 4 which would make it difficult for these carriers to use the cargo apron in its current configuration. If an ADG IV aircraft becomes the future critical aircraft, major airfield changes would need to take place.

c. General Aviation Critical Aircraft

The Bombardier Challenger 300 was identified as the general aviation (GA) critical aircraft. It has an AAC of C, an ADG of II, and a TDG of 1B. These design standards were applied to the areas of the airport located south of the commercial apron. This includes the main FBO apron and the south general aviation apron because these areas are intended for use by general aviation aircraft (Figure 6.4).

While Runway 17/35 and the east general aviation apron are also intended for use by general aviation aircraft, they are intended strictly for light general aviation aircraft like a Cessna 182 which is considered to be a small aircraft with an AAC of A, an ADG of I, and a TDG of 1A. Therefore, these design standards were applied to Runway 17/35.

The east general aviation apron and the taxilanes east of Runway 17/35 (i.e., Taxiways B, B1 – B3, and C) were designed to AAC A, ADG-II, and TDG 3 standards. This is discussed in additional detail in Section 6.3.3, Taxiway System Requirements.

Table 6.5: Critical Aircraft Classifications

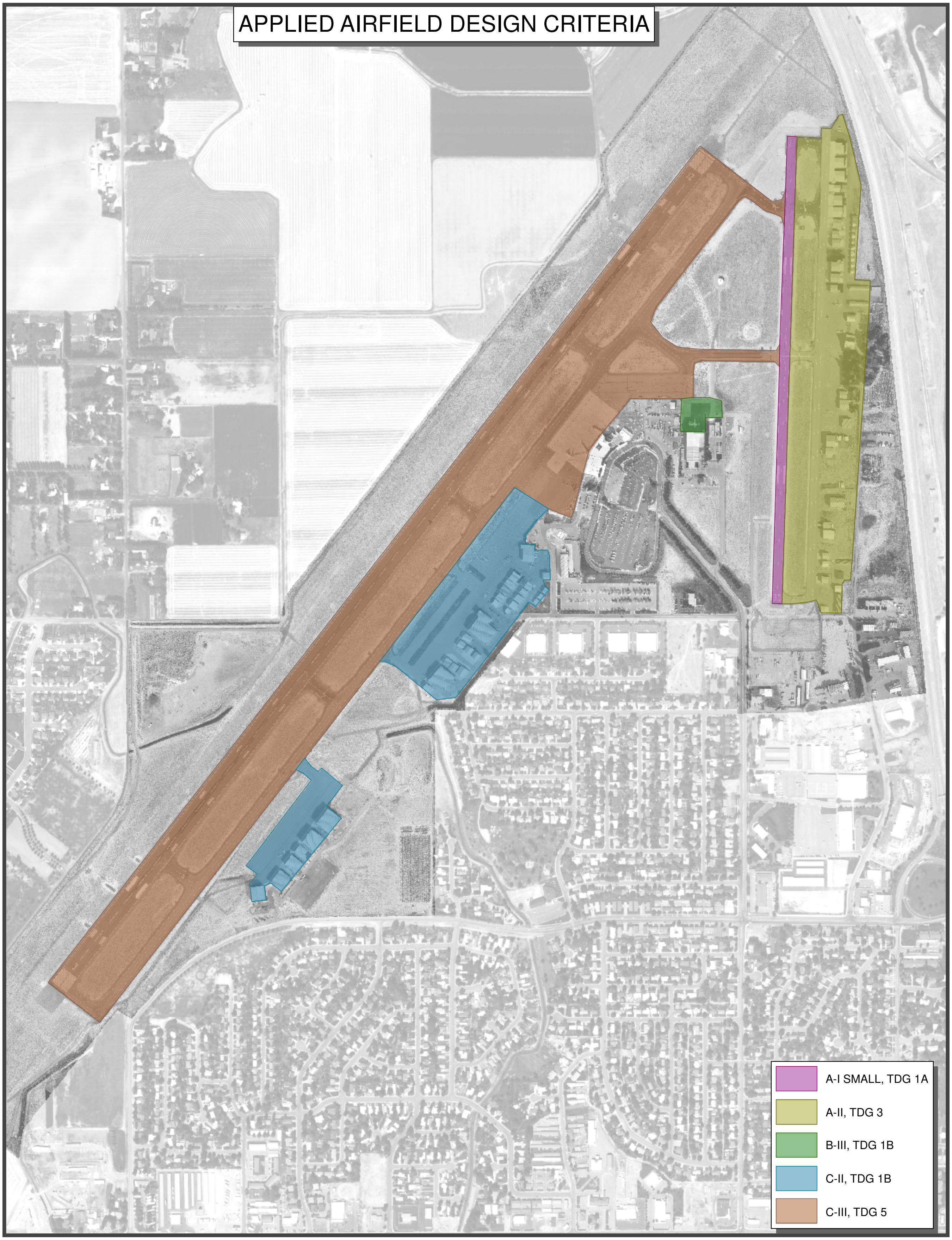
Area	Aircraft	AAC	ADG	TDG
Commercial Service	Airbus A320	C	III	3
Commercial Service Taxiways	Bombardier Q-400	B	III	5
Air Cargo	ATR 72	B	III	1B
General Aviation	Bombardier Challenger 300	C	II	1B

Source: FAA, AC 150/5300-13B *Airport Design*, Table 1-2.

d. Runway Design Codes for Idaho Falls Regional Airport

- Runway 21 is intended to be used mainly by commercial service aircraft and has a published approach minimum of 1/2 mile or 2,400 feet. This combination means Runway 3/21 has an RDC of C-III-2,400.
- Runway 17/35 is intended to be used mainly by small general aviation aircraft with less than a 12,500-pound maximum takeoff weight and does not have an instrument approach procedure. This combination means Runway 17/35 has an RDC of A-I(small)–VIS.

Figure 6.4: Applied Airfield Design Criteria



Source: Ardurra.

6.3. Airfield and Airspace Requirements

The determination of airfield and airspace requirements includes conducting an assessment to determine the airport's ability to safely and efficiently accommodate the activity forecasted for the 20-year planning period, and then determine if all airport facilities comply with FAA design and safety standards. The analysis is also used to help determine if and when improvements are needed to meet specific operational demands.[8]

6.3.1. Airfield Capacity

The most widely recognized and accepted method for conducting an airfield capacity analysis is found in FAA AC 150/5060-5, *Airport Capacity and Delay*. This methodology is used to determine the annual service volume (ASV) and hourly capacity to provide a reasonable estimate of an airport's annual capacity. This methodology accounts for differences in runway use, aircraft mix, and weather conditions encountered during a typical year. The calculations derived from this method may be used if the conditions at the airport do not significantly differ from the capacity assumptions listed in the AC.

Capacity assumptions are listed below:

- Runway Use Configuration: Most runway layouts used at the airport can be approximated by one of the 19 runway-use configurations shown in the AC. IDA uses an open "V" configuration, number 14 for a south traffic flow, and number 15 for a north traffic flow.
- Percent Arrivals: Arrivals equal departures.
- Percent Touch and Goes: The percent of touch-and-go operations is within the limits shown in Table 2-1 of the AC. For IDA, touch-and-go operations are assumed to be local GA operations which make up approximately 22% of total operations which is within the limits.
- Taxiways: A full-length taxiway with ample runway entrance and exit taxiways, and no taxiway crossing problems.
- Airspace Limitations: There are no airspace limitations that would adversely impact flight operations or otherwise restrict aircraft that could operate at the airport.
- Runway Instrumentation: The airport has at least one runway equipped with an instrument landing system (ILS) and has air traffic control services.

Annual service volume assumptions are listed below:

- Weather conditions allowing for flights using instrument flight rules (IFR) occur roughly 10% of the time.
- The airport operates with the runway-use configuration which produces the greatest hourly capacity roughly 80% of the time.

a. Aircraft Mix Index

As previously mentioned in Table 6.1, the FAA classifies aircraft based on their maximum certified operational weight (excluding helicopter operations). The mix index is a calculated ratio of forecasted aircraft mix based on this weight classification system. The mix index increases as the number of heavier aircraft increases. This increase indicates a decrease in hourly capacity because the FAA requires heavier aircraft to be spaced further apart from other aircraft for safety reasons.

The aircraft mix index is a mathematical expression of the aircraft mix. This equation is the percent of C aircraft (more than 12,500 pounds but less than 300,000 pounds) plus three times the percent of D aircraft (more than 300,000 pounds) which is written as %(C+3D). There are no Class D aircraft projected to use the airport so the equation can be simplified to %(C). The fleet mix forecast is used to calculate the mix index which is then used to determine airfield capacity. Based on the forecast, the mix index is projected to be between 58–60%. The mix index is expected to generally remain the same throughout the planning period.

b. Annual Service Volume

Using runway configuration number 14 from the AC, which represents a south traffic flow, the ASV is calculated to be 220,000 operations. Using runway configuration number 15, which represents a north traffic flow, the ASV is calculated to be 215,000 operations. Since runway configuration number 15 results in a decrease in capacity compared to runway configuration number 14, runway configuration number 15 will be used to determine runway capacity at IDA.

Conclusion

IDA's annual service volume is 215,000 annual operations with an hourly capacity of 82 operations per hour for VFR conditions and 56 operations per hour for IFR conditions. As noted in Table 5.1, there was a total of 33,656 operations at IDA for 2021 which is approximately 15% of ASV. By 2041, this is forecasted to grow to 40,119 total operations which is approximately 19% of ASV.

An airport should begin planning to make capacity improvements when capacity reaches 60% of ASV. At 80%, plans should be complete, and construction should begin. At 100%, the airport has reached capacity and improvements should be completed to avoid delays. Demand is expected to remain within 15–19% of ASV for the 20-year planning period which means there is not a need to begin planning for capacity improvements.

c. Capacity Analysis for a One-Runway Scenario

This scenario examines the airport's capacity using only Runway 3/21 and the existing mix index of 58–60%. Previous wind coverage analysis, which is discussed in Section 4.1.4. Wind Coverage, demonstrated that Runway 3/21 provides greater than 95% wind coverage in all weather conditions. Therefore, according to FAA Order 5100.38D, *Airport Improvement Program Handbook*, Table G-1, a crosswind runway is not required. However, a secondary runway could be justified if the primary runway is operating at 60% or more of its annual capacity, or when the FAA has made a specific determination that a secondary runway is required. In this scenario, the only parameter that changed was the runway configuration. Using runway configuration number 1 from the AC, which is a single runway, the ASV is 205,000 annual operations. This is approximately 16% of ASV for 2021 and 20% of ASV for 2041; well below 60% of ASV for the 20-year planning horizon.

Conclusion

Based on FAA requirements outlined in Table G-1 of FAA Order 5100.38D, *Airport Improvement Program Handbook*, Runway 17/35 does not meet the requirements for a crosswind or secondary runway unless the FAA makes a specific determination stating the runway is required.

6.3.2. Runway Requirements

The FAA has established design standards for nearly every aspect of airports. This includes navigable airspace, airside facilities, and landside facilities. Once the existing and future airport design classifications are determined, the applicable FAA design standards are applied to provide an acceptable level of safety at an airport. These standards, which are outlined in FAA AC 150/5300-13B, *Airport Design,* include dimensions for runway width, safety areas, separation distances from fixed or movable objects, and several other facets of airport layout.

Sponsors receiving federal funds are obligated by federal grant assurances to comply with FAA design standards, and identifying these standards is a core concept for every airport master plan. Applying FAA standards ensures that airport safety and design are congruent with the types of aircraft operations occurring at the airport.

Each design criteria includes associated safety area dimensional standards. Safety areas and object free areas surrounding a runway protect both airport operations and the community. Safety areas limit the accessibility and functionality of the property, establishing a protective buffer around the airport's operating surfaces. The following definitions describe the safety areas associated with a runway and their functionality.

Runway Object Free Area

A runway object free area (ROFA) is an area on the ground centered about the runway centerline. The ROFA enhances the safety of aircraft operations by requiring the area to be free of objects, except for objects that need to be located in the ROFA for air navigation (fixed-by-function) or aircraft ground maneuvering purposes.

Runway Obstacle Free Zone

A runway obstacle free zone (ROFZ) is a volume of airspace centered on the runway centerline. Its elevation is the same as the elevation of the nearest point on the runway centerline, and it extends 200 feet beyond each end of the runway. It must be clear of objects other than frangible NAVAIDs that need to be located in the OFZ because of their function.

Inner-Approach Obstacle Free Zone

The inner-approach obstacle free zone (IA-OFZ) is a defined volume of airspace centered on the approach area. It applies only to runways with an approach light system (ALS). The surface begins 200 feet from the runway threshold at the same elevation as the runway threshold and extends 200 feet beyond the last light unit in the ALS. Its width is the same as the ROFZ and rises at a slope of 50 to 1 from its beginning. At IDA, this applies only to Runway 21.

Inner-Transitional Obstacle Free Zone

The inner-transitional obstacle free zone (IT-OFZ) is a defined volume of airspace along the sides of the ROFZ and IA-OFZ. It applies only to runways with lower than 3/4 mile approach visibility minimums. Aircraft tails may not violate the IT-OFZ. For operations on runways used by large aircraft, where the visibility minimums are lower than ¾ mile but not lower than 1/2 mile, this surface begins at the edges of the ROFZ and IA-OFZ, then rises vertically for a height (H) calculated by the equation below, then slopes 6:1 out to a height of 150 feet above the airport elevation. At IDA, this applies only to Runway 21.

H(feet) = 61 – 0.094(Sfeet) – 0.003(Efeet). S is equal to the most demanding wingspan of the RDC of the runway, and E is equal to the runway threshold elevation above sea level.

At IDA, for an Airbus A320: H = 61–0.094(111.88)–0.003(4731.32) = 61–10.52–14.19 = 36.3 ft.

Precision Obstacle Free Zone

The precision obstacle free zone (POFZ) is defined as a volume of airspace above an area beginning at the threshold, at the threshold elevation, and centered on the extended runway centerline. This surface applies to any runway served by a vertically-guided approach with landing minimums less than 250 feet or visibility less than 3/4 statute mile or RVR is less than 4,000 feet, and an aircraft is on final approach within two miles of the runway threshold. When the POFZ is in effect, a wing or fuselage-mounted horizontal stabilizer of an aircraft holding on a taxiway may penetrate the POFZ; however, neither the fuselage nor tail-mounted horizontal stabilizer may penetrate the POFZ. At IDA, this surface applies to Runways 3 and 21 when the criteria have been met.

Runway Protection Zone

A runway protection zone (RPZ) is trapezoidal and centered about the extended runway centerline. The function of an RPZ is to enhance the protection of people and property on the ground by limiting incompatible land uses and precluding activities involving congregations of people. It is desirable to clear the entire RPZ of all above-ground objects. Airport ownership of the entire RPZ is not always possible; however, the FAA expects airport sponsors to take all possible measures to protect against and remove or mitigate incompatible land uses and recommends airport owners should at least own the property under approach and departure areas. Coordination with the FAA is required should land use within an RPZ incorporate incompatible land uses.

Runway Safety Area

A runway safety area (RSA) is a defined surface centered on and surrounding the runway that is prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, approach, or excursion from the runway. The RSA must be able to support, under dry conditions, snow removal equipment as well as aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing major damage to the aircraft. Certain items are allowed to be in the RSA, as they are "fixed-by-function," such as a PAPI, REIL, and Approach Lighting System. At IDA, the supplemental wind cone for Runway 3 is located in the RSA but is not fixed-by-function.

Table 6.6 lists the existing conditions for Runway 3/21 alongside current design standards for this runway. Table 6.7 lists the existing conditions for Runway 17/35 alongside current design standards for this runway. Areas where the runways are not in compliance with these standards are also noted in these tables.

Table 6.6: Runway 3/21 Design Standards and Compliance

Design Criteria	Existing 3/21	RDC C-III-2400 Standards	Compliant
Runway Length	9,002	See Section 6.3.2 (c)	N/A
Runway Width	150	150*	Y
Runway Shoulder Width	20	25*	N
Blast Pad Width	N/A	200*	N
Blast Pad Length	N/A	200	N
Crosswind Component	16 KTS	16 KTS	Y
RSA Length Beyond Runway End	1,000	1,000	Y
RSA Length Prior to Threshold	600	600	Y
RSA Width	500	500	Y
ROFA Length Beyond Runway End	1,000	1,000	Y
ROFA Length Prior to Threshold	600	600	Y
ROFA Width	800	800	Y
ROFZ Length Beyond Runway End	200	200	Y
ROFZ Width	400	400	Y
RWY 21 Inner Approach OFZ Width	200	200	Y
RWY 3 and 21 POFZ Length	200	200	Y
RWY 3 and 21 POFZ Width	800	800	Y
RWY 3 RPZ			
Approach Length	1,700	1,700	Y
Approach Inner Width	1,000	1,000	Y
Approach Outer Width	1,510	1,510	Y
Departure Length	1,700	1,700	Y
Departure Inner Width	500	500	Y
Departure Outer Width	1,010	1,010	Y
RWY 21 RPZ			
Approach Length	2,500	2,500	Y
Approach Inner Width	1,000	1,000	Y
Approach Outer Width	1,750	1,750	Y
Departure Length	1,700	1,700	Y
Departure Inner Width	500	500	Y
Departure Outer Width	1,010	1,010	Y
Centerline to Holding Position Marking	250	250	Y
Centerline to Parallel TWY Centerline	400	400	Y
Runway Gradient	0.12%	1.50% Max	Y

* For airplanes with maximum certificated takeoff weight greater than 150,000 pounds.
Source: FAA, AC 150/5300-13B *Airport Design*, Table G-9.

Table 6.7: Runway 17/35 Design Standards and Compliance

Design Criteria	Existing 17/35	RDC A-I (Small)-VIS Standards	Compliant
Runway Length	3,964	See Section X	N/A
Runway Width	75	60	Y
Runway Shoulder Width	N/A	10	N
Blast Pad Width	N/A	80	N
Blast Pad Length	N/A	60	N
Crosswind Component	10.5 KTS	10.5 KTS	Y
RSA Length Beyond Runway End	240	240	Y
RSA Width	120	120	Y
ROFA Length Beyond Runway End	240	240	Y
ROFA Length Prior to Threshold	240	240	Y
ROFA Width	250	250	Y
ROFZ Length Beyond Runway End	200	200	Y
ROFZ Width	250	400	Y
RWY 17 and 35 Approach and Departure RPZ Length (visual)	1,000	1,000	Y
RWY 17 and 35 Approach and Departure RPZ Inner Width (visual)	250	250	Y
RWY 17 and 35 Approach and Departure RPZ Outer Width (visual)	450	450	Y
Centerline to Holding Position Marking	125	125	Y
Centerline to Parallel TWY Centerline	270	150	Y
Runway Gradient	0.00%	2.0% Max	Y

Source: FAA, AC 150/5300-13B *Airport Design*, Table G-1.

a. Runway 3/21 Compliance Scenario for ADG-IV Aircraft

The preferred forecast for air cargo includes a scenario that assumes FedEx, UPS, or another cargo carrier will introduce new scheduled service using a Boeing 757F aircraft to supplement existing cargo operations at IDA at approximately 100 annual operations. Should this scenario occur, the 757F would then become the critical aircraft for cargo operations when the 500 annual operations threshold is met. At that time, the following design standards for Runway 3/21 would change:

- IT-OFZ: $H = 61 - 0.094(124.83) - 0.003(4731.32) = 61 - 11.73 - 14.19 = 35.1$ feet.
- The crosswind component would increase from 16 knots to 20 knots. Runway 3/21 meets this requirement.

b. Runway Orientation and 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 Runway 3/21 and Runway 17/35 indicates redesignation is not required for either runway during the planning horizon (Table 6.8).

Table 6.8: Runway Designation

Current Runway Designation	3	21	17	35
Latitude	43° 30′ 09″ N	43° 31′ 19″ N	43° 31′ 20″ N	43° 30′ 41″ N
Longitude	112° 05′ 07″ W	112° 03′ 52″ W	112° 03′ 42″ W	112° 03′ 44″ W
Elevation	4,741.99’	4,731.32’	4,731.10’	4,731.23’
Geodetic Heading	37° 54′ 38.87″		1° 54′ 30.40″	
Magnetic Heading (Current)	26° 19′ 38.87″		350° 19′ 30.40″	
Magnetic Declination (Current)	11° 35′ E			
Change/Year	0° 6′ W			
Magnetic Declination (Future)	9° 35′ E			
Magnetic Heading (Future)	28° 19′ 38.87″		352° 19′ 30.40″	

Source: NOAA; Ardurra.

Conclusion

Runway designations for Runway 3/21 and Runway 17/35 do not need to change during the planning horizon.

c. Runway Length

Many factors are used to help determine if a runway’s length is suitable for airplane operations. 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), effective runway gradient, presence of obstructions in the vicinity of the airport, and any locally imposed noise abatement restrictions. A given runway length may not be suitable for all aircraft operations. FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*, provides recommendations for use in the design of civil airports.

Adequate runway length is an FAA recommendation, not a design standard. It is up to the pilot operating under the unique meteorological conditions and demands of a particular flight to determine the safety of the available runway length for the operation. However, it does remain a goal of the sponsor to provide a safe environment suited to the aircraft regularly operating at the airport.

The calculations for recommended runway length are driven by the airport’s critical aircraft. For aircraft weighing more than 60,000 pounds, airport planning performance charts for individual aircraft were reviewed using conditions approximating the average temperature of the hottest month (86.2 F), and the airport’s elevation of 4,744 feet.

According to FAA AC 150/5325-4B, runway length calculations for aircraft that weigh 60,000 pounds or more, as well as regional jets, are accomplished by using performance charts for the individual aircraft. This applies to the commercial airline critical aircraft, the Airbus A320, and the cargo forecast scenario using the Boeing 757F.

For the A320, Airbus performance charts from *Aircraft Characteristics: Airport and Maintenance Planning* were reviewed to determine the approximate runway length needed to operate at IDA during the summer. An A320 operating with a takeoff weight of 160,000 pounds at 86 F at IDA's field elevation results in a takeoff runway length of approximately 7,200 feet.

The cargo forecast scenario uses a Boeing 757F to supplement cargo operations at IDA. *Aircraft Characteristics: Airport and Maintenance Planning* for the 757-200/300 published by Boeing were reviewed to determine runway length requirements under certain conditions at IDA. A 757-200 equipped with Rolls Royce engines using a takeoff weight of 220,000 pounds and 20 degrees of flaps at 84 F (i.e., maximum temperature available for the 757-200) at IDA's field elevation results in a takeoff runway length of approximately 6,800 feet.

For aircraft that weigh less than 60,000 pounds, charts within AC 150/5325-4B can be used to generate runway lengths by grouping small aircraft that weigh less than 12,500 pounds, and large aircraft that weigh between 12,500 and 60,000 pounds.

It is assumed that not every aircraft will be able to take off from the existing runway during the hottest day at maximum takeoff weight. Accordingly, the curves in AC 150/5325-4B for large aircraft less than 60,000 pounds are provided for 75% of the fleet at 60 or 90% of useful load, and 100% of the fleet at 60 or 90% of useful load. The general aviation critical aircraft, the Bombardier Challenger 300, is listed in the AC Table 3-1 as being part of the 75% fleet. Using Figure 3-1 in the AC for 75% of the fleet at 90% useful load yields a runway length of 8,600 feet. The runway length for 100% of the fleet at 60% of useful load is 9,000 feet, while the runway length for 100% of the fleet at 90% of useful load is 10,400 feet. The current runway length of Runway 3/21 is 9,002 feet, which is adequate for 75% of the large aircraft fleet at 90% useful load and 100% of the fleet at 60% useful load.

For small aircraft that weigh less than 12,500 pounds, Figure 2-1 in AC 150/5325-4B provides curves for 95% and 100% of the small aircraft fleet. These aircraft would be expected to use Runway 17/35, which is 3,964 feet long. The curve for 95% of the small aircraft fleet results in a runway length of 5,800 feet, while the curve for 100% of the small aircraft fleet yields a runway length of 6,000 feet. Both lengths exceed the existing Runway 17/35 length; however, in cases where small aircraft need a longer runway, they can use Runway 3/21. As such, Runway 17/35 is considered adequate for use by small aircraft.

Conclusion

The current length of Runway 3/21 and Runway 17/35 is adequate to support the critical aircraft throughout the 20-year planning horizon.

d. Runway Width

Runway 3/21 width meets design standards. Runway 17/35 exceeds design standards by 15 feet.

e. Displaced Threshold and Declared Distances

When an object exists that is beyond the power of the owner to remove, relocate, or lower, a runway threshold may need to be relocated down the runway, which also relocates the protective airspace, keeping it clear of object penetrations. A relocated threshold is defined by the FAA as a displaced threshold. Thresholds may also be displaced for environmental considerations, such as noise abatement, or to provide the standards for RSA and ROFA lengths, and RPZ mitigation of incompatible land uses.

Displacement of the threshold reduces the length of runway available for landing and/or takeoff. Depending on the reason for displacement, the portion of the pavement beyond the runway threshold may be available for takeoffs in either direction or landings from the opposite direction.

Displaced thresholds are communicated to pilots through visual markings on the pavement, as well as distances published in the airport's chart supplement as declared distances. Declared distances are defined as follows:

Takeoff Run Available

The takeoff run available (TORA) is the runway length declared available and suitable for the ground run of an aircraft taking off.

Takeoff Distance Available

The takeoff distance available (TODA) is the TORA plus the usable length of any remaining runway or clearway beyond the TORA. The TODA may need to be reduced because of obstacles in the departure area.

Accelerate-Stop Distance Available

The accelerate-stop distance available (ASDA) is the runway plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft aborting takeoff.

Landing Distance Available

The landing distance available (LDA) is the runway length declared available and suitable for landing an aircraft.

Conclusion

IDA does not have any displaced thresholds or need to use declared distances for any runway.

f. Runway Line of Sight

For individual (non-intersecting) runways with a full parallel taxiway, the standard for line of sight (LOS) requirements is to ensure any point five-feet above the runway centerline is mutually visible with any other point five-feet above the runway centerline for a distance one-half the length of the runway. Runways 3/21 and 17/35 meet this requirement.

For non-intersecting, but converging runways at airports with part-time ATCT operations, FAA AC 150/5300-13B recommends providing a clear LOS from the V1 points of both runways, where V1 is the takeoff decision speed at which the pilot makes a decision to either continue or discontinue the takeoff (e.g., as the result of an engine failure).[9] At IDA, it is possible to have aircraft taking off from Runway 35 and 3 at the same time and for those pilots to not see each other until one or both are airborne.

Conclusion

Runway LOS requirements are met for individual runways but not for both runways combined.

g. Runway Pavement Strength

To meet the design life goals of the airport, runway pavements must be designed to physically withstand the weight of arriving, taxiing, and departing aircraft. This is calculated using a mix of aircraft. The maximum takeoff weight of the existing critical aircraft and those aircraft forecasted to use the airport must be considered to determine pavement strength requirements. The pavement must possess sufficient stability to withstand the abrasive action of traffic, adverse weather conditions, and other deteriorating influences.

Airport pavements degrade faster when over-stressed with loads beyond their design capability. Pavements are most stressed when aircraft loads are applied slowly (e.g., when an aircraft is taxiing or parked). Pavement loading is also a function of the number of pressure points, such that the more tires an aircraft has to distribute its load the less stress is exerted on the pavement. The current weight bearing capacity of Runway 3/21 is 140,000 pounds for single wheel, 175,000 pounds for a double wheel, and 270,000 pounds for a double tandem wheel configuration. For Runway 17/35, the weight bearing capacity is 43,000 pounds for single wheel, and 58,000 pounds for double wheel configuration.

The Airbus A320 has a maximum takeoff weight of 171,961 pounds and has a double wheel configuration. The 757-200F has a maximum takeoff weight of 255,500 pounds and has a double tandem wheel configuration. Both aircraft are below the weight bearing capacity of Runway 3/21. The Challenger 300 and ATR-72 weigh considerably less than the Airbus A320 and are well beneath the weight bearing capacity of Runway 3/21. Runway 17/35 is intended to support light general aviation aircraft, such as the Cessna 182, which has a maximum takeoff weight of 2,950 pounds and a single wheel configuration. This is below the weight bearing capacity of Runway 17/35.

Conclusion

The existing weight bearing capacities of Runways 3/21 and 17/35 are adequate to support the forecast aircraft through the planning horizon.

h. Runway Incursion Mitigation

In AC 150/5300-13B, *Airport Design*, the FAA recommends the three-path concept for taxiway design. This concept is intended to prevent complex intersections that increase the possibility of pilot error and confusion which can lead to a runway incursion or accident. This design practice keeps taxiway intersections simple by providing pilots no more than three choices at an intersection—left, right, and forward. This also improves safety by allowing for proper placement of airfield markings, signage, and lighting.

Other measures that help reduce confusion and runway incursions are to avoid wide expanses of pavement at runway/taxiway intersections; limit runway crossings; avoid high-energy runway crossing intersections (i.e., An intersection within the middle third of a runway); increase pilot visibility by using 90-degree turns at runway entrance or crossing points; and eliminate direct runway access from a parking apron without requiring a turn.

Existing Conditions

- All intersections meet the three-path concept.
- There are no wide expanses of pavement at runway/taxiway intersections.
- There is one high energy runway crossing at the intersection of Taxiway C and Runway 17/35. This crossing also provides direct access to the runway from the east general aviation parking apron. As previously mentioned in Section 4.5.9., Hot Spots, this intersection has been identified as Hot Spot 1 in the IDA Chart Supplement.

- All runway and taxiway intersections have 90-degrees turns. However, Taxiway B2, which is between Runway 17/35 and Taxiway A, has a bend just before the hold position marking.

Figure 6.5: Runway 17/35, Taxiway C Intersection with Direct Apron Access

Source: Ardurra.

Conclusion

The intersection of Runway 17/35 and Taxiway C should be reviewed for alternatives to eliminate Hot Spot 1.

6.3.3. Taxiway System Requirements

Taxiways are defined paths that allow aircraft to move from one part of an airport to another. Like runways, taxiways have airport design standards, recommended practices, and design considerations based on the type of aircraft expected to use the taxiways. Taxiways should be designed for cockpit over centerline taxiing. This means the pavement should be sufficiently wide enough to allow a certain amount of aircraft wander from the centerline. The allowance for wander is provided by the taxiway edge safety margin (TESM) which is measured from the outside of the design landing gear to the edge of the taxiway. Dimensional taxiway design standards are established based on an FAA grouping called taxiway design group (TDG). Like runways, taxiway design includes associated safety and object free areas to provide a safety buffer around movement areas determined based on the taxiway's design standard. Guidance from Chapter 4. Taxiway and Taxilane Design, of AC 150/5300-13B, *Airport Design*, was used to establish taxiway design standards.

Taxiway/Taxilane Centerline to Fixed or Movable Object Separation

The minimum distance between the centerline of a taxiway or taxilane to a fixed or movable object. Objects that are fixed-by-function are allowed within this area.

Taxiway/Taxilane Safety Area

The taxiway/taxilane safety area (TSA) is a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft deviating from the taxiway.

Taxiway/Taxilane Object Free Area

The taxiway/taxilane object free area (OFA) is an area on the ground centered on a taxiway/taxilane centerline provided to enhance aircraft operations safety by remaining free of objects except for any objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

The airport design code and TDG associated with the identified critical aircraft at IDA (A320) are ADG III and TDG 3. As discussed in the forecast chapter, the FAA states that different critical aircraft may be identified to define separate elements of the airport design. The most demanding aircraft for taxiway requirements is the Q-400, which is operated by Alaska Airlines, with a TDG of 5. The west taxiway system of the airport was designed and built to TDG 5 standards to account for MD-80 and Q-400s operated previously. MD-80s have since been replaced by the A320, and Alaska Airlines intends to eliminate the Q-400 from their fleet by the end of 2023. Despite this, strong passenger growth in 2021 and 2022, added Q-400 service, and the potential for increased cargo operations by larger aircraft result in a need to plan accordingly. Therefore, taxiway design at IDA for the primary runway and movement areas continues to be defined by ADG III and TDG 5 standards.

For the taxiways and taxilanes supporting Runway 17/35, the taxiway design changes due to the types of aircraft and operations in that area. In 2019, a memorandum was submitted to the FAA explaining that this area of the airport supports significant tailwheel operations. The configuration of the gear orients the pilot at an upward angle, causing the engine cowling to obstruct a pilot's vision of the taxiway while operating on the ground. A taxiing technique used to overcome the visual obscuration is to taxi with a slight swerve left and right of the taxiway centerline. Because taxiways are designed for cockpit over centerline taxiing, a wider taxiway is needed to support tailwheel aircraft needing to taxi with a swerve. This is recognized in the AC. However, the AC does not provide further guidance for taxiway design for tailwheel aircraft. The 2019 memorandum recommends that the width of taxiways at IDA should be a minimum of TDG 3, which correlates to a width of 50 feet. The most recent ALP dated 2021 also identifies the design of this area as ADG II, TDG 3.

Table 6.9 outlines the existing conditions at IDA in comparison to the FAA design standards for ADG III, TDG 5 and ADG II, TDG 3 areas, according to the runways they directly support.

Table 6.9: Taxiway Standards

Design Criteria	Runway 3/21		Runway 17/35		Meets Standards?	
	Existing	Standard	Existing	Standard	Rwy 3/21	Rwy 17/35
Taxiway Protection Based on Airplane Design Group (ADG)						
Standard Applied		**ADG III**		**ADG II**		
Taxiway Safety Area (TSA) Width	118 ft.	118 ft.	79 ft.	79 ft.	Y	Y
Taxiway Object Free Area (TOFA)	171 ft.	171 ft.	124 ft.	124 ft.	Y	Y
Taxilane OFA (TLOFA)	158 ft.	158 ft.	110 ft.	110 ft.	Y	Y
Taxiway Separation						
Taxiway Centerline to Fixed or Movable Object	93 ft.	85.5 ft.	65.5 ft.	62 ft.	Y	Y
Taxilane Centerline to Fixed or Movable Object	81 ft.	79 ft.	57.5 ft.	55 ft.	Y	Y
Taxiway Design Based on Taxiway Design Group (TDG)						
Standard Applied		**TDG 5**		**TDG 3**		
Taxiway Width	Varies 60 ft. min.	75 ft.	Varies 35 ft. min.	50 ft.	N	N
Taxiway Edge Safety Margin	14 ft.	14 ft.	10 feet	10 ft.	Y	Y
Taxiway Shoulder Width	20 ft.	30 ft.	Varies 0–20 ft.	20 ft.	N	N

Source: FAA, AC 150/5300-13B

Conclusion

IDA meets appropriate design standards for all design criteria except taxiway width and taxiway shoulder width, due to the varying widths along the length of the taxiways. There are areas of the taxiway that meet the standards. However, the narrowest sections do not meet the minimum requirements for FAA design. Additionally, all object free areas and safety areas are within standards and contain no penetrations or incompatible land uses.

a. ADG-IV Taxiway Design Standards Scenario

In the event an ADG-IV aircraft becomes the critical aircraft for taxiway standards, the following taxiway design changes would occur:

- TSA: Increase from 118 feet to 171 feet.
- TOFA: Increase from 171 feet to 243 feet.
- TLOFA: Increase from 158 feet to 224 feet.
- Taxiway centerline to fixed or movable object: Increase from 85.5 feet to 121.5 feet.
- Taxilane centerline to fixed or movable object: Increase from 79 feet to 112 feet.

6.3.4. Airspace Requirements

Ensuring an airport's operational airspace is planned for and protected is necessary for the airport's long-term viability.

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

Title 14 of the Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace*, establishes standards for determining obstructions to airspace. Part 77 describes imaginary surfaces surrounding airports and specific to individual runways based on runway category and instrument approach (Figure 6.6).

The most precise existing or proposed instrument approach for the specific runway end determines the slope and dimensions of each approach surface. Any object, natural or man-made, that penetrates these imaginary surfaces is considered to be an obstruction.

Primary Surface

A rectangular area, symmetrically located along the runway centerline, that extends 200 feet beyond each runway threshold. The elevation of the Primary Surface is the same as the corresponding runway elevation. The most demanding existing or planned instrument approach for either runway end determines the Primary Surface width. In all cases, the width equals the inner width of the approach surface.

Approach Surface

A surface that begins at the ends of the Primary Surface and slopes upward, and flares outward horizontally at a predetermined ratio. The width and elevation at the inner Approach Surface conform to the Primary Surface. The slope, length, and width of the outer ends are governed by the runway service category, existing or proposed instrument approach procedure, and approach visibility minimums.

Horizontal Surface

An oval-shaped, level area situated 150 feet above the highest point on the airport's usable runways. The perimeter is established by swinging arcs of specified radii from the center of each end of the Primary Surface of each runway and connecting the adjacent arcs by lines tangent to those arcs. The arcs at either end will have the same value.

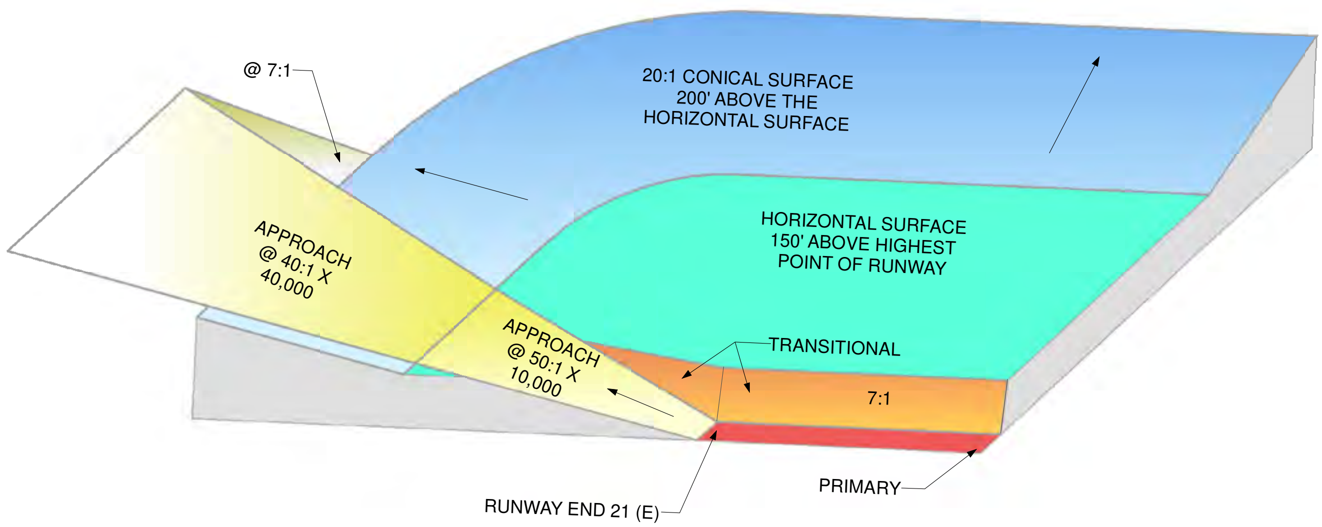
Conical Surface

A sloping area whose inner perimeter conforms to the shape of the Horizontal Surface.

Transitional Surface

An area that begins at the edge of the Primary Surface and slopes at a ratio of 7:1 (horizontal: vertical) until it intersects the Horizontal Surface.

Figure 6.6: Part 77 Imaginary Surfaces



Source: 14 CFR Part 77; Ardurra.

The dimensions of IDA's Part 77 surfaces are listed in Table 6.10.

Table 6.10: IDA Part 77 Dimensions

Primary Surface	Runway 3/21 (Primary)		Runway 17/35	
Width	1,000 feet		250 feet	
Length Beyond Runway End	200 feet		200 feet	
Horizontal Surface				
Height Above Airport Elevation	150 feet		150 feet	
Radius Arc	10,000 feet		5,000 feet (Encompassed by Runway 3/21)	
Conical Surface				
Length	4,000 feet		4,000 feet	
Slope	20:1		20:1	
Transitional Surface				
Slope	7:1		7:1	
Approach Surface Runway	**RWY 3**	**RWY 21**	**RWY 17**	**RWY 35**
Inner Width	1,000 feet	1,000 feet	250 feet	250 feet
Outer Width	4,000 feet	16,000 feet	1,250 feet	1,250 feet
Length	10,000 feet	10,000 feet plus 40,000 feet	5,000 feet	5,000 feet
Slope	34:1	50:1 then 40:1	20:1	20:1

Source: 14 CFR, Part 77

b. Approach and Departure Standards

In addition to the Part 77 imaginary surfaces are the protective surfaces outlined in FAA AC 150-5300-13B, *Airport Design*, though they serve the same function for the protection of the use of the runway. The AC defines approach and departure surface dimensions based on the runway type, the approach category of the aircraft using the runway, and the runway's instrument approach minimums.

c. Runway 3/21 Approach Surfaces

As previously summarized in Table 3.2, Instrument Approach Procedures, the approach procedure with the lowest minimum visibility requirement for Runway 3 is associated with the localizer performance with vertical guidance (LPV) approach which has a 3/4-mile visibility requirement. The approach procedure with the lowest minimum visibility requirement for Runway 21 is associated with the instrument landing system (ILS) approach which has a 1/2-mile visibility requirement.

The approach surface dimension standards for these approach types are listed in AC 150/5300-13B, "Table 3-4. APV and PA Instrument Runway Approach Surfaces" and illustrated in "Figure 3-7. Approach Procedure with Vertical Guidance (APV) and Precision Approach (PA) Instrument Runway Approach Surfaces." Both are included as Figure 6.7.[10] As shown in Figure 6.7, both of these approach types require approach Surface 5 and Surface 6.

Figure 6.7: Instrument Runway Approach Surfaces

Table 3-4. APV and PA Instrument Runway Approach Surfaces

Surface	Runway Type	Visibility minimums	A ft (m)	B ft (m)	C ft (m)	D [4] ft (m)	Slope
Surface 5	Approach end of runways providing ILS, MMLS, PAR, and localizer type directional aid with glidepath, LPV, LNAV/VNAV, RNP, or GLS.	≥ ¾ statute mile (1.2 km)	200 (61)	400 (122)	3,400 (1,036)	10,000 (3,048)	20:1
		< ¾ statute mile (1.2 km)	200 (61)	400 (122)	3,400 (1,036)	10,000 (3,048)	34:1
Surface 6	Approach end of runways providing ILS, MMLS, PAR, and localizer type directional aid with glidepath, LPV, LNAV/VNAV, RNP, or GLS.	All	0	Runway Width + 200 (61)	1,520 (463)	10,200 (3,109)	30:1

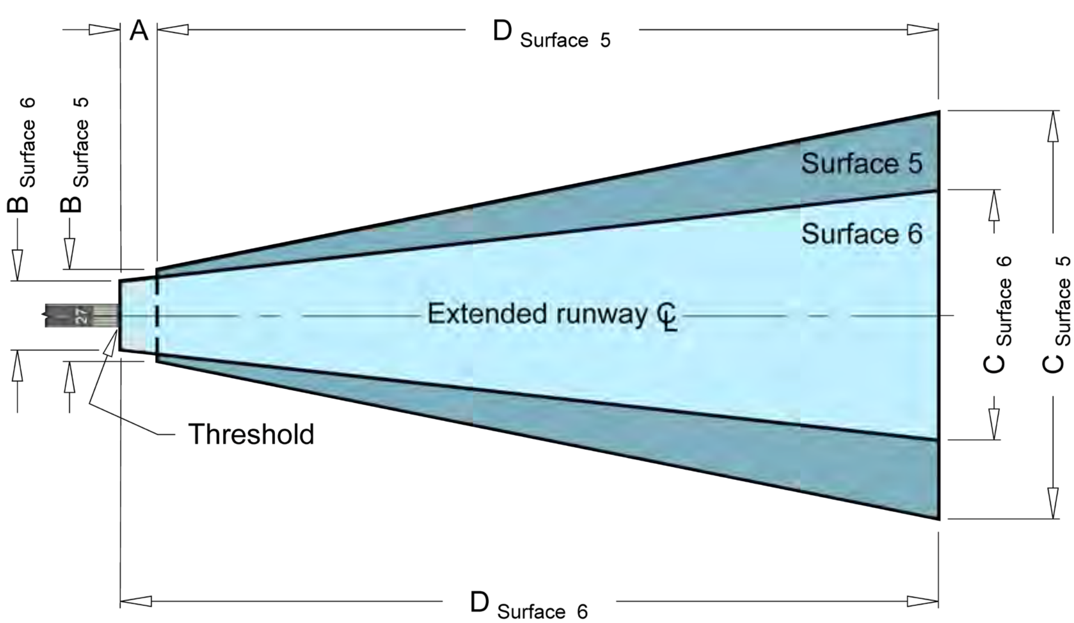
Note 1: Dimension A is relative to the runway threshold.

Note 2: Surface 5 represents the TERPS visual portion of the final approach segment. Surface 6 represents the TERPS Vertical Guidance Surface (VGS). Both surfaces apply for APV and PA procedures. Contact the Flight Procedures Team if existing obstacles penetrate this surface.

Note 3: The FAA assesses TERPS final approach segment criteria (e.g., W, X, Y surfaces) for all runway ends authorized for ILS, mobile microwave landing system (MMLS), precision approach radar (PAR), and localizer type directional aid with glide slope, LPV, and GLS procedures. Refer to FAA Order 8260.3 for additional information on TERPS surfaces.

Note 4: Represents a nominal value for planning purposes. The actual length depends on the precision final approach fix.

Figure 3-7. Approach Procedure with Vertical Guidance (APV) and Precision Approach (PA) Instrument Runway Approach Surfaces



Note: Refer to Table 3-4 for dimensional values.

Source: FAA, AC 150/5300-13B.

d. Runway 17/35 Approach Surfaces

Approach surface dimension standards for visual approaches are listed in Table 3-2 and illustrated by Figure 3-5 from AC 150/5300-13B; both are included as Figure 6.8.[11]

Runway 17/35 is a visual runway intended for use by small aircraft (i.e., less than 12,500 pounds) with approach speeds of 50 knots or more. As shown in Figure 6.8, both runway ends require approach Surface 2.

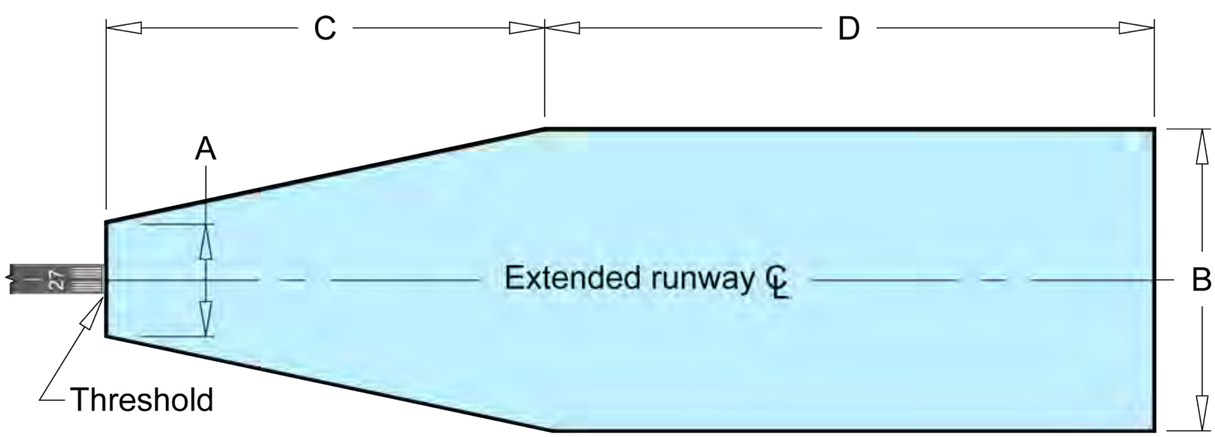
Figure 6.8: Visual Approach Surfaces

Table 3-2. Visual Approach Surfaces

Surface	Runway Type	A ft (m)	B ft (m)	C ft (m)	D ft (m)	Slope
Surface 1	Approach end of runways serving small airplanes with approach speeds less than 50 knots.	120 (37)	300 (91)	500 (152)	2,500 (762)	15:1
Surface 2	Approach end of runways serving small airplanes with approach speeds of 50 knots or more.	250 (76)	700 (213)	2,250 (686)	2,750 (838)	20:1
Surface 3	Approach end of runway serving large airplanes (>12,500 lbs (5,669 kg))	400 (122)	1,000 (305)	1,500 (457)	8,500 (2,591)	20:1

Note: Approach surface begins at the runway threshold.

Figure 3-5. Visual Approach Surfaces



Note 1: Refer to Table 3-2 for dimensional values.
Note 2: Surface slopes upward and away from starting point.

Source: FAA, AC 150/5300-13B.

e. Runway Departure Surfaces

Clear departure surfaces allow pilots to follow standard instrument departure procedures which assist pilots in avoiding obstacles during the initial climb from the terminal area. The FAA publishes these procedures in the *U.S. Terminal Procedures Publications* (TPP) which includes all instrument approach procedure (IAP) charts, departure procedure (DP) charts, standard terminal arrival (STAR) charts, charted visual flight procedures (CVFP), and airport diagrams for the entire United States. Unless otherwise stated in the TPP, the departure surface applies to all runways. For runway ends without an instrument departure surface, the airport operator coordinates with the FAA to identify it in the TPP as being not authorized for IFR departures.

Runway 17 is listed in the TPP as not having an instrument departure for environmental reasons. The instrument departure surface for Runway 3, Runway 21, and Runway 35 use the standards for Surface 7. These standards are listed in Table 3-5 from AC 150/5300-13B which is included as Figure 6.9. This is also illustrated by the accompanying figures from the AC, Figure 3-9 and Figure 3-11, which are included as Figure 6.10 and Figure 6.11.[12] The TPP also lists takeoff minimums and (obstacle) departure procedures. For IDA, it lists a pole as a takeoff obstacle for Runway 3 and vehicles, trees, and a pole as takeoff obstacles for Runway 35.

Figure 6.9: Instrument Departure Surface Dimensions

Table 3-5. Instrument Departure Surface

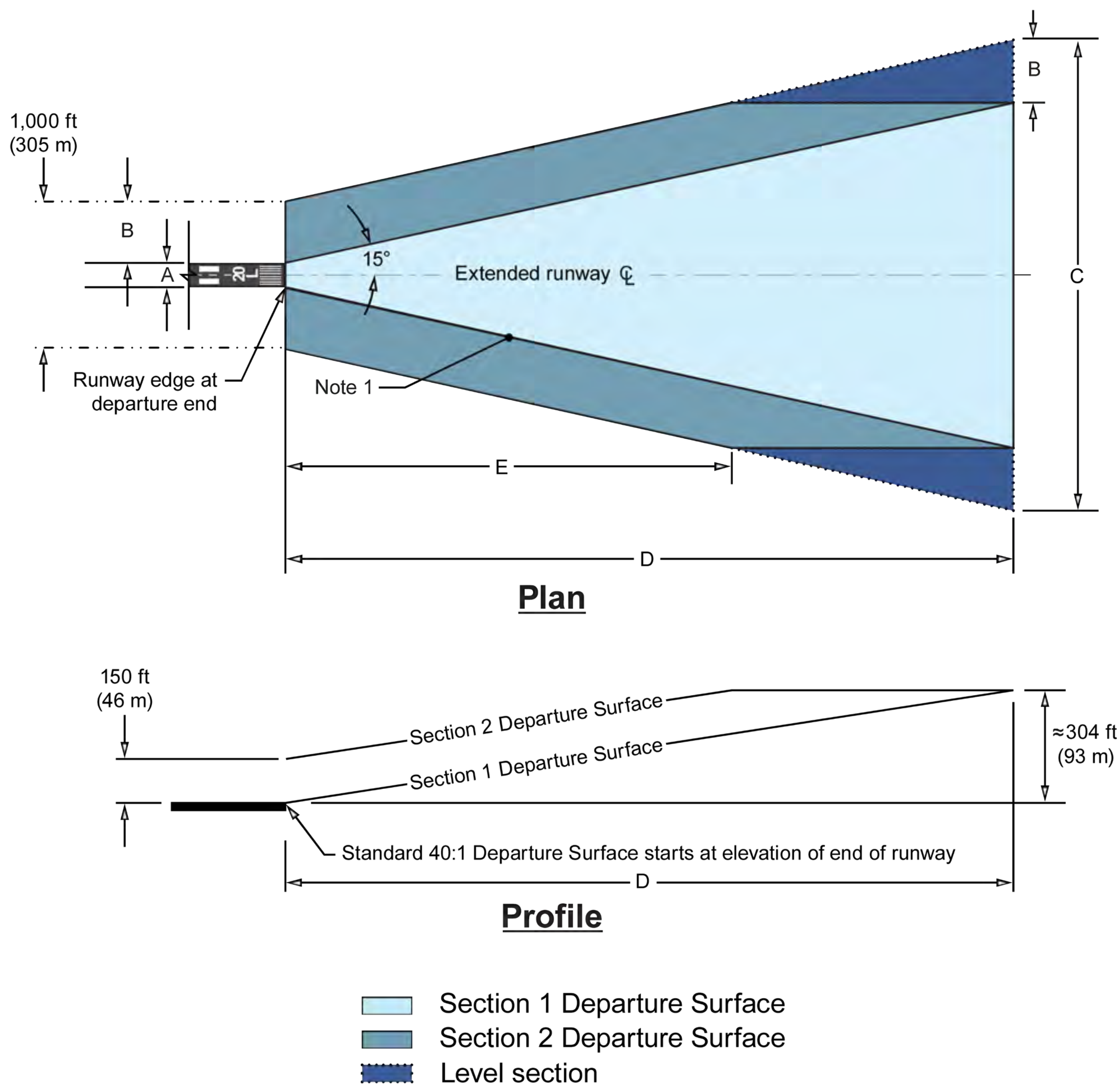
Surface	Runway Type	A ft (m)	B ft (m)	C ft (m)	D [4] ft (m)	E ft (m)	Section 2 Angle θ^2	Section 2 Transverse Slope m^2
Surface 7	Runways providing instrument departure operations	60 (18.3)	470 (143)	7,512 (2,290)	12,152 (3,704)	6,152 (1,875)	17:7	3.13:1
		75 (22.9)	462.5 (141)				18.0	3.08:1
		100 (30.5)	450 (137)				18.4	3.00:1
		150 (46)	425 (130)				19.4	2.83:1
		200 (61)	400 (122)				20.6	2.67:1

Note 1: Section 1 of the departure surface starts at the DER elevation for the width of the runway and rises along the extended runway centerline at 40:1. Section 2 starts at an equal elevation to the adjoining Section 1. Section 2 continues until reaching 304 ft (93 m) and then levels off until reaching the line where Section 1 and Section 2 reach 304 ft (93 m) above DER elevation, then that part of Section 2 that leveled off continues at a 40:1 slope.
Note 2: See Figure 3-11 for a graphical depiction of these values.
Note 3: The start of the surface is relative to the departure end of the runway. For runways with published declared distances, the TODA indicates the beginning of the departure surface. See Figure 3-10.
Note 4: 12,152 feet (3,704 m) represents a 2 nm nominal value for planning purposes.
Note 5: For other runway width values, interpolation is required to determine the value of "B", the Section 2 angle, and the Section transverse slope.

Source: FAA, AC 150/5300-13B, Figure 3-9.

Figure 6.10: Instrument Departure Surface Diagram

Figure 3-9. Instrument Departure Surface

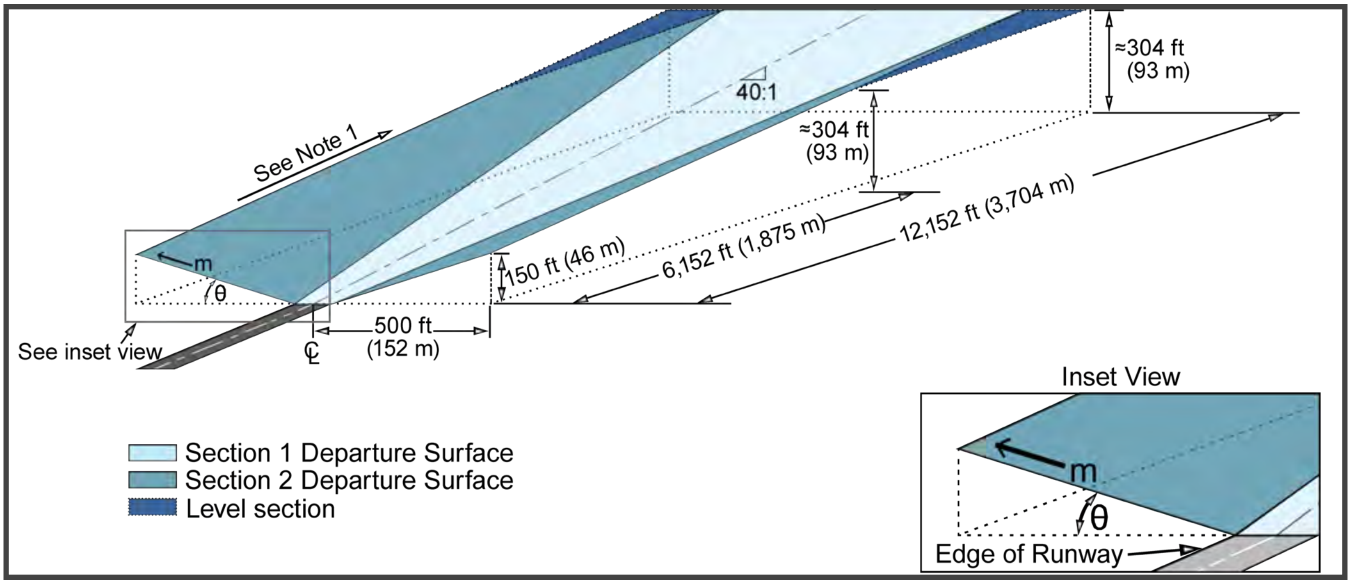


Note 1: The half-width of Section 1 is calculated by the formula:
Section $1_{\text{Half Width}}$ = (1/2 RWY Width) + (Tan 15° × X), where X = distance from the departure end of the runway.

Note 2: See Table 3-5 for dimensional values.

Source: FAA, AC 150/5300-13B.

Figure 6.11: Departure Surface — Perspective View (Without Clearway)



Note 1: The outer edge of the Section 2 Departure Surface has a slope of 40:1.
Note 2: The 304-foot (93 m) value represents the height above the DER.
Note 3: Refer to paragraph 3.6.2.1 for additional information.

Source: FAA, AC 150/5300-13B, Figure 3-11.

6.3.5. Precision Approach Path Indicator Clearance Surfaces

As previously discussed in Section 4.6.3., Precision Approach Path Indicators, each runway end is equipped with a precision approach path indicator (PAPI) that provides pilots with visual glideslope guidance during landing.

A PAPI obstacle clearance surface (OCS) is established to provide pilots with a minimum clearance over obstacles during an approach. The surface begins 300 feet in front of the PAPI and extends outward vertically into the approach zone at an angle one degree less than the aiming angle of the third light unit for a four-light system or the outside light for a two-light system. The surface expands horizontally outward 10 degrees from each side of the extended runway centerline for four statute miles.

Since the OCS originates at the runway centerline, and PAPI light boxes are located off to the side of the runway, the light beams emitted from each PAPI lightbox can be well outside the OCS. This is why the obstacle clearance protection provided by the OCS survey is not entirely sufficient. In order to ensure full obstacle clearance of the PAPI lights, a light signal clearance surface (LSCS) survey is required. Details of the LSCS survey process can be found in Engineering Brief Number 95, *Additional Siting and Survey Considerations for Precision Approach Path Indicator (PAPI) and Other Visual Glide Slope Indicators (VGSI)*.

When a PAPI is used on a runway that is also equipped with electronic ILS glideslope, such as Runway 21 at IDA, the PAPI visual glide path should coincide with the electronic glideslope. For those runways without an electronic glideslope, the PAPI glide path should produce the required threshold crossing height and clearance over obstacles in the approach for that runway. The threshold crossing height is the height of the lowest on-course signal at a point directly above the runway centerline and runway threshold. Threshold crossing height for small GA runways is typically 40 feet, while runways used by airlines range between 45 and 50 feet.

For Runway 3/21, both PAPI systems are set at a 3° visual glideslope with a 50-foot threshold crossing height. For Runway 17/35, the visual glideslope for Runway 17 is set at a 3° visual glideslope with a 40-foot threshold crossing height, and the visual glideslope for Runway 35 is set at a 3.5° angle with a threshold crossing height of 45 feet.

Conclusion

All Part 77, approach and departure, and PAPI OCS/LSCS surfaces should be protected to the maximum extent possible. Existing obstructions should be eliminated or marked and lighted.

6.3.6. Electrical, Visual, and Satellite Navigation Aids

Navigational aids (NAVAIDs) are visual or electronic devices that enhance safety for airport operations. There is a wide variety of communication, navigation, surveillance, and weather (CNSW) systems that assist pilots by locating the airport, updating weather conditions, or identifying the landing direction. As discussed in Section 4.6, IDA is outfitted with multiple NAVAIDs. These include an instrument landing system (ILS), runway end identifier lights (REIL), precision approach path indicators (PAPI), a segmented circle and wind cone, a very high frequency omnidirectional range with distance measuring equipment (VOR-DME), an airport beacon, an automated surface observing system (ASOS), a supplementary wind equipment F-420 (WEF) system, and a runway visual range (RVR) system. Every NAVAID has installment specifications that can include requirements for critical areas surrounding the equipment that must be kept clear of objects and obstructions. Table 6.11 lists the general function and any critical area requirements for each of these NAVAIDS.

Table 6.11: NAVAID Requirements

Equipment	General Function	Critical Area Requirements	Compliant
ILS 1.Localizer 2.Glide Slope	Instrument Approach	• 2,000 feet long x 400 feet wide oriented towards the approach.* • 2,000 feet long x 400 feet wide oriented towards the approach and 50 feet behind the antenna.	Y
REIL	Runway Identification	N/A	N/A
PAPI	Approach Slope Angle	N/A	N/A
VOR-DME	Navigation	1,000 feet	N
Beacon	Airport Identification	N/A	N/A
ASOS	Weather Reporting	• Obstructions within a 500-foot radius are limited to 15 feet below the wind sensor. • No hover or taxi operations within 100 feet. • Ideally, obstructions are not higher than 10 feet below the sensor or within a 500–1,000-foot radius.	Y
F-420 Wind Sensor	Wind Indicator Cross-Check	• Obstructions within a 500-foot radius are limited to 15 feet below the wind sensor. • No hover or taxi operations within 100 feet. • Ideally, obstructions are not higher than 10 feet below the sensor or within a 500–1,000-foot radius.	Y
RVR	ILS Visibility	N/A	Y

*Critical area active during ILS operations.

Source: FAA Orders 6820.10, 6850.2B, 6560.10D, AC 150/5300-13B, U.S. Dept. of Commerce FCM-S4-2019

Conclusion

The 1,000-foot critical area for the VOR-DME contains general aviation hangars and impedes development of the cargo apron and the installation of a holding bay at the Runway 21 end. The VOR-DME should be either relocated or upgraded to a Doppler VOR, which would reduce the size of the critical area by half.

6.3.7. Airport Traffic Control Tower

As previously discussed in Section 4.5.6, the airport traffic control tower (ATCT) was constructed in 1960 and currently occupies space within the passenger terminal. While the ATCT contributes to the safe operation and success of the airport, its current location restricts terminal expansion efforts required to meet passenger demand.

Conclusion

Consideration should be given to finding an alternate site for the airport traffic control tower.

6.3.8. Instrument Approach Procedures

As discussed in Section 3.3.2., Instrument Approach Procedures for Idaho Falls Regional Airport, there are currently eight instrument approach procedures for Runway 3/21. According to historic meteorological data at IDA, IFR conditions exist approximately 8% of the time. Runway 3/21 is properly equipped for instrument approaches to the runway with visibility minimums as low as 1/2 mile. By runway end, the ILS for Runway 21 lowest minimums are 250 feet height above touchdown (HAT) and 1/2-mile visibility. Runway 3 lowest minimums are achieved with the RNAV (GPS) Y with a HAT of 200 feet and visibility of 3/4 mile.

Conclusion

Given the percentage of IFR hourly observations and the aircraft expected to use the airport, the current instrument approaches to Runway 3/21 at IDA are adequate to support aircraft operations through the 20-year planning period. While the instrument approach procedures are adequate and appropriate, minimums can be improved by eliminating terrain obstructions for Runway 21 and adding an approach lighting system to Runway 3.

6.4. Commercial Service Passenger Terminal Complex

6.4.1. Commercial Apron Requirements

The commercial terminal apron is approximately 425,000 square feet and consists of both concrete and asphalt pavement. There are six aircraft parking positions serviced by three ground-level enclosed walkways (Gates A1–A3) and three upper-level passenger boarding bridges (Gates B1–B3).

Gates A1 and B1 are marked to accommodate regional jets. Gates A2, A3, B2, and B3 are marked for Airbus A320 and Boeing 737 aircraft. All ground-level gates have 110V and 240V power. Gates A2 and A3 have aircraft ground power units (GPU). Each upper level gate is equipped with a GPU and pre-conditioned air (PCA) capable of serving all aircraft using the airport except the Q-400.

There are two potable water cabinets along the west face of the terminal building and one along the walkway to Gate A1. There are two remain overnight (RON) parking positions marked on the apron. The concrete deicing pad behind Gate A1 is unusable when an aircraft is parked at the gate. The airline lavatory dump is at the apron edge approximately 300 feet south of Gate A1.

According to the forecast, in 2021 the average number of commercial airline operations during the peak hour of the peak month was four. As shown in Table 6.12, this is expected to increase to six by 2026. To determine the number of gates that will be needed during the peak hour as a result of this increase, individual and combined airline schedules were taken into consideration as well as other factors such as delays, gate use agreements, and potential new flights. The calculation used to determine the number of gates needed during the peak hour was the forecast peak hour operations plus a 30% surge factor.

Table 6.12: Terminal Gate Requirements

Planning Year	Peak Hour Operations	Existing Gates	Required Gates	Gates Needed
2021	4	6	5	-1
2026	6	6	8	+2
2031	6	6	8	+2
2036	6	6	8	+2
2041	6	6	8	+2

Source: Ardurra.

Conclusion

Adding two gates requires an expansion of the terminal building itself and two additional parking spaces on the terminal apron. The additional parking spaces should accommodate the full range of aircraft expected to be used by the airlines during the planning horizon, up to and including the Airbus A320 and Boeing 737-900MAX. FAA AC 150/5300-13B recommends a minimum clearance of 25 feet between parking positions for an ADG-III aircraft. Parking positions should also allow enough clearance for an ADG-IV aircraft taxiing on Taxiway A, which may require shifting the vehicle service road. The deicing pad should be relocated outside the envelope of the gate parking positions. A covered lavatory dump should be considered.

6.4.2. Passenger Terminal Building

Terminal requirements in this section are the result of a focused planning study conducted by Alliiance as part of this airport master plan. The full technical report is included as **Appendix C: Terminal Expansion Planning Study Report**. This report provides a detailed explanation of the planning assumptions used and conclusions reached. Planning activity level assumptions for this section differ from the airport master plan forecast in that these terminal requirements consider the addition of two new airlines beyond the airport master plan forecast; one using a Boeing 737-700 and the other using an Embraer 145 regional jet. Two scenarios were considered; one with the new service occurring within the peak hour, and one occurring outside the peak hour. This was done because of the extreme sensitivity of the terminal facilities to peak hour passenger activity. The preferred scenario used for this section is with the new service occurring outside of the peak hour. Table 6.13 summarizes the peak activity levels used for generating the terminal planning requirements under this section, and Table 6.14 summarizes the trigger points for each terminal functional area.

Table 6.13: Terminal Planning Peak Activity Levels

Year	Peak Hour		Avg. Load Factor	Peak Month Avg Day		Peak Month Enplanements	Annual Enpl.	CAGR
	Enpl.	Dep Ops		Enpl.	Dep Ops			
Historical	**21.7%**			**27**		**12.6%**		
2021	228	3	75.9%	1,052	16	28,178	223,741	
Forecast	**19.1%**					**11.1%**		
2026	302	4	79.0%	1,581	23	49,011	441,541	1.3%
2031	322	4	84.0%	1,686	23	52,266	470,865	1.3%
2041	366	4	95.0%	1,919	23	59,489	535,937	1.3%

Source: Alliiance

Conclusion

Virtually all of the functional areas in the terminal building need to be expanded or renovated if delays are to be avoided during peak hour activity. One major factor contributing to terminal requirements is airline scheduling and aircraft types. Multiple large aircraft operating within the peak hour, either by schedule or by system delays, will cause significant impacts on the terminal's ability to safely and comfortably process passengers.

Table 6.14: Terminal Planning Trigger Points

Functional Area	2021		Forecast		
	Existing	Recommended	2026	2031	2041
General					
Annual Enplanements	223,741	-	441,541	470,865	535,937
Peak Hour Enplaned	228	-	302	322	366
Peak Hour Deplaned	240	-	285	303	345
Gates/Aircraft Positions					
Small Regional (Cessna/Metro)	-	-	-	-	-
Medium Regional (CRJ/ERJ)	-	-	-	-	-
Large Regional (Q400/E175/CRJ9)	-	5	5	5	6
Narrowbody (A320/B737W)	6	1	1	2	2
Total Aircraft Gates/Positions	6	6	6	7	8
Public Space					
Circulation Total (sf)	20,431	21,570	24,280	26,980	29,720
Ticket Lobby Circulation (sf)	1,727	1,170	1,850	1,850	2,050
Baggage Claim Circulation (sf)	3,323	1,500	1,500	1,500	1,500
Airside Concourse Circulation (sf)	3,247	6,970	6,970	8,130	9,300
General Public Circulation (sf)	12,134	11,930	13,960	15,500	16,870
Security Screening Checkpoint (sf)	**4,909**	**5,190**	**7,390**	**7,390**	**7,390**
Number of Lanes	2	1	2	2	2
Security Screening Area (sf)	2,638	3,090	4,690	4,690	4,690
Queuing Area (sf)	777	600	1,200	1,200	1,200
TSA Offices (sf)	1,494	1,500	1,500	1,500	1,500
Queuing/Waiting Area Total (sf)	**7,623**	**7,500**	**8,900**	**8,970**	**9,460**
Public Seating (sf)	655	480	610	650	720
Ticket Lobby/Kiosks (sf)	2,558	2,010	3,180	3,180	3,510
Baggage Claim Devices	2	2	2	2	2
Linear Frontage (public side) (lf)	182	180	180	180	180
Baggage Claim Hall (sf)	4,410	4,500	4,500	4,500	4,500
Meeter/Greeter Lobby (sf)	-	510	610	640	730
Gate Lounges/Holdrooms Total (sf)	**12,642**	**10,900**	**10,900**	**13,900**	**15,480**
Medium Regional (sf)	-	-	-	-	-
Large Regional (sf)	-	7,890	7,890	7,890	9,470
Narrowbody (sf)	-	3,010	3,010	6,010	6,010
Restrooms Total (sf)	**2,781**	**5,330**	**5,660**	**6,260**	**6,730**
Restrooms post security (sf)	1,786	3,400	3,400	4,000	4,470
Restrooms pre security (sf)	855	1,530	1,860	1,860	1,860

Source: Alliiance

Functional Area	2021		Forecast		
	Existing	Recommended	2026	2031	2041
Service Animal Relief Area (SARA) (sf)	140	140	140	140	140
Nursing Mothers' Room (sf)	-	260	260	260	260
Airline Space Total (sf)	**3,379**	**2,730**	**4,330**	**4,330**	**4,780**
Linear Ticket Counter Positions (kiosk)	16	12 (0)	19 (0)	19 (0)	21 (0)
Total Check-In Positions (kiosk)	28 (12)	15 (3)	24 (5)	24 (5)	27 (6)
Total Linear Position Length (lf)	114	78	124	124	137
Counter Area (sf)	1,052	780	1,240	1,240	1,370
Airline Ticket Offices (ATO) (sf)	2,327	1,950	3,090	3,090	3,410
Other Airline Space Total (sf)	**5,920**	**8,080**	**9,000**	**10,020**	**10,290**
Outbound Baggage Makeup (sf)	1,481	1,790	2,500	2,880	2,940
Checked Baggage TSA Screening (sf)	931	1,800	1,800	1,800	1,800
Level 1 Inspection Units	1	1	1	1	1
Airside Operations/Storage (sf)	1,137	1,330	1,330	1,790	1,960
Inbound Baggage Claim, Secure (sf)	341	2,200	2,200	2,200	2,200
Baggage Circulation/Storage (sf)	2,030	760	970	1,080	1,100
Other Airline Offices & Support (sf)	-	200	200	270	290
Pre-Security Concession Space (sf)	**4,641**	**2,070**	**2,630**	**2,710**	**2,880**
Rental Car Counters	4	4	4	4	4
Rental Car Area/Offices (sf)	1,028	1,030	1,030	1,030	1,030
Rental Car Queue (sf)	458	460	460	460	460
Landside Concessions (sf)	2,137	450	880	940	1,070
Landside Support/Storage (sf)	1,018	130	260	280	320
Post-Security Concession Space (sf)	**3,157**	**2,330**	**4,590**	**4,900**	**5,580**
Airside Concessions (sf)	2,213	1,790	3,530	3,770	4,290
Airside Support/Storage (sf)	944	540	1,060	1,130	1,290
Non-Public Space Total (sf)	**23,388**	**17,560**	**19,930**	**21,320**	**22,520**
Airport Administration (sf)	2,882	3,110	3,110	3,110	3,110
Airport Police (sf)	248	250	250	250	250
FAA Tower (sf)	2,787	700	700	700	700
Restrooms (sf)	114	110	220	220	220
Circulation (sf)	1,456	1,610	1,820	1,930	1,990
Airport Maintenance/Support (sf)	3,545	1,430	1,700	1,830	1,970
Mechanical/Electrical/IT/Comm (sf)	9,086	7,150	8,380	9,170	9,860
Building Structure (sf)	3,271	3,200	3,750	4,110	4,420
Total Functional & Support Area (sf)	**85,600**	**80,060**	**93,860**	**102,670**	**110,410**
Total Gross (sf)	**88,871**	**83,260**	**97,610**	**106,780**	**114,830**

Source: Alliiance

6.4.3. On-Airport Circulation Roadways

The terminal building, public parking lots, rental car parking, air cargo facility, and ARFF station can all be accessed via North Skyline Drive which enters airport property from the south. North Skyline Drive has two northbound lanes that converge into one lane at the airport entrance. As shown in Figure 6.12, drivers looking to access the cargo facility or ARFF station turn right onto Federal Way while passenger and rental car traffic continues to the terminal.

Traffic entering the main terminal area meets with terminal return traffic where it becomes two lanes. From this point, drivers looking to access the short-term daily parking lot take the first left and continue through a narrow access gate. However, the daily lot is typically unused and barricaded. Drivers looking to access the short-term hourly parking lot take the second left and continue through a narrow access gate. Drivers looking to access the rental car ready/return area take the right just before the arrivals curbside area. Just beyond the arrivals area is the departures curbside area.

The two lanes in front of the terminal building measure approximately 435 feet long—from the start of the arrivals area to the end of the departures area. The curb in this section is marked to indicate the separate passenger pick-up and drop-off zones.

There is another decision point just beyond the departures area where drivers can access the daily or economy lots via a left turn or continue straight ahead. There is a second entrance to the economy lot prior to completing the circulation loop. The intersection at the end of the circulation loop allows drivers to either return to the terminal by continuing straight or make a sharp right turn to exit the airport.

This configuration requires drivers looking to access the primary entrance to the daily and economy parking lots to pass through the passenger pick-up and drop-off zones. This presents a pain point for these customers because vehicles are often stopped as pedestrians with luggage cross the road.

The configuration of North Skyline Drive—from International Way to the departures curbside area—has not changed significantly in more than 20 years despite significant passenger growth and expansions to the passenger terminal and public parking lots. During airline schedule surge periods, traffic along North Skyline Drive backs up from the terminal building off-airport beyond International Way.

Conclusion

Consideration should be given to widening North Skyline Drive and reconfiguring the entry points to the parking lots to avoid extra traffic passing through the congested passenger pick-up and drop-off zones. Consideration should also be given to mitigating the sharp right turn vehicles have to navigate to exit the terminal circulation loop.

Figure 6.12: Terminal Roadway and Parking Circulation

Source: Ardurra.

6.4.4. Public Parking Facilities

As previously mentioned in Section 4.9., Commercial Terminal Parking Areas, the public parking lot at the terminal is separated into three distinct parking areas; short-term hourly, short-term daily, and long-term parking (Figure 6.13). There are approximately 144 short-term hourly spaces, 291 short-term daily spaces, and 478 long-term spaces for a combined total of 913 spaces. Parking services are managed under contract by SP Plus Corporation (SP+).

Parking data provided by the airport's parking contractor, SP+, was used to analyze actual parking performance from each of the three areas. This data was then compared to the peak month enplanement data and projections from the focused terminal planning study forecast to determine parking needs at IDA through the planning horizon.

On average, there is a total of 400 cars parked per day during the peak month. As shown in Table 6.15, approximately 48% of these vehicles are parked in the hourly lot, 15% in the daily lot, and 38% use the long-term (i.e., economy) lot. It should be noted that these parking patterns did not account for the addition of Economy Lot 2, which added 240 to the airport parking lot inventory in mid-2022. Presently, there are 718 economy lot spaces.

Table 6.15: Vehicle Parking Patterns

Parking Lot	Avg. Vehicles Per Day	Avg. Duration Parked	Avg. % of Passengers	Avg. % of Vehicles
Short-Term Hourly	190	1 hr 10 min	21%	48%
Short-Term Daily	60	1 day	7%	15%
Long-Term Economy	150	4 days	17%	38%

Source: SP+; Alliiance; Ardurra.

As shown in Table 6.15, the hourly lot has a high turnover rate. In many cases, cars are parked in this lot for less than 30 minutes because the first half-hour is complimentary. This suggests the hourly lot is being used to drop off passengers and as a waiting area when picking up passengers. On average, cars are parked in the daily lot for one day. Cars are parked in the economy lot for an average duration of four days which means vehicles are stacking up over a rolling four-day average. To determine parking requirements for the hourly lot, peak hour enplanement levels were applied to the percentage of enplaned passengers using the hourly lot. For the daily requirements, peak day enplanement levels were applied to the percentage of enplaned passengers using the daily lot. For the economy lot requirements, peak day enplanement levels were applied to the percentage of enplaned passengers using the economy lot, times four days. The results are shown in Table 6.16.

Table 6.16: Vehicle Parking Requirements

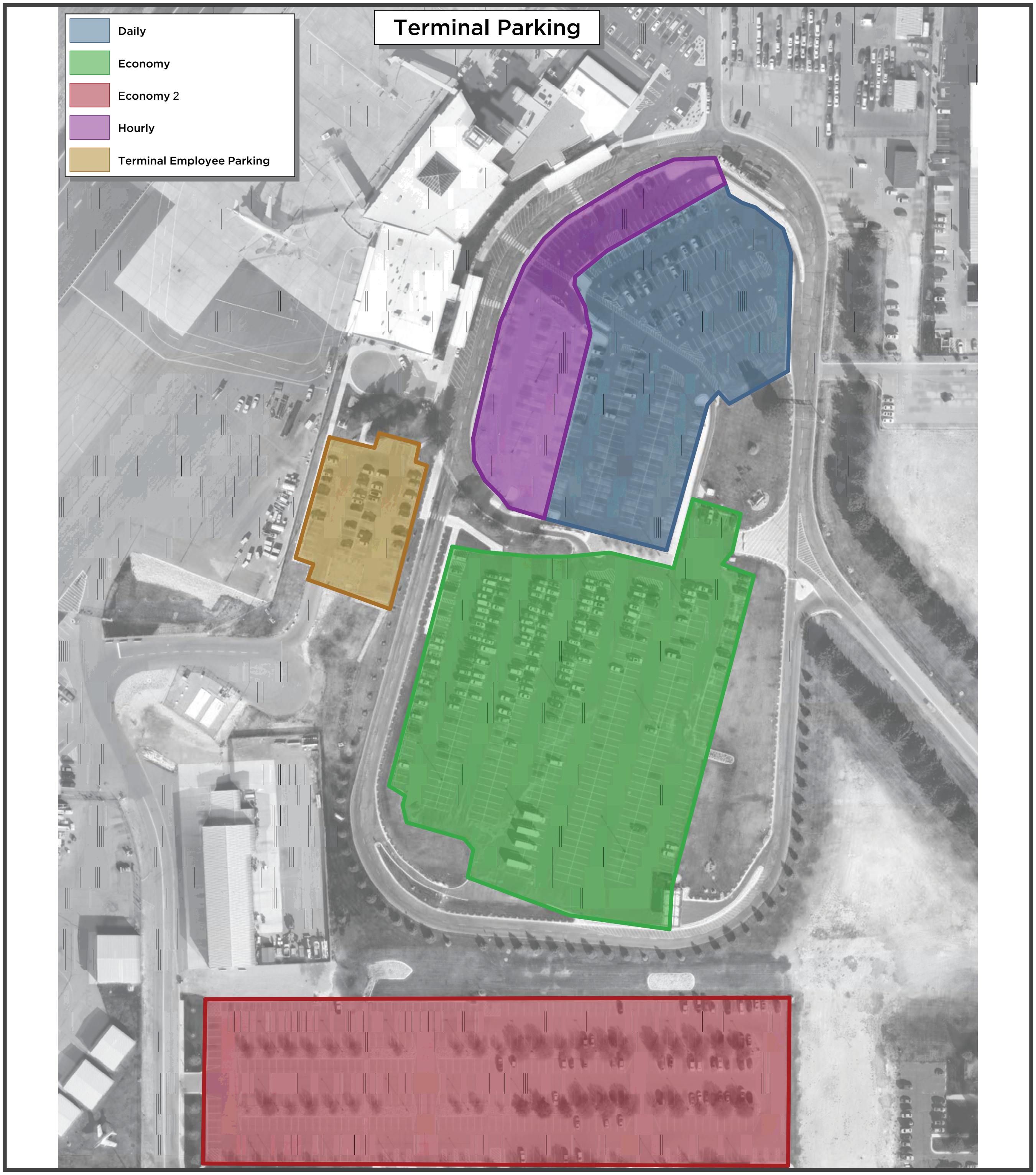
Year	Hourly (144)	Daily (291)	Economy (718)	Combined (1,153)	Need (Economy)	Need (Overall)
2021	48	60	694	802	-24	-351
2026	63	104	1,044	1,211	326	58
2031	67	111	1,113	1,291	395	138
2041	77	127	1,267	1,471	549	318

Source: Ardurra.

Conclusion

Reconfiguration of the existing hourly and daily lots to allocate more spaces to economy will help relieve some pressure in the immediate term. By 2026, reconfiguration of the existing lots alone will not be adequate to support parking demand. Other parking lot locations, along with vertical development options should be a priority.

Figure 6.13: Terminal Parking



Source: Ardurra.

6.4.5. Employee Parking

The employee parking lot, which is located south of the terminal between North Skyline Drive and the terminal apron, currently has approximately 72 parking spaces. This parking lot is used both by airport employees and employees of companies affiliated with the airport. This includes the Transportation Security Administration (TSA), air traffic control (ATC), airlines, and concessionaires. The total number of employees using the parking lot is estimated to be between 200—250 during peak periods. It is assumed that employee parking needs will increase at the same rate as commercial operations. Using 250 parking spaces as the baseline, Table 6.17 shows the increased number of employee parking spaces required based on the CAGR of 1.0% forecasted for commercial operations.

Table 6.17: Employee Parking Requirements

Year	Spaces Required (350 Square Feet per Stall)
2021	250
2026	263
2031	276
2041	305

Source: Ardurra.

Conclusion

The employee parking lot should be expanded, or other locations sought, in order to meet the estimated 305 spaces that will be needed by 2041.

6.4.6. Rental Car Facilities

Requirements for rental car facilities at IDA are based on the results of a questionnaire completed by the rental car companies operating at the airport during the first quarter of 2022 which included Avis-Budget, Hertz, Enterprise, Alamo, and National. These requirements apply to the ready/return area as well as the quick turnaround area (QTA) where several car rental support functions are located including fuel dispensers, wash bays, maintenance bays, rental car overflow parking, and rental car employee parking (Figure 6.14). Table 6.18 summarizes the results of the questionnaire.

Figure 6.14: Rental Car Facilities

Source: Ardurra.

Table 6.18: Rental Car Company Questionnaire Results

Area	Current	Desired
Ready/Return Area (spaces)	100	250
Quick Turnaround Area (QTA)		
Fuel Dispensers	4	7
Wash Bays	4	6
Maintenance Bays	3	5
Overflow Spaces	90	200
Staging Spaces	40	75
Employee Spaces	15	30

Source: Rental Car Questionnaire

Using partial data received from the rental car companies, the peak hour for rental returns during the peak month is 8 a.m., and the peak hour for car rentals is between 1–3 p.m.

Market share data for gross revenue of each rental car company during fiscal year 2021 was applied to data received from the questionnaire to determine that there is a daily average of 18 rental cars returned during the 8 a.m. hour of the peak month and a daily average of 13 cars rented during the peak hours of 1–3 p.m.

To determine ready/return space requirements, a 30% surge factor was applied to each average, then a two-hour utilization rate was used for returns, and a three-hour utilization rate was used for rentals to allow a buffer for potential delays during the peak periods. Future requirements were projected using forecast enplanement growth.

Table 6.19: Rental Car Ready/Return Requirements

Year	Spaces Required (350 Square Feet per Stall)
2021	98
2026	108
2031	118
2041	143

Source: Rental Car Questionnaire; Ardurra.

QTA requirements were projected using the forecast enplanement growth applied to the existing conditions, adding a 30% surge factor.

Table 6.20: Rental Car Quick Turnaround Area Requirements

QTA	2021 (Existing)	2026	2031	2041
Fuel Dispensers	4	6	6	8
Wash Bays	4	6	6	8
Maintenance Bays	3	4	5	6
Overflow Spaces	90	129	141	170
Staging Spaces	40	57	63	76
Employee Spaces	15	21	24	28

Source: Rental Car Questionnaire; Ardurra.

Conclusion

All of the functional areas related to the rental car ready/return and quick turnaround areas will exceed existing capacity by 2026. Alternative areas should be sought that will enable growth without impeding aeronautical development.

6.5. General Aviation Requirements

6.5.1. Aircraft Hangar Storage

There are currently 96 hangar spaces at IDA of varying sizes. Some of the hangars, such as those at Aero Mark, are capable of accommodating multiple aircraft. The *2020 Idaho Airport System Plan (IASP) Update* sets the objective for primary commercial airport hangar storage at 80% of based aircraft and 25% of transient aircraft. For this Airport Master Plan, the objective was 80% of based aircraft and 10% of transient aircraft, as it is assumed more GA transient aircraft requesting a hangar would use the main FBO on the west side of the airport, where the large hangars are located. Transient aircraft are assumed to be 70% of itinerant aircraft during the average day of the peak month (July). Itinerant aircraft were a combination of Air Taxi and GA itinerant operations from the forecast. Itinerant cargo and military are not included in the hangar requirement calculation. The based aircraft and fleet mix projections from the forecast, along with the aforementioned assumptions, were used to calculate the hangar requirements shown in Table 6.21.

Table 6.21: Hangar Requirements

Year	Based Aircraft	Transient Aircraft	Spaces Required	Spaces Existing	Spaces Needed
2021	100	4	104	96	8
2026	108	5	113	96	17
2031	116	5	121	96	25
2041	132	5	137	96	41

Source: Ardurra.

Conclusion

Additional hangar space is needed at IDA through the entire planning horizon.

6.5.2. Aircraft Tiedowns

Currently, there are 68 marked tiedown spaces at IDA. While there are large, unmarked sections of apron that could accommodate additional tiedowns, only marked spaces were considered to determine if the existing tiedown spaces are sufficient to accommodate forecasted demand.

The *2020 Idaho Airport System Plan* (IASP) set an objective for primary commercial airports to have enough marked tiedown spaces to accommodate 20% of based aircraft and 50% of transient aircraft. However, for this airport master plan, an objective of 20% of based aircraft and 75% of transient aircraft was determined to be more appropriate.

The based aircraft forecast, as discussed in Section 5.11, was used in this calculation along with the same transient aircraft assumptions used in the hangar requirements section. The resulting tiedown requirements are shown in Table 6.22.

Table 6.22: Tiedown Requirements

Year	Based Aircraft	Transient Aircraft	Spaces Required	Spaces Existing	Spaces Needed
2021	25	32	57	68	(11)
2026	27	35	62	68	(6)
2031	29	37	66	68	(2)
2041	33	40	73	68	5

Source: Ardurra.

Conclusion

There are adequate tiedowns to meet demand through 2031. Beyond 2031, the tiedown deficiencies could be met by using existing apron space with a more efficient use of markings.

6.6. Air Cargo Requirements

As previously discussed in Section 4.5.5., Air Cargo Facilities, FedEx operates the only air cargo facility at IDA. It has approximately 30,000 square feet of warehouse space, approximately 55,000 square feet of apron space with one marked aircraft parking space, 7,000 square feet of apron space used for ground service equipment (GSE) storage, 2,400 square feet of space used for receiving and office space, and a parking lot for FedEx employees with 75 parking spaces. Guidance from Airport Cooperative Research Program (ACRP) Report 143, *Guidebook for Air Cargo Facility Planning and Development*, was used to establish air cargo facility requirements.

To determine the amount of GSE apron space that will be required during the 20-year planning period, the ratio of annual tonnage per square foot was applied to the forecasted air cargo weights (converted to tons) established in Section 5.10., Air Cargo by Volume Forecast. To determine the amount of warehouse space required, the forecasted growth rate of 3.9% for air cargo by volume was applied to the square footage of the existing warehouse space.

Table 6.23: Forecast Cargo Weight in Pounds and Tons

Unit of Weight	Base Year	Forecast Years		
	2021	2026	2031	2041
Pounds	6,288,882	9,952,995	11,072,550	13,488,226
Tons	3,144	4,976	5,536	6,744

Source: Ardurra.

Table 6.24: Air Cargo Facility Requirements

Element	Existing	Required	Forecast Years		
	2021	2021	2026	2031	2041
GSE Apron	7,000 sq. ft.	5,517 sq. ft.	8,731 sq. ft.	9,713 sq. ft.	11,832 sq. ft.
Warehouse Space	30,000 sq. ft.	30,000 sq. ft.	36,300 sq. ft.	44,000 sq. ft.	64,500 sq. ft.

Source: ACRP Report 143; Ardurra, Aviation Forecast.

Table 6.25: Apron Space Requirements

Aircraft	Length + Buffers	Wingspan + 25-foot Buffer	Tail Height	Required Apron
ATR 72	124.2 feet	113.8 feet	25 feet	14,128 feet
Boeing 757-200	285.2 feet	150 feet	45.1 feet	42,780 feet

Source: ACRP 143, Tables 4-6 and 4-8.

Conclusion

Additional apron space for GSE is needed immediately. Building capacity will need to be expanded during the planning horizon. The existing FedEx cargo apron is adequate for use by ATR-72 aircraft through the 20-year planning horizon. However, the FedEx apron is adjacent to the rental car area which makes it difficult to maneuver a 757F. If another air cargo carrier company operating the 757F, decides to add scheduled air cargo service to IDA, they will need to use a different facility.

6.7. Airport Support Facilities

Airport support facilities include infrastructure and equipment used for emergency response, fuel storage, access control, equipment storage, and airport maintenance which are vital in ensuring the smooth, efficient, and safe operation of the airport. While the FAA provides guidance for assessing the future needs of some aviation support facilities, speaking with airport management, tenants, and users is a more reliable way of understanding existing and future requirements for aviation support facilities.[13]

6.7.1. Aircraft Rescue and Fire Fighting Station

As previously discussed in Section 4.7.2., Aircraft Rescue and Fire Fighting, IDA is an aircraft rescue and fire fighting station (ARFF) Index B airport. This is adequate for the Airbus A320, and the ARFF index is not expected to change during the 20-year planning period. While these facilities are adequate, the current location inhibits growth of the cargo facility. Relocating the ARFF station closer to the midpoint of the air carrier runway, Runway 3/21, would reduce response times to that runway and allow for opportunities to expand the cargo facilities.

Conclusion

Consideration should be given to finding an alternate site for the ARFF station. Future locations should consider a live fire discharge area to properly contain and eliminate chemicals associated with firefighting operations.

6.7.2. Fuel Storage

As previously discussed in Section 4.5.8., Aircraft Fuel Facilities, the fuel farm currently has three underground storage tanks used for Jet A fuel that hold a total of 75,000 gallons, and two underground storage tanks used for avgas that hold a total of 37,000 gallons.

Fuel records provided by airport staff for 2021 show the peak month for Jet A fuel was July with 363,210 gallons pumped. The peak month for avgas was June with 13,519 gallons pumped. The five-day average for each fuel type was applied to the operations forecast to determine fuel storage requirements (Table 6.26).

Table 6.26: Fuel Storage Requirements

Year	5-Day Jet A Average	5-Day Avgas Average
2021	58,582 gallons	2,253 gallons
2026	61,571 gallons	2,368 gallons
2031	64,711 gallons	2,489 gallons
2041	71,481 gallons	2,749 gallons

Source: Airport Staff, Current Fuel Usage; Ardurra, Aviation Forecast.

Conclusion

There is adequate fuel storage to support the five-day fuel requirements for the entire 20-year planning period.

6.7.3. Snow Removal Equipment and Airport Maintenance Building

As previously discussed in Section 4.7.1., Snow and Ice Control, the current 15,000-square-foot snow removal equipment (SRE) building was constructed in 2010. It contains office space for operations and maintenance personnel. It is adjacent to an enclosed storage yard that is approximately 33,000 square feet. Both the building and yard are also used to store airport maintenance vehicles.

The building has six bays; two of which allow pull-through access for large equipment. Two of the bays are used to store small equipment vehicles and to perform maintenance while the other two have a back-in design for large equipment. The building is 65 feet wide which does not allow double parking of large equipment with the snow removal attachments connected.

According to current guidance from FAA AC 150/5220-20A, *Airport Snow and Ice Control Equipment*, the airport is eligible for nine pieces of snow removal equipment.[14] These include one rotary plow, two displacement snowplows, three towed or self-propelled runway brooms with air blast, and three support vehicles for deicing or anti-icing chemical application. While the airport is eligible for nine pieces of snow removal equipment, the building is not large enough to store all nine pieces in a ready-to-use state.

Conclusion

The actual size required to store all of the snow removal equipment depends on the layout selected. Space should be reserved for future expansion.

6.7.4. Ground Service Equipment Storage

The ground service equipment (GSE) used by the airlines is currently stored along the fence on the commercial apron to the south of the terminal building. There is a small, covered area outside of the baggage makeup bays that can be used to stage ground service equipment to hook them up to baggage carts. This area is confined by the Gate A1 enclosed walkway which can reduce efficiency. This becomes especially noticeable when an aircraft is parked at the gate.

Conclusion

The size of the apron used to store ground service equipment is adequate. Adding apron markings to delineate the ground service equipment parking area would enhance circulation and efficiency. Future terminal expansions should include extra space and reconfiguration of the baggage makeup area to eliminate the constraints associated with Gate A1.

6.7.5. Fencing and Gates

The airport is fenced with a series of vehicle and pedestrian gates. As development progresses, airport fencing and gates may need to be added or re-aligned. Changes in security requirements also may dictate future fence and gate configuration needs.

6.7.6. Lighting Vault and Emergency Generator

The capacity of the regulators and emergency generator located in the lighting vault were not evaluated under this master plan. Future airfield development that includes additional lighting may require more capacity than provided by the existing lighting vault. Future terminal expansions may also require the lighting vault to be relocated elsewhere at the airport.

6.8. Utilities

As previously discussed in Section 4.14., Utilities, Water, sewer, communications, electrical, and natural gas are all available at the airport. There is sufficient capacity to accommodate growth. New development may require additional service connections, relocation, or extensions of these utilities. There are no electric vehicle (EV) charging stations at the airport.

Conclusion

Consideration should be given to adding electric vehicle charging stations at the airport.

6.9. Stormwater

Stormwater runoff at IDA is carried away by a series of inlets, swales, and culverts to two retention basins located on airport property where the water collects and then infiltrates into the soil. No stormwater runoff is treated at the airport or leaves the airport property through an outfall. Since no runoff leaves the airport through an outfall, the airport is not required to have a Storm Water Pollution Prevention Plan (SWPPP). Additionally, the airport is not part of the Idaho Falls MSA contributing area.

The main retention basin, which has been in use since at least the 1940s, is located to the east of Runway 17 between Foote Drive and Interstate 15. It receives runoff from the terminal area through a 27-inch concrete pipe that also dates back to the 1940s. This retention basin also receives runoff from International Way and the industrial park located just to its south (off-airport). The stormwater manholes located between the FBO and commercial apron have been known to overflow during heavy storm events due to surcharge of the 27-inch main line.

The second retention basin, which was constructed in 2006, is located to the east of Taxiway A between Taxiway A4 and Taxiway E. It receives runoff from the infield between Taxiway A and the FBO apron.

Conclusion

Stormwater infrastructure at the airport should be improved as more impervious surface is added. Pipes dating to the 1940s should be replaced and the capacity increased. The main retention basin east of Foote Drive should be reviewed to determine if it is capable of accommodating airport development.

6.10. Land Use

Land use is the term used to describe how property is currently being used and how it can be used in the future. The existing and planned land uses near an airport can impact the local community, airport operations, and potential growth.

Effective land use compatibility plans take both height and land use restrictions into consideration and are incorporated via local zoning laws. This type of proactive planning around an airport protects both the airport and the surrounding community. Furthermore, federal and state grant assurances require airport sponsors to operate and maintain the airport in a safe and serviceable condition, prevent and remove airport hazards, and take appropriate measures to ensure compatible land uses exist around the airport.

6.10.1. Federal Policies and Regulations

FAA Grant Assurance 20 requires airport sponsors to take appropriate action as needed to protect the airspace used for instrument and visual approaches by mitigating existing hazards and preventing the introduction of new hazards. Grant Assurance 21 requires airport sponsors to "…take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations including landing and takeoff of aircraft."[15]

6.10.2. State Policies and Regulations

The Idaho Transportation Department (ITD) Division of Aeronautics published *Idaho Airport Land Use Guidelines* in 2016 to assist airport sponsors in meeting regulatory requirements for local land use planning. These regulatory requirements include, but are not limited to, protecting public airports, including a Public Airport Facilities Section "q" in comprehensive plans, notifying an airport operator of a pending land use action, and preventing the creation or establishment of aviation hazards. Additionally, when an airport sponsor accepts grant funding from ITD Aeronautics, it agrees to comply with certain grant assurances. State Grant Assurance 23 states, "The Sponsor should have compatible land use and height restrictive zoning for the airport to prevent incompatible land uses and the creation or establishment of structures or objects of natural growth which would constitute hazards or obstructions to aircraft operating to, from, on, or in the vicinity of the subject airport."[16]

6.10.3. City Land Use Protections

As mentioned in Section 4.2.1., City Land Use Protections, Idaho Falls City Code; Title 11, Chapter 5, Section 11-5-3 established an Airport Overlay Zone that addresses compatible land uses and height restrictions to protect normal aircraft operations and IDA's airspace as well as people and property on the ground. While the land use zone designations in the Airport Overlay Zone do not have the same names and dimensions as those recommended in *Idaho Airport Land Use Guidelines,* they do serve the intended purpose.

Idaho Falls adopted a new comprehensive plan, *Imagine IF, A Plan to Move Idaho Falls Forward Together*, February 24, 2022. Background studies completed for this plan included a section for the airport which is equivalent to the Section "q" required by Idaho Statute 67-6508q.

6.10.4. County Land Use Protections

The *Bonneville County Comprehensive Plan* recognizes the importance of the airport and in protecting the airport from "...the thoughtless development of neighboring lands."[17] In 1967, Bonneville County adopted an airport zoning ordinance to protect the airspace around the airport. This ordinance has remained unchanged since its adoption. However, the runway configuration has changed substantially since 1967. Additionally, the county has not enacted land use zoning that is compatible with the airport. As a result, the county approved a zoning change in 2020 that allowed a new residential subdivision to be located approximately 3,000 feet from the Runway 21-end.

Conclusion

As the airport sponsor, the city of Idaho Falls is compliant with federal and state requirements regarding airport land use policies and zoning. Policies and regulations should be reviewed periodically to ensure they are current and relevant as the airport experiences growth and changes. The city and the airport should continue to work with Bonneville County to update its existing height restriction zoning ordinance and to adopt land use zoning to protect both the airport and the surrounding community from incompatible land uses.

6.10.5. Incompatible Land Use in Runway Protection Zones

The FAA updated its runway protection zone (RPZ) design standards with its March 2022 release of AC 150/5300-13B, *Airport Design*. It also replaced its land use compatibility planning guidance with its September 2022 release of AC 150/5190-4B, *Airport Land Use Compatibility Planning* which replaced the former FAA memorandum, "Interim Guidance on Land Uses Within a Runway Protection Zone.

The FAA expects sponsors to take appropriate measures to protect against, remove, or mitigate land uses that introduce incompatible development within runway protection zones. This includes having or securing sufficient control of the runway protection zone, ideally through fee simple ownership, to include off-airport property within the runway protection zone. For existing incompatible uses within runway protection zones, the FAA expects airport sponsors to seek all possible opportunities to eliminate, reduce, or mitigate such uses by way of land acquisition, land exchanges, right-of-first-refusal to purchase, agreements with property owners on land uses, easements, or other similar measures. The FAA also expects sponsors to document their efforts to eliminate incompatible uses within the runway protection zone to demonstrate they are complying with the grant assurances. For proposed or new incompatible uses, the FAA expects sponsors to take active steps to prevent or mitigate such uses. Sponsors should actively monitor conditions and object publicly to proposed incompatible land uses and make it a priority to acquire land or otherwise establish land use and zoning controls that prevent incompatible uses. The FAA will consider financial assistance to an airport sponsor for land acquisition, even if the sponsor has no land use control (i.e., when the runway protection zone extends into another jurisdiction), but only if the sponsor demonstrates they are taking all appropriate steps available to enhance control and mitigate existing risks.[18]

a. Existing Incompatible Land Uses

The following existing incompatible land uses are known to be located within the airport's runway protection zones:

- An industrial park is located within the Runway 35 runway protection zone.
- Interstate 15 is located within the Runway 17 runway protection zone.
- The soccer fields are located within the Runway 3 runway protection zone.
- Interstate 15, railroad tracks, and Lindsay Blvd. are all located within the Runway 21 runway protection zone.

b. Potential New Incompatible Land Uses

The Idaho Transportation Department is in the process of conducting an environmental impact statement (EIS) for reconfiguration of the intersection of Interstate 15 and U.S. Highway 20. One of the alternatives may result in a substantial increase in traffic driving through the Runway 17 and Runway 21 runway protection zones. The remaining viable alternatives will require airport land. As a result, the airport and the FAA's Helena Airports District Office (ADO) are both serving as coordinating agencies for the environmental impact statement.

The FAA sees both a substantial increase in traffic within the runway protection zone and the introduction of a new road within the runway protection zone as unacceptable modifications to the land use within the runway protection zone. This has been communicated to the environmental impact statement team and will be taken into consideration as part of the evaluation of alternatives.

Conclusion

The airport should continue to seek ways to eliminate or mitigate existing incompatible land uses within the runway protection zones and prohibit the introduction of new incompatible uses. All steps being taken by the airport should be documented to demonstrate compliance with FAA grant assurances.

6.10.6. Wildlife Hazard Attractants

FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or near Airports*, provides guidance on land uses that have the potential to attract hazardous wildlife on or near airports. Airports, like IDA, that hold an Airport Operating Certificate issued under 14 CFR Part 139, may use the standards, practices, and recommendations contained in AC 150/5200-33C as a means of complying with the wildlife hazard management requirements of Part 139.[19]

For airports serving turbine-powered aircraft, the FAA recommends a separation distance of 10,000 feet from wildlife attractants. These can include municipal landfills, wastewater treatment facilities, and stormwater management facilities that create standing bodies of water. In order to protect approach and departure corridors, the FAA recommends a five-mile separation from the wildlife attractant and the nearest aircraft operating area.

a. On-Airport Attractants

- Stormwater runoff at IDA collects in a retention basin between Foote Drive and I-15 located behind the NOAA Air Resources Laboratory. The water collects into a standing body of water where it infiltrates into the soil. This standing body of water could be considered a wildlife attractant for the airport.

b. Off-Airport Attractants

- The Hatch Pit is a landfill operated by Bonneville County. It is located approximately 6,000 feet, or 1.2 miles, northwest of IDA's aircraft operating area and northern approach corridor.
- The City of Idaho Falls Wastewater Treatment Plant is located approximately 2.8 miles south of IDA.

Conclusion

On-airport retention basins should be modified so they do not detain water for more than 48 hours. Airport staff should make sure any proposed development is reviewed to determine if it would comply with FAA AC 150/5200-33C, *Hazardous Wildlife Attractants on or near Airports.*

IDA conducted a Wildlife Hazard Assessment (WHA) between 2002 and 2003. A Wildlife Hazard Management Plan (WHMP) was updated in 2020.

6.11. City of Idaho Falls Strategic Vision

Imagine IF, A Plan to Move Idaho Falls Forward Together is the city's comprehensive plan. It articulates the city's vision, mission, and commitment to community expectations. It also outlines the means of successfully implementing this plan.

6.11.1. City of Idaho Falls Strategic Vision

"The City of Idaho Falls promotes a welcoming, attractive, safe and diverse community. We embrace small town values, big city efficiencies and forward-thinking approaches to provide outstanding services and sustainable economic, social and recreational opportunities for our whole community."[20]

6.11.2. City of Idaho Falls Strategic Mission

"The City of Idaho Falls works to provide outstanding quality of life to all our community members and be a model organization with emphasis on leadership, strategic planning and partnership, community engagement, asset and financial management and project implementation.

We achieve our mission by:

- Supporting opportunities for diverse economic and social growth and development,
- Adopting forward-thinking housing, economic and growth policies and approaches,
- Acting proactively to plan, develop and maintain infrastructure,
- Leading in emergency response and public safety,
- Providing excellent social and recreational amenities and services,
- Fostering strategic partnerships,
- Managing operations,
- Listening to and engaging with all members of our community.
- Idaho Falls Commitment to Community Expectations:
- Access to culture, recreation, leisure, life-long learning opportunities,
- Attractive, clean, and livable community,
- Strong, stable, and vibrant economic growth and opportunity,
- Environmental sustainability and resource preservation,
- Well-planned growth and development,
- Reliable public infrastructure, transportation, and mobility,
- Safe and secure community,
- Fiscally responsible, transparent, and efficient governance,
- Equitable and fair access to City government and services and active community engagement."[21]

Conclusion

Any development at IDA should support the city's strategic vision and mission.

6.12. Primary Management and Compliance Documents

An airport's primary management and compliance documents (PMCD) are a collection of rules, regulations, policies, and standards that guide the management, operation, and development of the airport. These documents provide an effective framework for airport sponsors to comply with federal obligations, set expectations, and ensure airport access is fair, reasonable, and not unjustly discriminatory. Common primary management and compliance documents at all airports include minimum standards, rules and regulations, leasing and development standards, minimum insurance requirements, rates and fees, an airport master plan, and an airport layout plan. Commercial service airports also have an airport certification manual, airport security manual, and airport emergency plan.

Conclusion

Primary management and compliance documents should be reviewed annually and updated as necessary to remain valid. The city of Idaho Falls is currently updating the minimum standards and rules and regulations for the airport.

6.13. Emerging Trends

The aviation industry is always evolving, and these changes can affect the size, quantity, and type of airport facilities needed to accommodate future demand. These trends can include topics that have a direct relationship with future airport growth and development needs such as unmanned aircraft systems (UAS), vertiports, sustainable aviation fuels (SAF), and electric aircraft. They can also include topics that are less directly related such as electric vehicle and ground service equipment integration which should be considered for inclusion as part of medium- and long-term planning. Moreover, trends with indirect ties to airports that are current social and political issues will likely lead to future financial and regulatory decisions at the federal, state, and local levels. These topics could include climate change and climate resilience; accessibility (e.g., ADA, wayfinding, gender-neutrality); social and economic justice; diversity, equity, and inclusion (DEI); and the ever-evolving impacts of COVID-19 which can include social distancing and touchless interfaces.

Conclusion

Airport management should remain aware of newly emerging industry trends and how they might affect the airport.

Endnotes

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DEVELOPMENT ALTERNATIVES

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CHAPTER SEVEN

DEVELOPMENT

This chapter brings together many of the previous elements of this airport master plan in order to identify the development options that will best meet the needs of Idaho Falls Regional Airport (IDA), the community, and align with the strategic vision of the airport sponsor. Each of the facilities described in Chapter 4, Airside and Landside Inventory, were analyzed in Chapter 6, Facility Requirements, to determine if any improvements are needed in order to safely and efficiently accommodate the forecasted activity levels discussed in Chapter 5, Forecast of Aviation Activity, or to meet new or updated standards developed and adopted by the Federal Aviation Administration (FAA) or other regulatory agencies.

Alternative concepts were developed by dividing the airport into three functional areas. These included the terminal, airfield, and west side development area. The following approach was then used to identify and evaluate the available development options:

- Identification of alternative ways to address facility requirements.
- Evaluation of these alternatives, individually and collectively, through a series of meetings with airport staff, the technical advisory committee (TAC), and the public to develop a thorough understanding of the strengths, weaknesses, and other implications of each option.
- Selection of the preferred alternative by the Idaho Falls City Council.

7.1. Terminal Area

Facility requirements to be addressed within the terminal area include the need to expand or relocate the following facilities:

Terminal Building
Addition of two aircraft gates and expansion of functional areas.

Passenger Parking Capacity
Addition of 318 parking spaces for a total of 1,471 spaces.

Rental Car Ready/Return Area and Quick Turnaround Area Capacity
More parking spaces for staging, overflow, and employees as well as additional support facilities for fuel, wash bays, and maintenance.

Air Cargo Facilities
Additional apron space for aircraft and ground service equipment, more than twice the existing warehouse space, and additional space for a second air cargo operator.

Snow Removal Equipment Facilities
Expansion of the snow removal equipment building.

Employee Parking Capacity
Addition of 233 parking spaces for a total of 305 spaces.

Potential Airport Traffic Control Tower and Aircraft Rescue and Fire Fighting Station Relocation
To address increased growth of the commercial terminal and associated apron expansion as well as improve airport traffic control tower (ATCT) response times.

7.1.1. Alternatives Concept Development Process

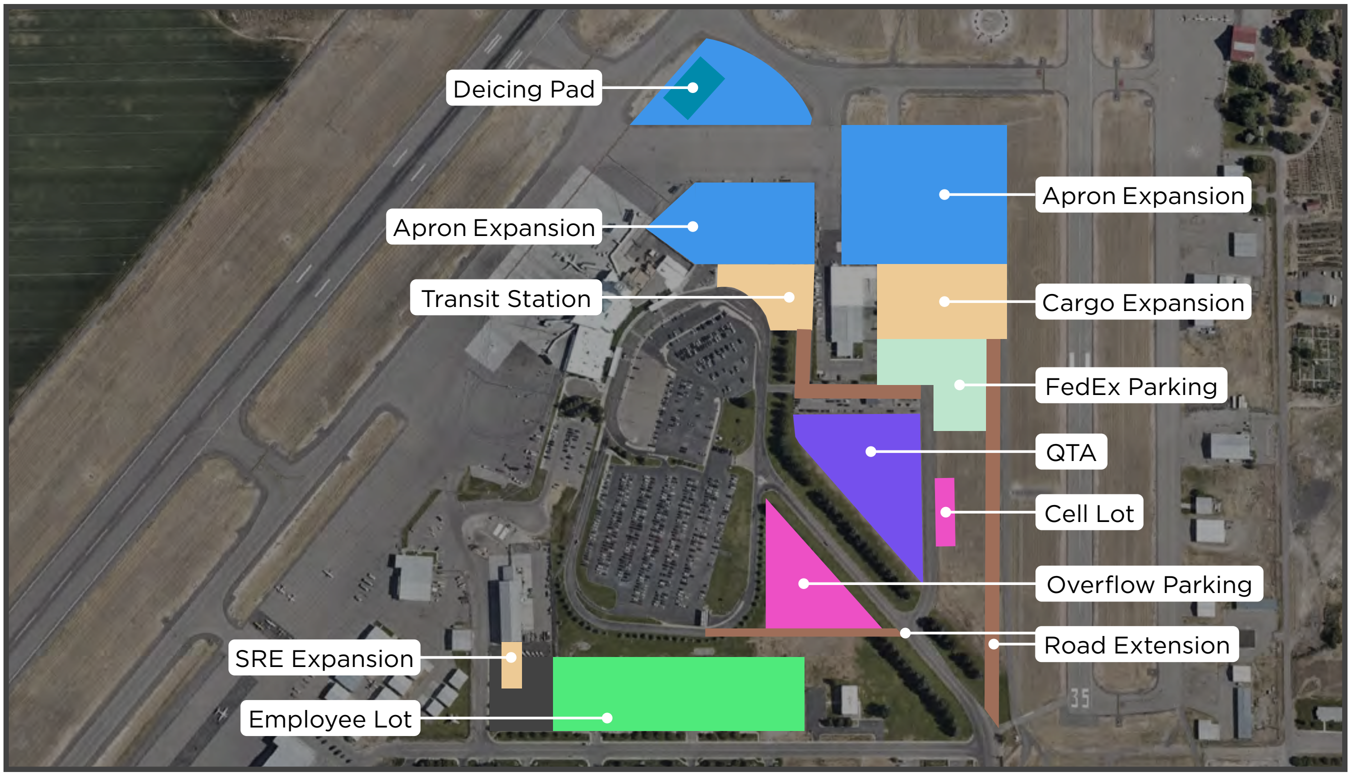
The airport master plan alternatives process began by developing four block-diagram terminal area concepts. Each concept included various parking garage options and terminal expansion alternatives developed through a separate terminal planning study completed during this airport master plan. These concepts all assume the rental car ready/return area, quick turnaround area, and aircraft rescue and fire fighting (ARFF) station have all been relocated to create space for an expanded aircraft parking apron and a new deicing pad north of the terminal building. The goal of these concepts was to explore sizing and land use opportunities and garner feedback from airport staff and stakeholders.

Each concept, combined with the garage layouts, meets or exceeds the requirements of the airport master plan 20-year planning period. The feedback and analysis received for each of the concepts was used in developing the alternatives described in Section 7.2. Terminal Area Alternatives. This section also describes locations that were evaluated for the potential relocation of the aircraft rescue and fire fighting station and airport traffic control tower.

7.1.2. Initial Terminal Concept 1

As shown in Figure 7.1, this concept keeps the existing road configuration and adds to it. A separate road is proposed that leads from Skyline and International Way to an expanded FedEx facility. The rental car ready/return area is placed on the first floor of a new parking garage and the quick turnaround area is placed within the field between Skyline Drive and Federal Way. A cell phone lot is added across from the quick turnaround area and a bypass road leads to a transit station. The employee parking lot is relocated to the existing Economy 2 lot and the snow removal equipment building is extended to the south. This concept meets all the terminal area facility requirements when combined with a new parking garage to be placed inside the Skyline Drive terminal loop. (Parking garage concepts are discussed in Section 7.1.6. Initial Garage Options.)

Figure 7.1: Initial Terminal Concept 1

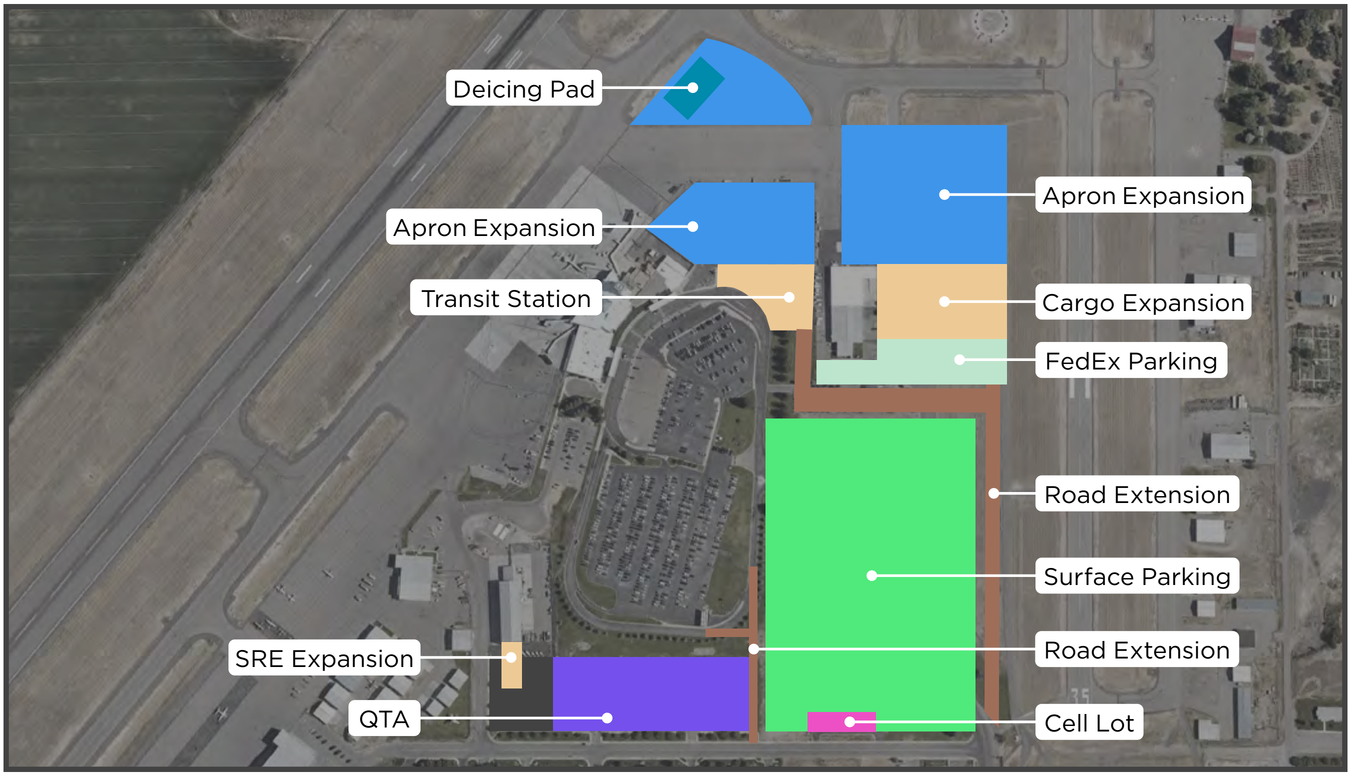


Source: Google Earth, Ardurra.

7.1.3. Initial Terminal Concept 2

As shown in Figure 7.2, this concept is similar to initial concept 1, but it eliminates the diagonal segment of Skyline Drive and the building at 1690 International Way which are replaced with a large surface parking lot for passengers and employees. The quick turnaround area is relocated to the existing economy 2 lot to reduce rental car traffic interactions with passenger traffic on the Skyline Drive loop. This concept meets all terminal area facility requirements when combined with a new parking garage to be placed inside the Skyline Drive terminal loop. (Parking garage concepts are discussed in Section 7.1.6. Initial Garage Options.)

Figure 7.2: Initial Terminal Concept 2

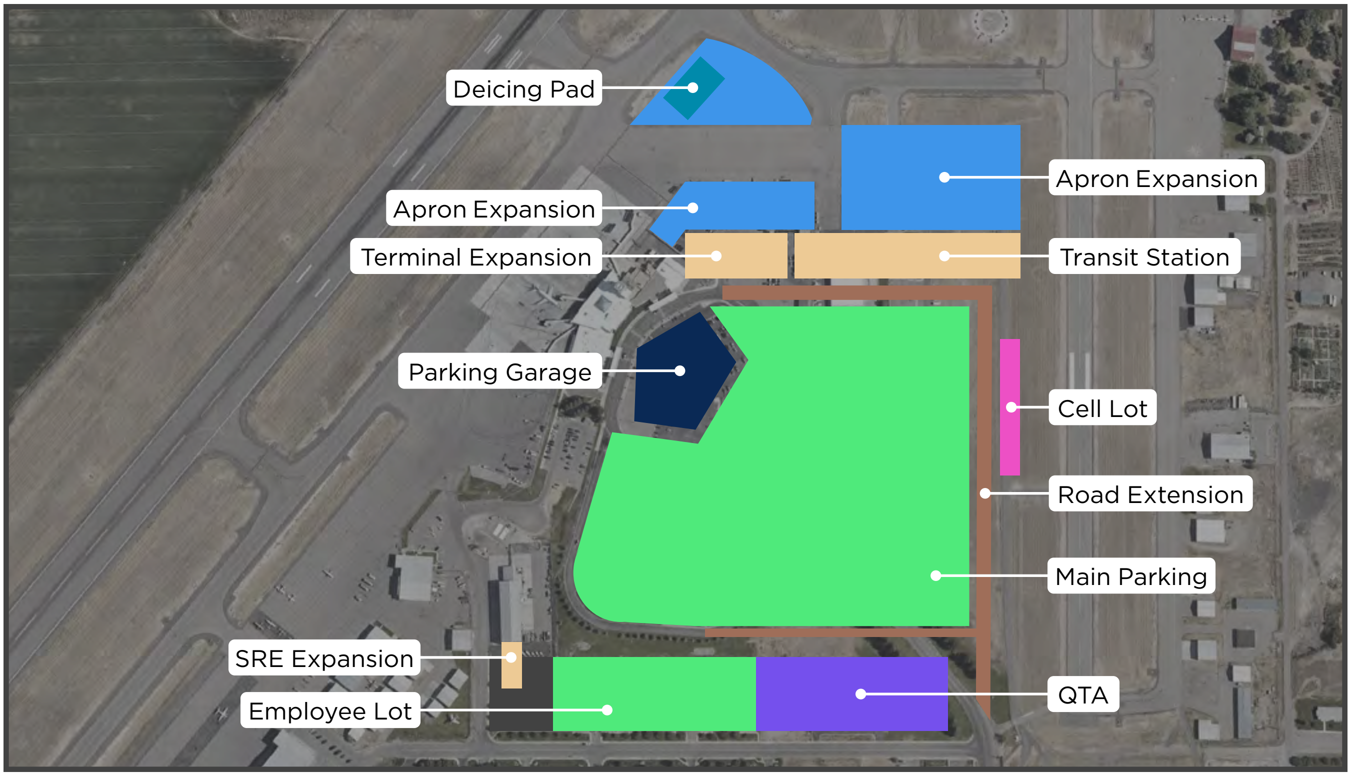


Source: Google Earth, Ardurra.

7.1.4. Initial Terminal Concept 3

As shown in Figure 7.3, this concept assumes the FedEx facility has been relocated as this allows the airport loop road to be expanded to accommodate a large surface parking area that meets parking requirements well beyond the planning horizon. This concept allows for any of the garage layouts described in Section 7.1.6. Initial Garage Options. With the FedEx facility relocated, additional space is available for an additional terminal expansion if it is required after the 20-year planning period or if new opportunities arise within the next 20 years. The quick turnaround area and employee parking lot would be relocated similarly to the prior alternatives.

Figure 7.3: Initial Terminal Concept 3

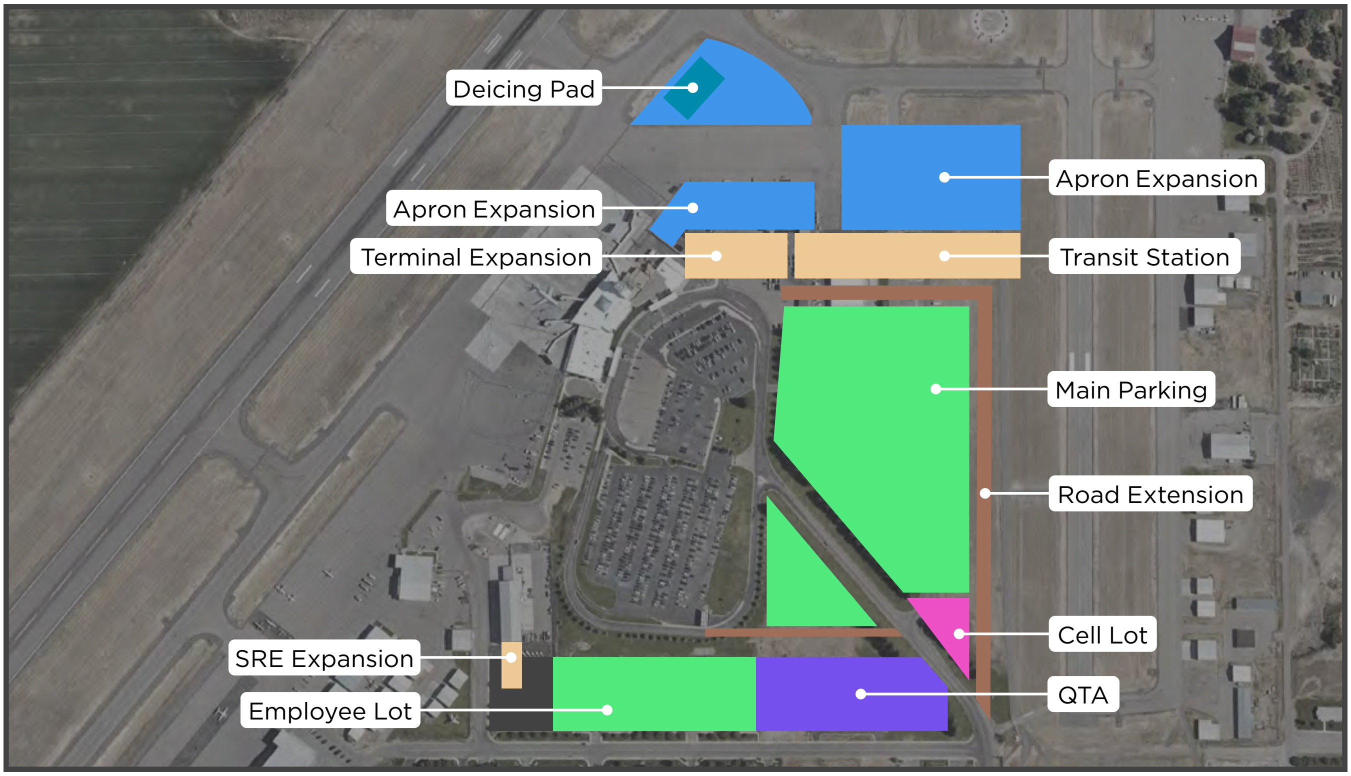


Source: Google Earth, Ardurra.

7.1.5. Initial Terminal Concept 4

This concept assumes the FedEx facility has been relocated but keeps the diagonal segment of Skyline Drive and the Skyline terminal loop roadway. A large surface parking area provides access to a potential long-term terminal expansion to the east, with the quick turnaround area remaining clear of the passenger circulation routes. As shown in Figure 7.4, this concept assumes the building at 1690 International Way has been removed. However, the option remains to keep that building and rearrange the employee lot and quick turnaround area within the terminal area.

Figure 7.4: **Initial Terminal Concept 4**



Source: Google Earth, Ardurra.

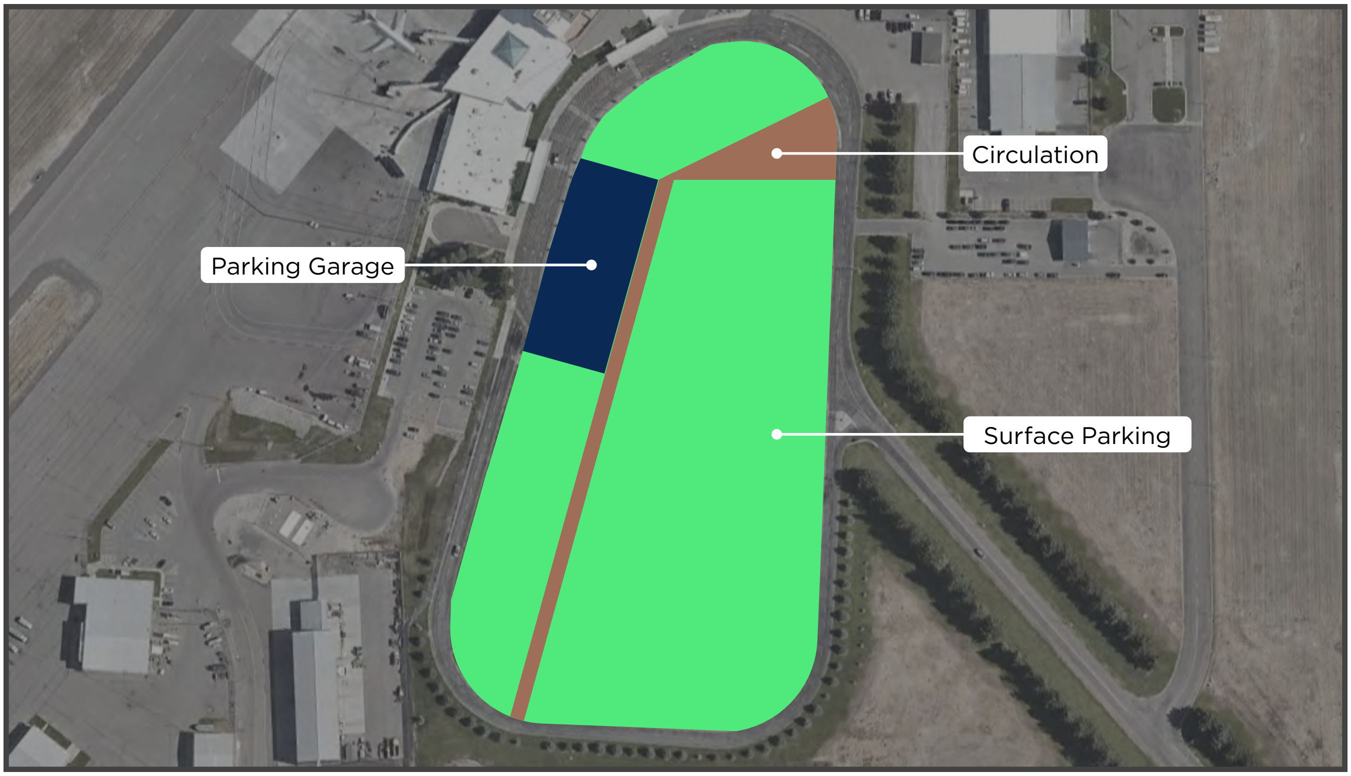
7.1.6. Initial Garage Options

Three options were created for garage locations within the Skyline terminal loop. Each option assumes a three-level garage with the rental car ready/return area placed on the first level. All three options include accommodations for drainage infrastructure within the Skyline terminal loop footprint.

7.1.7. Initial Garage Concept 1

As shown in Figure 7.5, concept 1 places a parking garage facing the south end of the terminal building with a parking access and exit lane separate from the main terminal loop. All vehicle traffic enters the garage before the terminal curbside and exits at the south end of the loop. This garage is the smallest of the three options and allows for one potential passenger bridge across Skyline Drive to the terminal.

Figure 7.5: Initial Garage Concept 1

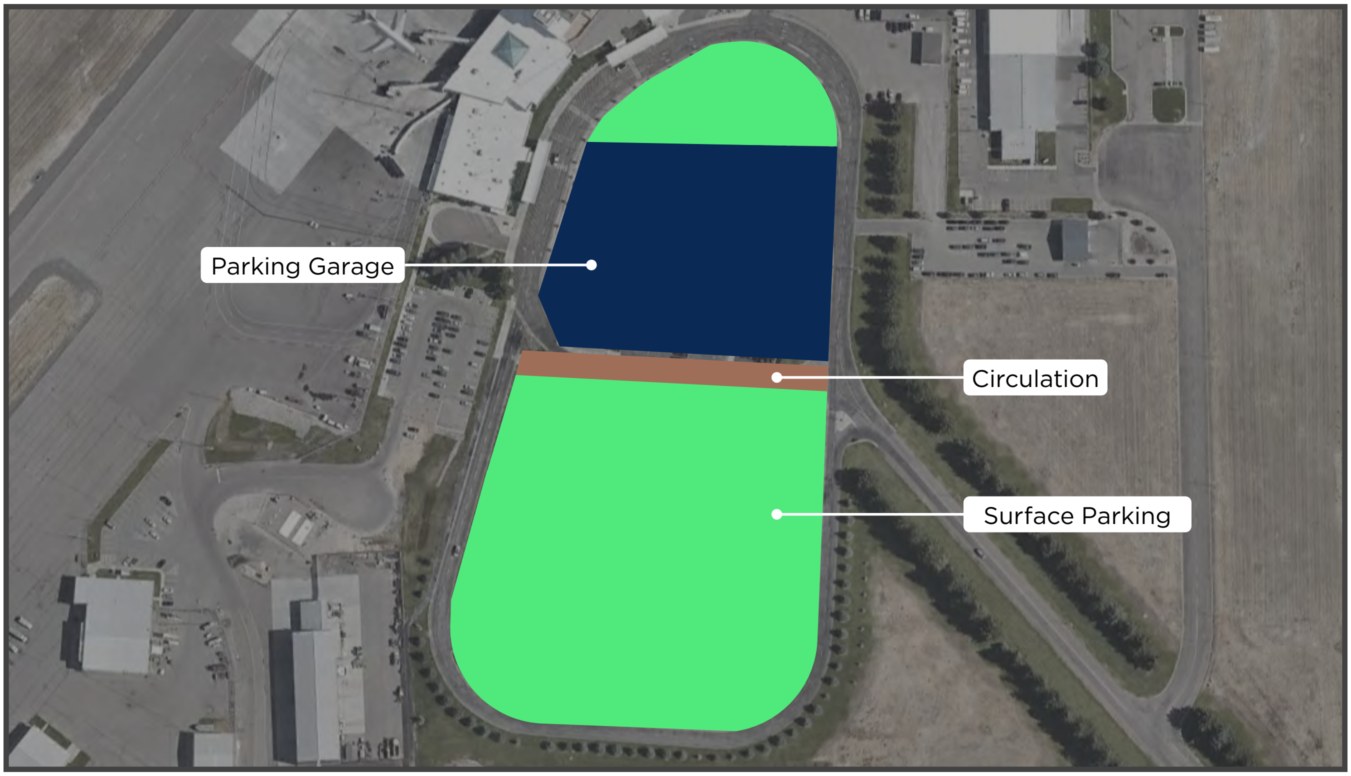


Source: Google Earth, Ardurra.

7.1.8. Initial Garage Concept 2

As shown in Figure 7.6, concept 2 is the largest of the three garage options and incorporates a parking access and exit lane through the center of the existing terminal loop to avoid putting traffic on the terminal curbside. Hourly surface parking is placed at the north end of the loop with additional surface parking at the south end. This garage concept allows for one passenger bridge across Skyline Drive to the terminal.

Figure 7.6: Initial Garage Concept 2

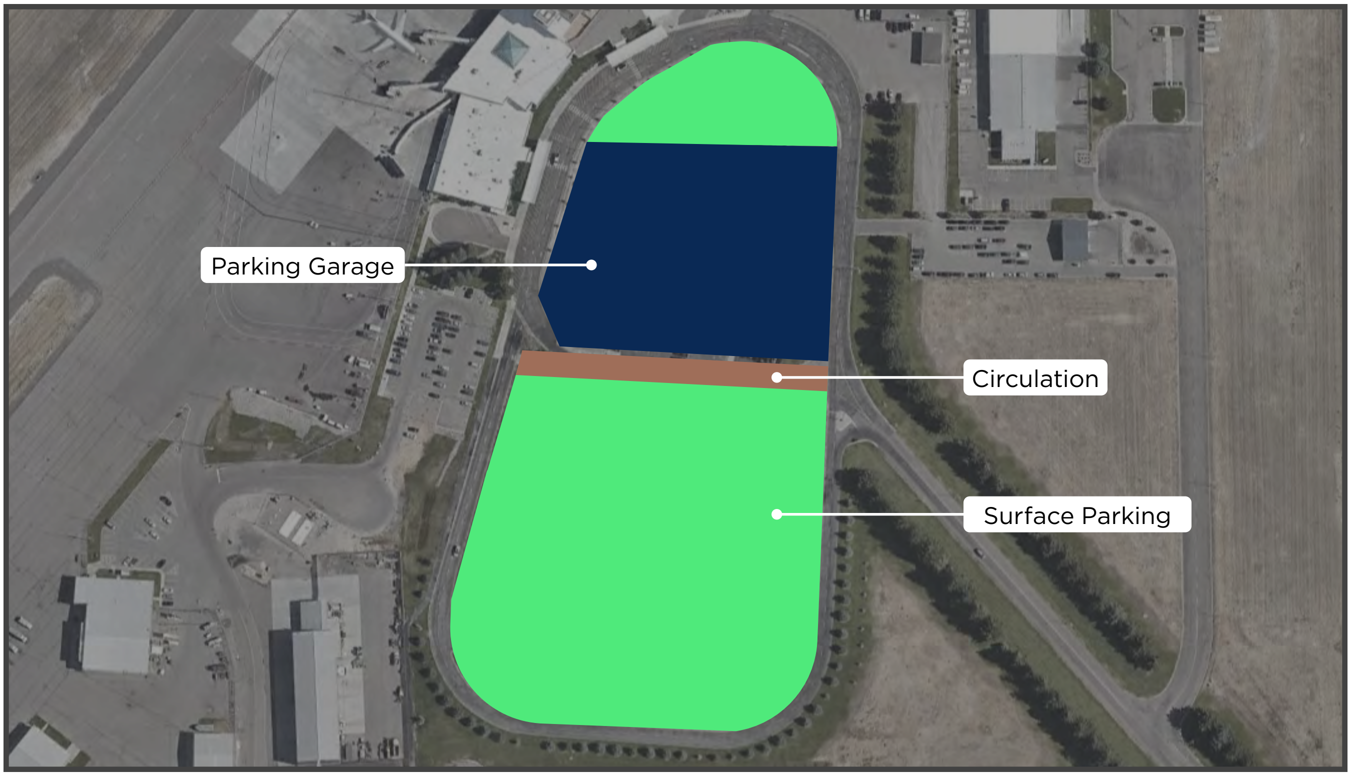


Source: Google Earth, Ardurra.

7.1.9. Initial Garage Concept 3

As shown in Figure 7.7, concept 3 places the garage directly in front of the terminal building and allows for two potential passenger bridges across Skyline Drive to a future terminal expansion. The access and exit lane would be similar to concept 2. Concept 1 and concept 3 do not meet all of the parking requirements within the Skyline terminal loop and require additional parking within the terminal area. Concept 2 meets the parking requirements without the need for additional parking outside of the Skyline terminal loop.

Figure 7.7: Initial Garage concept 3



Source: Google Earth, Ardurra.

7.1.10. Initial Terminal Area Evaluation

Each of the initial terminal area concepts and garage options resolves at least one of the facility requirements, enhances safety and efficiency, improves compliance with federal grant assurances through increased revenue generation, and does not cause any known significant environmental impacts. Feedback received from airport staff and the technical advisory committee eliminated initial terminal concept 2 and concept 3 from further consideration because the airport staff wanted to retain the diagonal segment of Skyline Drive as the signature entryway to the airport. Initial garage concept 1 and concept 3 were eliminated from further consideration due to the small size of the garage in concept 1 and the potential elimination of an airport traffic control tower relocation site due to the location of the garage footprint in concept 3. The following elements were found desirable and brought forward into the formalized alternatives analysis:

- Relocating the quick turnaround area.
- Adding a cell phone waiting lot.
- Eventually relocating the FedEx facility.
- Relocating the employee parking lot.
- Adding a transit center for public transportation and terminal deliveries.
- Expanding the apron and relocating the deicing pad.
- Realigning the terminal circulation routes.
- Reserving space for a future expansion of the terminal building.

7.1.11. Additional Quick Turnaround Area Concepts

During the initial terminal area concept development, two additional sites were reviewed for relocation of the rental car quick turnaround area. These include the area south of International Way across from the building at 1690 International Way and the south quad parcel along Grandview Drive. The International Way location requires land acquisition but is close to the terminal area. The south quad option is on airport property but is far from the terminal and reduces the land available for aeronautical development. These options were eliminated from further consideration because airport staff wanted to keep the quick turnaround area within the existing terminal area.

7.2. Terminal Area Alternatives

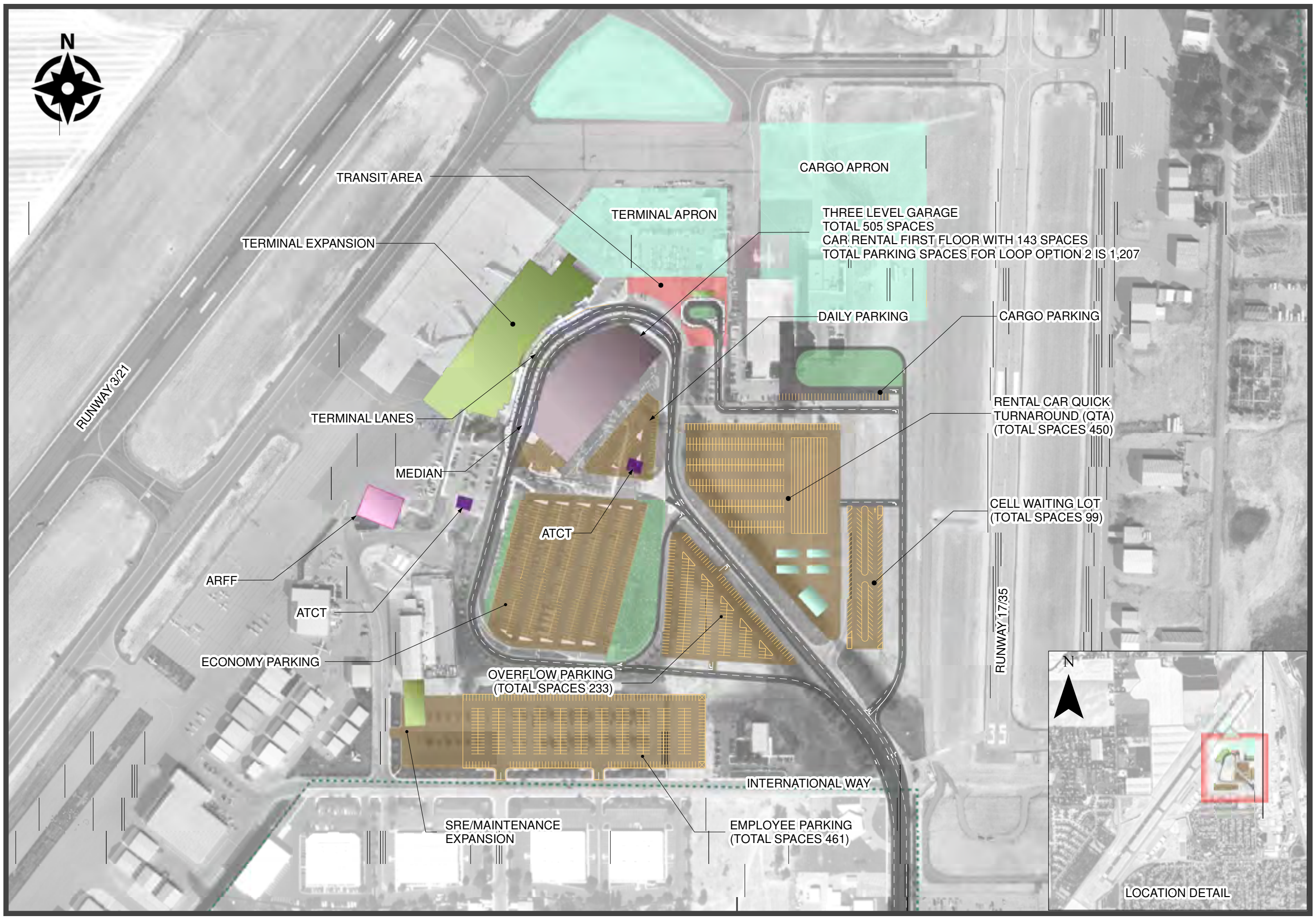
Following the initial evaluation of development concepts, and input from airport staff and the technical advisory committee, refinements were made to the options carried forward for further evaluation and discussion. Vehicle parking spaces shown generally exceed the requirements to demonstrate the ultimate potential of each alternative. Actual parking lot sizing would be based on need and added incrementally. The refined alternatives were termed phase 1 and phase 2. They worked together to demonstrate long-range potential phasing as well as alternatives to be compared against each other. Each of the terminal phases work towards an ultimate vision that includes:

- A slight realignment of Skyline Drive to increase efficiency and capacity.
- An eventual relocation of the FedEx facility. (Discussed in Section 7.3. Airfield and Section 7.4. West Side Development.)
- Further terminal expansion to the east.
- The addition of a combined transit and delivery station.
- The addition of a three-level parking garage facing the terminal building with the rental car ready/return occupying the first level.
- Relocation of the rental car quick turnaround area.
- Additional parking areas for passengers and airport employees.
- Addition of a cell phone waiting lot.

7.2.1. Terminal Area Phase 1

As shown in Figure 7.8, terminal area phase 1 is an all-encompassing layout of the future passenger interface from city streets to the terminal curbside. Space is reserved for two potential airport traffic control tower locations and one potential aircraft rescue and fire fighting station relocation. Phase 1 maintains space for the FedEx facility in its current location until a suitable replacement facility is built.

Figure 7.8: Terminal Area Phase 1

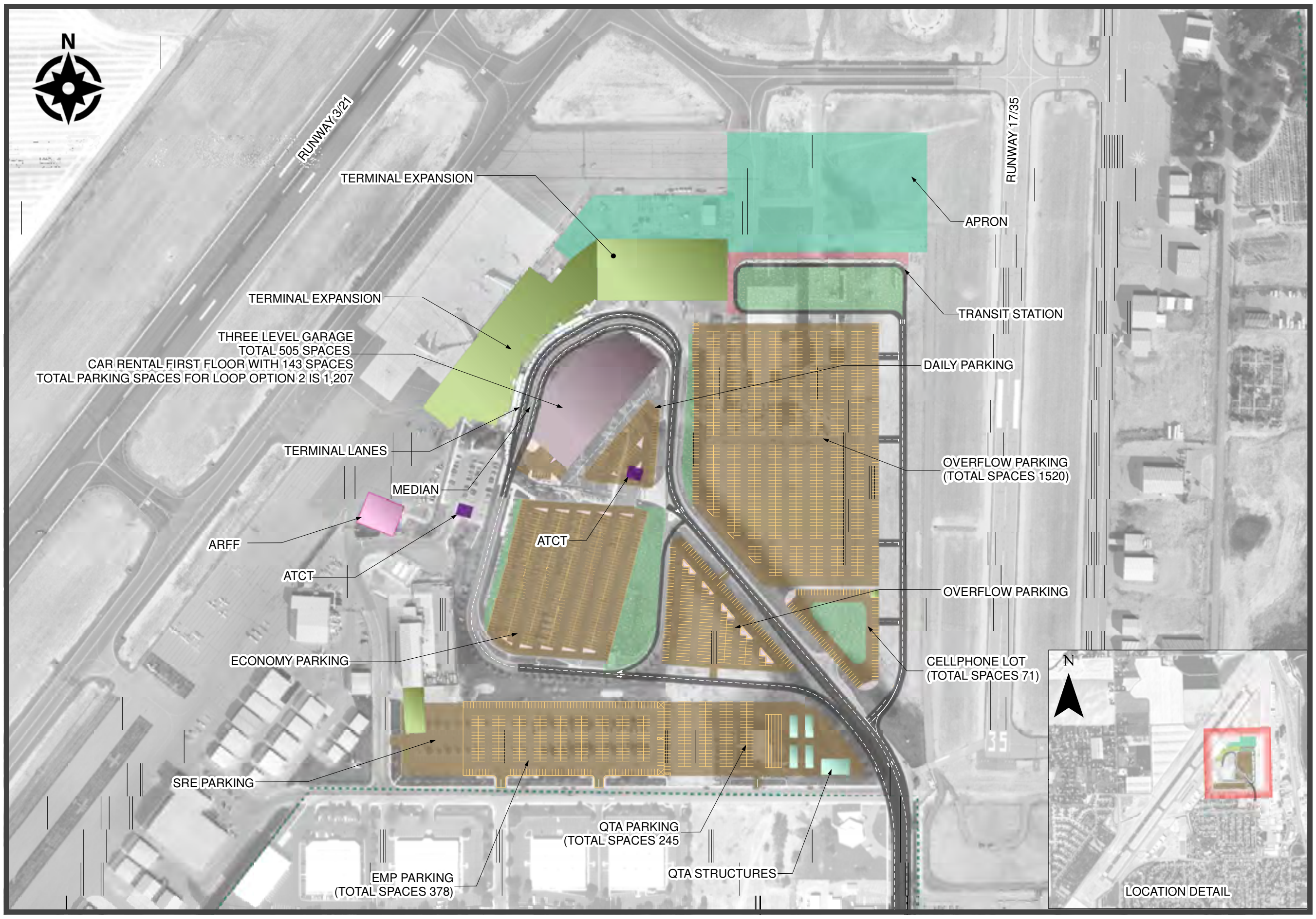


Source: Ardurra.

7.2.2. Terminal Area Phase 2

Terminal area phase 2 assumes the FedEx facility has been relocated to maximize the terminal area for passenger activity. In its place, a larger transit center exists that provides access to a future terminal expansion to the east should passenger activity require it. The building at 1690 International Way has been removed and replaced with the rental car quick turnaround area to reduce rental car conflicts with passenger traffic. As shown in Figure 7.9, the remaining space has been filled in with a cell phone waiting lot and extra parking that accounts for future passenger demand beyond the planning horizon.

Figure 7.9: Terminal Area Phase 2

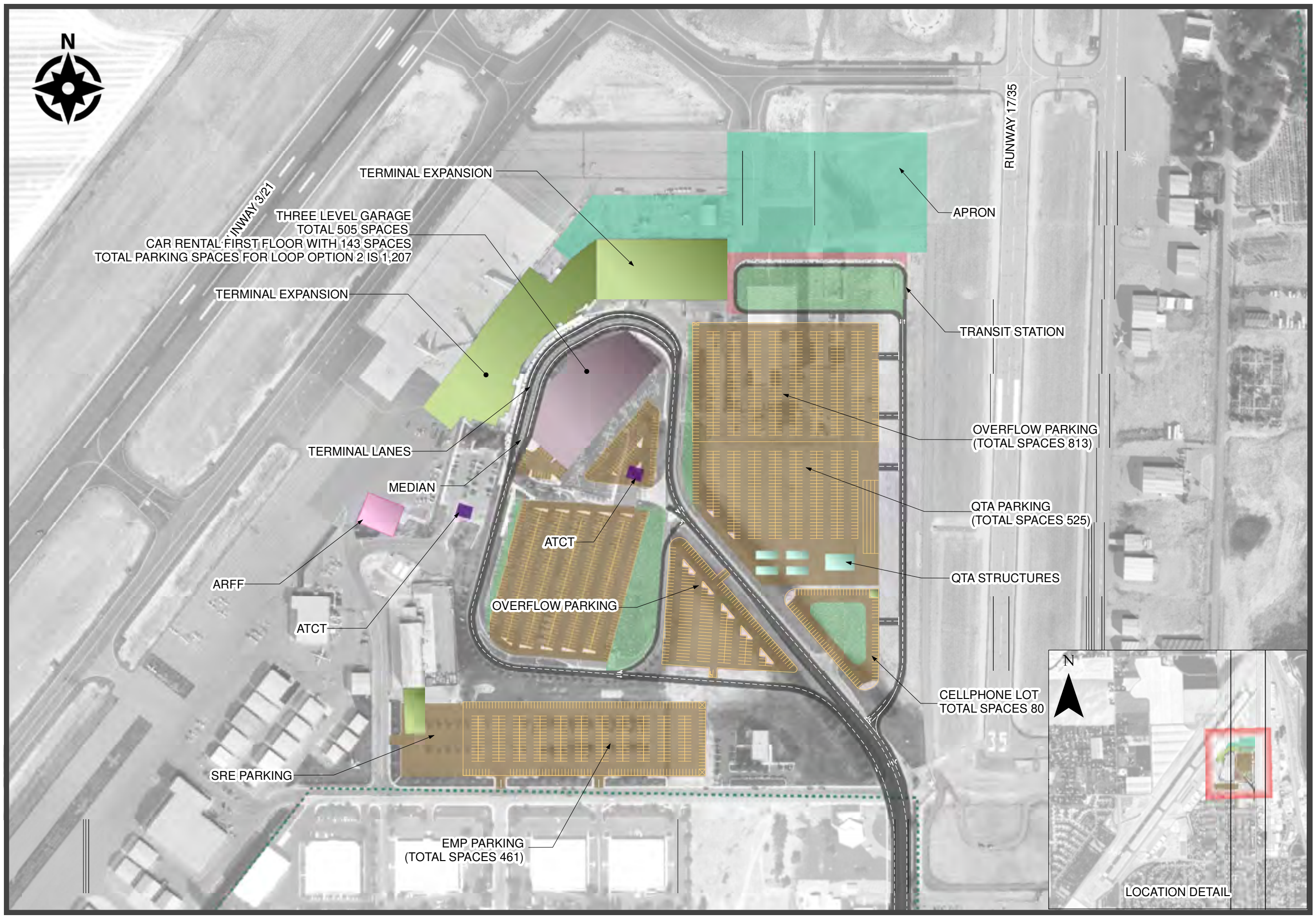


Source: Ardurra.

7.2.3. Terminal Area Phase 2A

As shown in Figure 7.10, the difference between phase 2 and phase 2A is that the building at 1690 International Way remains at its current location for use as airport administrative support or another revenue source. In this case, the quick turnaround area is expanded from the same location in phase 1, and the remaining space is filled in with parking and a cell lot.

Figure 7.10: Terminal Area Phase 2A



Source: Ardurra.

The phase 1, phase 2, and phase 2A alternatives were used to further assess each element being considered for relocation or expansion and to garner additional stakeholder feedback. That process culminated with the preferred option described in Section 7.5. Selection of the Preferred Alternatives.

7.3. Airfield

Airfield alternatives address airport design deficiencies, the possibility of closing Runway 17/35 due to its lack of FAA eligibility, and the addition of 41 new hangars.

7.3.1. Runway 17/35

The future disposition of Runway 17/35 was discussed during the development of the initial airfield development concepts since it is not eligible for FAA funding based on wind coverage and capacity. The two options considered during this phase were to close the runway and repurpose it as a taxiway for expanded general aviation (GA) and air cargo development on the east side of the airport or keep the runway open and maintain it using local funds. Both options have positive and negative consequences.

Keeping Runway 17/35 open is a no-action alternative that maintains the existing condition. Accordingly, small, light general aviation traffic and large, heavy commercial airline traffic are separated. Keeping the runway open allows light general aviation traffic to continue to have a crosswind option for training. Additionally, there is infrastructure and services tailored to light general aviation on the east side of the airport, such as fuel, maintenance, hangars, and aircraft parking. Since Runway 17/35 is not eligible for FAA funding, any maintenance and capital costs related to the runway would have to be funded using local funds. With intersecting extended runway centerlines, the traffic pattern on Runway 17/35 overlaps with traffic operating on Runway 3/21. Runway 17/35 also has incompatible land uses in the runway protection zone (RPZ), and there is a runway incursion hot spot at Taxiway C that needs to be addressed.

Closing Runway 17/35 and converting it to a taxiway makes the pavement eligible for FAA funding—a primary consideration for closing it. Closing the runway would eliminate the incompatible land uses, the runway incursion hot spot at Taxiway C, and the overlapping traffic patterns. Closing the runway would also create more space for general aviation development. This includes hangars and aircraft parking. Conversely, closing Runway 17/35 turns Idaho Falls Regional Airport into a single runway airport where a diverse mix of fast and slow, light and heavy, small and large aircraft are forced to use the same runway and traffic pattern. Taxi times from the east side of Runway 17/35 would become longer for aircraft taxiing to the Runway 3-end. If an aircraft becomes disabled on Runway 3/21, the airport would be closed to fixed-wing operations. This would create delays and diversions for all fixed wing operations until the disabled aircraft is removed from the runway. This includes commercial air carrier, corporate aircraft, medical transport, and general aviation aircraft operations.

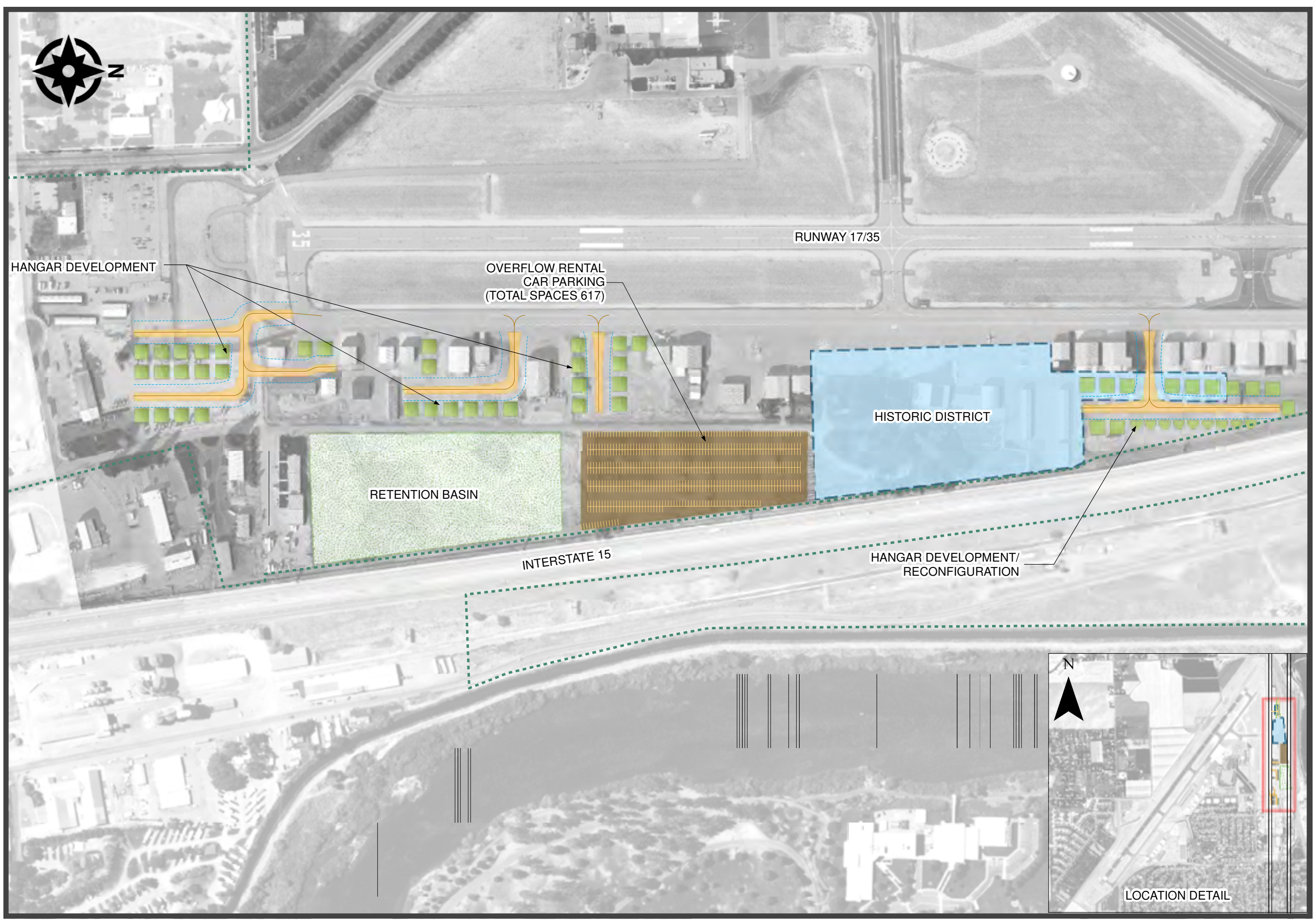
7.3.2. East Side General Aviation

Regardless of the disposition of Runway 17/35, development on the east side of Runway 17/35 focuses on maintaining its existing use for light general aviation aircraft. Other considerations were to maintain the integrity of the historic district, retain and enhance the existing stormwater retention basin to accommodate development of the terminal area, address design standards related to light general aviation aircraft, and fill in the existing hangar area to the maximum extent possible with hangars and taxilanes.

The concept shown in Figure 7.11 allows for development of 31 additional 50-foot by 50-foot hangars with room for up to 14 more hangars to be built when the 1505 Foote Drive parcel becomes available for conversion to an aeronautical use.

The parcels east of Foot Drive north of the retention basin show potential for additional vehicle parking of up to 617 spaces for rental cars in an area currently occupied by a community garden and the Holley Tree Farm. These are lots 12, 13, 14, and 15 of the Airport Industrial Park Addition, Division 3. The parcels were initially considered for aeronautical use, but the grade difference across from Foote Drive made it impractical for aircraft taxiing. Creating a vehicle parking lot on this parcel allows for the relocation of rental car overflow parking from the Runway 35 runway protection zone to a compatible location. However, it may result in the community garden and tree farm being displaced.

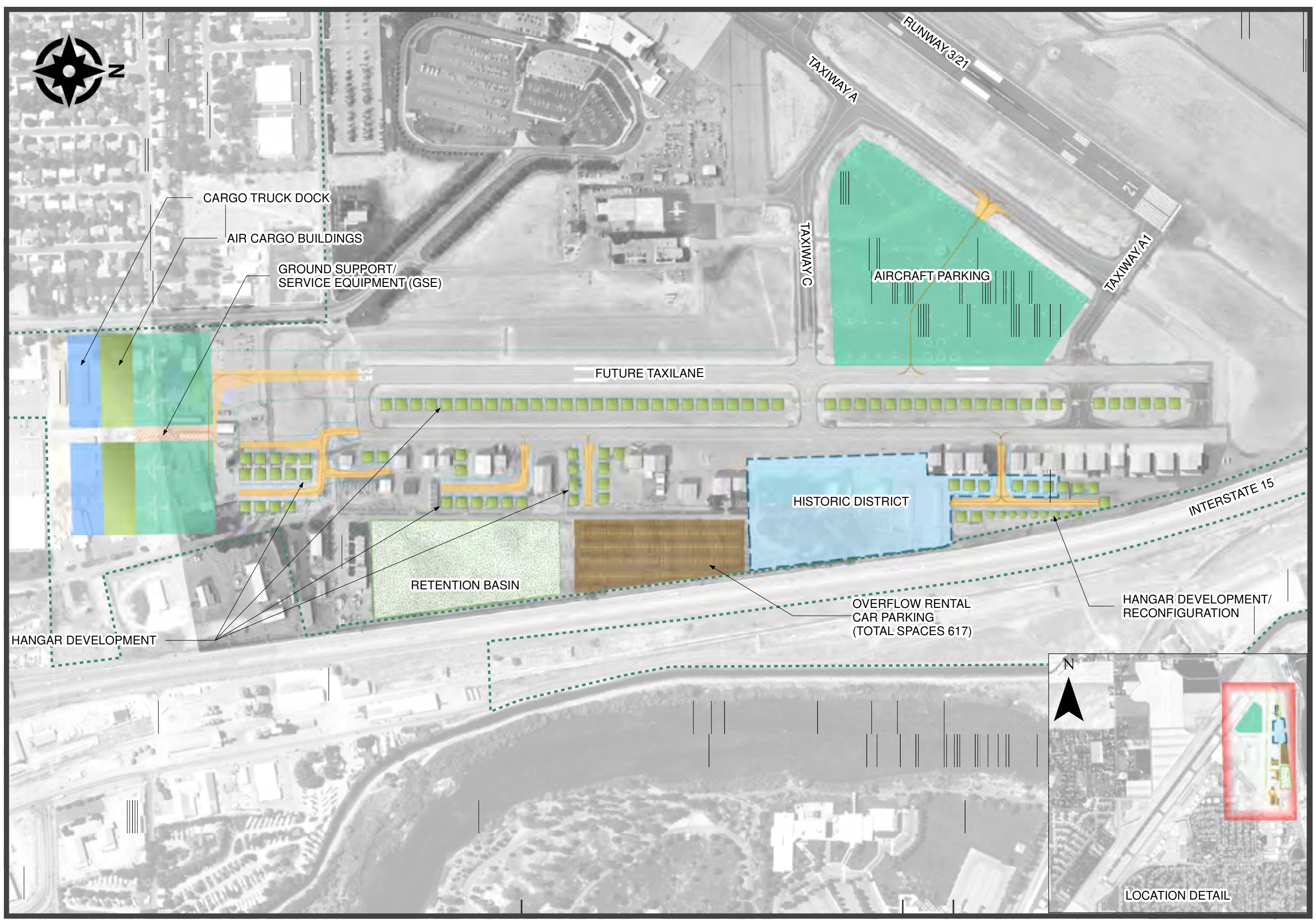
Figure 7.11: East Side General Aviation Development



Source: Ardurra.

Should Runway 17/35 be closed and converted to a taxiway, the area presently occupied by the Runway 35 runway protection zone could be converted for use by air cargo operators. There is enough space to meet the needs of FedEx plus another independent air cargo operator at that location. It is assumed the runway would be converted to a taxiway meeting ADG-IV standards to accommodate large air cargo aircraft. As shown in Figure 7.12, closing the runway also allows for more hangars and parking spaces in the infield with enough space for an ADG-IV taxiway or taxilane. Overall, the runway was determined to be maintained. The conclusion of that decision and the final configuration carried forward to the airport layout plan are discussed in Section 7.5. Selection of the Preferred Alternatives.

Figure 7.12: East Side Development with Runway 17/35 Closed



Source: Ardurra.

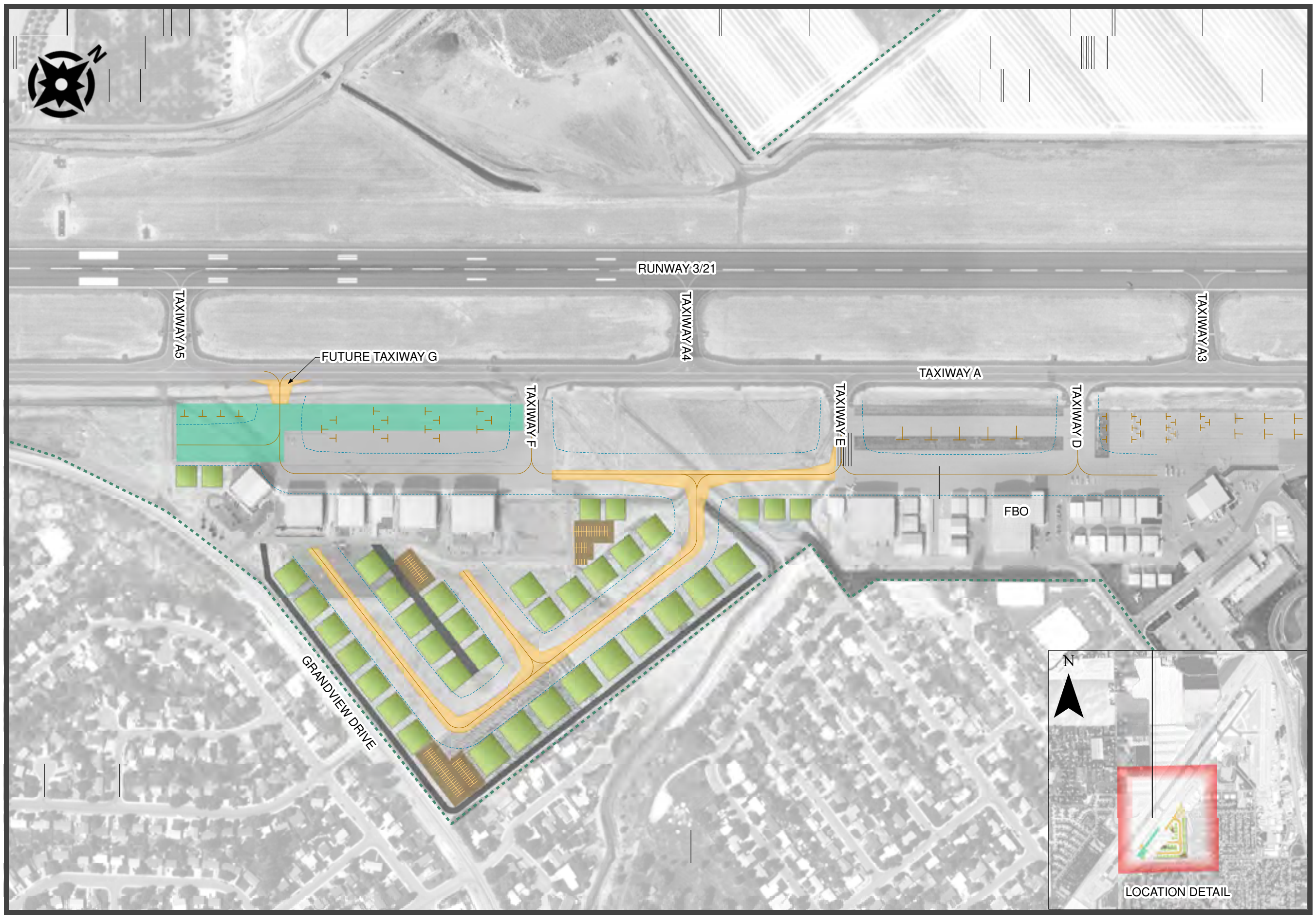
7.3.3. South Quad Parcel

The south quad parcel is located along Grandview Drive on airport property east of an existing development intended for large general aviation aircraft. Initial development concepts for this parcel include either dedicated general aviation use, dedicated air cargo use, or mixed aeronautical and nonaeronautical use that would include a rental car facility and air cargo or general aviation. Discussions with airport staff and the technical advisory committee ruled out the split-use concept with a rental car facility because it would be too far from the terminal area and would limit aeronautical use. Further discussion concluded the highest and best use of the south quad parcel was for medium and large general aviation aircraft because that is the existing adjacent use. As shown in Figure 7.13, Figure 7.14, and Figure 7.15, three different layouts were created with a mix of large, medium, and small executive hangars. These three layouts all incorporate the following features:

- Space for vehicle access and parking.
- A connecting taxilane between Taxiway E and Taxiway F.
- Maintaining the existing retention basin for drainage.
- Existing apron expansion with additional aircraft tiedowns.
- A future Taxiway G connecting the apron to Taxiway A.

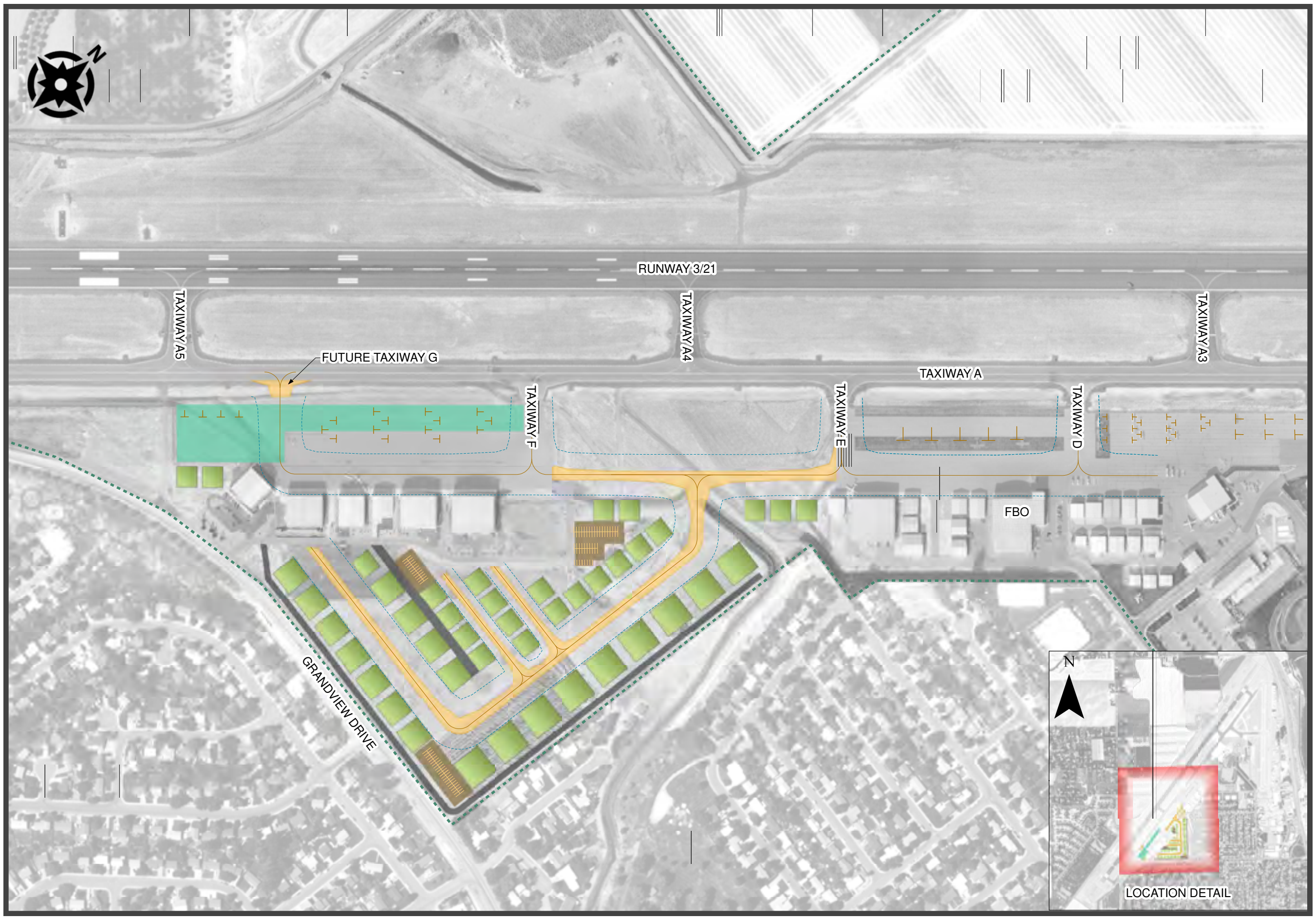
These hangar layout alternatives assisted in determining a final alternative to be carried forward into the airport layout plan. The final configuration carried forward is discussed in Section 7.5. Selection of the Preferred Alternatives.

Figure 7.13: South Quad General Aviation Development Layout 1



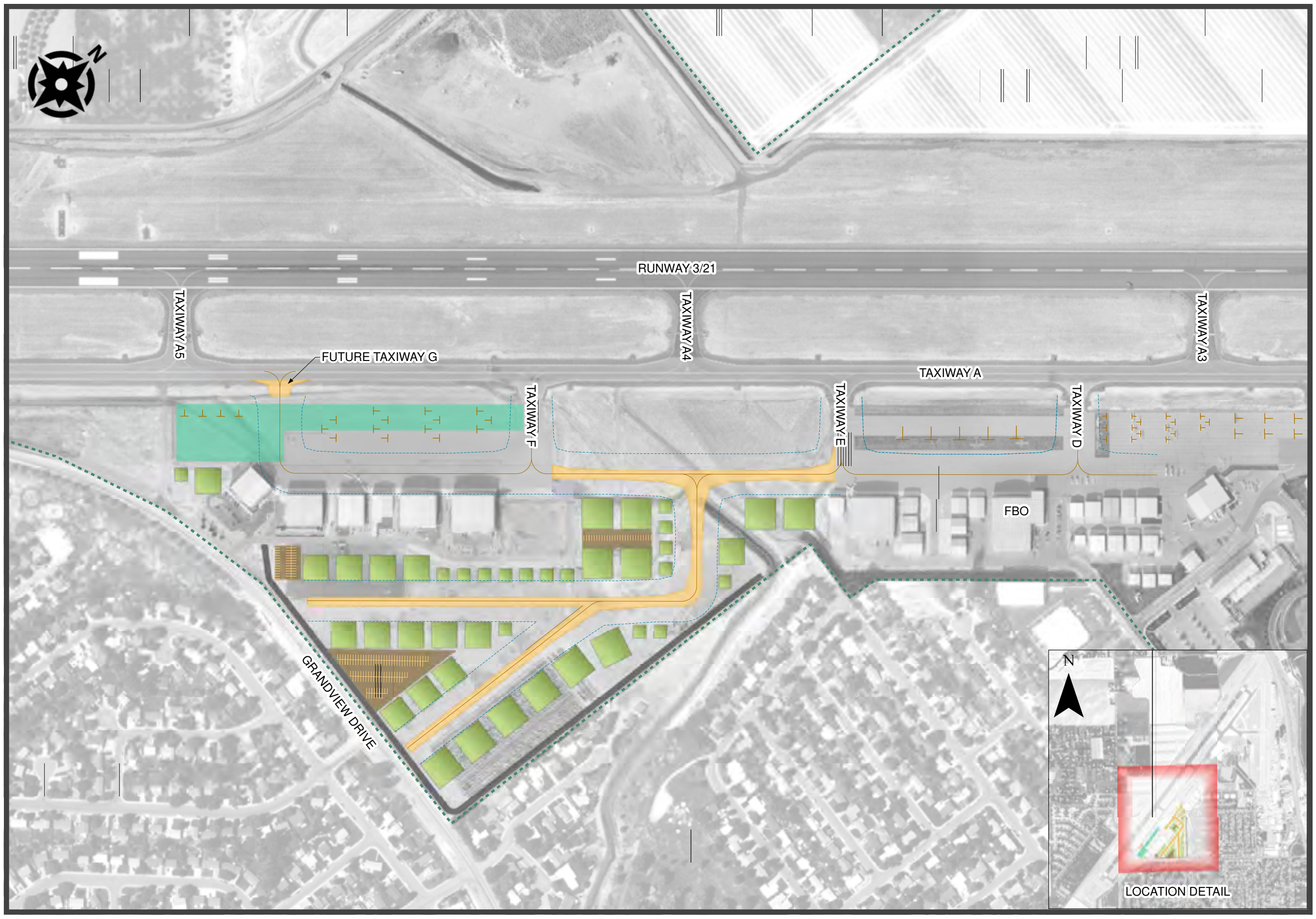
Source: Ardurra.

Figure 7.14: South Quad General Aviation Development Layout 2



Source: Ardurra.

Figure 7.15: South Quad General Aviation Development Layout 3



Source: Ardurra.

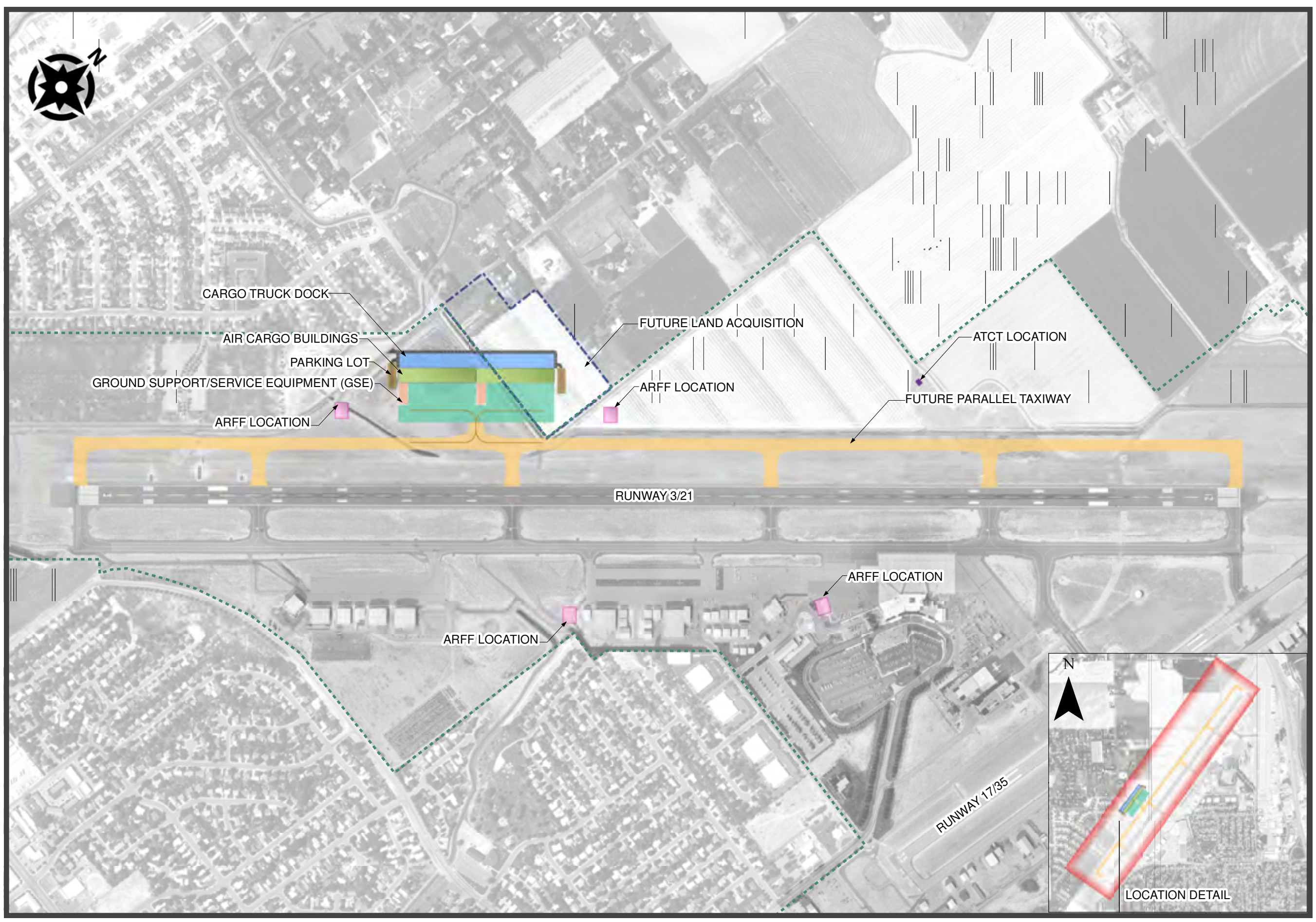
7.4. West Side Development

The west side development concept is driven by the need to double the size of FedEx's facility and create space for a second air cargo operator that is equal to or larger than the FedEx facility. As discussed in the terminal area alternatives, the air cargo facility needs to be relocated to make room for the eventual expansion of passenger activity within the terminal building, outside the terminal building on the apron, and within the vehicle parking area. The west side development complex includes a full-length parallel taxiway, land acquisition, space for a new air cargo facility, a placeholder for future aviation development, space for airport support, and space for drainage infrastructure.

7.4.1. West Side Development Phase 1

As shown in Figure 7.16, phase 1 of the west side development includes space for two air cargo facilities and preserves space for the potential relocation of the aircraft rescue and fire fighting facility and the airport traffic control tower. Phase 1 maintains access using the existing surface streets and does not disrupt the soccer fields. There is enough space available for FedEx to relocate to this area using existing airport property with a partial parallel taxiway. For phase 1 to achieve full build out, land acquisition is required to the north. Phase 1 requires extensive infrastructure improvements and an environmental evaluation.

Figure 7.16: **West Side Development Phase 1**

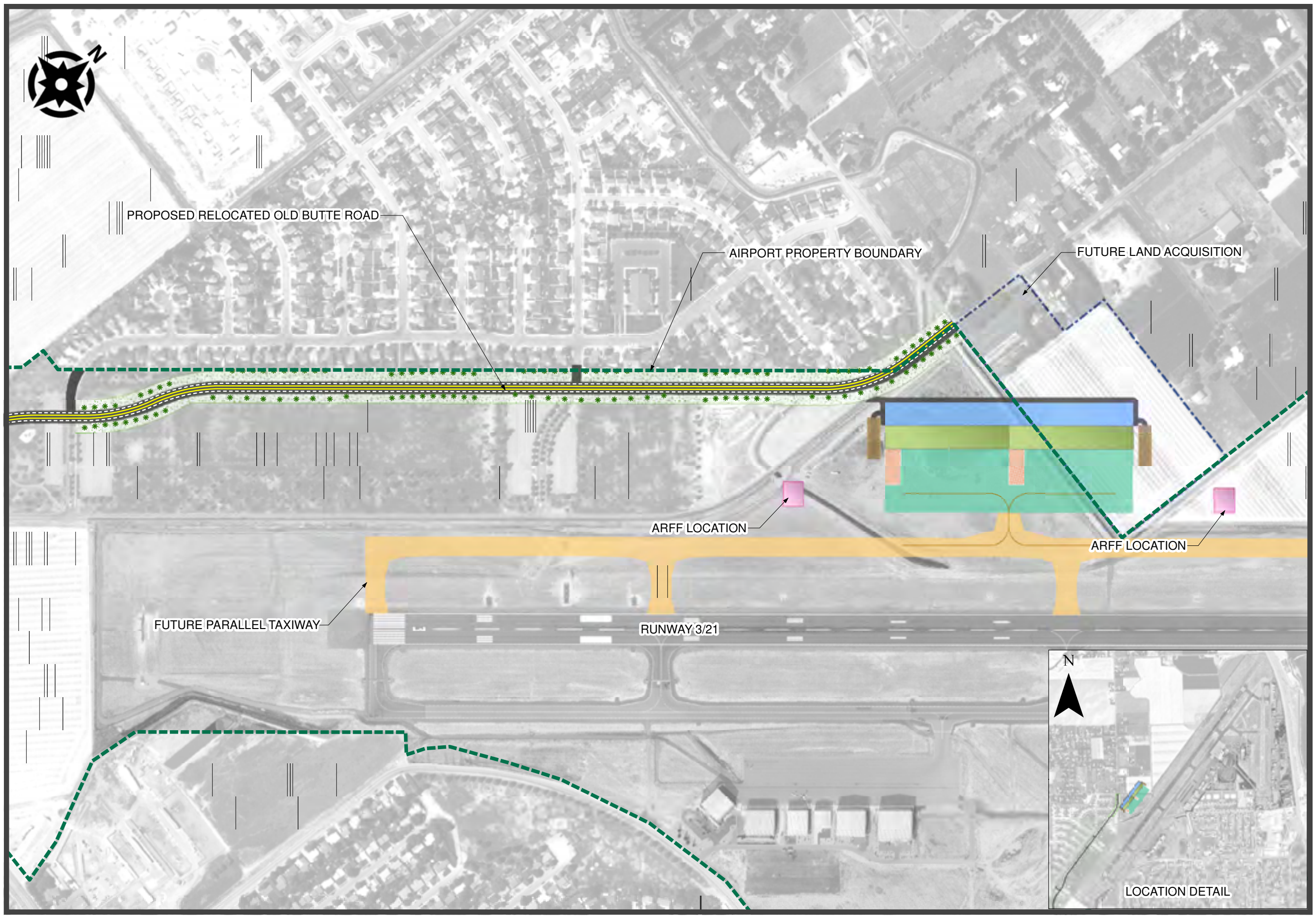


Source: Ardurra.

7.4.2. West Side Development Phase 2

As shown in Figure 7.17, phase 2 of the west side development is primarily an airport land use protection alternative because the area is not projected to be needed for airport use during the 20-year planning period for this airport master plan. Old Butte Road is shown relocated to the western edge of the airport property boundary. This is necessary because the property was purchased with federal funds and is intended for aeronautical use. The exact alignment, size, and timing of this relocation are dependent on traffic levels as well as input from others that are unknown at the time of this airport master plan.

Figure 7.17: **West Side Development Phase 2**

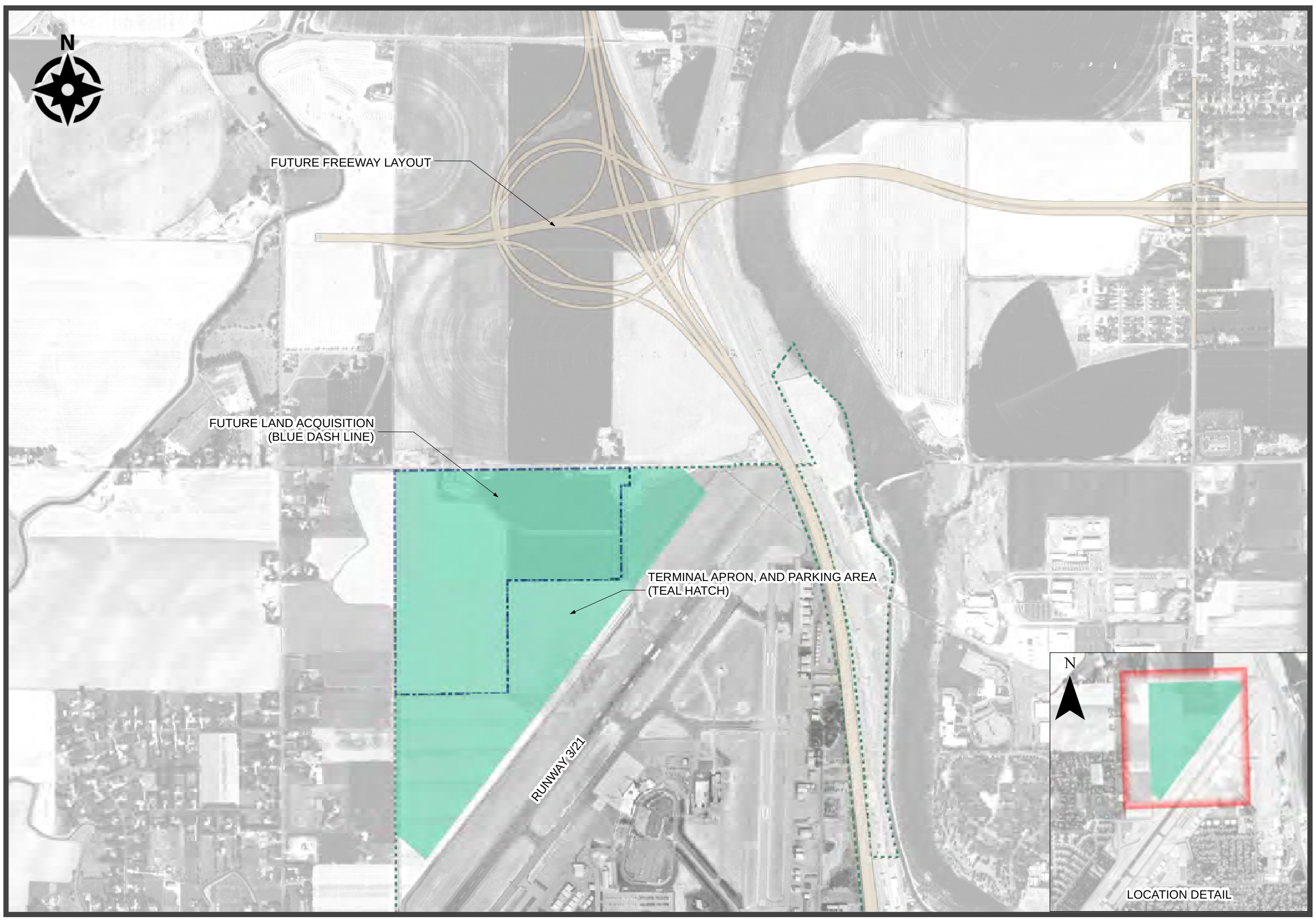


Source: Ardurra.

7.4.3. West Terminal Concept

At the time of this study, the Idaho Transportation Department (ITD) was evaluating a possible Interstate 15 and U.S. Highway 20 interchange north of the airport. While likely beyond the planning horizon of this study, should this scenario materialize, it would open possible new access points to airport property from the northwest. Funding notwithstanding, this could allow for development of a purpose-built terminal complex along with associated support infrastructure that would include parking, rental cars, and airline cargo. As shown in Figure 7.18, moving the terminal complex to this location would move vehicle traffic away from the residential area along Skyline Drive and allow the existing terminal area to be repurposed for other aviation uses. Other possible uses of this area include an expanded air cargo space, corporate flight operations, private hangar development, commercial aviation operations, and advanced air mobility operations. These scenarios are beyond the planning horizon of this airport master plan. Consideration should be given to protecting the northwest quadrant of the airport and the adjacent properties from permanent uses that would prevent future development opportunities.

Figure 7.18: West Terminal Concept



Source: Ardurra.

7.5. Selection of the Preferred Alternatives

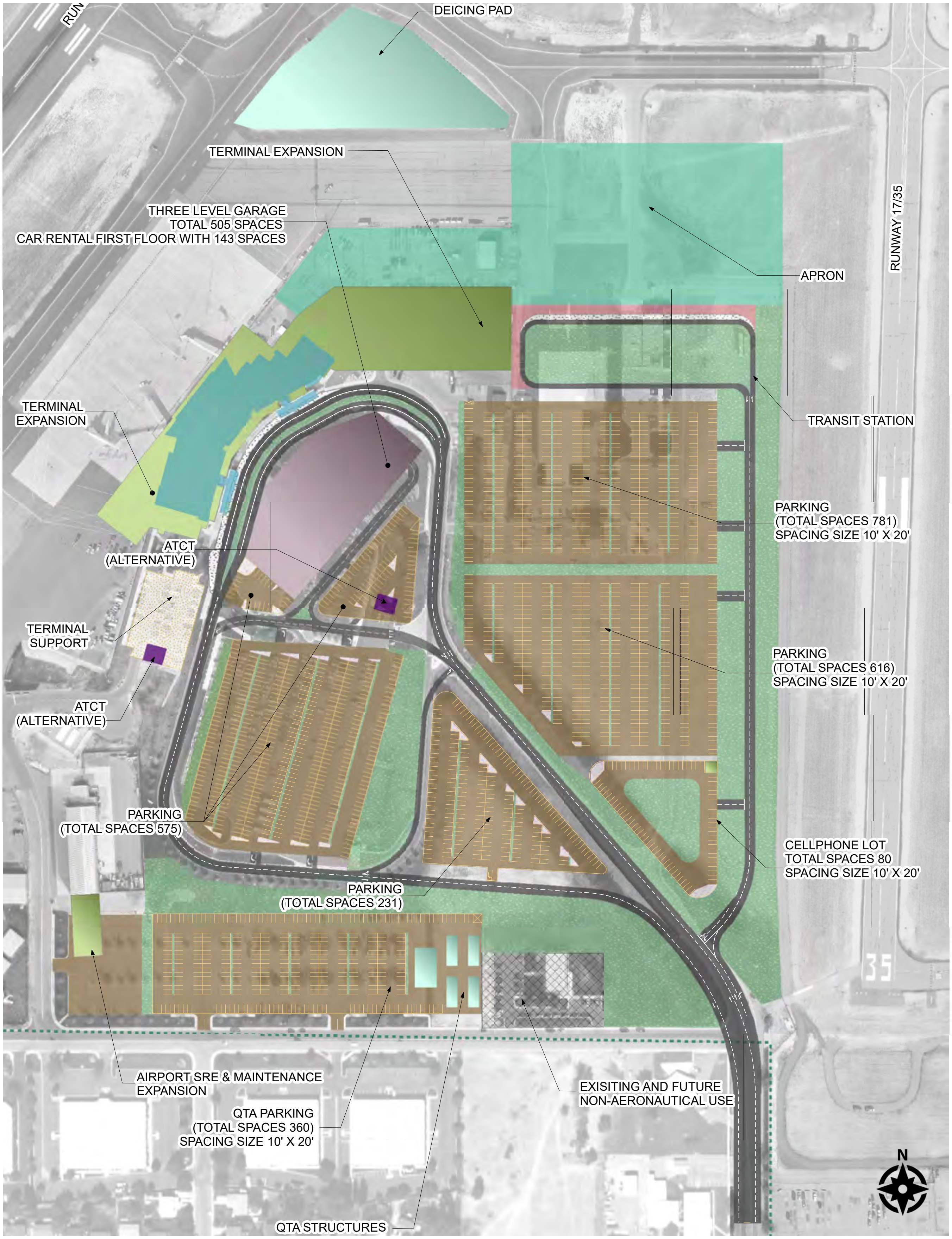
A public open house was held February 7, 2024, at the Idaho Falls Activity Center near the main entrance to the airport. During the open house, the draft alternatives were presented, and questions and comments were received. The primary concerns were related to the placement of a taxiway and air cargo on the west side of the airport, relocation of Old Butte Road closer to the residential area, the disposition of the soccer field complex and its drainage infrastructure, land acquisition related to airport development on the northwest side of the airport, and the possible closure of Runway 17/35. Through consideration of public comment during the open house, the City of Idaho Falls selected a preferred alternative for each of the functional areas of airport property.

7.5.1. Terminal Area

From the draft terminal area alternatives, a variation of phase 2A was selected as the preferred terminal area alternative. This alternative retains the building located at 1690 International Way for existing and future nonaeronautical use. Other notable changes from phase 2A include the aircraft rescue and fire fighting relocation option at the south end of the commercial apron has been removed from further consideration, the addition of more drainage features in the parking lot expansion area, shifting the rental car quick turnaround area to the existing economy lot 2, and incorporating future employee parking elsewhere in the parking lot expansion area. Placing the rental car quick turnaround area at economy lot 2 results in 360 parking spaces which exceeds the requirement of 274 spaces. Total parking spaces available for passengers and employees is approximately 2,500 which exceeds the requirements of 1,776 combined spaces.

Overall, this alternative can be completed using a phased approach based on demand while also ensuring areas are preserved to accommodate growth beyond the 20-year planning horizon. The preferred terminal area alternative is shown in Figure 7.19.

Figure 7.19: Preferred Terminal Area Alternative



Source: Ardurra.

7.5.2. Airfield – East Side

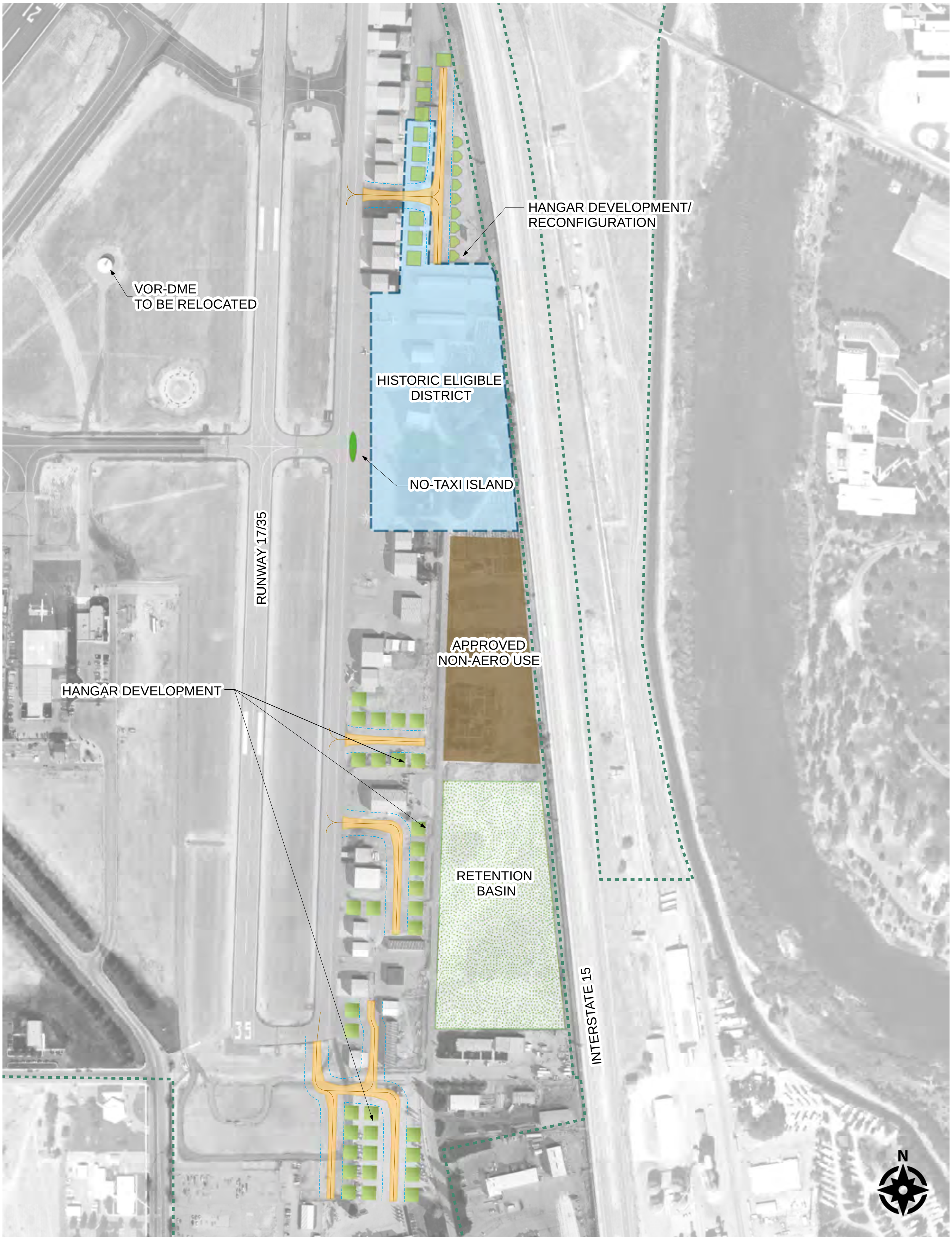
Development of the east side of the airport was contingent on retaining or closing Runway 17/35. This consideration was based solely on FAA eligibility for current and future funding for maintenance and upkeep of the runway. The preferred alternative selected for this master plan was to keep Runway 17/35 and continue to maintain it using local funds. The runway pavement is in good enough condition that it can be maintained during the short-term to medium-term planning period of five to ten years for this airport master plan without a full reconstruction. However, the airport rate structure should be reviewed to determine if adjustments are needed to account for the progressively increasing cost of maintaining the runway as the pavement degrades over time. Additional or alternate funding sources from federal, state, and private sources should be pursued to help support the airport operations and maintenance fund for the long-term planning horizon of 11–20 years for this airport master plan.

With Runway 17/35 being retained for this airport master plan, it means the hot spot at Taxiway C would remain. This is mitigated by adding a no-taxi island on the apron in front of Taxiway C to force pilots to make turns before entering the runway. Runway guard lights, which are sometimes called wig wags, should also be installed at the entrance to Runway 17/35 at Taxiway C to provide further visual cues to pilots.

The previous airport layout plan, as well as prior planning studies, noted the movement area boundary along Taxiway B does not account for the full width of the taxiway object free area (OFA). This was mitigated in prior plans by moving Taxiway B closer to Runway 17/35 while maintaining runway to taxiway separation standards. However, with Runway 17/35 being ineligible for FAA funding, it is unlikely the FAA would fund a relocation of Taxiway B. This preferred alternative retains Taxiway B in its present location. To mitigate for the nonstandard movement area boundary, it is recommended the airport revise the letter of agreement on file with the airport traffic control tower to adjust the movement area boundary line.

In the draft alternative for the east side, the community garden north of the retention basin was converted into an overflow parking lot for rental car companies. The preferred alternative earmarks this area for a nonspecific, future approved nonaeronautical use. The preferred east side area alternative is shown in Figure 7.20.

Figure 7.20: Preferred East Side Alternative

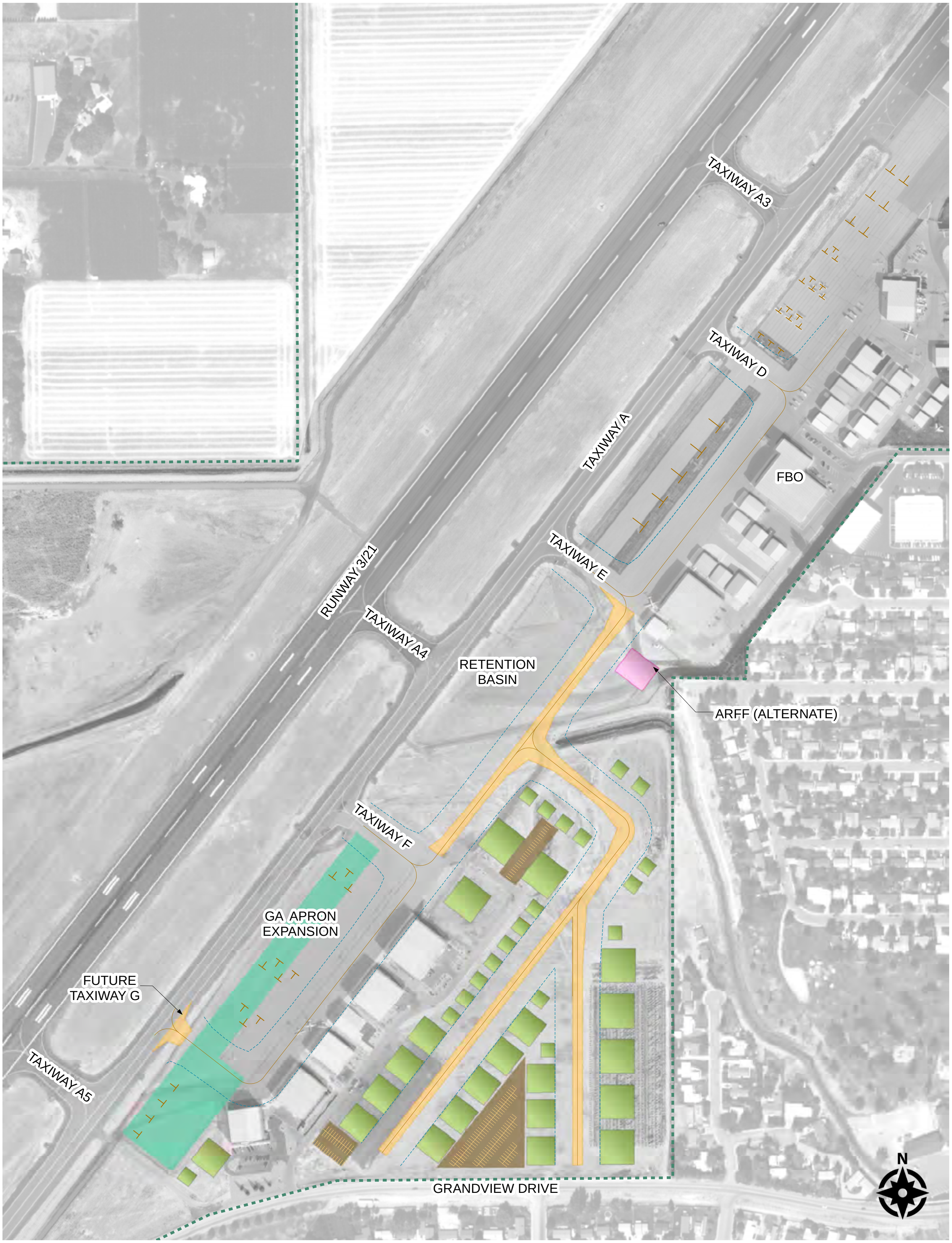


Source: Ardurra.

7.5.3. Airfield – South Quad

The three hangar configurations for the south quad were evaluated by the planning team and airport staff. The preferred alternative selected was a variation of layout 3. Noted changes are the placement of a possible aircraft rescue and fire fighting relocation at the south end of the FBO area near Olympia Drive which would shift the taxilane south to avoid the East Lateral and re-size the hangar options along the east side of the parcel to allow for an adequate buffer from the residential area to the east. The preferred alternative for the South Quad parcel is shown in Figure 7.21.

Figure 7.21: Preferred South Quad Development Alternative



Source: Ardurra.

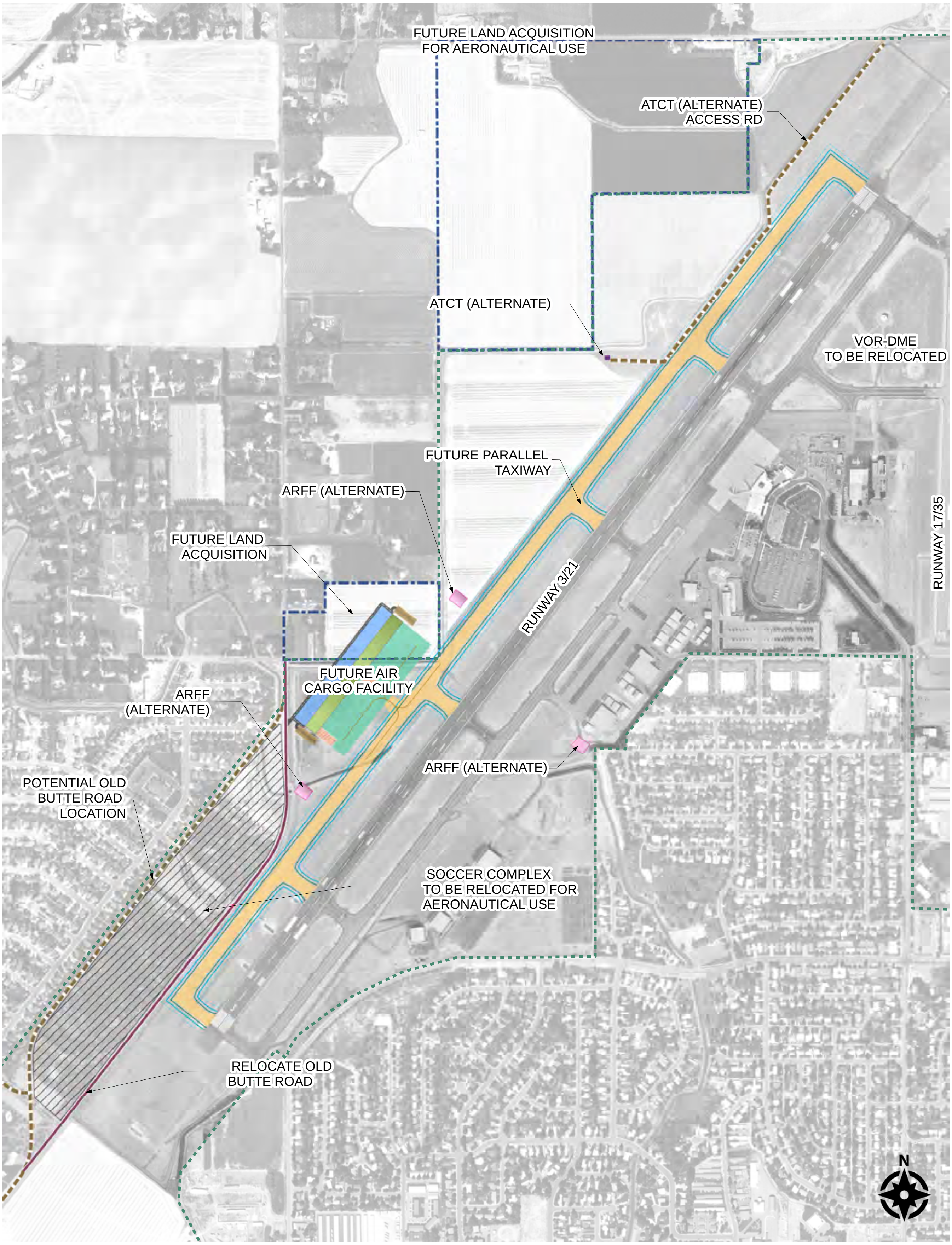
7.5.4. Airfield – West Side Development

With Runway 17/35 being retained, the demand for air cargo is met by developing the west side of the airport as shown in phase 1 of the draft alternative for the west side. The existing alignment of Old Butte Road is retained for the short-term planning period. It is subject to relocation based on both the aviation demand of the airport and regional transportation requirements of the community. One possible future alignment of Old Butte Road is along the western edge of the airport property boundary. However, no specific road design is depicted because it is too speculative as to the final disposition of Old Butte Road at the time of this airport master plan. The soccer field complex is depicted as being relocated because the City of Idaho Falls has already commenced the process of moving the complex. Future aviation use of the soccer complex will be dependent on when and what the demand calls for, but is not expected to occur during the 20-year planning period of this airport master plan. The drainage basin currently located at the soccer complex will be retained until aviation demand requires the use of the soccer field parcel. At that time, drainage requirements will be assessed and incorporated into any future development.

As for the northwest section of the airport, the draft alternatives depict a possible terminal complex that could be accessed from a potential Interstate 15 and U.S. Highway 20 interchange connecting to the airport from the north. However, since this possibility is still too speculative at the time of this master plan, the northwest corner of the airport is shown only as future aeronautical use, and the private parcels adjacent to the airport are shown as future land acquisition for aeronautical use as a land use protection measure. Timing of such development or land acquisition will be dependent on the final outcome of the Interstate 15 and U.S. Highway 20 interchange project but is not expected to occur within the horizon of this airport master plan. The preferred alternative for west side development is shown in Figure 7.22.

With development occurring on the west side of the airport during, and potentially beyond the master plan horizon, coordination should begin immediately with city planners to update or revise local and regional land use and zoning designations. Present zoning for the soccer field complex on the airport property is public while the rest of the airport is light manufacturing and heavy commercial.[1] The current land use designation for the soccer field complex is cultural, entertainment, and recreation (athletic field) while the rest of the airport is transportation, communication, and utilities (airport).[2] The future land use map depicted in *Imagine IF, Imagine IF, A Plan to Move Idaho Falls Forward Together, City of Idaho Falls' Comprehensive Plan*, shows the future designation of the soccer field complex as park and open space while the rest of the airport is designated as special use.[3] However, the soccer field complex within the airport property should be designated the same as the other operational areas of the airport. The off-airport parcels shown for future acquisition adjacent to the northwest of the existing airport property are presently not in the City of Idaho Falls limits or area of impact but are designated as special use on the future land use map in the comprehensive plan. Present zoning and comprehensive plan land use designations by Bonneville County are agricultural.[4] Coordination with Bonneville County planners should begin once the northwest corner of the airport is ready for development to facilitate its incorporation into the City of Idaho Falls purview.

Figure 7.22: Preferred West Side Development Alternative



Source: Ardurra.

Endnotes

1 City of Idaho Falls. Maps. "Zoning & Development." Accessed June 7, 2024. https://www.idahofallsidaho.gov/332/Maps.

2 City of Idaho Falls. Maps. "Land Use." Accessed June 7, 2024. https://www.idahofallsidaho.gov/332/Maps.

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ENVIRONMENTAL OVERVIEW

8

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CHAPTER EIGHT

ENVIRONMENTAL

An environmental overview is designed to assist the planning team by providing information regarding the possible presence of sensitive environmental resources that could be affected by airport improvement projects. This information is intended to help determine if additional alternatives are needed in order to avoid or minimize the environmental impact of a project; identify the level of coordination and analysis needed for these projects; and identify if an environmental assessment or environmental impact statement would be required or whether categorical exclusions may apply in order to help the planning team estimate costs and scheduling to complete the National Environmental Policy Act (NEPA) process.[1]

The purpose of this environmental overview is to identify existing environmental conditions in and around the airport. This environmental overview is a preliminary review and is based mainly on existing studies and documentation gathered from federal, state, and local government agencies with limited field investigation or agency coordination. It is intended to help Idaho Falls Regional Airport (IDA) conduct an initial evaluation of the airport improvement projects discussed in Chapter 7, Development Alternatives, in order to expedite the environmental review and compliance process.[2]

8.1. The Environmental Review Process

When federal funding is used for airport improvement projects, these activities are considered to be federal actions and are then subject to the NEPA process. This process is an independent, federal decision making process requiring public disclosure of critical planning and environmental information regarding the proposed action and its reasonable alternatives. Depending on the potential environmental effects of the proposed project, it can require either a categorical exclusion (CATEX), an environmental assessment, or an environmental impact statement to be completed as part of the environmental review process.

8.1.1. Categorical Exclusion

A proposed action may be categorically excluded from a detailed environmental analysis if it meets certain criteria that the Federal Aviation Administration (FAA) has previously determined to have no significant environmental impact. These actions normally involve administrative and planning-related actions such as approval of an airport layout plan (ALP) or authorization for the purchase of snow removal equipment. However, they can also include projects such as installing or upgrading airfield lighting as well as making certain improvements to an existing airfield facility such as resurfacing runway pavements.

8.1.2. Environmental Assessment

An environmental assessment (EA) is a concise document that takes a hard look at the expected environmental effects of a proposed action in order to determine if the proposed action has the potential to cause significant environmental effects. These actions typically involve more extensive projects such as approval of a new runway or a major runway extension. If the FAA determines the action will not have a significant environmental impact, the agency will issue a finding of no significant impact (FONSI) that explains the reason for this determination. If the agency determines the action will have a significant environmental impact, an environmental impact statement will be required.

8.1.3. Environmental Impact Statement

An environmental impact statement (EIS) is a more detailed and rigorous evaluation of the environmental impacts of the proposed action. The types of proposed actions that typically require an environmental impact statement include construction of a new commercial service airport located in a metropolitan statistical area. The environmental impact statement process requires the FAA to publish a notice of intent in the Federal Register to inform the public of the upcoming environmental analysis and describe how the public can become involved in the process. This is followed up with a draft of the environmental impact statement being published for public review and comment for a minimum of 45 days. Upon close of the public comment period, the FAA considers all substantive comments and, if necessary, conducts further analyses. The final environmental impact statement is then published along with responses to substantive comments. After a 30-day wait period, the process ends with the FAA issuing a record of decision (ROD) that explains the decision, describes the alternatives considered, and discusses any plans for mitigation and monitoring.[3]

8.1.4. Environmental Documentation Required

While some of the projects proposed in this airport master plan may be within the scope of a categorical exclusion, most of these projects will likely require an environmental assessment.

8.2. Environmental Overview Summary

This environmental overview discusses existing conditions associated with the environmental impact categories defined in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, that need to be evaluated as part of the environmental review and compliance processes.[4] These environmental impact categories are listed in Table 8.1 along with a summary of potential impacts or agency coordination and permits that may be required.

Table 8.1: Environmental Overview Summary

Environmental Impact Category	Potential Impacts and Required Permits
Air Quality	• Unlikely to have a significant impact. • An Idaho Department of Environmental Quality permit to construct may be required.
Biological Resources	• Unlikely to have a significant impact.
Climate	• Unlikely to have a significant impact.
Coastal Resources	• No coastal resources are associated with the airport.
Department of Transportation Act, Section 4(f)	• West side development projects will impact Section 4(f) resources. • Will likely require consultation with the agencies having jurisdiction over Section 4(f) resources.
Farmlands	• May require coordination with the Natural Resources Conservation Service (NRCS) and a Farmland Conversion Impact Rating Form AD-1006 to be completed.
Hazardous Materials, Solid Waste, and Pollution Prevention	• May require Phase I and Phase II Environmental Site Assessments to determine if hazardous materials are located at the project site. • May require development of a hazardous materials response plan and a spill prevention, control, and countermeasure plan.
Historical, Architectural, Archeological, and Cultural Resources	• West side development projects will potentially impact historic resources. • Will require coordination with the state historic preservation office (SHPO) and the tribal historic preservation office (THPO). • May require development of an inadvertent discovery plan.
Land Use	• Will require coordination with the City of Idaho Falls Planning Division to ensure projects are consistent with local plans. • May require a letter from the City of Idaho Falls stating the proposed action is consistent with existing land use plans.
Natural Resources and Energy Supply	• Unlikely to have a significant impact.
Noise and Noise-Compatible Land Use	• Unlikely to have a significant impact.
Socioeconomics, Environmental Justice, and Children's Health and Safety Risks	• Unlikely to have a significant impact. • Relocation assistance would be required for projects that involve property acquisition.
Visual Effects	• West side development projects will likely impact visual effects.
Water Resources	• A wetland delineation and a U.S. Army Corps of Engineers Section 404 permit may be required for projects involving the East Lateral, Armstrong Lateral, or Hoff Lateral. • National Pollutant Discharge Elimination System (NPDES) and Idaho Pollution Discharge Elimination System (IPDES) permits may be required.

8.3. Resources Not Affected

8.3.1. Coastal Resources

Idaho Falls Regional Airport is located in Bonneville County, Idaho, which is not within the Coastal Barrier Resources System (CBRS) as shown on U.S. Fish and Wildlife Service coastal barrier maps.[5] Therefore, no coastal resources are associated with the airport.

8.3.2. Wild and Scenic Rivers

According to the Nationwide Rivers Inventory, which is maintained by the National Parks Service, there are no Wild and Scenic Rivers or river segments located on airport property or in its immediate vicinity.[6] Therefore, the projects proposed in this airport master plan would have no effect on Wild and Scenic Rivers.

8.4. Air Quality

8.4.1. Regulatory Setting

The Clean Air Act (CAA) authorized the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These pollutants, which are known as criteria pollutants, include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb).

The Idaho Department of Environmental Quality is responsible for monitoring emissions to make sure levels of these pollutants meet federal and state air quality standards throughout Idaho.[7]

a. Attainment, Nonattainment, and Maintenance Areas

Attainment areas are areas where the air quality meets or exceeds the national standard. If the air quality does not meet the national standard, the EPA designates the area as a nonattainment area. Nonattainment areas are then required to have a state implementation plan (SIP) that details the emission reduction strategies to bring nonattainment areas into attainment. After the air quality in that area once again meets the national standard, the EPA designates the area as a maintenance area.[8]

b. Required Permits

An Idaho Department of Environmental Quality air quality permit to construct (PTC) is required before constructing or modifying buildings, structures, and installations that emit or may emit air pollutants.[9]

8.4.2. Affected Environment

Idaho Falls Regional Airport is located in Bonneville County. According to the Idaho Department of Environmental Quality, which monitors air quality at 30 sites within the state, the closest monitoring station is in Idaho Falls and is located approximately 3.78 miles southeast of the airport.[10] According to the EPA Green Book, as of May 2023, Bonneville County is in attainment for all criteria air pollutants.[11]

8.4.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on air quality, both direct and indirect impacts resulting from the construction and operation of these projects need to be examined. This requires preparing an emissions inventory to determine the amount of criteria pollutants that would be generated by construction and operation of each proposed project.

a. Construction Emissions

Construction of the projects proposed in this airport master plan would result in both direct and indirect impacts to air quality. However, these impacts will be short-term and are considered normal for construction activities.

b. Operational Emissions

The projects proposed in this airport master plan are unlikely to result in an increase in the number of flights, type of aircraft, or number of airport users beyond expected growth, and therefore would have no impact on air quality.

8.4.4. Significance Determination

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on air quality is if, "*The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.*"[12]

a. Potential Impacts

The airport is located in an attainment area for all criteria air pollutants, and a temporary increase in emissions due to construction is unlikely to affect Bonneville County's attainment status. Therefore, the projects proposed in this airport master plan are not expected to have a significant impact on air quality.

8.5. Biological Resources

8.5.1. Regulatory Setting

The Endangered Species Act (ESA) requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) to determine if a proposed action the agency authorizes, funds, or carries out is likely to jeopardize a species listed as threatened or endangered or result in the destruction or adverse modification of designated critical habitat.

8.5.2. Affected Environment

As previously discussed in Section 4.1. Natural and Physical Environment, the airport is located within the city of Idaho Falls and is situated less than 1,000 feet from the western bank of the upper Snake River. It is also within the eastern section of the Snake River Plain which is a large and wide depression that extends east to west across southern Idaho. The Upper Snake River Plain is nearly level and contains pastureland, cities, suburbs, industries, and cropland where extensive surface irrigation occurs.

The airport property has been previously disturbed by development activities and has minimal vegetation as it is maintained to support aircraft operations. The airport property is currently zoned as light manufacturing and heavy commercial. The land surrounding the airport is primarily zoned as agricultural farmland, commercial, and residential.

a. Federally-Protected Species; Critical Habitat; Essential Fish Habitat

Several public databases were reviewed to determine the special status species that may be present on airport property. These databases include the U.S. Fish & Wildlife Service Information, Planning, and Consultation (IPaC) database and the National Oceanic and Atmospheric Administration Essential Fish Habitat Mapper. According to these databases, there are no designated or proposed critical habitats, and no essential fish habitats or habitat areas of particular concern located on airport property. According to the IPaC database, the monarch butterfly (*Danaus plexippus*) is a candidate species that could potentially occur on or near airport property. However, consultation with the U.S. Fish & Wildlife Service is not required for candidate species under Section 7 of the Endangered Species Act.[13]

b. State-Protected Species

The Idaho State Wildlife Action Plan is the state's guiding document for managing and conserving at-risk species with the potential to be listed under the Endangered Species Act. The species of greatest conservation need and the habitats upon which they depend that have been observed within Bonneville County are listed in Table 8.2.[14]

Table 8.2: Idaho Species of Greatest Conservation Need

Common Name	Scientific Name	Common Name	Scientific Name
Tier 1 Species			
Morrison's Bumble Bee	*Bombus morrisoni*	Yellow-billed Cuckoo	*Coccyzus americanus*
Western Bumble Bee	*Bombus occidentalis*	Wolverine	*Gulo gulo*
Greater Sage-Grouse	*Centrocercus urophasianus*	Grizzly Bear	*Ursus arctos*
Tier 2 Species			
Clark's Grebe	*Aechmophorus clarkii*	Pinyon Jay	*Gymnorhinus cyanocephalus*
Western Grebe	*Aechmophorus occidentalis*	Harlequin Duck	*Histrionicus histrionicus*
Western Toad	*Anaxyrus boreas*	Silver-haired Bat	*Lasionycteris noctivagans*
Golden Eagle	*Aquila chrysaetos*	Hoary Bat	*Lasiurus cinereus*
Sagebrush Sparrow	*Artemisiospiza nevadensis*	Northern Leopard Frog	*Lithobates pipiens*
Burrowing Owl	*Athene cunicularia*	Lewis's Woodpecker	*Melanerpes lewis*
American Bittern	*Botaurus lentiginosus*	Long-billed Curlew	*Numenius americanus*
Ferruginous Hawk	*Buteo regalis*	Sage Thrasher	*Oreoscoptes montanus*
Black Tern	*Chlidonias niger*	Bighorn Sheep	*Ovis canadensis*
Idaho Dune Tiger Beetle	*Cicindela arenicola*	American White Pelican	*Pelecanus erythrorhynchos*
Rocky Mountain Duskysnail	*Colligyrus greggi*	White-faced Ibis	*Plegadis chihi*
Trumpeter Swan	*Cygnus buccinator*	Caspian Tern*	*Hydroprogne caspia*
Bobolink	*Dolichonyx oryzivorus*	California Gull*	*Larus californicus*
Common Loon	*Gavia immer*		
Tier 3 Species			
Grasshopper Sparrow	*Ammodramus savannarum*	Franklin's Gull	*Leucophaeus pipixcan*
Short-eared Owl	*Asio flammeus*	Western Small-footed Myotis	*Myotis ciliolabrum*
Yellow Bumble Bee	*Bombus fervidus*	Little Brown Myotis	*Myotis lucifugus*
Hunt's Bumble Bee	*Bombus huntii*	Clark's Nutcracker	*Nucifraga columbiana*
Common Nighthawk	*Chordeiles minor*	Mountain Goat	*Oreamnos americanus*
Olive-sided Flycatcher	*Contopus cooperi*	Rotund Physa	*Physella columbiana*
Townsend's Big-eared Bat	*Corynorhinus townsendii*	White-headed Woodpecker	*Picoides albolarvatus*
Monarch	*Danaus plexippus*	Great Gray Owl	*Strix nebulosa*
Sandhill Crane	*Grus canadensis*	Ring-billed Gull*	*Larus delawarensis*

*Breeding population only

Source: Idaho Department of Fish and Game, Bonneville County Observations List.

c. Migratory Birds

Certain birds are protected by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Activities that may result in impacts to Birds of Conservation Concern (BCC) or their habitats should be coordinated with the USFWS, and all appropriate regulations and conservation measures should be followed. According to the IPaC database, there are 18 species on the Birds of Conservation Concern list or that warrant special attention that could potentially occur on or near airport property (Table 8.3).[15]

Table 8.3: Birds of Conservation Concern

Common Name	Scientific Name	Breeding Season
American White Pelican	*pelecanus erythrorhynchos*	April 1 – August 31
Bald Eagle	*Haliaeetus leucocephalus*	December 1 – August 31
Black Tern	*Chlidonias niger*	May 15 – August 20
Bobolink	*Dolichonyx oryzivorus*	May 20 – July 31
California Gull	*Larus californicus*	March 1 – July 31
Cassin's Finch	*Carpodacus cassinii*	May 15 – July 15
Clark's Grebe	*Aechmophorus clarkii*	June 1 – August 31
Evening Grosbeak	*Coccothraustes vespertinus*	May 15 – August 10
Franklin's Gull	*Leucophaeus pipixcan*	May 1 – July 31
Lesser Yellowlegs	*Tringa flavipes*	Breeds elsewhere
Lewis's Woodpecker	*Melanerpes lewis*	April 20 – September 30
Marbled Godwit	*Limosa fedoa*	Breeds elsewhere
Olive-sided Flycatcher	*Contopus cooperi*	May 20 – August 31
Pinyon Jay	*Gymnorhinus cyanocephalus*	February 15 – July 15
Rufous Hummingbird	*selasphorus rufus*	April 15 – July 15
Sage Thrasher	*Oreoscoptes montanus*	April 15 – August 10
Western Grebe	*aechmophorus occidentalis*	June 1 – August 31
Willet	*Tringa semipalmata*	April 20 – August 5

Source: U.S. Fish & Wildlife Service, Information for Planning and Consultation.

8.5.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on biological resources, impacts from construction and ongoing operations need to be examined. This includes the following:

- Identifying potential impacts from construction activities such as the destruction or alteration of habitat, the disturbance or elimination of local fish, wildlife, or plant populations, and the introduction of invasive species.
- Identifying the vegetation types and wildlife species associated with the project area.
- Identifying potential impacts from operation of the proposed project. This includes discussing disturbances to noise-sensitive terrestrial and aquatic animal species generated by operational noise within the vicinity of the project area as well as any land area or open water that aircraft would fly over.[16]

8.5.4. Significance Determination

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on biological resources is if, "*The U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a Federally-listed threatened or endangered species, or would result in the destruction or adverse modification of federally-designated critical habitat.*"

The FAA has not established a significance threshold for non-listed species. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does identify the following factors to consider in evaluating potential impacts.

The action would have the potential for:

- A long-term or permanent loss of unlisted plant or wildlife species from a large project area.
- Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) or their habitats.
- Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations.
- Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance.[17]

a. Potential Impacts

The projects proposed in this airport master plan are not expected to have a significant impact on biological resources.

8.6. Climate

8.6.1. Regulatory Setting

The Clean Air Act authorized the U.S. Environmental Protection Agency to regulate greenhouse gas emissions. The EPA determined there are six greenhouse gases that need to be regulated which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6).

8.6.2. Affected Environment

The U.S. Environmental Protection Agency prepares an annual *Inventory of U.S. Greenhouse Gas Emissions and Sinks.* According to this report, total gross U.S. greenhouse gas emissions were 6,340.2 million metric tons of carbon dioxide equivalent (MMT CO_2 Eq.) for 2021 with transportation activities accounting for 28.5%. This includes 6.6% contributed by commercial aircraft and 2.0% contributed by other aircraft.[18]

According to the U.S. EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks by State,* Idaho's total greenhouse gas emissions for 2020, which was the most recent year of analysis, was estimated at 35.369 million metric tons of carbon dioxide equivalent. In Idaho, the transportation sector contributed approximately 10.312 million metric tons of carbon dioxide equivalent.[19]

8.6.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on climate, the same emission sources included in the air quality analysis should be examined. For non-aircraft sources of emissions, greenhouse gas emissions should be determined from projections of fuel burn and converted to CO_2e. This includes evaluating both direct and indirect emissions that would occur as a result of any operational changes as well as construction of these projects.[20]

a. Operational Changes

The projects proposed in this airport master plan are unlikely to result in an increase in the number of flights, type of aircraft, or number of airport users beyond expected growth, and therefore would not have a direct impact on climate.

b. Construction Emissions

Construction of the projects proposed in this airport master plan would result in both direct impacts (e.g., the use of construction equipment) and indirect impacts (e.g., worker commutes to the site) to climate. However, these impacts will be short-term, of local impact, and are considered normal for construction activities.

8.6.4. Significance Determination

The FAA has not established a significance threshold for climate. However, guidance provided by the Council on Environmental Quality does recommend federal agencies consider the potential effects of a proposed action, as indicated by its greenhouse gas emissions, and the implications regarding climate change. It is also important to note that there are currently no accepted methods for determining the impact an aviation project would have on climate change.[21]

a. Potential Impacts

The projects proposed in this airport master plan are not expected to have a significant impact on climate.

8.7. Department of Transportation Act, Section 4(f)

8.7.1. Regulatory Setting

Under Section 4(f) of the U.S. Department of Transportation Act, any transportation project that requires the use of public land considered to be a significant resource is prohibited unless there is no feasible and prudent alternative, and the project includes all possible planning to minimize harm resulting from the use. 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).

A project that would use Section 4(f) parks or recreation areas must also comply with Section 6(f) of the Land and Water Conservation Fund if the property was acquired or developed with financial assistance under the Land and Water Conservation Fund State Assistance Program.

a. Land and Water Conservation Fund Act, Section 6(f)

Section 6(f) of the Land and Water Conservation Fund Act established a grant program for states and local governments to acquire and develop public outdoor recreation sites and facilities. It also prevents these lands from being converted to non-recreation uses unless the U.S. Department of the Interior (DOI) approves the conversion. Section 6(f), which is administered by the National Park Service (NPS), requires that areas funded through the program remain for public outdoor recreation use or be replaced by lands of equal value, location, and recreation usefulness.

8.7.2. Affected Environment

An initial review of publicly available records was conducted to identify potential Section 4(f) resources located at or adjacent to the airport. This includes records maintained by the National Park Service, the National Register of Historic Places, and the city of Idaho Falls.

a. Parks and Recreational Resources

Publicly owned parks and recreational areas are considered to be Section 4(f) resources when they are of national, state, or local significance and open to the public. The public parks and recreational areas that are located at or adjacent to the airport and could potentially be considered 4(f) resources are listed in Table 8.4.[22]

Esquire Acres Park was developed using Land and Water Conservation Fund Act funds as well as FAA funds and has the potential to be a Section 6(f) property. However, there is no proposed development associated with Esquire Acres Park and the master plan alternatives.

Table 8.4: **Parks and Recreational Areas**

Property Name	Location
Old Butte Park and Soccer Complex	1055 North 26th West
Esquire Acres Park	800 Moonlite Drive
Reinhart Park	1055 Washburn Avenue

Source: City of Idaho Falls.

b. Wildlife and Waterfowl Refuges

Publicly-owned wildlife and waterfowl refuges are considered to be Section 4(f) resources when they are of national, state, or local significance and are open to the public. According to the U.S. Fish & Wildlife Service, there are no wildlife or waterfowl refuges located on or adjacent to airport property.[23]

c. Historic Sites

Public and privately owned historic sites are considered to be Section 4(f) resources when they are of national, state, or local significance regardless of whether they are open to the public. The National Register of Historic Places was reviewed to identify existing historic sites located on or adjacent to airport property that could potentially qualify as Section 4(f) resources (Table 8.5).[24] As discussed in Section 8.10. Historical, Architectural, Archeological, and Cultural Resources, an additional 24 resources were recently identified as potentially being eligible for listing in the National Register of Historic Places.

Table 8.5: Existing Historic Sites

Property Name	Location
Airport Historic District	2381 Foote Drive
East Lateral Canal System	Adjacent to and on airport property

Source: National Park Service, National Register of Historic Places.

8.7.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on Section 4(f) resources, both the physical use and constructive use of these resources need to be examined.[25]

a. Physical Use

A physical use of Section 4(f) resources occurs if a proposed project involves the actual physical taking of a Section 4(f) property through the purchase of land or a permanent easement, physical occupation of a portion or all of the property, or alteration of structures or facilities on the property. This typically does not include the temporary occupancy of a Section 4(f) property for construction-related activities.

b. Constructive Use

A constructive use occurs if a proposed project impacts a Section 4(f) property so severely that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired.

8.7.4. Significance Determination

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on Section 4(f) resources is if, "*The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a "constructive use" based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; and publicly or privately owned land from an historic site of national, state, or local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.*"[26]

a. Potential Impacts

West side development projects will likely impact the parks and recreational areas considered to be Section 4(f) resources and also have the potential to impact sections of the Armstrong, East, and Hoff laterals which are sub-features of the historic East Lateral Canal System.

8.8. Farmlands

8.8.1. Regulatory Setting

The Farmland Protection Policy Act (FPPA) regulates federal actions with the potential to convert farmland to non-agricultural uses.

8.8.2. Affected Environment

The National Resources Conservation Service (NRCS) keeps an inventory (i.e., the Web Soil Survey) of the prime and unique farmland in the United States. This inventory identifies the classification, soil type, and location of important rural lands needed to produce food, feed, fiber, forage, and oilseed crops. The farmland classifications for each of the soil types identified in the National Resources Conservation Service Web Soil Survey for Idaho Falls Regional Airport are listed in Table 8.6.

Table 8.6: Farmland Classifications

Soil Type	Farmland Classification	Acres	Percentage
Bannock loam	Prime farmland if irrigated	4.6	0.5%
Bock loam	Prime farmland if irrigated	63.1	7.4%
Packham gravelly loam	Prime farmland if irrigated	20.8	2.4%
Pancheri silt loam 0–2% slopes	Prime farmland if irrigated and reclaimed of excess salts and sodium	447.2	52.4%
Pancheri silt loam 2–4% slopes	Prime farmland if irrigated and reclaimed of excess salts and sodium	263.3	30.9%
Pancheri silt loam 4–8% slopes	Not prime farmland	30.0	3.5%
Polatis-Rock outcrop complex 2–25% slopes	Not prime farmland	5.2	0.6%
Stan sandy loam	Prime farmland if irrigated	19.1	2.2%

Source: USDA, NRCS.

According to the National Resources Conservation Service Web Soil Survey, approximately 12.5% of the airport property consists of soil types that are considered prime farmland if irrigated (map units 6, 7, 20, and 47), and approximately 83.3% consists of soil types that are considered prime farmland if irrigated and reclaimed of excess salts and sodium (map units 22 and 23). Some of this property is currently being used for active farming.[27]

8.8.3. Environmental Consequences

For projects that involve converting farmlands to non-farm use, U.S. Department of Agriculture (USDA) Form AD-1006, *Farmland Conversion Impact Rating*, will need to be completed and submitted to the local National Resources Conservation Service office or U.S. Department of Agriculture service center for evaluation in order to determine potential impact on farmlands.[28]

8.8.4. Significance Determination

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on farmlands is if, "*The total combined score on Form AD-1006, "Farmland Conversion Impact Rating," ranges between 200 and 260 points.*"[29]

a. Potential Impacts

The projects proposed in this airport master plan are not expected to have a significant impact on farmlands.

8.9. Hazardous Materials, Solid Waste, and Pollution Prevention

8.9.1. Regulatory Setting

The Resource Conservation and Recovery Act (RCRA) authorized the U.S. Environmental Protection Agency to establish a comprehensive regulatory program that ensures hazardous waste is safely managed from the time it is created until it is disposed of. This includes how it is transported, treated, and stored. Under Idaho's Rules and Standards for Hazardous Waste, hazardous waste is regulated at the state level by the Idaho Department of Environmental Quality (DEQ).[30]

According to FAA Advisory Circular 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program (AIP) Assisted Projects*, an adequate due diligence environmental audit should be conducted as part of the project planning and environmental assessment phases to determine if hazardous materials or contamination are present on the property. These audits include Phase I and Phase II Environmental Site Assessments which should identify quantities of any hazardous materials located at the proposed project site or in its immediate vicinity.[31]

8.9.2. Affected Environment

Construction of the projects proposed in this airport master plan would generate construction debris that would result in a temporary increase in the quantity of solid waste generated at the airport. Additionally, this debris may potentially contain hazardous materials such as asbestos or lead-based paint.

a. Identification of Contaminated Sites

The U.S. Environmental Protection Agency maintains a list of superfund sites that have known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States called the National Priorities List (NPL). According to this list, there are no sites located on airport property or in its immediate vicinity.[32]

According to the EPA's MyEnvironment online search application, there have not been any toxic releases to air, land, or water reported on airport property. However, this site did identify the Snake River Animal Shelter to be a Brownfield property because this location was operated as a landfill in 1968.[33] Brownfield sites are vacant or underutilized properties that may have been compromised by actual or perceived contamination.[34]

A review of the Idaho Department of Environmental Quality facility mapper revealed two reports of leaking underground storage tanks (LUST) on airport property. These include a storage tank owned by Aero Mark (Case 430) reported in 1992 and a storage tank owned by Delta Air Lines (Case 1285) reported in 1998. Both spills were cleaned up.[35]

A Phase 1 Environmental Site Assessment (ESA) of the east side retention basin, tree farm, RV parking, and community garden was completed July 2023 by North Wind Environmental Consulting Services. This report is included as **Appendix D: Phase I Environmental Site Assessment**. Small amounts of hazardous materials were present but stored properly, and one *de minimus* environmental condition was observed (an above ground storage tank, oil stained dirt, and bags of herbicide and fertilizer). No further environmental surveys were recommended for these sites.[36]

b. Identification of Solid and Hazardous Waste Disposal Capacity

The Peterson Hill Landfill serves as the sole municipal solid waste landfill for Bonneville County, and most construction and demolition debris is diverted to the Hatch Pit. As of 2008, the landfill currently accepted between 65,000 and 75,000 tons of waste per year and had a total projected life of approximately 150 years.[37]

8.9.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on hazardous materials, solid waste, and pollution prevention, impacts from construction and ongoing operations need to be examined. This includes determining the following:

- Describe the waste that would be generated from the construction and operation of the projects. This includes waste generated from the disturbance of hazardous materials at an existing contaminated site.
- Determine if the projects would impact the capacity of waste disposal facilities.
- Determine whether the projects would interfere with any ongoing remediation of existing contaminated sites at the proposed project site or in its immediate vicinity.

a. Hazardous Materials

- Identify types and quantities of any hazardous materials (e.g., oil, gasoline, or jet fuel) that would be used during construction and operation of the proposed projects or any waste generated from the disturbance of hazardous materials at an existing contaminated site, and describe how these hazardous materials would be stored, managed, and transported.
- Determine if any identified contaminated sites would be impacted by the proposed projects.
- Provide the locations of aboveground and underground storage tanks located in the area and if they would be used or potentially impacted by the proposed projects. Determine if waste disposal related to the projects would result in impacts to the capacity of disposal facilities.

b. Hazardous Waste

- Identify any hazardous waste that would be generated by construction and operation of the proposed projects, and describe how it would be stored, managed, and transported.
- Identify any on-site treatment, engineering, or administrative controls that may be applied to the hazardous waste encountered.

c. Solid Waste

- Identify the solid waste that would be generated by construction and operation of the proposed projects, and describe how it would be stored, managed, and disposed.

d. Pollution Prevention

- Describe any pollution prevention activities, plans, programs, or policies currently being undertaken or in effect that may be relevant to the proposed projects.
- Describe how pollution prevention plans or programs associated with the proposed projects would help avoid, prevent, or reduce pollutant discharges or emissions.
- Describe aspects of operations and waste generation from the proposed projects that could result in accidental discharges with the potential to negatively impact the environment.
- Describe appropriate pollution prevention planning measures that will be taken to address accidental discharges, and describe methods to be employed to control spills and any other unauthorized releases during construction and operation of the proposed projects.[38]

8.9.4. Significance Determination

The FAA has not established a significance threshold for hazardous materials, solid waste, and pollution prevention. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does identify the following factors to consider in evaluating potential impacts:

- The proposed project would have the potential to involve a contaminated site or violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials or solid waste management.
- The proposed project would generate a quantity or type of solid waste that would exceed local capacity.
- The proposed project would adversely affect human health and the environment.[39]

a. Potential Impacts

The projects proposed in this airport master plan are not expected to have a significant impact on hazardous materials, solid waste, and pollution prevention.

8.10. Historical, Architectural, Archeological, and Cultural Resources

8.10.1. Regulatory Setting

The National Historic Preservation Act (NHPA) established the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic Places within the National Park Service. In Idaho, these are administered by the Idaho State Historic Preservation Office. Resources eligible for inclusion in the National Historic Preservation Act are also covered by Section 106 of the National Historic Preservation Act and Section 4(f) of the U.S. Department of Transportation Act.

8.10.2. Affected Environment

A cultural resources survey was conducted by Preservation Solutions LLC and T-O Engineers in May 2019 as part of Airport Improvement Program project #3-16-0018-041-2016. This survey evaluated above-ground resources for the entire airport and two abutting properties which included Reed's Dairy and Swanson Farmstead.

a. Historical and Architectural Resources

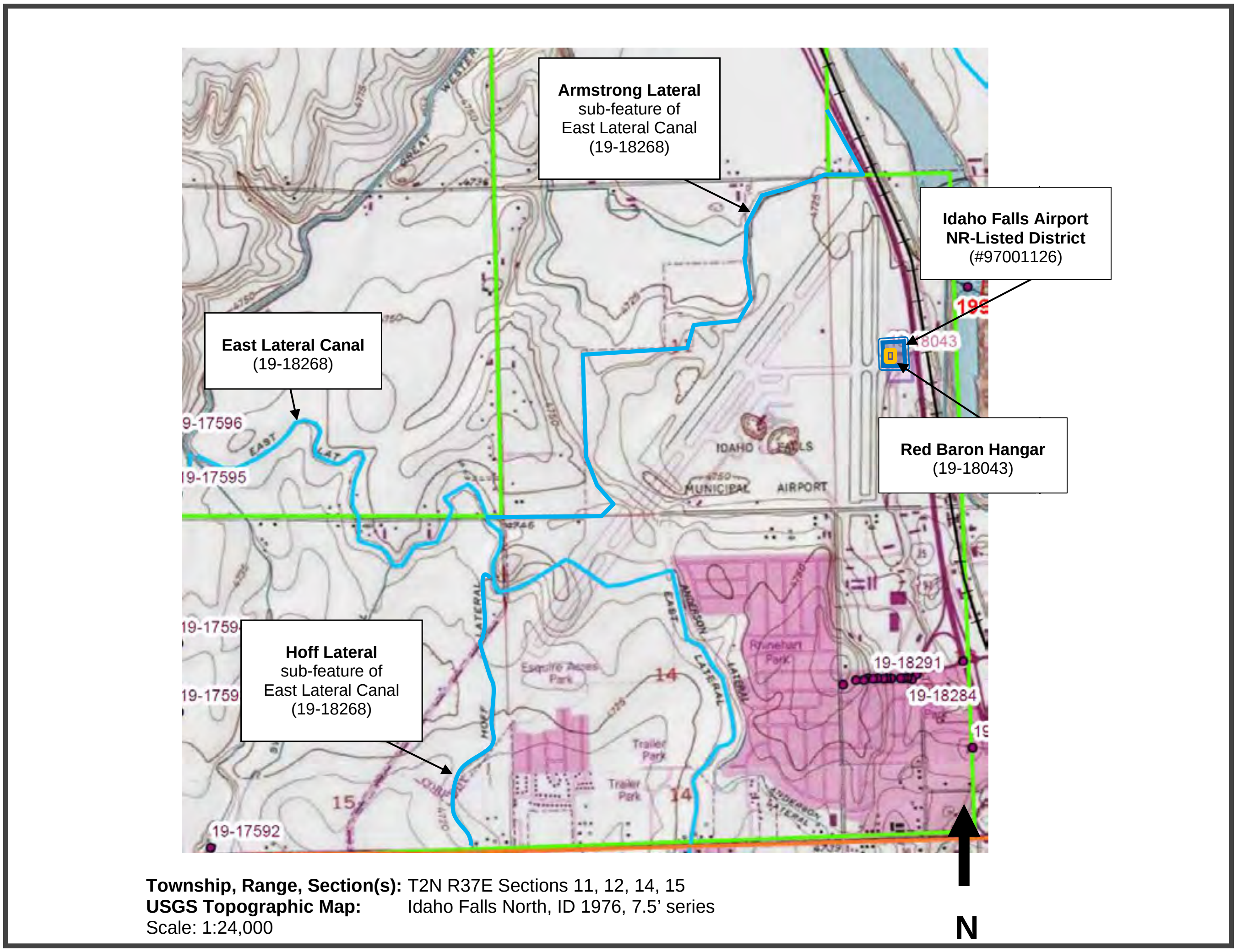
According to this survey, three properties in the survey area have been previously documented and found to be eligible for listing in the National Register of Historic Places (Table 8.7 and Figure 8.1).

Table 8.7: Previously Documented Historic Properties

Reference #	Property	Associations	Status
97001126	Idaho Falls Airport Historic Dist.	WPA, early-to-mid 20th century aviation	Listed
19-18043	Red Baron Hangar	WPA, early-to-mid 20th century aviation	Listed, contributing
19-18268	East Lateral Canal System	Early settlement	Eligible

Source: Preservation Solutions LLC, Idaho Falls Regional Airport Historic Resource Documentation.

Figure 8.1: Previously Documented Historic Properties



Source: Preservation Solutions LLC, Idaho Falls Regional Airport Historic Resource Documentation.

During the on-site investigation, an additional 24 resources were identified as potentially being eligible for listing in the National Register of Historic Places. These include a Craftsman-style farmhouse and two garages as well as a sub-lateral of the East Lateral Canal system located on the Reed's Dairy property; a sub-lateral of the East Lateral Canal system located on the Swanson Farm; three sub-lateral sections of the East Lateral Canal system located on airport property; and an additional 16 structures that are potentially eligible to be included as part of the NRHP-listed Idaho Falls Airport Historic District (Table 8.8 and Figure 8.2).[40]

Table 8.8: Potentially Eligible Idaho Falls Airport Historic District Structures

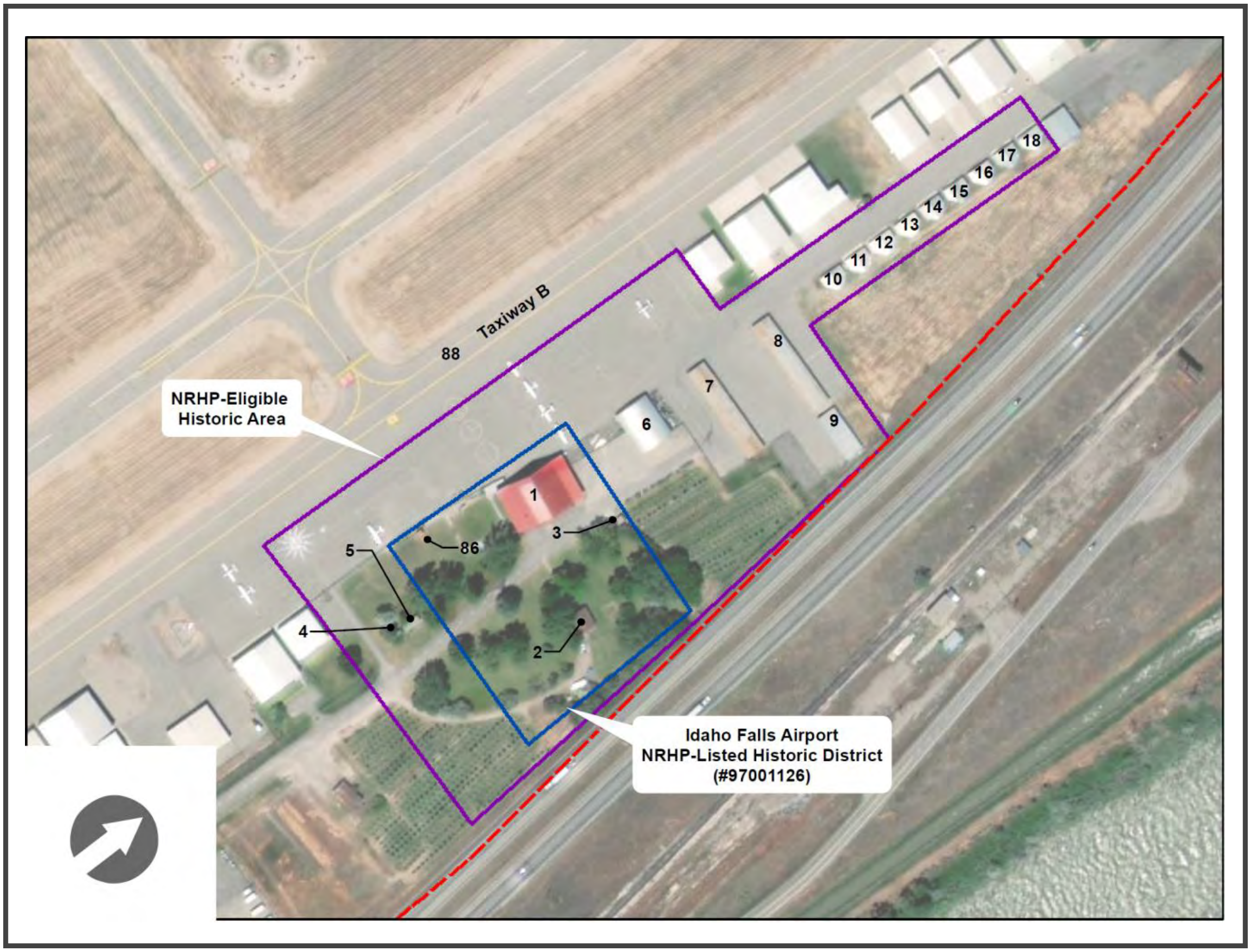
Resource #	Resource	Potential NRHP Eligibility	Date
03	Shed	Contributing	c.1940
04	Power Utility Bldg.	Contributing	c.1945
05	Water Well Shed	Contributing	c.1945
06	Shop	Contributing	c.1957
07	Six-bay Hangar	Contributing	c.1947
08	Six-bay Hangar	Contributing	c.1947
09	Two-bay Hangar	Contributing	c.1950
10	Single-bay Hangar	Contributing	c.1956
11	Single-bay Hangar	Contributing	c.1956
12	Single-bay Hangar	Contributing	c.1956
13	Single-bay Hangar	Contributing	c.1956
14	Single-bay Hangar	Contributing	c.1956
15	Single-bay Hangar	Contributing	c.1956
16	Single-bay Hangar	Contributing	c.1956
17	Single-bay Hangar	Contributing	c.1956
18	Single-bay Hangar	Contributing	c.1956

Source: Preservation Solutions LLC, Idaho Falls Regional Airport Historic Resource Documentation.

8.10.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on historical, architectural, archaeological, and cultural resources, both direct and indirect impacts from construction and ongoing operations need to be examined. This is determined through consultation with the State Historic Preservation Office (SHPO), the Tribal Historic Preservation Office (THPO), and other relevant agencies. When assessing effects, there are three possible outcomes: no historic properties affected, no adverse effect on historic properties, or adverse effect on historic properties.[41]

Figure 8.2: **Potentially Eligible Idaho Falls Airport Historic District Structures**



Source: Preservation Solutions LLC, Idaho Falls Regional Airport Historic Resource Documentation.

8.10.4. Significance Determination

The FAA has not established a significance threshold for historical, architectural, archeological, and cultural resources. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does state that a factor to consider in evaluating potential impacts is if a proposed action would result in a finding of Adverse Effect through the Section 106 process.[42]

a. Potential Impacts

West side development projects have the potential to impact sections of the Armstrong Lateral, East Lateral, and Hoff Lateral which are sub-features of the historic East Lateral Canal System.

8.11. Land Use

8.11.1. Regulatory Setting

Under the Airport Improvement Program, the FAA may not approve a grant for an airport development project unless the project is consistent with local land use plans. This section should assess the compatibility of land uses in the vicinity of the airport to ensure those uses do not adversely affect safe aircraft operations. This includes identifying any municipal solid waste landfills (40 CFR § 258.10), water management facilities, wildlife refuges, wetlands, or other land uses referenced in FAA Advisory Circular 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports* that have the potential to attract hazardous wildlife.

8.11.2. Affected Environment

As previously discussed in Section 4.2. Airport Zoning, and Section 6.10. Land Use, the city of Idaho Falls and Bonneville County are the two jurisdictions that control land use in the immediate areas surrounding the airport. The city's land use regulations designate airport property as Light Manufacturing and Heavy Commercial (LM) (Figure 4.14). Additionally, the city adopted an Airport Overlay Zone in 2019 to restrict incompatible uses from being located near the airport (Figure 4.12). This includes height zone limitations to protect the airport's Part 77 surfaces (Figure 4.13).

a. Wildlife Hazards

As previously discussed in Section 6.10.6. Wildlife Hazard Attractants, the airport completed a Wildlife Hazard Assessment (WHA) in 2003. The following potential wildlife attractants were identified in this assessment:

- Stormwater runoff at IDA collects in a retention basin located behind the National Oceanic and Atmospheric Administration (NOAA) Air Resources Laboratory between Foote Drive and Interstate Highway 15. The water collects into a standing body of water where it infiltrates into the soil. This standing body of water could be considered a wildlife attractant.
- The Hatch Pit is a landfill operated by Bonneville County. It is located approximately 6,000 feet, or 1.2 miles, northwest of IDA's aircraft operating area and northern approach corridor.
- The City of Idaho Falls Wastewater Treatment Plant is located approximately 2.8 miles south of the airport.

8.11.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on land use, both existing and future land uses must be examined. This includes determining if these projects would result in land uses that are incompatible with existing or future planned uses and assessing the compatibility of land uses in the vicinity of the airport to ensure those uses do not adversely affect safe aircraft operations.

8.11.4. Significance Determination

The FAA has not established a significance threshold for land use. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does state that the determination that significant impacts exist in the land use impact category is normally dependent on the significance of other impact categories. For example, if a proposed project included acquisition of property or noise impacts were associated with airport operations, the project could be considered to have a significant impact on land use.[43]

a. Potential Impacts

The projects proposed in this airport master plan are not expected to have a significant impact on land use.

8.12. Natural Resources and Energy Supply

8.12.1. Regulatory Setting

The Council on Environmental Quality (CEQ) requires federal agencies to consider energy requirements, natural depletable resource requirements, and the conservation potential of proposed projects.

8.12.2. Affected Environment

As previously discussed in Section 4.14, Utilities, the airport is located in a well-developed area with adequate access to water, sewer, power, and natural gas, and none of these resources are in short supply in the region.

a. Suppliers of Resources

The City of Idaho Falls is the airport's water and sewer service provider, Idaho Falls Power provides electricity, and Intermountain Gas Company provides natural gas service.

b. Consumption of Resources

Construction of the projects proposed in this airport master plan would likely result in a temporary increase in the airport's consumption of natural resources. These resources include a variety of construction materials, electricity, fuel, oil, and water. These resources are widely available in Bonneville County and the surrounding area, and construction of these projects is not expected to place an undue strain on supplies within the region.

Long-term operation and maintenance of these projects (e.g., terminal and cargo facility expansions) will likely permanently increase demands on water, electricity, and natural gas. These demands are expected to be met by existing infrastructure and are not expected to place an undue strain on supplies within the region.

8.12.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on natural resources and energy supply, impacts from construction as well as ongoing operations and maintenance need to be examined. This includes determining how a proposed project would increase demand for utilities servicing the area, fuel consumption, and consumable materials—especially scarce or unusual materials—in and around the study area.

8.12.4. Significance Determination

The FAA has not established a significance threshold for natural resources and energy supply. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does state that a factor to consider in evaluating potential impacts is if the action would have the potential to cause demand to exceed available or future supplies of these resources.[44]

a. Potential Impacts

The projects proposed in this airport master plan are not expected to have a significant impact on natural resources and energy supply.

8.13. Noise and Noise Compatible Land Use

8.13.1. Regulatory Setting

The Aviation Safety and Noise Abatement Act required the FAA to establish a single system for measuring aviation noise around airport communities that takes into account noise intensity, duration of exposure, frequency of operations, and time of occurrence as well as identifying land uses normally compatible with various noise exposures. As a result, the FAA determined that a person's cumulative exposure to noise resulting from aviation activities must be established in terms of day night average sound level (DNL).

This metric accounts for noise levels of individual aircraft operations, the number of times per day they occur, and when they occur by logarithmically averaging aircraft sound levels at a location during a complete 24-hour period. This metric applies a 10-decibel (dB) penalty to noise that occurs at night (i.e., between 10 p.m. and 7 a.m.). This penalty counts each operation occurring at night the same as ten daytime operations. The penalty attempts to correct for the fact that nighttime noise events are more disruptive than those generated during daytime hours when ambient noise levels are generally higher.

8.13.2. Affected Environment

Noise contours were developed for this airport master plan in order to identify current and future noise conditions. These noise contours were prepared using the FAA's software system, Aviation Environmental Design Tool (AEDT), for determining noise impacts. Figure 8.3 shows the current DNL noise contours based on 2021 operations while Figure 8.4 shows the future DNL noise contours based on operations forecast for 2041.

8.13.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on noise and noise compatible land use, both direct and indirect noise impacts that would occur as a result of construction and ongoing operation of these projects will need to be examined. This includes determining the following information:

- The number of residences located within each noise contour where aircraft noise exposure is at or above DNL 65 dB as well as the location and number of other noise sensitive uses such as schools, hospitals, parks, and recreation areas.
- The identification of noise sensitive areas within the DNL 60 dB contour that are exposed to aircraft noise at or above DNL 60 dB but below DNL 65 dB and are projected to experience a noise increase of DNL 3 dB or more.

Figure 8.3: 2021 Noise Contours

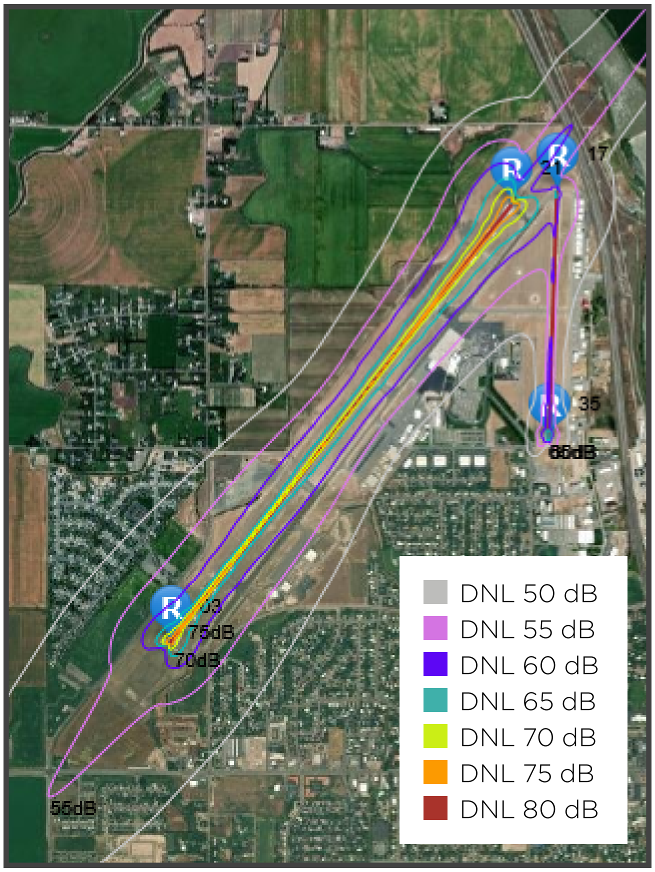
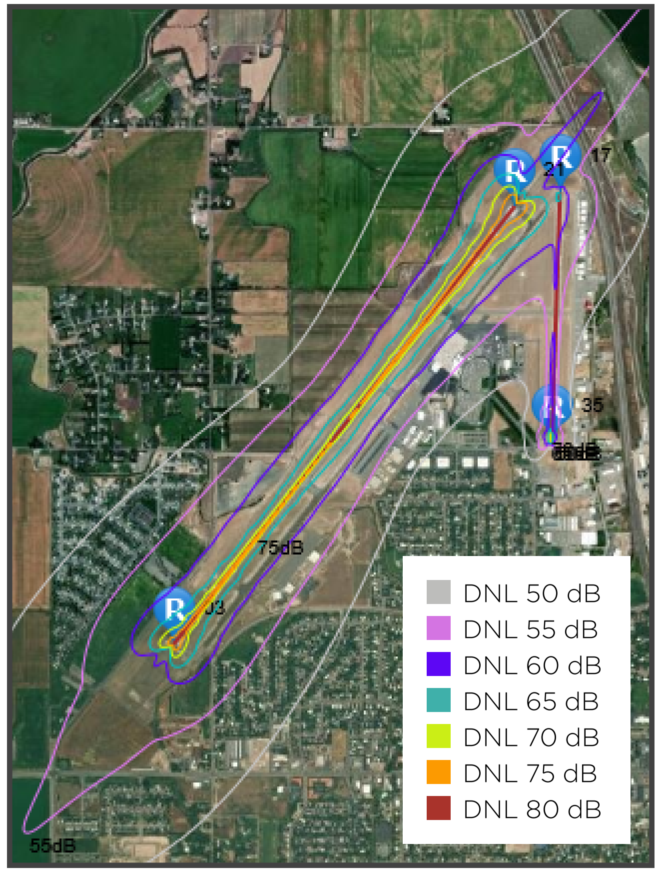


Figure 8.4: 2041 Noise Contours



Source: Ardurra.

8.13.4. Significance Determination

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if the action would have a significant impact on noise and noise-compatible land use is if, "*The action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.*"[45]

a. Potential Impacts

Both the current and future 65 dB DNL contours are contained entirely within airport property. Therefore, the projects proposed in this airport master plan are not expected to have a significant impact on noise and noise compatible land use.

8.14. Socioeconomics, Environmental Justice, and Children's Health & Safety Risks

8.14.1. Regulatory Setting

a. Socioeconomics

The Uniform Relocation Assistance and Real Property Acquisitions Policy Act is a federal law that establishes minimum standards for federally funded programs and projects that require the acquisition of real estate or displaces persons from their homes, businesses, or farms.

b. Environmental Justice

Title VI of the Civil Rights Act explicitly prohibits any discrimination in federally funded programs and projects, and Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, requires federal agencies to identify and address any disproportionately high and adverse health or environmental effects of proposed projects on minority and low-income populations.

c. Children's Health and Safety Risks

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires federal agencies to identify and assess environmental health or safety risks that may disproportionately affect children. This includes risks attributable to products a child might use or be exposed to or substances they are likely to come in contact with or ingest (e.g., air, food, water, soil).

8.14.2. Affected Environment

a. Socioeconomics

According to the U.S. Census Bureau, the city of Idaho Falls has a total population of 64,818 with a median age of 35. The median household income is $61,833, the employment rate is 60.3%, and the poverty rate is 10.8%.[46]

b. Environmental Justice

According to the U.S. Census Bureau, the population of the city of Idaho Falls is predominantly white and does not have a significant number of people considered to be an environmental justice population (Table 8.9).[47] In addition, it should be acknowledged that Idaho Falls Regional Airport is located on the traditional land of the Shoshoni and Bannock people and was ceded to the United States July 3, 1868, via land cession 520.[48] The City of Idaho Falls is grateful for the opportunities afforded on said land.

Table 8.9: City of Idaho Falls Race and Ethnicity Data

Race and Ethnicity	Population	Percentage
Total	64,818	100.00%
Population of one race	59,764	92.20%
White	52,860	81.55%
Black or African American	437	0.67%
American Indian and Alaska Native	833	1.29%
Asian	870	1.34%
Native Hawaiian and Other Pacific Islander	93	0.14%
Other Race	4,671	7.21%
Population of two or more races	5,054	7.80%

Source: U.S. Census Bureau, 2020.

c. Children's Health and Safety Risks

According to the U.S. Census Bureau, approximately 4,236 (6.3%) of the city of Idaho Falls population is less than five years of age, and approximately 16,912 (25.3%) is less than 18 years of age.[49]

Areas of particular concern for this impact category are schools, daycares, parks, and children's health clinics. According to the EPA's Environmental Justice Screening and Mapping Tool, EJSreen, there are no schools, daycares, or children's health clinics located on airport property or in its immediate vicinity.[50] As previously discussed in Section 8.7. Department of Transportation Act, Section 4(f), there are three parks and recreational areas located at or adjacent to the airport (Table 8.4).

8.14.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on socioeconomics, environmental justice, and children's health and safety risks, both direct and indirect impacts need to be examined. This includes identifying potential impacts that would occur as a result of operational changes and construction of these projects.

a. Socioeconomics

- Identify the effect the proposed project would have on economic activity, employment, income, poverty rates, population growth, housing, public services, and social conditions in the study area.
- In cases where the proposed project would result in relocation of local businesses, public services, or housing, estimate the number and characteristics of the individuals and families to be displaced; describe the impact on the affected neighborhood; and provide an indication of the ability of that neighborhood to provide adequate relocation housing for the families to be displaced.

b. Environmental Justice

- Determine if a low income or minority population will sustain more of the impact than any other population segment, or if they will experience impacts that are appreciably more severe or greater in magnitude than the rest of the population.

c. Children's Health and Safety Risks

- Determine if children will sustain more of the impact than any other population segment.
- Determine if the impacts suffered by children will be appreciably more severe or greater in magnitude than the adverse effects suffered by the rest of the population.

8.14.4. Significance Determination

a. Socioeconomics

The FAA has not established a significance threshold for socioeconomics. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does identify the following factors to consider in evaluating potential impacts.

The action would have the potential to:

- Induce substantial economic growth in an area.
- Disrupt or divide the physical arrangement of an established community.
- Cause extensive relocation when sufficient replacement housing is unavailable.
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities.
- Disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities.
- Produce a substantial change in the community tax base.
- When the action would result in significant impacts in other environmental impact categories and disproportionately affect an environmental justice population.
- When environmental impacts affect an environmental justice population in a way that the FAA determines to be unique or significant to that population.
- Lead to disproportionate health or safety risks to children.[51]

b. Environmental Justice

The FAA has not established a significance threshold for environmental justice. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does state that a factor to consider is if the action would have the potential to lead to disproportionately high and adverse impact to an environmental justice population (i.e., a low-income or minority population) or results in impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population.[52]

c. Children's Health and Safety Risks

The FAA has not established a significance threshold for children's health and safety risks. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does state that a factor to consider in evaluating potential impacts is if the action would have the potential to lead to a disproportionate health or safety risk to children.[53]

d. Potential Impacts

The projects proposed in this airport master plan are not expected to have an impact on socioeconomics, environmental justice populations, or children's health and safety.

8.15. Visual Effects

8.15.1. Regulatory Setting

There are no special purpose laws or requirements specific to light emissions or visual effects. However, some visual resources are protected under federal, state, or local regulations. Some of these protected visual resources include scenic roadways; Wild and Scenic Rivers; national scenic areas; scenic easements; trails protected under the National Trails System Act; biological resources; parks, recreation areas, wildlife, or waterfowl refuges; historic properties; and other features protected under other federal, state, or local regulations. Additional laws protecting resources that may be affected by visual effects include Section 106 of the National Historic Preservation Act, and Section 4(f) of the Department of Transportation Act as well as any state and local regulations, policies, and zoning ordinances that may apply.

8.15.2. Affected Environment

The airport is located in Idaho Falls which is a developed area with several existing light sources from surrounding commercial and residential land uses which contribute to the overall visual environment.

a. Light Emissions

The airport is currently equipped with several sources of light emissions which include airfield and apron lighting, visual navigational aids, terminal lighting, parking lot lighting, airborne and ground-based aircraft operations, and roadway lighting. These sources of light emissions are typical for airports and are essential to the safe and efficient movement of aircraft as well as the safety of vehicles and pedestrians using the airport.

b. Visual Resources and Visual Character

As previously discussed in Section 8.7, Department of Transportation Act, Section 4(f), there are three publicly owned parks and recreational areas located at or adjacent to the airport that could potentially be considered visually protected resources. There are also two historic sites and three potential historic sites located at or near the airport that could potentially be considered visually protected resources. These sites include the Idaho Falls Airport Historic District and portions of the East Lateral Canal System as well as a Craftsman-style farmhouse and two garages located on the Reed's Dairy property.

The visual character of the airport consists of various airside and landside facilities which include the runways, taxiways, apron areas, terminal building, parking lots, air cargo facility, aircraft hangars, fuel facilities, fixed base operator, and airport landscaping.

8.15.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on visual effects, both direct and indirect impacts from construction and ongoing operations need to be examined.

a. Light Emissions

Light emission impacts are typically related to the extent to which any lighting or glare associated with the proposed projects would create an annoyance for people in the vicinity and would interfere with their normal activities. When the potential for annoyance exists, information should be included in the analysis such as the location of lights or light systems, pertinent characteristics of the lighting (e.g., intensity, flashing sequence for strobe lighting) and its intended use (e.g., security lighting, runway lighting), and mitigation measures that could be implemented to lessen any annoyance such as shielding or angular adjustment.

b. Visual Resources and Visual Character

Visual resources and visual character impacts are typically related to a decrease in the aesthetic quality of an area resulting from development, construction, or demolition. Analysis of visual impacts considers whether the proposed projects would affect, obstruct, substantially alter, or remove visual resources including buildings, historic sites, or other landscape features that are visually important or have unique characteristics. When the potential to obstruct a visual resource exists, information should be included in the analysis such as how a project would alter the character and quality of views and the number of locations from which the resource can be viewed.

8.15.4. Significance Determination

The FAA has not established a significance threshold for light emissions or for visual resources and visual character. However, FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, does identify the following factors to consider in evaluating potential impacts.

The degree to which the proposed projects would have the potential to:

- Create annoyance or interfere with normal activities from light emissions.
- Affect the importance, uniqueness, or aesthetic value of the visual character of the area.
- Block or obstruct views of visual resources or contrast with the visual character of the area.[54]

a. Potential Impacts

West side development projects could have an impact on light emissions and visual character.

8.16. Water Resources

8.16.1. Regulatory Setting

a. Wetlands

Jurisdictional wetlands are federally protected under Section 404 of the Clean Water Act (CWA) which regulates the discharge of dredge or fill material into Waters of the United States, including wetlands. Under the Clean Water Act, the term wetlands means areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. This generally includes swamps, marshes, bogs, and similar areas, but does not include streams, reservoirs, and deep lakes or areas covered with water for such a short time that there is no effect on moist-soil vegetation.

b. Floodplains

Floodplains are lowland areas adjoining inland and coastal waters which are periodically inundated by flood waters. As part of the National Flood Insurance Program (NFIP), the Federal Emergency Management Agency established a mapping system known as the Flood Insurance Rate Map (FIRM) which is used to delineate floodplain areas within the United States. Flood hazard areas are identified on the Flood Insurance Rate Map as a Special Flood Hazard Area (SFHA). These areas are often discussed in terms of the 100-year flood. The 100-year flood is a flood having a 1% chance of occurring in any given year. The 100-year flood is also known as the base flood.

According to Executive Order 11988, *Floodplain Management*, federal agencies must avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of 100-year floodplains. This includes avoiding direct or indirect support of floodplain development wherever there is a practical alternative.

City of Idaho Falls Code, Title 10, Chapter 4, *Flood Control*, addresses local requirements for minimizing public and private losses related to flooding.

c. Surface Waters

Surface waters include streams, rivers, lakes, ponds, estuaries, and oceans as well as other waters on the surface of the ground that are not considered to be wetlands, floodplains, groundwater, or Wild and Scenic Rivers. Surface waters are federally protected under Section 303(d), Section 404, Section 401, and Section 402 of the Clean Water Act which regulate the discharge of pollutants into waters of the United States and established the National Pollutant Discharge Elimination System (NPDES) permit program. If a project disturbs one or more acres of land, the Idaho Department of Environmental Quality may also require an Idaho Pollution Discharge Elimination System (IPDES) permit.[55]

According to the September 2022 edition of the Idaho Falls Public Works *Engineering Design Policy Manual*, all storm drain systems that ultimately flow to an Irrigation District system must be approved of by the affected Irrigation District prior to City approval and acceptance.[56]

d. Groundwater

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

Under Idaho Code Section 39-120, the Idaho Department of Environmental Quality is designated as the agency responsible for coordinating and administering groundwater quality protection programs in Idaho.

According to the General Water Quality Rule of the Idaho Administrative Code (IDAPA 58.01.11), activities with the potential to degrade general resource aquifers shall be managed in a manner which maintains or improves existing groundwater quality through the use of best management practices and best practical methods to the maximum extent practical.

e. Required Permits

- A U.S. Army Corps of Engineers Section 404 permit may be required for projects involving the East Lateral, Armstrong Lateral, or Hoff Lateral.
- National Pollutant Discharge Elimination System and Idaho Pollution Discharge Elimination System permits may be required.

8.16.2. Affected Environment

a. Wetlands

According to the U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) map, there are two types of wetlands located on airport property. These include a 5.75-acre riverine habitat associated with the East Lateral, a 67.57-acre riverine habitat associated with the Armstrong Lateral, a 67.57-acre riverine habitat associated with the Hoff Lateral, and a 0.18-acre freshwater emergent wetland habitat located just south of the Aero Mark building at the end of Olympia Street.[57]

An aquatic resources delineation was conducted by T-O Engineers October 13, 2022. The area surveyed for this study is approximately 9.7 acres of airport property located northeast of the Foote Drive and International Way intersection. There is one drainage ditch and two depressional wetlands located within the study area that currently serve as stormwater basins. According to this report, the study area contains a total of 0.58 acres of palustrine emergent (PEM) wetlands and 0.08 acres of palustrine forested (PFO) wetlands. However, the drainage ditch and depressional wetlands are isolated from other Waters of the United States, and therefore may not be jurisdictional under Section 404 of the Clean Water Act.[58] A jurisdictional determination (JD) was requested from the U.S. Army Corps of Engineers (USACE) and these wetlands were found to be nonjurisdictional.[59]

b. Floodplains

According to the Idaho Falls floodplain map, the entire airport is located in Zone C which is an area of minimal flooding.[60]

c. Surface Waters

The following surface waters are located on airport property or in its immediate vicinity.

- The Snake River is located approximately 0.2 miles east of the airport.
- The airport is located within the New Sweden Irrigation District, and sections of the Hoff Lateral, Armstrong Lateral, and East Lateral are located on and adjacent to airport property.[61]
- Surface drainage at the airport terminates into two retention basins where the water infiltrates into the soil. No surface drainage enters the irrigation canals or the Snake River.

d. Groundwater

According to the Idaho Department of Water Resources (IDWR) Groundwater Quality map, there are six wells located on airport property. Two of these wells are located at the Old Butte Park and Soccer Complex, one is located at the apron in front of the rental car quick turnaround area (QTA), two are located at the Snake River Animal Shelter, and one is located in the infield west of the Runway 21 approach lighting system. Additional wells exist on potential land acquisition areas as well as on land recently acquired for Runway 21 approach protection east of the Snake River.[62]

The airport is located within the Eastern Snake Plain Aquifer (ESPA) region. The Eastern Snake River Plain Aquifer is a sole source, basalt aquifer that provides drinking water for approximately 200,000 people in southeastern and south-central Idaho.[63]

8.16.3. Environmental Consequences

To identify the potential impact the projects proposed in this airport master plan would have on water resources, both direct and indirect impacts need to be examined. This includes identifying potential impacts that would occur as a result of operational changes as well as construction of these projects.

a. Wetlands

- Describe how the proposed project would affect or alter the physical condition or function of any wetlands. This includes impacts resulting from any fill, excavation, or construction as well as draining, dredging, channelizing, filling, diking, impounding, or related activities.
- Determine if construction within a wetland could lead to loss of a wetland function such as natural flood control, resulting in increased flooding in the vicinity of the proposed project.
- Determine if the creation of a new impermeable surface such as a runway could lead to increased runoff and affect water quality in nearby wetlands.
- Determine if these impacts would fall under the terms and conditions of a Section 404 general permit.

b. Floodplains

- Describe the potential direct and indirect impacts to all floodplains identified within the project area that might result from construction of the proposed project (e.g., grading).
- Where appropriate, describe impacts on natural and beneficial floodplain values, water pollution, increased runoff from impermeable surfaces, or changes in hydrologic patterns.

c. Surface Waters

- Describe the potential direct impacts to all surface waters identified within the study area that might result from construction of the proposed project.
- Identify any indirect impacts that could occur from construction of the proposed project such as sedimentation or petrochemical spills that could reach surface waters and cause water quality issues.
- Describe any potential impacts that could occur from ongoing operation of the proposed project such as increased runoff from new impermeable surfaces or changes in hydrologic patterns that could affect water quality and hydrology in nearby surface waters.
- Determine if these impacts fall under the terms and conditions of a Section 404 permit.

d. Groundwater

- Describe the potential impact impervious surfaces, excavation, and construction would have on groundwater. This includes potential petrochemical spills from construction activities that could reach groundwater through infiltration and cause water quality issues.
- Describe how ongoing operation of the proposed project would affect groundwater.

8.16.4. Significance Determination

a. Wetlands

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on wetlands is if the action would:

- Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies including surface waters and sole source and other aquifers.
- Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected.
- Substantially reduces the affected wetland's ability to retain floodwaters or storm runoff.
- Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected wetlands.

b. Floodplains

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on floodplains is if, "The action would cause notable adverse impacts on natural and beneficial floodplain values." Natural and beneficial floodplain values are defined in Department of Transportation Order 5650.2, *Floodplain Management and Protection*.

c. Surface Waters

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on surface waters is if the action would:

- Exceed water quality standards established by federal, state, or local regulatory agencies.
- Contaminate public drinking water supply such that public health may be adversely affected.

d. Groundwater

According to FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the threshold for determining if an action would have a significant impact on groundwater is if the action would:

- Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies.
- Contaminate an aquifer used for public water supply such that public health may be adversely affected.[64]

e. Potential Impacts

A wetland delineation and mitigation measures may be required for projects involving the East Lateral, Armstrong Lateral, or Hoff Lateral.

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9 AIRPORT LAYOUT PLAN

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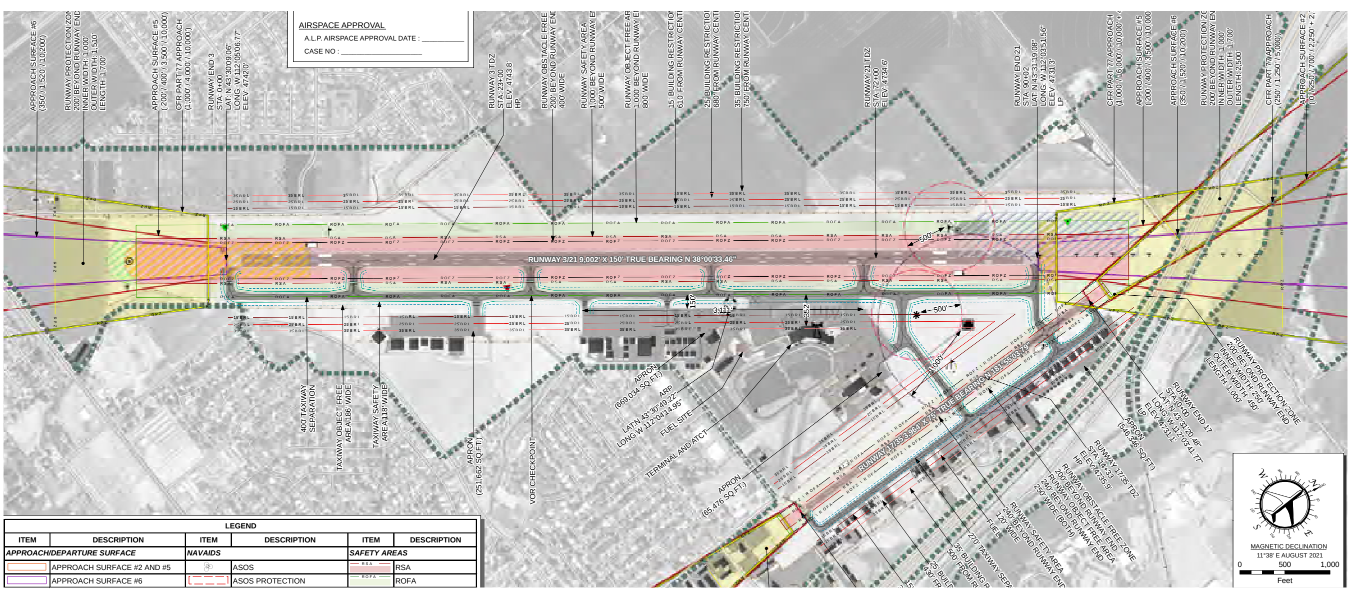
CHAPTER NINE

AIRPORT LAYOUT PLAN

The airport layout plan (ALP) is a set of drawings that depicts the current airport facilities and proposed development projects. Under the Airport and Airway Improvement Act of 1982, it is necessary for airport layout plans to be adopted by the sponsor as well as reviewed and accepted by the FAA for an airport to receive financial assistance. The airport is obligated by federal grant assurance requirements to follow its airport layout plan and keep it current. According to FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans,* the primary functions of the airport layout plan are:

- Create a blueprint for airport development to serve as a guideline for the airport sponsor which helps to ensure development maintains airport design standards and safety requirements and is consistent with airport and community land use plans.
- The airport layout plan is a public document that serves as a record of aeronautical requirements, both present and future, and as a reference for community deliberations on land use proposals and budget resource planning.
- The approved airport layout plan enables the airport sponsor and the FAA to plan for airport improvements. It also allows the FAA to anticipate budgetary and procedural needs. The approved airport layout plan will also allow the FAA to protect the airspace required for facility or approach procedure improvements.
- The airport layout plan can be a tool for the airport sponsor including development and maintenance staff.



9.1. Airport Layout Plan Drawing Set

This chapter describes each sheet included in the airport layout plan for Idaho Falls Regional Airport and the proposed improvements for the airport. It also describes information on major changes from the previous airport layout plan completed in 2022 by T-O Engineers. All layout drawings were produced using FAA standards defined in AC 150/5070-6B, *Airport Master Plans*, and AC 150/5300-13B, *Airport Design*. The airport layout plan also complies with FAA Airports Organization (ARP) Standard Operating Procedure (SOP) No. 2.00, *Standard Procedure for FAA Review and Approval of Airport Layout Plans*. The updated airport layout plan drawings for Idaho Falls Regional Airport are attached as **Appendix E: Airport Layout Plan and** include the following sheets.

- Sheet 1: Title Sheet
- Sheet 2: Airport Data Sheet
- Sheet 3A: Airport Layout Plan (Existing)
- Sheet 3B: Airport Layout Plan (Future)
- Sheet 4: Airport Airspace
- Sheet 5A: Runway 3/21 Profile
- Sheet 5B: Runway 17/35 Profile
- Sheet 6A: Inner Portion of the Approach Surface – Runway 3
- Sheet 6B: Inner Portion of the Approach Surface – Runway 21
- Sheet 6C: Inner Portion of the Approach Surface – Runway 17/35
- Sheet 7A: Runway Departure Surface – Runway 3/21
- Sheet 7B: Runway Departure Surface – Runway 35
- Sheet 8A: Terminal Area North
- Sheet 8B: Terminal Area South
- Sheet 9A: Off-Airport Land Use
- Sheet 9B: On-Airport Land Use (Future)
- Sheet 10: Photo and Contours
- Sheet 11A: Exhibit ‘A’
- Sheet 11B: Exhibit ‘A’ Data Table

9.2. Sheet 1: Title Sheet

The title sheet provides an index of the individual sheets in the airport layout plan set along with approval signature blocks, airport location and vicinity maps, title and revision blocks, and any other information requested by the FAA.

9.3. Sheet 2: Airport Data Sheet

The airport data sheet includes the wind roses, runway data table, airport data table, non-standard conditions table, declared distances table, and an abbreviations index. The data tables summarize critical information about current and future planned design and safety area dimensions for each runway.

9.4. Sheets 3A and 3B: Airport Layout Plan

These sheets are a graphical representation of existing and future proposed airport facilities. These drawings include aircraft operating areas (e.g., runways, taxiways, aprons), required facility identifications, description labels, runway protection zones, runway and taxiway safety areas, runway and taxiway object free areas, runway obstacle free zones, building restriction lines, and navigational aids. All features are shown as complying with the FAA design standards that correspond to the critical aircraft. This sheet also includes an area for the FAA signature of approval.

9.5. Sheet 4: Airport Airspace

The airport airspace drawing depicts the imaginary surfaces defined by 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*, and any objects penetrating those surfaces. It also includes an obstruction data table that lists each obstacle, the amount of each penetration, and its future disposition.

9.6. Sheets 5A and 5B: Runway Profile

The runway profile sheets depict a profile drawing that displays the centerline ground profile detail for Runways 3/21 and 17/35.

9.7. Sheets 6A-6C: Inner Portion of the Approach Surface

The inner portion of the approach surface sheets depict a top-down view of the inner approach surfaces for each runway end, critical ground profile for the inner approach of each runway end, and any obstructions to the inner approach surfaces.

9.8. Sheets 7A and 7B: Runway Departure Surfaces

These drawings depict the applicable departure surfaces for runway ends. There are no published standard instrument departures (SID) for Runway 17 due to environmental reasons. Therefore, there is no departure surface depicted at the south end of Runway 17.

9.9. Sheets 8A and 8B: Terminal Area

These sheets depict areas associated with existing and future general aviation and commercial aviation development. This includes the passenger terminal, air cargo, fixed base operator, hangar areas, tie-down parking areas, and vehicle parking areas.

9.10. Sheets 9A and 9B: Land Use

The land use drawings depict the on-airport and off-airport land uses associated with future airport development. These drawings also show the day-night average sound level (DNL) 65 decibel noise contour, runway protection zones, future property boundary of the airport, and any property to be acquired based on future runway protection zone limits and airport development.

9.11. Sheet 10: Photo and Contours

This sheet is a drawing that depicts two-foot and five-foot terrain contours of the land around the airport. These contours are used to identify possible terrain obstructions and penetrations of approach and departure surfaces. They are also used for planning construction and earthwork. The existing and proposed facilities, as well as the airport property boundary and safety areas, are also included for reference.

9.12. Sheets 11A and 11B: Exhibit 'A'

Sheet 11A is a drawing that depicts the airport property boundary and the various tracts of land that were acquired to develop the airport. Sheet 11B contains associated data tables that list how each track was acquired (i.e., source of funding) and if it has been sold. The Exhibit 'A' property map was prepared consistent with the Exhibit 'A' Review Checklist included in the FAA's Standard Operating Procedure No. 3.00, *Standard Operating Procedure (SOP) for FAA Review of Exhibit 'A' Airport Property Inventory Maps,* dated October 1, 2013. The creation of Exhibit 'A' required a boundary survey and record of survey compliant with Idaho Code, so this sheet is stamped by the licensed surveyor who oversaw that work.

9.13. Airport Layout Plan Changes

This section identifies the following significant changes from the previous airport layout plan completed by T-O Engineers and approved by the FAA in May 2022.

9.13.1. Taxiway B

The previous airport layout plan moves Taxiway B closer to Runway 17/35 to meet taxiway to runway separation standards. This airport layout plan does not show Taxiway B relocated because it is unlikely the FAA would fund a relocation of Taxiway B due to Runway 17/35 being ineligible for FAA funding.

9.13.2. Terminal Area

The previous airport layout plan shows a modest expansion of the terminal building to the south and no expansions of the parking lots. This airport layout plan depicts terminal expansions to the east and south, expansion of the parking lots, revisions to the terminal roadways, and expansion of the snow removal equipment building as well as the FedEx, rental car, and aircraft rescue and firefighting (ARFF) facilities being relocated.

9.13.3. West Side Development

The previous airport layout plan did not show any development on the west side of Runway 3/21. This airport layout plan shows a future parallel taxiway, air cargo facility, the airport traffic control tower (ATCT) relocation site, and land acquisition for future aviation development.

9.13.4. South Quad Development

The previous airport layout plan did not show any development in the south quad area. This airport layout plan shows future general aviation hangar development in the south quad area along with an expansion of the apron and the addition of a connector taxiway.

FINANCIAL ANALYSIS AND IMPLEMENTATION PLAN

10

FIGURES

TABLES

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CHAPTER TEN

IMPLEMENTATION

This chapter reviews planned capital improvement projects for Idaho Falls Regional Airport (IDA) 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. The facilities implementation plan provides guidance on when to implement the recommended improvements and includes rough order of magnitude cost estimates for each project. It also addresses the airport's planned capital improvement projects to ensure adequate funds, staff, and other resources are available. The cost estimates included in this chapter are based on general estimates of a project's cost as well as level of effort and are developed using unit costs and planning assumptions.

Projects identified through this airport master plan are depicted on the airport layout plan (ALP) which makes them eligible for FAA funding. Implementation of the 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 implementation. Not all projects eligible for FAA funding will receive FAA funding.

10.1. Capital Improvement Plan

Capital improvement projects differ from operations and maintenance (O&M) projects in that capital improvement projects often require substantial funding, can take multiple years to complete, and are typically planned several years in advance. Operations and maintenance projects consist of short-term expenses normally related to the routine maintenance, operation, and management of the airport. Capital improvement projects are normally large infrastructure improvements and can include runways, terminals, taxiways, and aprons. Certain types of equipment, such as snow removal equipment, firefighting or rescue trucks, and their associated storage buildings, may also be eligible for FAA and state funding assistance.

Airport master plans and airport layout plans (ALP) are typically updated every seven to ten years and larger development needs are justified through these planning efforts. However, based on the identified growth rate of the community at large and the airport itself, this airport master plan may need to be updated more often to address growth outside the parameters identified within this airport master plan. The projects identified during the planning process are added to the FAA's Airports Capital Improvement Plan by the airport sponsor during an annual review with the FAA. During this review, completed projects are removed, pending projects are refined, and new projects are added for future years. Once a project has been added to the Airports Capital Improvement Plan, depending on the priority of the project, it may take several years to schedule the funding. Projects that are related to safety and security are the highest priority for receiving federal funding.

10.2. Development Phasing Plan

The phasing plan is intended to help establish interrelationships between projects, determine a sequence to minimize conflicts, and ensure priorities are maintained. Implementation of projects is typically driven by future demand. However, in some cases, some projects can be undertaken at any point during the planning period.

It is important for the airport sponsor to plan projects well in advance. This helps ensure funding is available from the FAA, state, and airport sponsor. For airport sponsors that struggle with obtaining matching funds, this level of planning is especially important.

This phasing plan is divided into three planning activity levels (PAL), which are generally based on the federal fiscal year (October 1–September 30), and five functional areas of the airport. Projects are assigned an identifier based on airport functional area (T: Terminal, E: East Side, S: South Quad, W: West Side, and A: Airfield) and a project identification number that indicates the planned sequence. Actual project sequencing will be dependent on funding availability, aviation demand, passenger demand, local priorities, environmental findings, enabling project completion, and other factors that may occur within the planning horizon. The first planning activity level is the short-term planning period of one to five years (2025–2030) and ties projects to a specific federal fiscal year. Projects within planning activity level 1 are sufficiently justified and ready for environmental review, design, or construction. Planning activity level 2 represents the mid-term planning period of six to 10 years (2030–2034) and includes projects that are sufficiently justified but require projects in planning activity level 1 to first be completed or require a more robust environmental review. Projects in planning activity level 2 may advance or recede within the planning period. Planning activity level 3 represents the long-term planning period from 2035 through 2042 and includes projects that are not assigned a specific fiscal year for completion.

Rough order of magnitude (ROM) cost estimates are included for each project with costs based on 2024 prices and dollar values. Design costs are estimated as a percentage of the construction cost and include limited environmental reviews such as a categorical exclusion (CatEx). If a more extensive environmental review is anticipated, such as an environmental assessment, they are listed as a separate project. Land acquisition cost estimates include appraisal services and assume a land value of $64,000 per acre based on a 2024 appraisal.

10.2.1. Planning Activity Level 1 Development

Projects included in planning activity level 1 are listed in Table 10.1. Major projects in this planning activity level include an expansion of the terminal building, construction of a new airport traffic control tower (ATCT), rehabilitation of Runway 3/21, pavement rehabilitation, and design work related to a new parking garage, parking lots, and a road realignment.

Table 10.1: Planning Activity Level 1 Development Projects

Project ID	Project Description	Cost Estimate
Terminal Area Development		
T-1	deicing pad design and construction	$2,473,684
T-2	cargo apron rehabilitation	$3,946,667
T-3	commercial apron rehabilitation	$6,473,684
T-4	parking garage design	$1,688,720
T-5	Skyline Drive rehabilitation design	$138,422
T-6	Federal Way relocation design	$45,476
T-7	parking lot expansion design	$595,987
T-8	terminal expansion: Priority 1A and administration building	$100,816,442
T-9	convert economy 2 to quick turnaround area	$8,551,700
T-10	FedEx apron expansion design	$169,443
T-11	FBO apron pavement maintenance	$266,667
East Side Development		
E-1	retention basin improvements (design)	$62,591
E-2	north hangar environmental assessment, design, and construction	$1,045,333
E-3	central hangar and taxilane design	$37,927
E-4	Runway 17/35 rehabilitation design	$178,695
E-5	Taxiway B rehabilitation design	$213,333
E-6	apron and taxilane pavement maintenance	$266,666
South Quad Development		
S-1	hangar and taxilane design Phase 1	$2,912,000
S-2	Taxiway G and general aviation apron expansion design	$284,272
S-3	apron and taxilane pavement maintenance	$266,666
S-4	aircraft rescue and fire fighting relocation (design)	$476,577
S-5	land acquisition (Reed)	$1,300,000
West Side Development		
W-1	parallel Taxiway K environmental assessment	$400,000
W-2	land acquisition of parcel 44 environmental assessment	$450,000
Airfield Development		
A-1	Runway 3/21 rehabilitation	$20,168,421
A-2	relocate VOR (design)	$220,000
A-3	acquire snow removal equipment (blower)	$842,105
A-4	install runway weather information system	$526,316
A-5	acquire snow removal equipment (plow and deicer)	$1,000,000
A-6	relocate airport traffic control tower (construction)	$15,000,000
A-7	land acquisition (Peterson)	$3,789,474
	Planning Activity Level 1 Total Costs	**$174,607,248**

10.2.2. Planning Activity Level 2 Development

Projects included in planning activity level 2 are listed in Table 10.2. Major projects continued from planning activity level 1 include the expansion of the terminal building and construction of terminal area infrastructure. West side development begins with construction of parallel Taxiway K. At the south quad, phase 1 of general aviation infrastructure development begins which will result in additional hangars and apron expansion for aircraft parking. On the east side of the airport, Runway 17/35 receives a pavement rehabilitation.

Table 10.2: Planning Activity Level 2 Development Projects

Project ID	Project Description	Cost Estimate
Terminal Area Development		
T-12	snow removal equipment building expansion design & construction	$5,469,715
T-13	parking garage construction	$21,109,000
T-14	Skyline Drive construction	$1,730,272
T-15	Federal Way construction	$568,454
T-16	parking lot construction	$9,728,623
T-17	terminal expansion: Priority 1a Phase 4, 1b, and 2a	$52,398,323
T-18	conversion of rental car area to apron (design and construction)	$2,118,042
T-19	FBO north apron design and construction	$2,249,649
T-20	FBO south apron pavement maintenance	$268,141
T-21	cargo and commercial apron pavement maintenance	$489,269
T-22	quick turnaround area pavement maintenance	$134,094
T-23	deicing pad pavement maintenance	$99,478
East Side Development		
E-7	retention basin construction	$782,384
E-8	central hangar and taxilane construction	$474,092
E-9	north hangar taxilane construction	$544,997
E-10	Taxiway B rehabilitation construction	$2,243,479
E-11	south hangar and taxilane design	$66,463
E-12	Runway 17/35 rehabilitation construction	$2,233,682
E-13	apron and taxilane rehabilitation (design and construction)	$1,161,973
South Quad Development		
S-6	aircraft rescue and fire fighting relocation (construction)	$5,957,213
S-7	Taxiway G and general aviation apron expansion (construction)	$3,553,402
S-8	hangar and taxilane design Phase 2	$151,031
S-9	apron and taxilane rehabilitation design and construction	$1,408,776
West Side Development		
W-3	parallel Taxiway K (design)	$1,027,460
W-4	air cargo apron (design)	$598,275
W-5	land acquisition of parcel 44	$1,113,600
W-6	parallel Taxiway K (construction)	$12,843,246
Airfield Development		
A-8	Runway 3/21 pavement maintenance	$1,151,069
A-9	Taxiway C rehabilitation design	$65,795
A-10	Taxiway A rehabilitation design	$333,625
A-11	relocate VOR construction	$2,750,000
A-12	acquire snow removal equipment (plow and deicer)	$800,000
A-13	acquire aircraft rescue and fire fighting vehicle	$1,000,000
	Planning Activity Level 2 Total Cost	**$136,815,022**

10.2.3. Planning Activity Level 3 Development

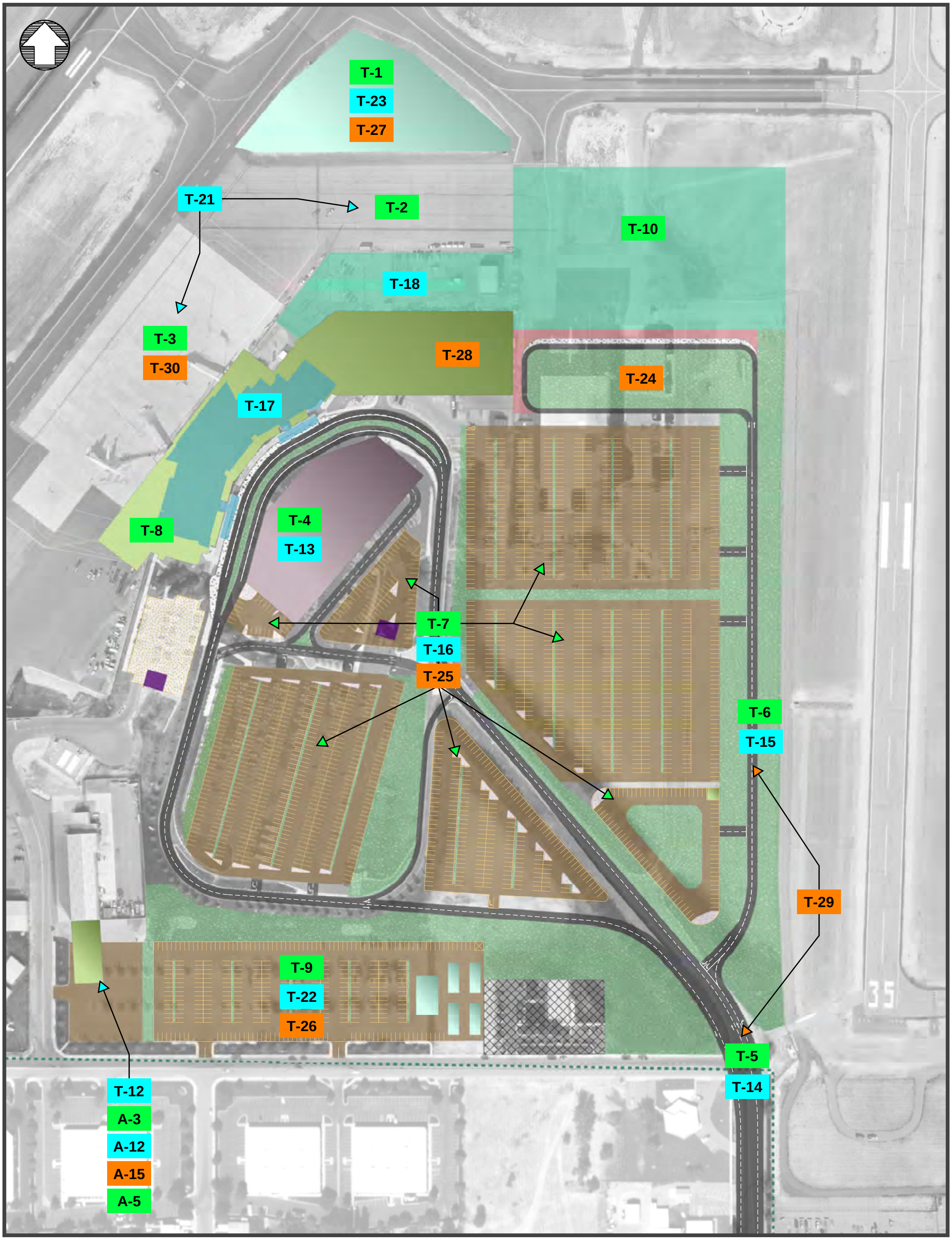
Projects included in planning activity level 3 are listed in Table 10.3. Major projects in this planning activity level include another terminal expansion, pavement maintenance projects across the airfield, and additional infrastructure at the south quad for general aviation development.

Table 10.3: Planning Activity Level 3 Development Projects

Project ID	Project Description	Cost Estimate
Terminal Area Development		
T-24	transit station planning, design, and construction	$4,420,132
T-25	parking lot pavement maintenance	$3,692,349
T-26	quick turnaround area pavement maintenance	$134,094
T-27	deicing pad pavement maintenance	$99,478
T-28	terminal expansion: Priority 2b design and construction	$43,233,300
T-29	Skyline Drive and Federal Way pavement maintenance	$218,221
T-30	commercial apron rehabilitation	$4,600,780
T-31	FBO apron pavement maintenance	$2,258,325
East Side Development		
E-14	south hangar and taxilane construction	$830,785
E-15	Taxiway B pavement maintenance	$212,875
E-16	Runway 17/35 pavement maintenance	$211,946
E-17	apron and taxilane pavement maintenance	$221,451
South Quad Development		
S-10	hangar and taxilane construction Phase 2	$1,887,892
S-11	apron and taxilane pavement maintenance	$606,622
West Side Development		
W-7	air cargo apron construction	$7,478,444
W-8	Old Butte Road environmental	$600,000
W-9	Taxiway K pavement maintenance	$513,875
W-10	cargo apron pavement maintenance	$254,586
Airfield Development		
A-14	Runway 3/21 pavement maintenance	$1,151,069
A-15	Taxiway A and Taxiway C rehabilitation construction	$4,992,745
A-16	acquire snow removal equipment	$1,000,000
	Total PAL 3	**$78,618,969**

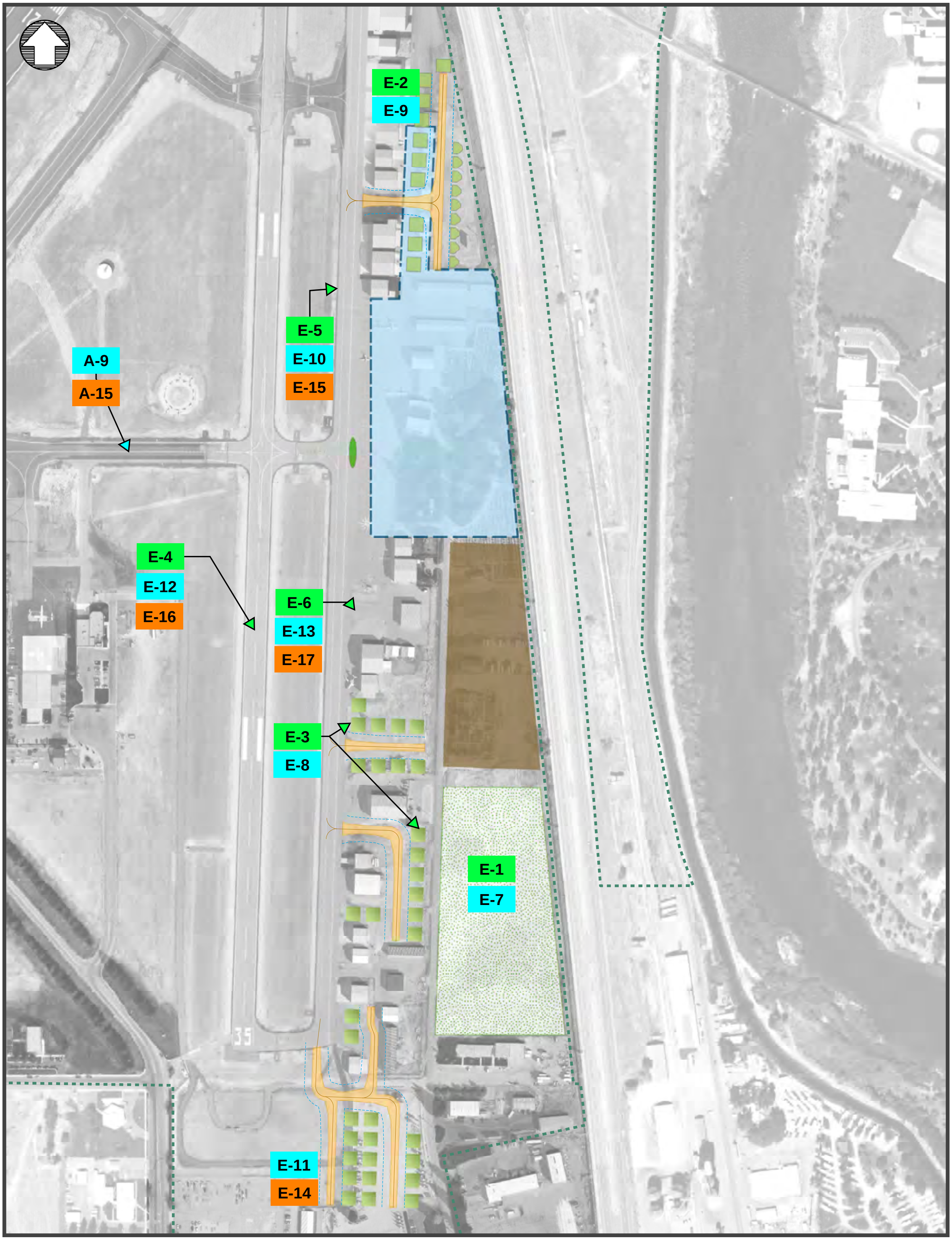
Figure 10.1, Figure 10.2, Figure 10.3, and Figure 10.4 depict the projects located within each of the functional areas with the project identification numbers corresponding to project location.

Figure 10.1: Terminal Area Development Plan



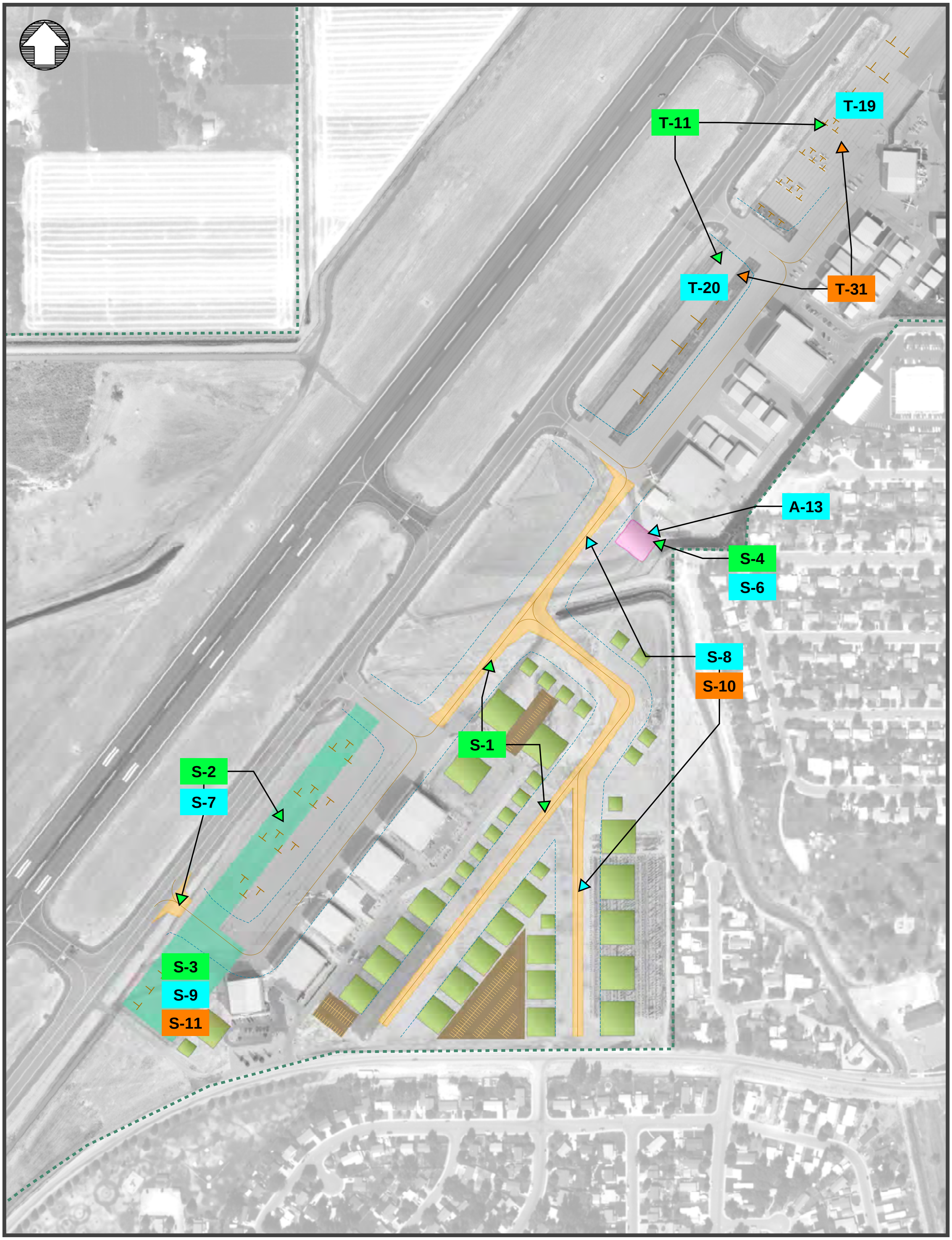
Source: Ardurra

Figure 10.2: East Side Development Plan



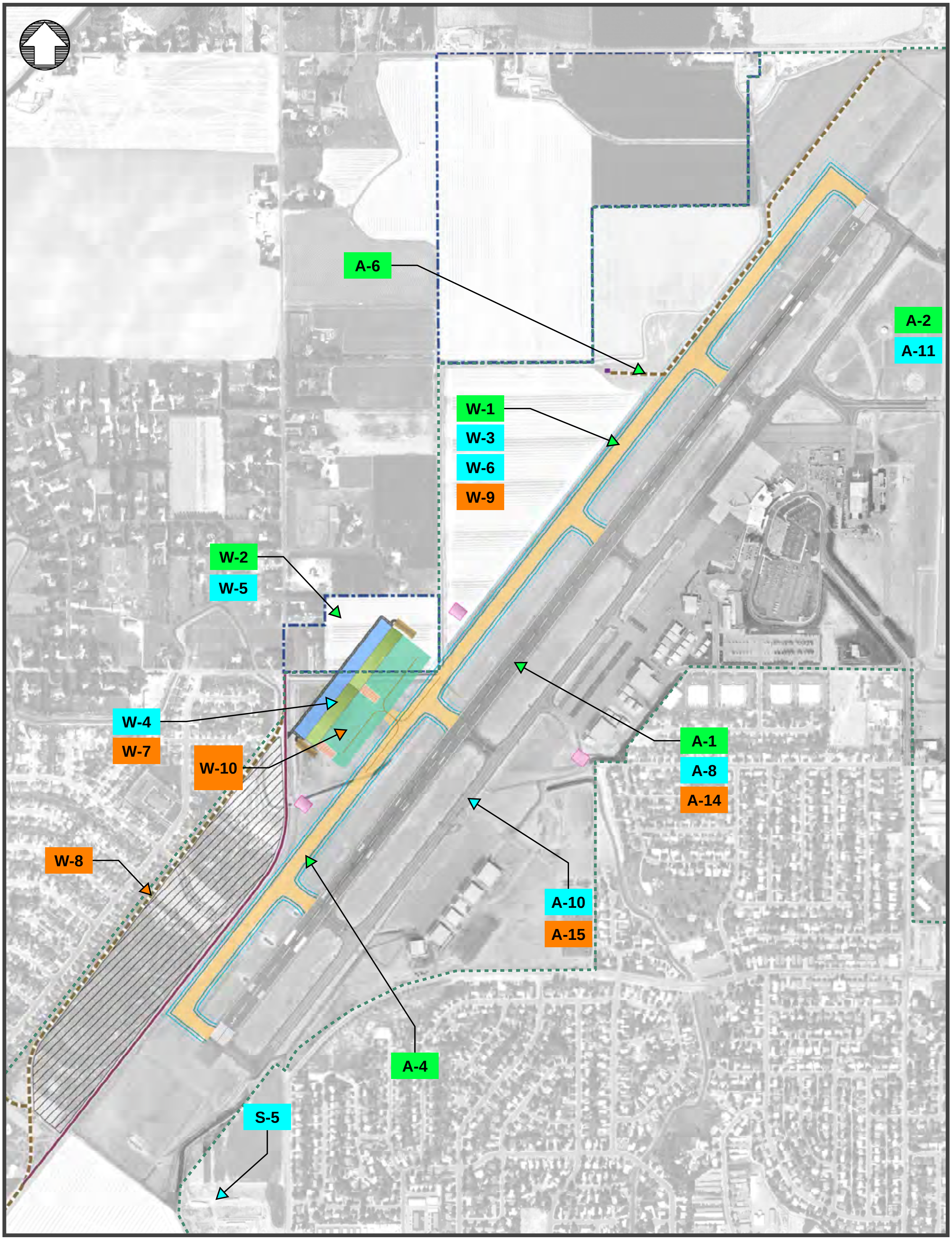
Source: Ardurra

Figure 10.3: South Quad Development Plan



Source: Ardurra

Figure 10.4: West Side Development Plan



Source: Ardurra

10.2.4. Functional Area Summary

Table 10.4 summarizes the rough order of magnitude cost estimates for each planning activity level within each airport functional area. The total estimated cost of the capital improvement plan is $390,041,239. Approximately 80% of the total cost is associated with multiple terminal expansions ($194,448,065) and pavement projects ($112,693,822).

Table 10.4: Functional Area Summary

PAL	Project Highlights	Cost Estimate
Terminal Area Development		
PAL 1	Terminal expansion, parking and garage design, road design	$125,166,892
PAL 2	Terminal expansion, SRE expansion, parking, road, garage construction	$96,363,060
PAL 3	Terminal expansion, transit station construction, pavement maintenance	$58,656,679
	Terminal Area Development Total	**$280,186,631**
East Side Development		
PAL 1	Runway 17/35, Taxiway B, and hangar design, pavement maintenance	$1,804,545
PAL 2	Runway 17/35, Taxiway B, hangar, and retention basin construction	$7,507,070
PAL 3	South hangar construction, pavement maintenance	$1,477,057
	East Side Development Total	**$10,788,672**
South Quad Development		
PAL 1	Apron expansion, ARFF relocation, hangar design Phase 1, land acquisition	$5,239,515
PAL 2	Apron expansion, ARFF relocation, and hangar construction	$11,070,422
PAL 3	Hangar construction Phase 2, pavement maintenance	$2,494,514
	South Quad Development Total	**$18,804,451**
West Side Development		
PAL 1	Parallel Taxiway K and land acquisition environmental assessments	$850,000
PAL 2	Parallel Taxiway K design and construction, air cargo design, land acquisition	$15,773,981
PAL 3	Air cargo construction, Old Butte Road environmental assessment	$8,846,905
	West Side Development Total	**$25,470,886**
Airfield Development		
PAL 1	Runway 3/21 rehabilitation, ATCT construction, land acquisition, acquire SRE	$41,546,316
PAL 2	Taxiways A/C design, relocate VOR, acquire SRE and ARFF	$6,100,489
PAL 3	Taxiways A/C construction, pavement maintenance, acquire SRE	$7,143,814
	Airfield Development Total	**$54,790,619**
	Total Cost	**$390,041,259**

Source: Ardurra

Table 10.5 lists the potential funding sources associated with planning activity level projects. Rough order of magnitude cost estimates are an approximation and are designed to provide a starting point for financial planning. Many factors may affect these estimates such as inflation or changes in unit pricing. It is recommended that estimates are updated as projects move closer to implementation.

Table 10.5: Planning Activity Level 1 Potential Funding Sources

Phasing Sequence	Project	Federal			PFC	Local/ Private/CFC	Total Cost
		Entitlement	Discretionary	BIL			
T-1 (2026)	deicing pad design and construction	$1,650,000	$700,000	$0	$123,684	$0	$2,473,684
T-2 (2029)	cargo apron rehabilitation	$1,500,000	$2,200,000	$0	$246,667	$0	$3,946,667
T-3 (2025-2026)	commercial apron rehabilitation	$450,000	$5,700,000	$0	$323,684	$0	$6,473,684
T-4 (2026)	parking garage design	$0	$0	$0	$0	$1,688,720	$1,688,720
T-5 (2027)	Skyline Drive rehabilitation design	$0	$0	$0	$0	$138,422	$138,422
T-6 (2027)	Federal Way relocation design	$0	$0	$0	$0	$45,476	$45,476
T-7 (2028)	parking lot expansion design	$0	$0	$0	$0	$595,987	$595,987
T-8a (2025-2026)	terminal expansion Phase 1	$2,000,000	$0	$30,076,091	$17,677,310	$17,500,000	$67,253,401
T-8b (2027)	terminal expansion Phase 2	$0	$0	$17,200,000	$2,659,649	$0	$19,859,649
T-8c (2027)	terminal expansion Phase 3	$0	$0	$10,200,000	$1,503,392	$0	$11,703,392
T-8d (2027)	terminal expansion: admin. building	$0	$1,875,000	$0	$0	$125,000	$2,000,000
T-9 (2029)	convert economy 2 to QTA	$0	$0	$0	$8,551,700	$0	$8,551,700
T-10 (2029)	FedEx apron expansion design	$158,853	$0	$0	$0	$10,590	$169,443
T-11 (2028)	FBO apron pavement maintenance	$250,000	$0	$0	$16,667	$0	$266,667
E-1 (2026)	retention basin improvements	$0	$59,461	$0	$0	$3,130	$62,591
E-2a (2028)	north hangar EA	$255,000	$0	$0	$17,000	$0	$272,000
E-2b (2029)	north hangar construction	$725,000	$0	$0	$48,333	$0	$773,333
E-3 (2026)	central hangar and taxilane design	$0	$0	$0	$0	$37,927	$37,927
E-4 (2027)	Runway 17/35 rehabilitation design	$0	$0	$0	$0	$178,695	$178,695
E-5 (2028)	Taxiway B rehabilitation design	$200,000	$0	$0	$13,333	$0	$213,333
E-6 (2028)	apron pavement maintenance	$250,000	$0	$0	$16,666	$0	$266,666
S-1 (2027-2028)	hangar and taxilane design Phase 1	$2,180,000	$550,000	$0	$182,000	$0	$2,912,000
S-2 (2028)	Taxiway G and GA apron expansion	$266,505	$0	$0	$0	$17,767	$284,272

Phasing Sequence	Project	Federal			PFC	Local/ Private/CFC	Total Cost
		Entitlement	Discretionary	BIL			
S-3 (2028)	apron pavement maintenance	$250,000	$0	$0	$16,666	$0	$266,666
S-4 (2027)	ARFF relocation	$446,791	$0	$0	$0	$29,786	$476,577
S-5 (2027)	land acquisition (Reed)	$0	$1,235,000	$0	$0	$65,000	$1,300,000
W-1 (2030)	Taxiway K environmental assessment	$380,000	$0	$0	$20,000	$0	$400,000
W-2 (2028)	land acquisition EA	$421,875	$0	$0	$0	$28,125	$450,000
A-1a (2025)	Runway 3/21 rehabilitation	$750,000	$0	$0	$0	$50,000	$800,000
A-1b (2029)	Runway 3/21 rehabilitation (design)	$750,000	$0	$0	$39,474	$0	$789,474
A-1c (2030)	Runway 3/21 rehabilitation	$2,800,000	$14,850,000	$0	$928,947	$0	$18,578,947
A-2 (2026)	relocate VOR (design)	$0	$209,000	$0	$0	$11,000	$220,000
A-3 (2027)	acquire snow removal equipment	$0	$800,000	$0	$42,105	$0	$842,105
A-4 (2030)	install runway weather system	$0	$500,000	$0	$26,316	$0	$526,316
A-5 (2026)	acquire snow removal equipment	$950,000	$0	$0	$50,000	$0	$1,000,000
A-6 (2026)	relocate airport traffic control tower	$0	$0	$15,000,000	$0	$0	$15,000,000
A-7 (2028)	land acquisition (Peterson)	$0	$3,600,000	$0	$189,474	$0	$3,789,474
	Total	**$16,634,024**	**$32,278,461**	**$72,476,091**	**$32,693,067**	**$20,525,625**	**$174,607,268**

Notes: BIL includes BIL-AIG, BIL-ATP, and BIL-FCT

10.3. 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. This section identifies some of the more common funding sources used for airport projects.

10.3.1. Airport Improvement Program

The Airport Improvement Program (AIP) provides grants for eligible planning and development projects at National Plan of Integrated Airport Systems (NPIAS) airports. Eligible projects include those related to airport safety, capacity, security, and environment. Airport Improvement Program grants may come from the following sources:

Passenger Entitlements

These are based on enplanements from the previous calendar year. The IDA passenger entitlement for fiscal year 2023 was $1,935,994.

Cargo Entitlements

These are based on an airport's share of total landed cargo weight when the annual landed weight exceeds 100 million pounds by cargo-only aircraft.

Discretionary

These are distributed for individual projects based on funding availability and national priority. Airport sponsors may apply for supplemental discretionary grant funds through a notice of funding opportunity (NOFO) issued by the FAA.

State Apportionment

This is money set aside to the state for non-primary commercial and general aviation airports based on each state's population and land area. At IDA, the FAA normally provides 93.75% of the total eligible cost of a project, with the airport providing the remainder in matching funds, typically through passenger facility charges (PFC). The FAA Reauthorization Act of 2024 increased the FAA share of eligible costs to 95% for federal fiscal years 2025 and 2026. For discretionary grants, the FAA conducts a benefit-cost analysis (BCA) for grants exceeding $10 million during the life of the project and for projects that increase airport capacity. IDA is a primary commercial service airport and is not expected to reach 100 million pounds of annual cargo landed weight so cargo entitlements and state apportionment are not expected to be funding sources.

10.3.2. Bipartisan Infrastructure Law

The Infrastructure Investment and Jobs Act of 2021 (IIJA), also referred to as the bipartisan infrastructure law (BIL), provided $25 billion in funding for the National Airspace System. These funds are from the General Treasury and the FAA provides 93.75% of the eligible cost of projects at IDA. Under the bipartisan infrastructure law, all airports in the NPIAS received Airport Infrastructure Grant (AIG) entitlement funds for five years (fiscal year 2022 through fiscal year 2026). Funds are available for four years beginning in the federal fiscal year the funds are allocated. Allocation for these funds is based on enplanements from the previous calendar year for primary commercial service airports. For IDA, the allocations for fiscal 2022, 2023, and 2024 were $1,806,687, $2,025,358, and $2,594,046, respectively.

Bipartisan Infrastructure Law – Airport Terminals Program

The Bipartisan Infrastructure Law – Airport Terminals Program (BIL-ATP) provides competitive grants for airport terminal projects and for relocating or repairing an airport-owned airport traffic control towers (ATCT). Application requirements for BIL-ATP grants are based on criteria explained in a NOFO issued by the FAA. Recipients of BIL-ATP grants are based on how well a project scores in the areas of accessibility, sustainability, efficiency, safety, and job creation. IDA received a $5.2 million grant under this program for fiscal year 2023 to expand the terminal ticketing, bag screening, hold room, passenger exit, and restroom areas as well as to improve energy efficiency. The 2023 BIL-ATP grant for IDA was provided by the FAA at 95% of eligible costs.

The FAA Contract Tower Competitive Grant is a BIL-AIG program intended to modernize sponsor-owned contract towers participating in the federal contract tower (FCT) program and the contract tower cost share program. Like BIL-ATP competitive grants, FAA Contract Tower Competitive Grants are based on requirements outlined in a NOFO issued by the FAA. IDA received a $1.5 million grant under this program for fiscal year 2022 to conduct a siting study, environmental review, and design of an airport traffic control tower relocation project.[1] The 2022 grant was provided by the FAA at 100% of eligible project costs.

10.3.3. Passenger Facility Charge

In 1990, congress passed legislation authorizing passenger facility charges (PFC) as part of the Aviation Safety and Capacity Expansion Act of 1990. This allowed airports to impose a fee of up to $3.00 per passenger. Some of the important provisions under the act were:

- Passenger facility charges will be collected by the air carrier.
- At airports where passengers enplaned an aircraft, passenger facility charges are limited to no more than two charges on each leg of a round trip.
- Revenue from passenger facility charges must be spent at the designated airport that imposed the fee.
- Revenue from passenger facility charges may be used to finance the allowable costs of approved projects. This includes airport planning and development projects eligible for Airport Improvement Program funding and noise compatibility plans and measures.

In 2000, the Wendell H. Ford Aviation Investment and Reform Act for the Twenty-First Century was signed into law. This increased levels of funding for aviation investments and increased the maximum passenger facility charge from $3.00 to $4.50. IDA currently charges air carriers the maximum charge of $4.50.

10.3.4. Customer Facility Charge

A customer facility charge (CFC) is a user fee imposed by an airport on each rental car user that is collected by rental car companies. Car rental revenues are a substantial revenue source and one of the largest nonaeronautical revenue sources for smaller airports. Customer facility charge funds can be used as capital and for financing costs related to the development and operation of rental car facilities such as a quick turnaround area (QTA) as well as buses or shuttles and roadways to and from rental car facilities. IDA currently charges $2.50 per rental car transaction per day.

10.3.5. Local Funding

Local funds are derived from income generated by the operation of the airport through leases and user fees or contributions by the sponsoring agency. Local funds are used to match grants that do not cover 100% of project costs and to fund the operation, maintenance, and administration of the airport.

Interdepartmental loans are another funding source used by the airport. IDA has entered into agreements with the City of Idaho Falls enterprise fund to secure loans to acquire land for approach protection with an expectation that FAA grants will be used to repay the loans.

10.3.6. Bond Proceeds

Airports can also obtain financing for infrastructure projects by issuing bonds. Airport bonds involve leveraging future funding to pay for projects. This allows airport authorities to borrow money up front to finance infrastructure projects and this money is then paid back with interest. U.S. airports may qualify for tax-exempt bonds to support airport projects for federal tax purposes because most airports are owned by government agencies. The tax-exempt status enables airports to issue bonds at lower interest rates than taxable bonds which reduces the cost to finance a project. IDA has no current debt issued. Additionally, while Idaho laws generally require debt to be approved by a vote of the electorate, the Idaho Constitution grants an exception for debt repaid with fees generated by an airport.

10.3.7. Idaho State Grant Programs

The Idaho Airport Aid Program (IAAP) provides for discretionary allocation of grant funds to Idaho airports that are owned by public entities. Any county, city, village, or agency designated in Idaho Code is deemed an eligible public entity for participation in this program.

This program is administered according to Idaho Administrative Code IDAPA 39.04.01. This rule states that an airport owner should have a state approved airport plan (section 701.01) and protective zoning (Idaho law Title 67 Chapter 6508 Section q) in place to participate in this program. However, if they do not have a plan or protective zoning in place, or if these need to be updated, the Idaho Airport Aid Program can provide funding for those items.

The airport recently received grants from the Idaho Transportation Department (ITD) for airport projects and as matching funds for FAA grants. In 2022, the airport received a $215,000 grant under the Idaho Airport Aid Program to replace a chiller for the terminal building. In 2023, the airport received a grant of $20,000 under the Idaho Airport Aid Program as part of the city's match to an Airport Improvement Program grant to rehabilitate Runway 3/21, expand the apron and terminal, and acquire snow removal equipment (SRE). In 2024, the airport received a grant for $1 million under the Idaho governor's Idaho First plan. This grant is dedicated to an expansion of the terminal building.

10.3.8. Transportation Infrastructure Finance and Innovation Act Program

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects. This can include highways, transit systems, railways, and other infrastructure initiatives. Its main objectives are to facilitate funding for large-scale transportation projects, stimulate economic development, and support the enhancement of the nation's transportation infrastructure.[2]

Under the Bipartisan Infrastructure Law, as defined in section 40117(a) of title 49, the Build America Bureau can now consider TIFIA loans for airport-related projects and to support surface transportation projects at airports, such as consolidated rental car facilities and inter-modal facilities, through other eligibilities.[3]

The Rural Project Initiative (RPI) is a targeted program under the broader TIFIA program aimed at addressing the unique transportation infrastructure needs of rural areas. The program is designed to improve transportation infrastructure in rural areas, which often face different challenges compared to urban areas, such as lack of funding opportunities, fewer transportation options, and greater distances between communities. For this program, a community qualifies as rural if it is located outside an urban area or within an urban area that has less than 150,000 population (per the 2020 Census) with an eligible project costing between $10 million and $100 million.[4]

10.3.9. Private Funding

Private funding for airport improvements typically comes in the form of investors who intend to make extensive use of the airport through hangar development or an airport business such as an FBO or air cargo facility. 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 airport sponsor to make it attractive to investors.

10.3.10. Airport Sustainability Grants

Airport sustainability grants are designed to help airports reduce their carbon footprint, improve environmental practices, and encourage sustainable development in the aviation sector. The Voluntary Airport Low Emission (VALE) program is a federal initiative designed to support airports in their attempts to reduce air pollution and greenhouse gas emissions. The fiscal year 2023 Supplemental Discretionary Notice of Funding Opportunity (NOFO) introduced a significant change to this program by removing the requirement for the airport to be in a non-attainment area. Previously, these grants were restricted to airports located in non-attainment areas for air quality standards. A non-attainment area is defined as a region where air quality fails to meet the National Ambient Air Quality Standards (NAAQS) set by the Environmental Protection Agency (EPA). The fiscal year 2023 Notice of Funding Opportunity eliminated this requirement which allowed all eligible public-use airports, regardless of their air quality designation, to apply for these grants. This change allows more airports to participate in this program and promotes a wider embrace of clean technologies.[5]

The Airport Zero Emission Vehicle (ZEV) program is a pilot program aimed at promoting the adoption of zero-emission vehicles and sustainable practices at airports. This program addresses both airport operations and the broader environmental impact of aviation activities. It allows airports that are eligible for Airport Improvement Program funds to purchase zero-emissions airport vehicles and the infrastructure necessary to operate them.[6]

10.4. Revenue Enhancement

According to FAA Grant Assurance #24, the airport sponsor is required to maintain a fee and rental structure that makes the airport as self-sustaining as possible under the circumstances that exist at the airport.[7] According to FAA Order 5190.6B, *Airport Compliance Manual*, fees for aeronautical uses need to be fair and reasonable, and fees for nonaeronautical uses must be at fair market value. Charging less than fair market value for nonaeronautical uses is a violation of Grant Assurance #25 because it constitutes a subsidy of local government and is considered revenue diversion.[8] The FAA expects airport sponsors to charge police or fire fighting units that operate aircraft at the airport reasonable fees for their aeronautical use but may offset the value of those services against airport fees (in-kind services). Airport sponsors may reduce rental rates for military tenants, aviation museums, Civil Air Patrol units that operate an aircraft at the airport, and aeronautical education programs provided by accredited institutions; to the extent that these organizations benefit civil aviation.

As development occurs around the airport, so does the potential for new sources of revenue, such as hangar rent for additional hangars. However, revenue from increased development may be offset by increased maintenance and utility costs. One opportunity that should be explored is leasing the facility at 1690 International Way as a source of nonaeronautical revenue, following the expiration of any existing leases. Another opportunity is to restructure the leases associated with the Airport Industrial Park located south of Runway 17/35.

10.5. Financial Feasibility

The purpose of the financial feasibility analysis is to demonstrate the airport sponsor's ability to fund the projects described in this airport master plan. Much of the funding is intended to come from the FAA Airport Improvement Program and Bipartisan Infrastructure Law programs. Internal revenue goes to the operating and maintenance (O&M) budget and includes personnel, supplies, equipment, maintenance, repair, and other incidental costs.

Financial and administrative management are key functions of airport management. Airports should strive to be as self-sustaining as possible through revenue generation and good fiscal management of expenditures through budgeting. Appropriate lease documents, established rates and charges, maximizing grant funding (if eligible), and minimizing risk through insurance are also important fiscal management tools.

10.5.1. Airport Revenue and Expenses

Idaho Falls Regional Airport annual budgets from 2021 to 2025 were reviewed to evaluate revenue and expense trends. These budgets, which are summarized in Table 10.6, reflect a drastic increase in intergovernmental revenue that is primarily due to FAA grant funding as well as an increase in capital outlay expenses mainly due to terminal expansion projects.

10.6. Summary

The development plan for IDA is appropriate to satisfy the existing needs and the forecasted growth. Alternative funding sources, along with enhanced revenue-generating capacity at the airport will be key to the successful implementation of projects in this airport master plan.

Note the projects contained in the development plan are for planning and programming purposes and do not commit the airport sponsor or FAA to carry out or fund the projects. If a project is not financially feasible or justified, it will not be pursued.

Table 10.6: Airport Revenue and Expenses

Budget Item	2021 (actual)	2022 (actual)	2023 (actual)	2024 (adopted)	2025 (proposed)
Airport Fund Revenue					
Intergovernmental Revenue	$14,068,029	$5,759,944	$7,615,383	$23,116,311	$30,575,877
Fine/Forfeitures	$378	$4,190	$9,718	$3,560	$10,000
Investment Income	$8,180	($41,572)	$97,924	$0	$0
Rentals and Leases	$358,991	$334,009	$457,881	$358,253	$390,000
Misc.	$11,136	$195,856	($50,921)	$1,000	$1,000
Non-Revenue Transfer	$754,939	$492,374	($422,974)	$1,299,645	$1,828,333
Charges for Services	$2,264,587	$3,898,498	$4,364,547	$4,285,702	$5,379,333
Total Airport Fund Revenue	**$17,466,240**	**$10,643,298**	**$12,071,558**	**$29,064,471**	**$38,184,543**
PFC Fund Revenue					
Charges for Services	$716,117	$1,353,346	$1,039,561	$1,197,645	$1,233,000
Investment Income	$97	($26,706)	$49,378	$0	$20,000
Non-Revenue Transfer	($171,713)	$0	($562,092)	($1,197,645)	($1,828,333)
Total PFC Fund Revenue	**$544,501**	**$1,326,640**	**$526,848**	$0	**($575,333)**
CFC Fund Revenue					
Charge for Services	$0	$0	$277,723	$488,808	$451,000
Investment Income	$0	$0	$3,044	$0	$5,000
Total CFC Fund Revenue	**$0**	**$0**	**$280,766**	**$488,808**	**$456,000**
Total Revenue	**$18,010,741**	**$11,969,939**	**$12,879,171**	**$29,553,279**	**$38,065,210**
Expenses					
Salaries & Wages	$688,994	$1,302,883	$2,005,736	$2,069,083	$2,055,349
Benefits	$366,996	$426,108	$627,883	$863,037	$1,037,708
Current Operating Expense	$2,098,063	$2,545,755	$3,281,446	$3,564,096	$3,795,163
Capital Outlay	$140,072	$348,963	$842,218	$18,936,713	$21,275,346
MERF* Allocation	$37,800	$37,800	$32,700	$102,000	$120,000
MERF* Expenditures	$0	$34,918	$0	$0	$0
Grant Expenditures	$0	$0	$1,546	$0	$0
Debt Service	$60,447	$0	$112,667	$150,000	$555,000
Total Expenses	**$3,392,372**	**$4,696,427**	**$6,888,120**	**$25,684,929**	**$28,838,566**

*MERF = Machinery and Equipment Replacement Fund

Source: City of Idaho Falls

Endnotes

1 U.S. Department of Transportation. Federal Aviation Administration. "Bipartisan Infrastructure Law - Airport Infrastructure." November 19, 2024. https://www.faa.gov/bil/airport-infrastructure.

2 U.S. Department of Transportation. Build America Bureau. "Program Overview." January 4, 2024. https://www.transportation.gov/buildamerica/financing/tifia.

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4 U.S. Department of Transportation. Build America Bureau. "TIFIA Rural Project Initiative (RPI)." July 2, 2024. https://www.transportation.gov/buildamerica/financing/tifia/tifia-rural-project-initiative-rpi.

5 U.S. Department of Transportation. Federal Aviation Administration. Office of Airports. "Notice of Funding Opportunity for FAA's Office of Airports FY 2023 Supplemental Discretionary Grants." Section C.3.a.3 Emissions and Energy (EE). Federal Register: April 04, 2024. https://www.federalregister.gov/documents/2024/04/01/2024-06778/notice-of-funding-opportunity-for-faas-office-of-airports-fy-2023-supplemental-discretionary-grants.

6 U.S. Department of Transportation. Federal Aviation Administration. "Airport Zero Emissions Vehicle and Infrastructure Pilot Program." October 22, 2024. https://www.faa.gov/airports/environmental/zero_emissions_vehicles.

7 U.S. Department of Transportation. Federal Aviation Administration. "Grant Assurances (Obligations)." Tuesday, August 2, 2022. https://www.faa.gov/airports/aip/grant_assurances.

8 Ibid.

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PLANNING FOR COMPLIANCE

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CHAPTER ELEVEN

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 last longer than 20 years. An exception is for land acquisition grants which last for as long as the airport is owned and operated as an airport. 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]

Title 14 of the Code of Federal Regulations (CFR) Part 139, *Certification of Airports*, establishes standards for airports with (scheduled or unscheduled) commercial passenger service. Part 139 airports are subcategorized as Class I–IV airports based on the size of the air carrier aircraft that operate at the airport. Under Part 139, the size of the aircraft depends on the number of seats the aircraft has. An air carrier with 10–30 seats is considered to be small, and an air carrier with more than 30 seats is considered to be large. Idaho Falls Regional Airport, which is a Class I Part 139 airport, has scheduled operations of large and small aircraft as well as unscheduled operations of large aircraft.

11.1. 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 Airport and Airway Improvement Act.
- 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 Airport and Airway Improvement Act.
- Written agreements between the sponsor and the FAA which includes settlement agreements resulting from litigation.

11.2. 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 in interpreting and meeting these obligations. According to this report, the majority of compliance complaints made against airports were related to the following grant assurances.[4]

11.2.1. 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 rights 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.

11.2.2. 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.

Obligation: To preserve, operate, and maintain the 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.

11.2.3. 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 6.3.4. Airspace Requirements.)

11.2.4. Grant Assurance 21: Compatible Land Use

Grant Assurance 21, Compatible Land Use, requires airports 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.

11.2.5. Grant Assurance 22: Economic Nondiscrimination

Grant Assurance 22, Economic Nondiscrimination, requires airports to operate the airport 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.

11.2.6. Grant Assurance 23: Exclusive Rights

Grant Assurance 23, Exclusive Rights, requires airports to operate the airport 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).

11.2.7. Grant Assurance 24: Fee and Rental Structure

Grant Assurance 24, Fee and Rental Structure, requires airports to maintain a fee and rental structure for the facilities and services being provided to airport users that will make the airport as self-sustaining as possible. (Note: Fair and reasonable for aeronautical activities and fair market value for nonaeronautical activities.)

11.2.8. 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

Airports 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.

11.2.9. Grant Assurance 29: Airport Layout Plan

Grant Assurance 29, Airport Layout Plan, requires airports to develop, operate, and maintain the airport in accordance with its most recently approved airport layout plan (ALP). 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.

11.2.10. Grant Assurance 31: Disposal of Land

Grant Assurance 31, Disposal of Land, requires airports 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 as well as for the use of any net proceeds.

11.2.11. Other Obligations

Grants 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

11.3. 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 of the Code of Federal Regulations 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 Decision 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]

11.4. 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 and is itself not adversely affected by airport operations. According to FAA Order 5190.6B, *Airport Compliance Manual*, land use planning and zoning are important tools that help to protect airport investments from incompatible land uses, 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 that 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 one in which the 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]

11.4.1. 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, nonairport 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 object free area or object free zone are also incompatible land uses.[7]

11.5. Part 139 Certification of Airports

Part 139, Airport Operating Certificates, serves to ensure safety in air transportation. To obtain a certificate, an airport must agree to certain operational and safety standards and provide for such things as firefighting and rescue equipment. These requirements vary depending on the size of the airport and the type of flights available. Because Idaho Falls Regional Airport is a Class I airport, it is required to comply with all Part 139 requirements. As part of the certification, the airport must also have an FAA-approved Airport Certification Manual (ACM), Airport Emergency Plan (AEP), Airport Security Plan (ASP), and Snow and Ice Control Plan (SICP).

Part 139 is subdivided into parts A through D. Subpart D lists the operational requirements that a Part 139 certificate holder must meet. The following information pertains to Subpart D which explains what an airport must do to maintain its Part 139 certification.

- **§139.301, Records:** Maintain personnel training, inspection, accident and incident, and airport condition records.
- **§139.303, Personnel:** Description of the required training, re-occurring training, familiarization, and lengths to keep records of training.
- **§139.305, Paved areas:** Description when repairs are required for runways, taxiways, loading ramps, and parking areas.
- **§139.307, Unpaved areas:** Description when repairs are required for gravel, turf, and unpaved runways, taxiways, or loading ramps and parking areas.
- **§139.309, Safety areas:** Description of the safety area required to be provided by the airport for each runway and taxiway used for air carrier use.
- **§139.311, Marking, signs, and lighting:** Description of the required marking, signs, and lighting for air carrier operations.
- **§139.313 Snow and ice control:** Description of the minimum required standards for an airport's snow and ice control plan.
- **§139.315, Aircraft rescue and firefighting index determination:** Description of the length and frequency in aircraft to determine the Aircraft Rescue and Firefighting (ARFF) index.

- **§139.317, Aircraft rescue and firefighting equipment and agents:** Description of the minimum equipment and agents needed corresponding to the appropriate ARFF index.

- **§139.319, Aircraft rescue and firefighting operational requirements:** Addresses rescue and firefighting capabilities, how to increase an ARFF index, procedures for reducing capabilities, required vehicle communication, vehicle markings, vehicle readiness, response requirements, personnel training, hazardous materials guidance, emergency access roads, methods and procedures, and implementation of these requirements.

- **§139.321, Handling and storing of hazardous substances and materials:** Description of protection of persons and property for airports who handle cargo.

- **§139.323, Traffic and wind direction indicators:** Description of required traffic and wind direction indicators.

- **§139.325, Airport emergency plan:** Description of requirements for an airport emergency plan to minimize the possibility and extent of personal injury and property damage on the airport in an emergency.

- **§139.327, Self-inspection program:** Description of the required self-inspection program each airport must follow to maintain their certificate.

- **§139.329, Pedestrians and ground vehicles:** Addresses the required manner to control pedestrians and ground vehicles to prevent incursions, accidents, and incidents.

- **§139.331, Obstructions:** Addresses the requirements for obstructions.

- **§139.333, Protection of navigational aids:** Description of how to protect navigational aids.

- **§139.335, Public protection:** Description of how to protect the public from harm, including airport personnel within and the public outside the fence.

- **§139.337, Wildlife hazard management:** Description of how and when to conduct wildlife hazard assessments.

- **§139.339, Airport condition reporting:** Description of when and how to disseminate airport condition information to air carriers.

- **§139.341, Identifying, marking, and lighting construction and other unserviceable areas:** Addresses how to mark and light construction and unserviceable areas.

- **§139.343, Noncomplying conditions:** Description as to when to limit air carrier operations when noncomplying conditions exist.

To ensure that airports with Part 139 airport operating certificates are meeting these requirements, FAA airport certification safety inspectors conduct certification inspections. These inspections typically occur yearly, but the FAA can also make unannounced inspections. If the FAA finds that an airport is not meeting its obligations, it often imposes an administrative action. It can also impose a financial penalty for each day the airport continues to violate a Part 139 requirement. In extreme cases, the FAA might revoke the airport's certificate or limit the areas of an airport where air carriers can land or takeoff.

11.6. Compliance at Idaho Falls Regional Airport

The following conditions at Idaho Falls Regional Airport should be closely monitored to ensure the airport is complying with required grant assurances.

11.6.1. Nonaeronautical Use or Disposal of Obligated Airport Property

The FAA must approve using airport property for nonaeronautical purposes if that property is subject to grant assurances, and any agreements must preserve the rights and powers of the airport sponsor to comply with its obligations. This means the sponsor will not sell, lease, encumber, or otherwise transfer its title or interest in any property shown on Exhibit A of the airport layout plan (ALP) without prior approval from the FAA. When airport property that was purchased using federal funds for noise compatibility purposes is no longer needed, the airport sponsor is required to promptly dispose of the property at fair market value (Grant Assurances 5, 19, 29, 31).[8]

The soccer fields west of Runway 3, Esquire Acres Park, Idaho Falls Dog Park, the Snake River Animal Shelter, community garden, tree farm, industrial park south of Runway 35, farmland, and any rights of way granted should be reviewed to ensure they are approved nonaeronautical uses depicted on the airport layout plan or were disposed of properly at fair market value. Any lease proceeds generated from these uses are required to be retained by the airport for capital and operating costs of the airport (Grant Assurance 25).[9]

11.6.2. Rates and Charges for Nonaeronautical Uses of Airport Property

An airport sponsor must charge fair market value for any nonaeronautical uses of airport property that is subject to grant assurances. However, it may make airport property available for community purposes at less than fair market value on a limited basis as long as the following conditions are met:

- The property is not needed for aeronautical purposes.
- The property is not producing airport revenue for the airport and there are no near-term prospects for producing revenue.
- Use of the property by the community will not impact the aeronautical use of the airport.
- Use of the property by the community will maintain or enhance positive community relations in support of the airport.
- The proposed use is consistent with the airport layout plan.
- The proposed use is consistent with other federal obligations regarding surplus and non-surplus property.[10]

Rates and charges should be reviewed annually to ensure they are current, relevant, and comply with FAA policies. If rates and charges for nonaeronautical uses are below fair market value, the airport must demonstrate a valid community use if the property is not needed for aeronautical purposes. Nonaeronautical uses should also comply with other grant assurances related to land use.

11.6.3. Runway Protection Zones

As described in Chapter Six, Facility Requirements, certain types of land uses within the runway protection zone (RPZ) must be coordinated with the FAA. These include structures, commercial and industrial buildings, recreational uses, transportation facilities, fuel storage, wastewater treatment facilities, and utilities, such as solar panels.

At IDA, there are industrial buildings in the runway protection zone south of Runway 35, a portion of Old Butte Park in the runway protection zone off the end of Runway 3, Idaho Falls Dog Park and I-15 in the runway protection zone off the end of Runway 21, and I-15 in the runway protection zone off the end of Runway 17. All of these uses, along with any proposed uses, such as the proposed I-15/US-20 connector project, should be coordinated with the FAA to ensure there are no impacts to aviation.[11]

11.6.4. 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, non-commercial 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. The airport is in the process of updating its rules and regulations and minimum standards.[12]

11.6.5. Compatible Land Use

In May 2019, the City of Idaho Falls adopted an airport overlay zoning ordinance protecting the airspace around the airport and restricting land uses around the airport to those normally compatible with airport operations. While this action protects much of the area surrounding the airport, land adjacent to and around the airport is also under the jurisdiction of Bonneville County. Bonneville County currently has an airport zoning ordinance that protects the airspace around the airport but does not have a zoning ordinance restricting the use of land around the airport. Bonneville County has approved a residential subdivision approximately 3,000 feet from the Runway 21-end. While this subdivision is not within city limits, and therefore not within the city's jurisdiction, the city should take any available action to prevent the establishment of any incompatible land uses near the airport. Bonneville County's lack of airport compatible zoning around the airport is a threat to the long-term viability of the airport. City staff should work with the county to develop and adopt airport compatible land use zoning.

11.7. Summary

According to FAA Order 5190.6B, *Airport Compliance Manual*, 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

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12 RECYCLING AND SUSTAINABILITY

TABLES

FIGURES

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CHAPTER TWELVE

SUSTAINABILITY

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

12.1. Sustainability

12.1.1. Defining 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."

12.1.2. 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

12.1.3. How Sustainability Relates to Idaho Falls Regional Airport

The City of Idaho Falls has established a commitment to environmental sustainability and resource preservation as part of *Imagine IF, A Plan to Move Idaho Falls Forward Together, City of Idaho Falls' Comprehensive Plan.* Accordingly, Idaho Falls Regional Airport has adopted the EONS approach to sustainability.

As articulated in the city's comprehensive plan, "The City of Idaho Falls promotes a welcoming, attractive, safe and diverse community. We embrace small town values, big city efficiencies and forward-thinking approaches to provide outstanding services and sustainable economic, social and recreational opportunities for our whole community."[1]

Figure 12.1: EONS Approach to Sustainability

Source: Ardurra.

12.2. 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 Airport Improvement Program 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.

12.2.1. 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 under Subtitle D and hazardous waste under Subtitle C.[2]

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.

12.3. Types of Airport Waste

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

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

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

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

12.3.1. 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 general aviation airports like Idaho Falls Regional Airport:[3]

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 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 activities 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.

12.4. Airport Recycling, Reuse, and Waste Reduction Plan

12.4.1. 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 FAA Modernization and Reform Act 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).

12.4.2. Recycling Feasibility

Idaho Falls Regional Airport is large and busy enough to generate sufficient recyclable materials to justify a recycling program. Bonneville County operates a landfill, the Hatch Pit, and a transfer station that accepts many types of waste, although certain fees may apply. Additional infrastructure (bins), staffing, and funding may be needed to establish a recycling program and maintain it.

12.4.3. Plan to Minimize Solid Waste Generation at the Airport

The Airports Council International-North America policy handbook provides a waste decision hierarchy that shows—in order of priority—what constitutes the best overall waste management choices. These include to avoid, to reduce, to reuse, to recycle, and lastly, to dispose—with the ultimate goal of eliminating waste going to landfills.

Figure 12.2: Waste Decision Hierarchy

Source: ACI-NA Policy Handbook, Ardurra.

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 10 steps airports can take to design and implement an effective airport recycling and waste minimization program (Table 12.1).

Table 12.1: 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*

Idaho Falls Regional 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 additional containers and space for recycling.
4. Educate airport staff and users about the importance of recycling and waste minimization.

12.4.4. Airport Operations and Maintenance Requirements

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

Aircraft: The amount of aircraft waste correlates with the number of operations at the airport. The person responsible for aircraft and ground support equipment waste varies depending on the vehicle's owner and who performs the maintenance. The fixed base operator and maintenance shop are responsible for aircraft maintenance waste. Some waste associated with maintenance is considered hazardous waste and must be handled accordingly.

Airfield: The infields are mowed regularly for habitat management and wildlife hazard mitigation, and clippings are left in place. Sweeping of airfield pavements occurs weekly or more often if needed. Debris from sweeping is disposed of in a trash dumpster. When snow is plowed from airfield pavements, some dirt and grit are also removed as part of this process. 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.

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.

Cargo Facilities: These facilities are leased and, as per the lease agreement, the tenants are responsible for trash disposal within this area.

Airport Offices and Pilot Lounges: These waste streams usually consist of solid waste or compostables and are steady throughout the year.

Terminals: There is one full-service kitchen located inside the terminal building which is associated with a restaurant. The vendor is responsible for their own waste management and waste oil or grease trap cleaning.

12.4.5. Review of Waste Management Contracts

The sanitation division of the city's public works department is responsible for waste management at the airport. Tenants are responsible for trash disposal within their area, per their lease agreement. The airport has four six-yard garbage dumpsters located adjacent to the terminal building and the airfield lighting vault. There are no recycle bins located in the terminal area.

12.4.6. Potential for Cost Savings or Revenue Generation

The City of Idaho Falls provides 13 locations across the city to recycle various items such as glass, cardboard, tin, and aluminum. They do not accept plastic or paper. One of the locations is on airport property at the Old Butte Soccer Complex. This location is intended as a general community recycling location rather than specifically for airport use.

During May of 2022, the City's sanitation division held a Clean & Green Citywide Cleanup event, where they accepted household solid waste, brush, and construction waste. As part of the airport's recycling and waste minimization education efforts, it could notify airport staff and users about similar events in the future.

Potential cost savings or revenue generation at Idaho Falls Regional Airport rests with establishing a recycling program at the airport, where revenue generated from recycling can be deposited into the airport's account and used for airport purposes.

12.5. Conclusion

Idaho Falls Regional 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 the addition of electric aircraft and vehicle charging stations. Another opportunity is to reuse construction and demolition 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:

1. Reduced operating costs.
2. Prolonged use of limited landfill space.
3. Reduced environmental liability.
4. Improved public perception of the airport.

Endnotes

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13

GLOSSARY OF TERMS

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CHAPTER THIRTEEN

GLOSSARY

13.1. Common Terms, Abbreviations, Acronyms, and Initialisms

This glossary 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 help 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 varies 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)

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.

FY 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

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 the 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.

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APPENDIX A

Community Engagement Summary

Idaho Falls
Regional Airport
2025 Airport Master Plan

January 2025

2025 Airport Master Plan
Kick-Off Meeting

CONTENTS

Community Engagement Summary

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APPENDIX A

COMMUNITY ENGAGEMENT

Community involvement and coordination is a critical component of the airport master planning process. Airport staff and the project team used several methods to engage the public and held several public meetings where members of the community were encouraged to share their ideas and provide feedback on key elements of the airport master plan.

Public Information Meetings

Airport staff and the project team hosted several public information meetings at key milestones in the planning process to share relevant and timely information with the public and invite feedback. These meetings were advertised in the local newspaper, on social media, and the city and project websites. Mailings and press releases were also sent out to increase awareness and participation. Meeting attendees were asked to sign in and provided with informational handouts and comment forms. All attendees were also made aware of future opportunities to be involved in the planning process. Members of the public could also view plan documents and submit comments via the project website.

Technical Advisory Committee

The airport staff and project team relied heavily on members of the technical advisory committee (TAC) to help guide development of the plan. This committee was comprised of members who have a deep understanding of the airport, its role in the community, and its opportunities in the future. Committee members included city representatives and several members of the community who interact with the airport for work or pleasure on a regular basis. The technical advisory committee provided the aviation planning team with valuable feedback and insight into the needs of the local aviation community and kept the team informed of local issues throughout the planning process.

01 Public Information Meeting Summaries

01.1 Public Meeting #1

a. Meeting Summary

Date: August 31, 2021

Time: 6—8 p.m.

Place: Idaho Falls City Hall Council Chambers
680 Park Avenue, Idaho Falls, Idaho 83402

- Airport Director Rick Cloutier welcomed attendees and provided opening comments.
- T-O Engineers Airport Planner Rick Patton introduced the planning team members, provided a brief history of the airport, described the purpose of airport master plans, and gave an overview of how airport projects are funded.
- T-O Engineers Airport Planner Wayne Reiter covered the elements and steps of an airport master plan, roles and responsibilities of the various stakeholders, airport compliance, public involvement, tentative meeting schedule, airport website, key issues, and next steps.
- The following questions and comments were made by in-person attendees:

Question: What does Runway 17-35 viability mean from Key Issues?
Answer: It is primarily related to FAA justification for future FAA funding. The FAA may fund a crosswind runway based on primary runway wind coverage, or a secondary runway based on capacity. The justification for continued FAA funding of the runway will be reviewed as part of this Master Plan considering both wind coverage and capacity.

Question: Will the previous Runway 17-35 planning study be used for this master plan?
Answer: It was a targeted study for Runway 17-35 that did not encompass the entire airport as this master plan will do. The planning study will be reviewed, but this master plan will take a fresh look at the entire airfield including Runway 17-35 design standards and potential historic eligibility of hangars and structures.

Question: Will there be a master plan review committee?
Answer: Yes, there will be a Technical Advisory Committee for this master plan. It will consist of airport users.

Question: How will the I-15/US-20 connector project influence the master plan?
Answer: The airport is on the EIS project review committee and is coordinating with ITD and the FAA.

Comment: Expressed concerns about the future of Runway 17-35.

Comment: Would like to see safety and maintenance issues addressed in the master plan.

Question: Will regional stakeholders be involved in the master plan?
Answer: The county and surrounding communities have been invited to participate. The team will engage Bonneville County when preparing Land Use recommendations.

Comment: Concerned about future property acquisitions and requested to keep the surrounding community informed.

- The following questions and comments were made by online attendees:

Question: What are the dates for future meetings?
Answer: The next meeting is planned for the Fall of 2021 to present the forecast, dependent on FAA approval.

Comment: Audio from the presentation was difficult to hear.
Response: The meeting is being recorded and a project website will be updated with project information.

- There were no further comments.
- Airport Director Rick Cloutier thanked everyone for attending, encouraged public input, and closed the meeting.

b. Meeting Supplement

Idaho Falls Regional Airport
Master Plan Kickoff Supplement
Frequently Asked Questions
Common Terms
August 31, 2021

Presentation Contents:

1. Welcome and Introductions
2. Project Description
3. Master Plan Objectives
4. Master Plan Elements
5. Roles and Responsibilities
6. Public Participation
7. Key Airport Issues
8. Project Schedule
9. Next Steps
10. Public Comments

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Airport Master Plans

An Airport Master Plan is a comprehensive study of an airport that describes short-, medium-, and long-term development plans needed to support future aviation demand.

The elements of an Airport Master Plan are outlined by the Federal Aviation Administration (FAA); however, the complexity of each element depends upon the size, function, and challenges of the airport.

The Idaho Falls Regional Airport Master Plan will present a strategy for development while considering the potential environmental and socioeconomic impacts throughout the planning period.

The Idaho Falls Regional Airport Master Plan will meet the following objectives:

- Understand airport issues, opportunities, and constraints.
- Consider the impacts of aviation trends.
- Identify the capacity of existing airport infrastructure.
- Determine need for airport improvements.
- Estimate project costs and funding sources.
- Develop a schedule for project implementation.
- Obtain stakeholder and public input.

Master Plan Process

The process begins with a pre-planning phase to determine the scope of work, then systematically follows the steps shown in the figure. The Idaho Falls Regional Airport Master Plan will incorporate a significant amount of public involvement to ensure the best final product possible. Effective public involvement includes numerous stakeholders, including airlines, aircraft owners, airport staff, public officials, funding agencies, airport businesses, and the surrounding community.

Information will be available online throughout the Airport Master Plan project to include a project schedule, announcements for upcoming meetings, draft documents, references, as well as a portal to ask questions and provide comments. The website can be accessed through the Idaho Falls Regional Airport main website, or by visiting IFAirportMP.com

Frequently Asked Questions

Q: What is an Airport Master Plan?

A: An Airport Master Plan is a comprehensive study of an airport that describes short-, medium-, and long-term development needs to meet future aviation demand.

Q: Why is an Airport Master Plan needed?

A: An Airport Master Plan provides the developmental framework for airports to ensure appropriate planning for future needs. An Airport Master Plan is typically updated every 5-10 years due to FAA changes in airport design, swings in the economy, and transformational changes in aviation and how people travel. The last Airport Master Plan completed for Idaho Falls Regional Airport was in 2010.

Q: What are the major elements of an Airport Master Plan?

A: Airport Master Plans are developed based on guidance from the FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans.*

- Inventory of Existing Conditions
- Aviation Forecast
- Facility Requirements
- Environmental Considerations
- Alternatives Development
- Airport Layout Plan (ALP)
- Facilities Implementation

Q: What are the Airport Master Plan Objectives:

A: The objectives of an Airport Master Plan are:

- To understand airport issues, opportunities and constraints.
- Consider the impacts of aviation trends.
- Identify the capacity of existing airport infrastructure.
- Determine the need for airport improvements.
- Estimate project costs and funding sources.
- Develop a schedule for project implementation.
- Obtain stakeholder and public input.

Q: Who is funding the Airport Master Plan project and at what cost?

A: The FAA is providing 100% of funding for this Airport Master Plan project, totaling $701,987.

Q: Who Approves a Master Plan?

A: The Airport Sponsor, in this case the City of Idaho Falls, approves the Airport Master Plan.

FAA approval is required for the Airport Master Plan Forecast, as well as the Airport Layout Plan (ALP). The FAA also provides a review of the Master Plan documents, and accepts the final document.

Q: What results from an Airport Master Plan?

A: The approved Airport Master Plan becomes the primary guiding document for airport development.

Common Terms

Advisory Circular (AC): External publications issued by the FAA consisting of non-regulatory material providing for the recommendations relative to a policy, and guidance and information relative to a specific aviation subject.

Aircraft Operation: The landing, takeoff or touch-and-go procedure by an aircraft on a runway at an airport. A touch-and-go equals two aircraft operations.

Airport Capital Improvement Plan (ACIP): The planning program used by the FAA to identify, prioritize, and distribute funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

Airport Improvement Program (AIP): The Airport Improvement Program of the Airport and Airways Improvement Act of 1982, as amended by the Airport and Airway Safety and Capacity Expansion Act of 1987. Under this program, the FAA provides funding assistance for the planning, design and development of airport facilities.

Airport Layout Plan (ALP): A graphic presentation, to scale, of existing and proposed airport facilities, their location on the airport, and the pertinent clearance and dimensional information required to show conformance with applicable standards. To be eligible for AIP funding assistance, an airport must have an FAA approved ALP.

Airport Sponsor: An entity that is legally responsible for the management and operation of an airport including the fulfillment of the requirements of laws and regulations related thereto, usually a city, county, or airport authority.

Based Aircraft: The total number of active general aviation aircraft which use or may be expected to use an airport as a home base.

Critical (Design) Aircraft: The most demanding aircraft (or combination of aircraft) with at least 500 annual operations that operates, or is expected to operate, at the airport.

Commercial Service Airport: A publically owned airport with at least 2,500 annual enplanements and scheduled air carrier service.

Enplanement: The boarding of one passenger on a commercial service aircraft that departs an airport.

Federal Aviation Administration (FAA): Created by the act that established the Department of Transportation. Assumed all of the responsibilities of the former Federal Aviation Agency including aircraft safety, movement, and controls.

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

Land Use Plan: Shows on-airport land uses as developed by the airport sponsor under the master plan effort and off-airport land uses as developed by surrounding communities.

Large Aircraft: Aircraft weighing more than 12,500 pounds maximum certificated takeoff weight.

National Environmental Policy Act (NEPA): Federal legislation that establishes environmental policy for the nation. It requires an interdisciplinary framework for federal agencies to evaluate environmental impacts and contains action-forcing procedures to ensure that federal agency decision makers take environmental factors into account.

National Plan of Integrated Airport Systems (NPIAS): A plan prepared by the FAA which identifies, for the Congress and the public, the composition of a national system of airports together with the airport development necessary to anticipate and meet the present and future needs of civil aeronautics, national defense, and the postal service. The plan includes both new facilities and qualitative improvements to existing airports to increase their capacity, safety, technological capability, etc.

Public Airport: An airport for public use, publicly owned, and under control of a public agency.

Small Aircraft: Aircraft of 12,500 pounds or less maximum certificated takeoff weight.

c. Presentation

d. Postcard

e. Press Release

Posted on: August 27, 2021

Idaho Falls Regional Airport (IDA) To Kick Off Year-Long Master Planning Process

(Idaho Falls, ID) – The Idaho Falls Regional Airport (IDA) will be hosting a kick-off meeting on Tuesday, August 31 at 6 p.m. as they begin a year-long process of updating their master plan for the future of the airport.

The meeting will be held in the Idaho Falls City Council Chambers in the City Hall Annex located at 680 Park Avenue in downtown Idaho Falls. The meeting will be open to the public but will also be broadcast live via WebEx for virtual participation, due to social distancing at the meeting.

"Given the massive changes around the globe over the past few years, there have been a lot of impacts to the way people travel and the way that the airline industry serves their customers," said Rick Cloutier, Director of IDA. "We want to make sure that we are getting all the input we can to adequately plan for future growth, anticipate changes in the industry and changes in the way we serve and take care of our customers. This process will help us do that."

The IDA Airport Master Plan is a comprehensive study of the airport to help identify the short, medium, and long-term development plans needed to support future aviation demand. The plan provides the developmental framework for the airport to ensure appropriate planning for future needs.

The plan is updated every five to 10 years to ensure compliance with changes in airport design, economic changes, technological changes in aviation and passenger travel needs. The last IDA Master Plan was completed in 2010. The current planning process is being led by Idaho-based company, TO Engineering.

"We are hoping for a very robust process that will allow us to hear from a wide variety of IDA customers," said Cloutier. "We really encourage anyone with an interest in the airport and its future to come out or participate virtually with one or more of our meetings. This will be a year-long process, so there will be ample opportunity for people's voices to be heard."

Written comments about the plan can be submitted to Jayme Verish, the Assistant Director of IDA at 2140 Skyline Drive, Idaho Falls, Idaho 83402. Additional information can be obtained by emailing TO Engineering at wreiter@to-engineers.com or by calling 208-370-3906.

Future meeting dates and announcements will be advertised on the IDA's webpage as well as their Facebook page and on other city social media. A virtual link to attend meetings is also available at www.IFairportMP.com.

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f. Newspaper Ad

POST REGISTER LEGALS • 08/29/2021

Legals | Legals | Legals | Legals | LEGALS | Legals

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SUMMONS FOR PUBLICATION ON COMPLAINT FOR JUDICIAL FORECLOSURE AND DECLARATORY RELIEF SUMMONS FOR PUBLICATION ON COMPLAINT FOR JUDICIAL FORECLOSURE AND DECLARATORY RELIEF
CV10-20-1447

NEWREZ LLC D/B/A SHELLPOINT MORTGAGE SERVICING, Plaintiff,
v.
THE UNKNOWN HEIRS, ASSIGNS AND DEVISEES OF ROLAND TALAMANTEZ; GREGORY ROLAND TALAMANTEZ; TRINITY FINANCIAL SERVICES, LLC; AND DOES 1 THROUGH 20, INCLUSIVE, including all parties with an interest in and/or residing in real property commonly known as, 331 E. 16TH ST., IDAHO FALLS, IDAHO 83404, and legally described as: LOTS 32 AND 33, BLOCK 58, CROWS ADDITION, TO THE CITY OF IDAHO FALLS, COUNTY OF BONNEVILLE, STATE OF IDAHO, ACCORDING TO THE PLAT RECORDED SEPTEMBER 3, 1890, BOOK 1 AT PAGE 19, Defendants.

TO: **DEFENDANTS THE UNKNOWN HEIRS, ASSIGNS AND DEVISEES OF ROLAND TALAMANTEZ and DOES 1 through 20**, inclusive, including all parties with an interest in and/or residing in real property commonly known as **331 E. 16TH ST., IDAHO FALLS, IDAHO 83404:**

You have been sued by NewRez LLC d/b/a Shellpoint Mortgage Servicing, the Plaintiff, in the District Court in and for the County of Bonneville, Idaho, Case No. CV10-20-1447.
The nature of the claim against you is an action for declaratory relief and judicial foreclosure of the real property currently known as **331 E. 16TH ST., IDAHO FALLS, IDAHO 83404** and legally described as
LOTS 32 AND 33, BLOCK 58, CROWS ADDITION, TO THE CITY OF IDAHO FALLS, COUNTY OF BONNEVILLE, STATE OF IDAHO, ACCORDING TO THE PLAT RECORDED SEPTEMBER 3, 1890, BOOK 1 AT PAGE 19.

Any time after 21 days following the last publication of this summons, the court may enter a judgment against you without further notice, unless prior to that time you have filed a written response in the proper form, including the Case Number and paid any required filing fee to the Clerk of the Court at 605 N. Capital Ave., Idaho Falls, ID 83402, (208) 529-1350, and serve a copy of your response on the Plaintiff's attorney, Sydney K. Leavitt, at ALDRIDGE PITE, LLP, 3597 E. Monarch Sky Ln., Ste. 240, Meridian, ID 83646.
A copy of the Summons and Complaint can be obtained by contacting either the Clerk of the Court or the attorney for Plaintiff. If you wish for legal assistance, you should immediately retain an attorney to advise you in this matter.

CLERK OF THE COURT
By: Emmy Yates, Deputy

Published: 8/29, 9/5, 9/12, 9/19, 2021
(140060-12811)

SUMMONS IN THE DISTRICT COURT OF THE SEVENTH DISTRICT OF THE STATE OF IDAHO IN AND FOR THE COUNTY OF BONNEVILLE
CV10-21-3979

JOEL WARD, Plaintiff,
vs.
BISHOP CONSTRUCTION, LLC, an Idaho limited liability company, and REN BISHOP, an individual, Defendants.
NOTICE:
YOU HAVE BEEN SUED BY THE ABOVE-NAMED PLAINTIFF. THE COURT MAY ENTER JUDGMENT AGAINST YOU WITHOUT FURTHER NOTICE UNLESS YOU RESPOND WITHIN TWENTY-ONE (21) DAYS. READ THE INFORMATION BELOW.
TO: REN BISHOP and BISHOP CONSTRUCTION, LLC
Any time after 21 days following the last publication of this Summons, the Court may enter a judgment against you without further notice, **unless** prior to that time you have filed a written response in proper form, including the Case No., and paid any required filing fee to the Clerk of the Court at Bonneville County Courthouse, 605 N. Capital Ave., Idaho Falls, Idaho 83402, (208) 529-1350, and served a copy of your response on the Plaintiff's attorney at Nathaniel H. Wadsworth, Esq., Holden, Kidwell, Hahn & Crapo, P.L.L.C., PO Box 50130, Idaho Falls, Idaho, 83405.
A copy of the Summons and Verified Complaint can be obtained by contacting either the Clerk of the Court or the attorney for the Plaintiffs.
If you wish legal assistance, you should immediately retain an attorney to advise you on this matter.

DATED: 8/11/2021

Penny Manning, Clerk of the Court
By: John W. Frey, Deputy

Published: 8/15, 8/22, 8/29, 9/5, 2021
(133939-10904)

IDA IDAHO FALLS REGIONAL AIRPORT

Idaho Falls Regional Airport Master Plan Public Meeting #1
Date: August 31, 2021
Time: 6 p.m. – 8 p.m.
Location: Idaho Falls City Hall Council Chambers
308 Constitution Way, Idaho Falls

The Idaho Falls Regional Airport is conducting a comprehensive study that will identify short-, medium-, and long-term development plans to meet aviation demand over the next 30 years. Airport staff and the master plan consultant team are hosting a public meeting to share information about the process and next steps.

For more information:
Wayne Reiter
wreiter@to-engineers.com
(208) 370-3906
IFAirportMP.com

Published: 8/29/2021 (135735-16418)

Legals

NOTICE TO CREDITORS IN THE DISTRICT COURT OF THE SEVENTH JUDICIAL DISTRICT STATE OF IDAHO, IN AND FOR BONNEVILLE COUNTY
CV10-21-4734
IN THE MATTER OF THE ESTATE OF JULIE ANN JOHNSON-BUTIKOFER, Deceased.
NOTICE IS HEREBY GIVEN that the undersigned has been appointed Personal Representative of the above named decedent. All persons having claims against the decedent or the decedent's estate are required to present their claims within four months after the date of the first publication of this Notice or said claims will be forever barred.
Claims must be presented to the undersigned at the address indicated and filed with the Clerk of the Court.
Dated: 8/25/2021
Kevin Butikofer
Personal Representative
650 Gladstone Street, Apt. 8
Idaho Falls, Idaho 83401
Attorney for the Personal Representative:
Kevin B. Homer, Esq.
1565 South Boulevard
Idaho Falls, ID 83404
Published: 8/29, 9/5, 9/12, 2021
(139817-10774)

SUMMONS IN THE DISTRICT COURT OF THE SEVENTH JUDICIAL DISTRICT OF THE STATE OF IDAHO, IN AND FOR THE COUNTY OF BONNEVILLE
Case No. CV10-20-7972
BONNEVILLE BILLING & COLLECTIONS, INC., a corporation,
Plaintiff, vs.
JAMES P. WADDOUPS,
Defendant.
You have been sued by Bonneville Billing & Collections, Inc., the Plaintiff, in the Seventh District Court in and for Bonneville County, Idaho, Case No. CVI0-20-7597. The nature of the claim against you is collection. Any time after 21 days following the last publication of this summons, the court may enter a judgment against you without further notice, unless prior to that time you have filed a written response in the proper form, including the Case No., and paid any required filing fee to the Clerk of the Court at 605 North Capital, Idaho Falls, ID 83402, (208)529-1350, and served a copy of your response on the Plaintiffs attorney at Todd Erikson, 3456 E. 17th St., Ste. 280, Idaho Falls, Idaho 83406. A copy of the Summons and Complaint can be obtained by contacting either the Clerk of the Court or the attorney for Plaintiff. If you wish legal assistance, you should immediately retain an attorney to advise you in this matter.
Dated: 7/28/2021
Penny Manning
Bonneville County
District Court
By Tawnya Corona,
Deputy Clerk
Todd R. Erikson, #4374
Todd R. Erikson, P.A.
3456 E. 17th St., Ste. 280
Idaho Falls, ID 83406
Telephone: (208) 522-3305
eriksonlaw@gmail.com
Attorney for Plaintiff
Published: August 15, 22, 29, Sept. 5, 2021.
(133745-12227)

g. Facebook Post

h. Display Ad

IDAHO FALLS REGIONAL AIRPORT

You're Invited!
Idaho Falls Regional Airport Master Plan Public Meeting #1

The Idaho Falls Regional Airport is conducting a comprehensive study that will identify short-, medium-, and long-term development plans to meet aviation demand over the next 30 years.

Airport staff and the master plan consultant team are hosting a public meeting to share information about the process and next steps.

PUBLIC MEETING DETAILS

Date: August 31, 2021
Time: 6 p.m. – 8 p.m.
Location: Idaho Falls City Hall Council Chambers
308 Constitution Way, Idaho Falls

CONTACT

IFAirportMP.com

For more information:
Wayne Reiter
wreiter@to-engineers.com
(208) 370-3906

i. Photos

j. Welcome Board

k. Sign-In Sheets

Idaho Falls Regional Airport Master Plan
Meeting 1 – Kickoff
August 31, 2021
6:00 to 8:00 PM MDT

IFAirportMP.com

Name	Company/Representing	Address	Contact Number(s)	Email Address
Steve Henderson	IFAA	[redacted]	[redacted]	[redacted]
Daniel McCown	N/A	[redacted]	[redacted]	[redacted]
[illegible] Mickelsen	BEA		[redacted]	[redacted]
Dan Wark	NA	[redacted]	[redacted]	[redacted]
Amy Taylor	U.S. Senator Risch	[redacted]	[redacted]	[redacted]
Roger Cox	N/A	[redacted]	[redacted]	[redacted]
Anas Almassrahy	IF - Planning Division	[redacted]		[redacted]
Carl Dixon	Self	[redacted]	[redacted]	[redacted]

Idaho Falls Regional Airport Master Plan
Meeting 1 – Kickoff
August 31, 2021
6:00 to 8:00 PM MDT

IFAirportMP.com

Name	Company/Representing	Address	Contact Number(s)	Email Address
Alan Reed	Reed Dairy	[redacted]	[redacted]	[redacted]
Bobby Picker	Aviation CAP Pilot	[redacted]	[redacted]	[redacted]
Robert Roesener	Self	[redacted]	[redacted]	[redacted]
John Grubb	CAP	[redacted]	[redacted]	[redacted]
Eric Parker	Self	[redacted]	[redacted]	[redacted]
Derek [illegible]	RCAS	[redacted]	[redacted]	[redacted]
Kristin Cook		[redacted]	[redacted]	[redacted]
Gary Dixon	Self	[redacted]	[redacted]	[redacted]

T-O ENGINEERS

Idaho Falls Regional Airport Master Plan
Meeting 1 – Kickoff
August 31, 2021
6:00 to 8:00 PM MDT

IFAirportMP.com

Name	Company/Representing	Address	Contact Number(s)	Email Address
[illegible] Beck	Pal 1 LLC	[redacted]	[redacted]	[redacted]
Roger Blew		[redacted]	[redacted]	[redacted]
Farmer Virginia Tracy		[redacted]	[redacted]	[redacted]
Kevin Pettingill		[redacted]	[redacted]	[redacted]
[illegible] Willison		[redacted]	[redacted]	
Steve Wackerli		[redacted]	[redacted]	
[illegible]		[redacted]	[redacted]	
Declan Dittrick	Skyline Storage LLC	[redacted]	[redacted]	

[redacted]

Idaho Falls Regional Airport Master Plan
Meeting 1 – Kickoff
August 31, 2021
6:00 to 8:00 PM MDT

IFAirportMP.com

Name	Company/Representing	Address	Contact Number(s)	Email Address
Will Westphal	[redacted]	[redacted]	[redacted]	[redacted]
Wayne Reiter	T-O Engineers	7950 N. Meadowlark Way Suite A Coeur d'Alene, ID 83815	208-370-3906	wreiter@to-engineers.com
Jared Winge	T-O Engineers	1717 S. Rustle St. Suite 201 Spokane, WA 99224	509-319-2580	jwinge@to-engineers.com
Rick Patton	T-O Engineers	1998 W. Judith Lane Boise, ID 83705	208-433-1900	rpatton@to-engineers.com
Nathan Cuvala	T-O Engineers	2471 S. Titanium Pl. Meridian, ID 83642	208-323-2288	ncuvala@to-engineers.com
Dave Sherman	T-O Engineers	2471 S. Titanium Pl. Meridian, ID 83642	208-323-2288	dsherman@to-engineers.com
Rick Cloutier	Idaho Falls Regional Airport	2140 N. Skyline Dr. Idaho Falls, ID 83402	208-612-5224	rcloutier@idahofalls.gov
Jayme Verish	Idaho Falls Regional Airport	2140 N. Skyline Dr. Idaho Falls, ID 83402	208-612-5267	jverish@idahofalls.gov

T-O ENGINEERS

l. Comment Forms

IDAHO FALLS REGIONAL AIRPORT MASTER PLAN
Meeting Comment Card

Please fill out this comment card if you wish to make a comment during the meeting. Comments will be limited to 3 minutes, unless prior arrangements have been made with the planning team.

Name and Affiliation: Steve Henderson

City of Residence: Idaho Falls

Phone: 208 [redacted] Email: [redacted]

IDAHO FALLS REGIONAL AIRPORT MASTER PLAN
Meeting Comment Card

Please fill out this comment card if you wish to make a comment during the meeting. Comments will be limited to 3 minutes, unless prior arrangements have been made with the planning team.

Name and Affiliation: Roger Blew

City of Residence: Idaho Falls

Phone: 208 [redacted] Email: [redacted]

01.2 Public Meeting #2

a. Meeting Summary

Date: October 20, 2022

Time: 4—8 p.m.

Place: College of Eastern Idaho, Building 6, Rooms 150 & 152
1600 S. 25th E., Idaho Falls, Idaho

- The meeting was held in an open house format and was split into four one-hour sessions.
- The staff at the sign-in table explained the meeting format to participants as they arrived and asked them to sign-in. They were each given a comment form and project handout that included a brief overview of the meeting and explained the type of input requested.
- Community members then had an opportunity to talk with project staff and provide input about the master plan at four information stations.

Information Stations

- Airport Master Plan Overview
- Airport Overview
- Aviation Demand Forecast
- Facility Requirements and Next Steps

Project Staff

- Wayne Reiter, T-O Engineers
- Nathan Cuvala, T-O Engineers
- Rick Patton, T-O Engineers
- Airport staff

Key Taking Points

- The master plan helps the airport prepare for change and examines future operations, passenger, and cargo activity requirements and identifies what the airport needs to do to accommodate those requirements for the next 20 years.
- An airport master plan includes a review of existing conditions, passenger forecasts, terminal building requirements, cargo requirements, parking requirements, rental car requirements, general aviation requirements, compliance with Federal Aviation Administration standards and grant assurances, and implementation and funding strategies.
- When an airport uses federal funds to acquire property for aeronautical use, the airport is obligated to use that property for aeronautical purposes. This obligation does not expire.
- If federally-obligated airport property is no longer needed for aeronautical purposes, the FAA must approve of the nonaeronautical use of this property, it must be documented on the airport layout plan, and the airport must receive fair market value rent for the property.

- The FAA does not have jurisdiction in local land use or zoning approvals. Both the city and county are responsible for implementing policies and laws to protect the airspace surrounding the airport.
- The disposition of the soccer fields is unknown at this time. The next phase of the master plan will focus on developing a variety of alternatives to help the airport meet each of the facility requirements presented at the meeting.
- 2021 was a record year with a total of 223,741 enplaned passengers.
- There was a total of 219,683 enplaned passengers between January 1 and August 31, 2022.
- There was a total of 33,656 operations for 2021.
- There was approximately 6.3 million pounds of cargo processed at the airport in 2021.
- There are five public meetings planned for this master plan. The next meeting will focus on development alternatives being considered, and the fourth meeting will focus on the draft master plan and airport layout plan. The fifth meeting will occur at a city council meeting where the final master plan and airport layout plan will be considered for adoption.
- A project website has been set up to inform the public and provide access to documents as they become available: https://ifairportmp.com/
- The planning team has completed the inventory, developed the aviation forecast, and determined the facility requirements needed to meet that demand as well as any improvements needed to meet updated safety requirements. The next step is to focus on development alternatives to meet those requirements.
- The Federal Aviation Administration approves the forecast and the airport layout plan and accepts the airport master plan report.
- The Idaho Falls City Council adopts and implements the airport master plan.

b. Meeting Supplement

Idaho Falls Regional Airport
Master Plan Open House
College of Eastern Idaho
October 20, 2022
4:00 - 8:00 pm

Open House Stations

1. Sign In Desk
2. Master Plan Overview
3. Airport Overview
4. Forecast
5. Facility Requirements
6. Comment Forms

Contact Information:

Rick Cloutier, C.M.
Airport Director
rcloutier@idahofalls.gov
208-612-8224

Jayme Verish, C.M., ASC
Assistant Airport Director
jverish@idahofalls.gov
208-612-8267

Nathan Cuvala, P.E.
Project Manager
ncuvala@to-engineers.com
208-323-2288

Rick Patton
Aviation Planner
rpatton@to-engineers.com
208-433-1900

Wayne Reiter, A.A.E.
Aviation Planner
wreiter@to-engineers.com
208-762-3644

Airport Master Plan Overview and Project Update

An Airport Master Plan is a 20-year plan to meet aviation demand at an airport.

- This project began in July of 2021
- Kickoff meeting in August of 2021
- Airport Master Plans are normally a 2-year process
- We are about halfway through the technical aspects of this Airport Master Plan
- Chapters completed to-date: Introduction, Existing Conditions (Socioeconomic Overview, Background, and Inventory), Forecast of Aviation Demand, and Facility Requirements
- Next Step: Development of Alternatives to meet the facility requirements, then hold a public workshop
- Project website with draft documents: https://www.ifairportmp.com/

Forecast Summary and Critical Aircraft

Passenger enplanements are projected to grow at 1.9%. Overall operations are projected to grow at 0.9%. The critical aircraft are as follows:

Commercial Airline: Airbus A319/320

Cargo: ATR 72

General Aviation: Challenger 300

Forecast Year	Itinerant						Local		Total Airport Operations
	Enpl	Airline Ops	Cargo (Lbs.)	Cargo Ops	GA Ops/Air Taxi	Military Ops	GA Ops	Military Ops	
2021 (Baseline)	223,741	7,856	6,288,882	676	17,228	259	7,402	235	33,656
2026	289,508	9,468	9,952,995	843	18,017	286	7,604	235	36,453
2031	300,869	9,484	11,072,550	918	18,843	319	7,812	235	37,611
2041	326,041	9,570	13,488,226	1,071	20,610	389	8,244	235	40,119
CAGR	1.9%	1.0%	3.9%	2.3%	0.9%	2.1%	0.5%	0%	0.9%

Facility Requirements Summary

AIRFIELD

- Relocate Runway 3 windcone outside of the Runway Safety Area (RSA)
- Expand runway shoulders and blast pads
- Expand taxiway width and shoulders
- Eliminate the direct access to Runway 17/35 at Taxiway C from the GA parking apron
- Relocate the deicing pad
- Relocate the VOR-DME
- Add an additional 41 hangars
- Reconfigure GA parking spaces

LANDSIDE

- Expand the terminal building and add two additional aircraft gates
- Expand the economy and employee parking lots
- Expand the rental car facility
- Expand the cargo apron and processing building
- Expand the SRE building
- Expand the terminal access road

Recommendations

- Relocate the ATCT to allow for terminal expansion
- Relocate the ARFF station to allow for cargo expansion
- Eliminate terrain obstruction at the Runway 21 end
- Add approach lighting system to Runway 3 end
- Assess drainage infrastructure capacity and structural integrity
- Reconfigure parking lot access points from N. Skyline Drive
- Add electric vehicle (EV) charging stations to parking lot expansions

Airport Layout

c. Posters

Idaho Falls Regional Airport 2022 Airport Master Plan

What is an Airport Master Plan?

An airport master plan is the process of establishing an airport's blueprint for long-term development to meet future aviation demand. It helps to ensure the airport will continue to meet the needs of its customers and that future development is consistent with local, state, and national goals. This includes identifying potential environmental and socioeconomic impacts of future airport projects.

Why Does the Airport Need One?

An airport master plan is typically updated every five to ten years. This helps the airport respond to updated design requirements as well as industry trends and changes in the economy. The last airport master plan was completed in 2010.

The Airport Master Plan Process

Research

- Research the airport's history.
- Inventory existing conditions.
- Develop a forecast of future activity levels.
- Identify critical aircraft.
- Forecast approval.

Requirements

- Identify improvements required due to updated standards or to accommodate forecasted activity.
- Evaluate each option to determine the most responsible plan.

Implementation

- Prepare an implementation plan with a preliminary schedule and estimated costs.
- Prepare a capital improvement plan.
- Prepare an airport layout plan (ALP).

Who Determines This Process?

The elements of an airport master plan are outlined by the Federal Aviation Administration (FAA), but the process is tailored to meet the needs of the airport.

Who Approves the Plan?

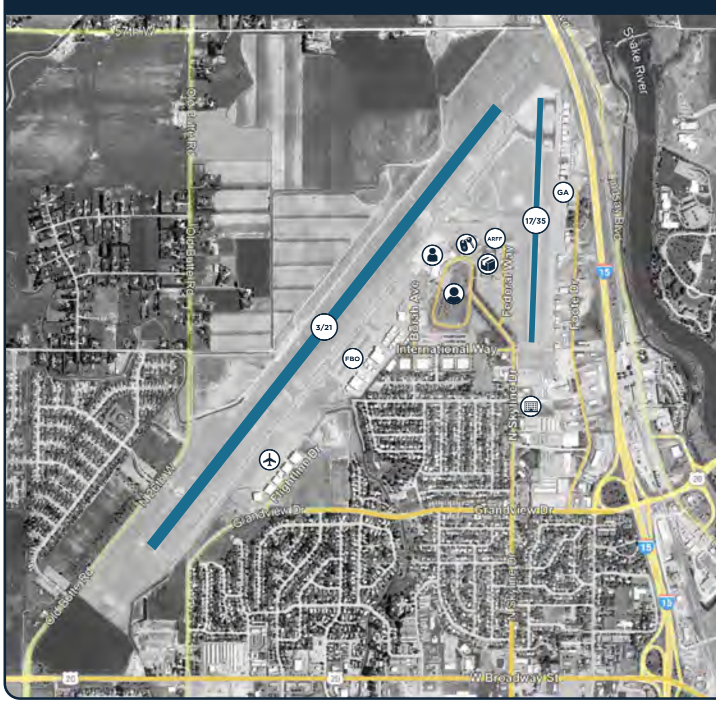
The City of Idaho Falls approves the plan. However, FAA approval is required for the forecast and the airport layout plan (ALP) these are used to determine grant funding.

What Is the Purpose of the Plan?

- Identify the condition and capacity of existing airport infrastructure.
- Identify existing problems, opportunities, and constraints.
- Determine if improvements are needed to meet current safety standards or future activity levels.
- Identify industry trends and their potential impact to the airport.
- Ensure the airport is able to continue to safely and efficiently meet the needs of customers.
- Allow the community to provide input on the plan.
- Develop a financially responsible plan for airport development.
- Establish a realistic schedule for project implementation.
- Identify potential funding sources.
- Keep the community informed.

Idaho Falls Regional Airport Overview

Idaho Falls Regional Airport



- PASSENGER TERMINAL
- TERMINAL PARKING
- RENTAL CAR PARKING
- 3/21 PRIMARY RUNWAY
- 17/35 CROSSWIND RUNWAY
- AIR CARGO APRON
- FBO MAIN FBO APRON
- GA EAST GA APRON
- SOUTH GA APRON
- ARFF AIRCRAFT RESCUE AND FIRE FIGHTING
- INDUSTRIAL PARK

Passenger Airlines

Primary Runway 3/21

- Oriented: Northeast-Southwest
- Length: 9,002 Feet
- Width: 150 Feet
- Markings: Precision Instrument

Crosswind Runway 17/35

- Oriented: North-South
- Length: 3,964 Feet
- Width: 75 Feet
- Markings: Visual

Idaho Falls Regional Airport Aviation Forecast

Aircraft Operations

An aircraft operation is when an aircraft lands, takes off, or conducts a touch-and-go procedure. They are separated into three main categories; commercial service, general aviation, and military operations.

Passengers

The passenger enplanements forecast is particularly important because it will help determine future requirements for airport facilities that accommodate passengers such as the size of the terminal and parking facilities.

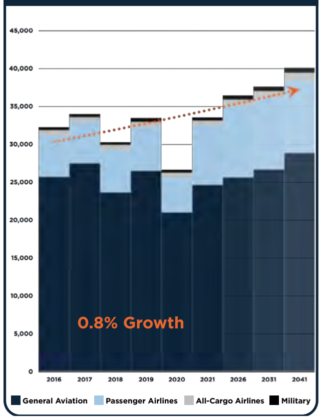
Air Cargo

The forecast for air cargo by volume will help determine if the airport's cargo facilities will be able to handle the expected increases in the volume of cargo throughout the forecast period.

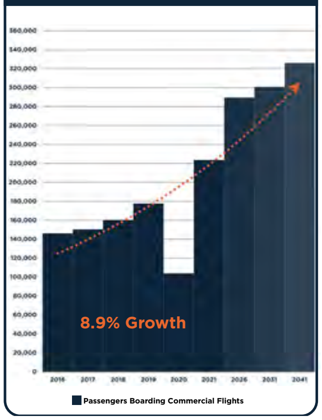
Critical Aircraft

The critical aircraft is often referred to as the design aircraft because it is used to determine the correct design standards, such as the separation distance between taxiways and runways.

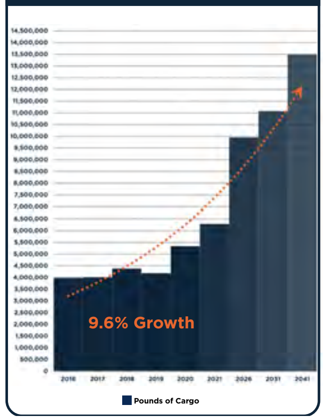
Aircraft Operations Forecast



Passenger Enplanement Forecast



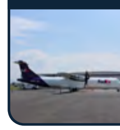
Air Cargo Forecast



Commercial Service

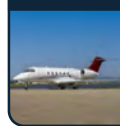
Airbus A320	
Aircraft Approach Category	C
Airport Design Group	III
Taxiway Design Group	3
Maximum Takeoff Weight	171,961 Pounds
Approach Speed	136 Knots
Wingspan	111.88 Feet
Length	123.27 Feet

Air Cargo Service



ATR 72	
Aircraft Approach Category	B
Airport Design Group	III
Taxiway Design Group	2
Maximum Takeoff Weight	49,603 Pounds
Approach Speed	114 Knots
Wingspan	88.75 Feet
Length	89.13 Feet

General Aviation



Bombardier Challenger 300	
Aircraft Approach Category	C
Airport Design Group	II
Taxiway Design Group	1B
Maximum Takeoff Weight	38,850 Pounds
Approach Speed	125 Knots
Wingspan	63.83 Feet
Length	68.75 Feet

Idaho Falls Regional Airport Facility Requirements

Airfield Requirements

- Relocate Runway 3 windcone outside the RSA
- Expand runway shoulders and blast pads
- Expand taxiway width and shoulders
- Eliminate direct access to Runway 17/35 at Taxiway C from the general aviation (GA) aircraft parking apron
- Relocate the deicing pad
- Relocate the VOR-DME
- Add 41 hangars
- Reconfigure GA aircraft parking spaces

Landside Requirements

- Expand the terminal building
- Add two aircraft gates
- Expand the economy parking lot
- Expand the employee parking lot
- Expand the rental car facility
- Expand the cargo apron
- Expand the cargo processing building
- Expand the snow removal equipment building
- Expand terminal access road

Recommendations

- Relocate the air traffic control tower to allow for terminal expansion
- Relocate the aircraft rescue and firefighting (ARFF) station to allow for cargo expansion
- Eliminate terrain obstruction at Runway 21 end
- Add approach lighting system to Runway 3 end
- Assess drainage infrastructure capacity and structural integrity
- Reconfigure parking lot access points from N. Skyline Drive
- Add electric vehicle (EV) charging stations to parking lot

Next Steps >>>

1. Identify potential alternatives to meet facility requirements.
2. Evaluate each alternative to determine the most environmentally, socially, and financially responsible plan.
3. Present each alternative to the public and seek feedback from the community.
4. Prepare an implementation plan with a preliminary schedule and estimated costs.
5. Conduct a financial analysis and prepare a capital improvement plan.
6. Prepare the airport layout plan (ALP).

d. Handout

Idaho Falls Regional Airport

Airport Master Plan 2022

Introduction

Idaho Falls Regional Airport (IDA) is owned and operated by the city. It proudly serves the aviation needs of Idaho Falls and the surrounding communities.

What is an Airport Master Plan?
An airport master plan is the process of establishing an airport's blueprint for long-term development. It is a comprehensive study of the airport to determine an effective plan for future airport development. It ensures the airport will continue to meet the needs of its customers in the future and that development is consistent with local, state, and national goals. This includes identifying potential environmental and socioeconomic impacts of future airport projects. An airport master plan is an important step in helping the airport become more efficient as well as financially and socially responsible.

Why Does the Airport Need One?
An airport master plan is typically updated every five to ten years. This helps the airport respond to updated design requirements, changes in the economy, and industry changes. The last airport master plan was completed for Idaho Falls Regional Airport in 2010.

Who Determines This Process?
The elements of an airport master plan are outlined by the Federal Aviation Administration (FAA), but the process is tailored to meet the needs of the airport and our community. An airport's size, as well as the number and type of aircraft using the airport, will determine the level of detail required.

DID YOU KNOW?

- The majority of the airport's capital improvements are funded through state and federal grants.
- Idaho Falls Regional Airport has an annual economic impact of more than $145.6 million (2020 Idaho Airport Economic Impact Analysis).

What Is the Purpose of the Plan?
The purpose of the Idaho Falls 2022 Airport Master Plan is to meet the following goals:

- Identify the condition and capacity of existing airport infrastructure.
- Identify existing problems, opportunities, and constraints.
- Determine if improvements are needed to meet current safety standards or future activity levels.
- Identify industry trends and their potential impact to the airport.
- Ensure the airport is able to continue to safely and efficiently meet the needs of customers.
- Allow the community to provide input on the plan.
- Develop a financially responsible plan for airport development.
- Determine the potential environmental and socioeconomic impact of airport development.
- Establish a realistic schedule for project implementation.
- Identify potential funding sources.
- Keep the community informed.

The Airport Master Plan Process
The FAA provides airports with guidance in the preparation of airport master plans. According to FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans* each master plan should include the following steps:

- Research the airport's history.
- Inventory existing conditions.
- Develop a forecast of future activity levels.
- Assess the airport's ability to accommodate forecasted activity.
- Identify potential improvements or new facilities needed to accommodate forecasted levels of activity safely and efficiently.
- Evaluate each option to determine the most environmentally, socially, and financially responsible plan.
- Prepare a financial plan that describes how the airport will pay for each project.
- Prepare an implementation plan that includes a preliminary schedule and estimated costs.
- Prepare an airport layout plan (ALP) that illustrates the long-term development plan.

Project Funding
The FAA is providing the airport with 100% of the funding needed to develop the airport master plan. While the FAA does provide the funding, it does not direct the process.

Project Sponsor
As the owner of the airport, the City of Idaho Falls is the airport sponsor. The airport master plan will be supervised by the airport director with support from the IDA Airport Board.

Plan Guidance
The technical advisory committee (TAC) will also help guide the development of the plan. The TAC is comprised of stakeholders and city representatives. The TAC provides the aviation planning team with valuable feedback and insight into the needs of the local aviation community and keeps the team informed of local issues.

Who Approves a Master Plan?
The airport sponsor approves the airport master plan. FAA approval is required for the forecast and the airport layout plan (ALP) because the agency uses these elements to help determine the airport's eligibility for grant funding of proposed development.

IDAHO FALLS REGIONAL AIRPORT 2022 Airport Master Plan

Community Outreach
Public meetings are an important part of this plan. These meetings provide airport planners with the opportunity to learn about your concerns and questions about the future of the airport. They also provide the community with access to the planning team, airport management, and city officials.

The planning team will hold several meetings where they will update the community as they reach major milestones in the plan. **The whole community is invited to attend these public meetings. We encourage you to share your thoughts and ideas and help shape the future of our airport.**

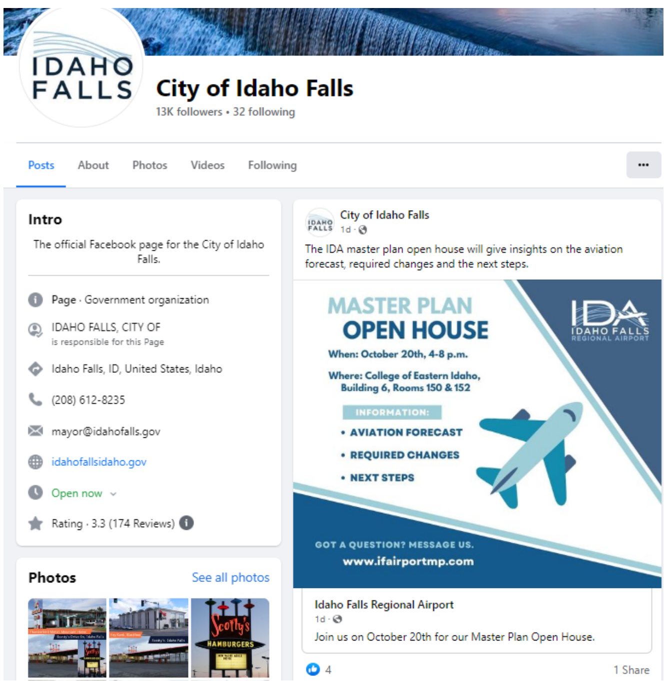
Plan Information and Updates
Project information and updates will also be posted online throughout the airport master plan process. This includes a project schedule, meeting announcements, and copies of plan documents as well as a comment page where you can submit your questions, concerns, and comments.

Please visit us online:
https://ifairportmp.com

Or please contact:

- **Jayme Verish, Assistant Airport Director**
  JVerish@IdahoFallsIdaho.gov
  (208) 612-8267
- **Wayne Reiter, Aviation Planner**
  WReiter@TO-Engineers.com
  (208) 762-3644
- **Nathan Cuvala, Aviation Planner**
  NCuvala@TO-Engineers.com
  (208) 323-2288

e. Facebook Posts



f. Website Notice

g. Photos

h. Sign-In Sheets

Idaho Falls Regional Airport Master Plan
Meeting 2 - Forecast and Facility Requirements
October 20, 2022
4:00 to 8:00 PM

IFAirportMP.com

IDAHO FALLS REGIONAL AIRPORT

Name	Affiliation	Address	Phone	Email	Would you like to receive newsletters?
Jim Francis	City Council	[redacted]	[redacted]	[redacted]	
Traci Hodgins	WSP		[redacted]	[redacted]	yes
[illegible]	Home owner		[redacted]	[redacted]	Yes
Lane Clayson	Mikelaleuca Hangar	[redacted]	[redacted]	[redacted]	Y
Milt Rule	Home Owner	[redacted]	[redacted]	[redacted]	Yes
[illegible]	Home owner	[redacted]	[redacted]	[redacted]	yes
Jon Re Young	Home owner	[redacted]	[redacted]	[redacted]	yes
Troy Robinson	Home Owner	[redacted]	[redacted]	[redacted]	Yes

Idaho Falls Regional Airport Master Plan
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4:00 to 8:00 PM

IFAirportMP.com

IDAHO FALLS REGIONAL AIRPORT

Name	Affiliation	Address	Phone	Email	Would you like to receive newsletters?
Jim Freeman	City Council			[redacted]	
Rene Maroski		[redacted]		[redacted]	yes
Rob Brochu		[redacted]			No
Kerry Beutler	City Planning	[redacted]		[redacted]	Yes
[illegible] Stevens	CPS	[redacted]		[redacted]	YES
Caitlin Long	City planning	[redacted]		[redacted]	Yes
Kevin + Jill Steel		[redacted]			
John Radford	City Council	[redacted]			

Idaho Falls Regional Airport Master Plan
Meeting 2 - Forecast and Facility Requirements
October 20, 2022
4:00 to 8:00 PM

IFAirportMP.com

IDAHO FALLS REGIONAL AIRPORT

Name	Affiliation	Address	Phone	Email	Would you like to receive newsletters?
Erin Bagner	self	[redacted]	[redacted]	[redacted]	Y
Paul Bagner	Self	[redacted]	[redacted]	[redacted]	Y
[illegible]	self	[redacted]	[redacted]	[redacted]	Y
Kim McCall	self	[redacted]	[redacted]	[redacted]	Y
[illegible]	self	[redacted]	[redacted]	[redacted]	Y
Andrew Mace	self	[redacted]	[redacted]	[redacted]	
Patrick Weston	self	[redacted]	[redacted]	[redacted]	yes
Dennis Meczeski	Self	[redacted]	[redacted]	[redacted]	Yes

Idaho Falls Regional Airport Master Plan
Meeting 2 - Forecast and Facility Requirements
October 20, 2022
4:00 to 8:00 PM

IFAirportMP.com

IDAHO FALLS REGIONAL AIRPORT

Name	Affiliation	Address	Phone	Email	Would you like to receive newsletters?
Amanda Ryan Seibach	we live near	[redacted]	[redacted]	[redacted]	yes please
Rebecca Casper	I.F. Resident City Employee	[redacted]	[redacted]	[redacted]	yes
Ken Schreck	IDA Based Pilot	[redacted]	[redacted]	[redacted]	Yes
Bill Crane	Village Resident	[redacted]	[redacted]	[redacted]	Yes
Kerry Kunkler	Rosewood	[redacted]	[redacted]	[redacted]	Yes
Steve Henderson	Pilot IFAA	[redacted]	[redacted]	[redacted]	Y

i. Comment Forms

IDAHO FALLS REGIONAL AIRPORT

IDAHO FALLS REGIONAL AIRPORT MASTER PLAN Comment Form

IFAirportMP.com

Contact Information (optional):

Name or Affiliation: Kerry Beutler, City Planning office

Address:

Phone: Email:

Please provide your comments about the Idaho Falls Regional Airport Master Plan:

future land use planning should take into consideration ~~&~~ the possibility of Highway 20 moving to the north & the land use implications this would have. It might indicate a need for airport operations to move or change on the property.

If its possible to create better public access to the Historic vet Bmon hanger that would be beneficial.

If you would like to return this comment form outside of the public meeting, please send it to:

Jayme Verish, Assistant Airport Director
2140 N. Skyline Drive
Idaho Falls, ID 83402
208-612-8267

02 Technical Advisory Committee Meeting Summaries

02.1 Technical Advisory Committee Meeting #1

a. Agenda

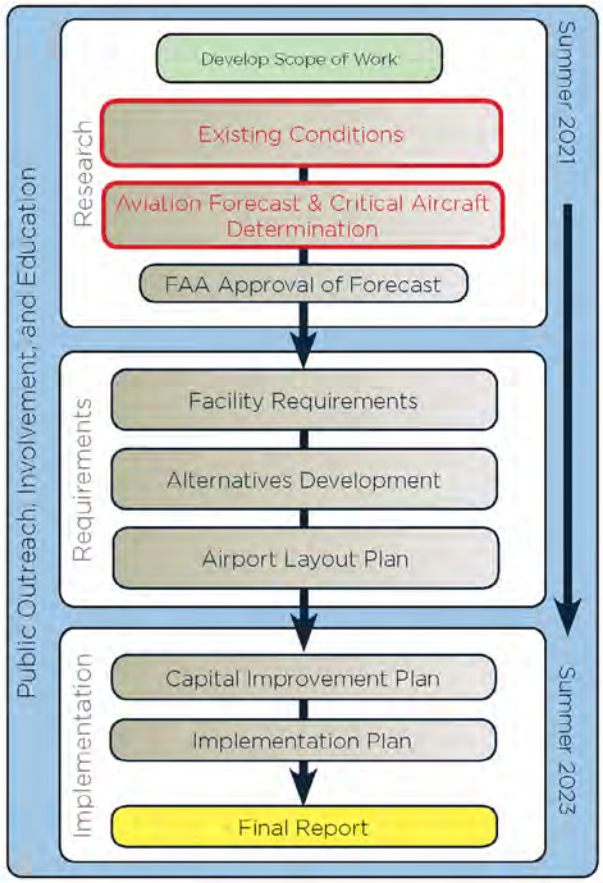
Idaho Falls Regional Airport Master Plan

TAC Meeting #1 • October 20th, 2021 • 1:30 pm • Teams or Call-In: 208-995-2415, ID 332282411#

IDAHO FALLS REGIONAL AIRPORT

MEETING AGENDA

- Welcome & Introductions
- Review Principles of Participation
- Schedule Update
- Feedback on the Presentation
- Open Ended Discussion
- Next Steps
- Meeting Conclusion



Recorded Kickoff
Please Review Prior to the Meeting

- Welcome and Introductions
- Project Description
- Master Plan Objectives
- Master Plan Elements
- Roles and Responsibilities
- Public Participation
- Key Issues
- Project Schedule
- Next Steps
- Public Comments

Website:
https://ifairportmp.com/

Links to the kickoff recording and meeting summary are avaiable on the website.

Contact Information:
Wayne Reiter, Aviation Planner
wreiter@to-engineers.com
208.370.3906

Jayme Verish, Assistant Airport Director
jverish@idahofalls.gov
208.612.8267

Idaho Falls Regional Airport Master Plan *www.to-engineers.com*

b. Meeting Summary

Date: October 20, 2021

Time: 1:30 p.m.

T-O Engineers Airport Planner Wayne Reiter opened the meeting and noted the following attendees were present.

- Tom Hoff from Aero Mark participated in the absence of Bob Hoff
- Steve Laflin, President, Idaho Falls Airport Association
- Shanda Schmardebeck, Station Manager, SkyWest/United/Delta/Alaska
- Rick Cloutier, Airport Director, Idaho Falls Regional Airport
- Jayme Verish, Assistant Airport Director, Idaho Falls Regional Airport
- Brad Cramer, Direct of Community Development, City of Idaho Falls
- Bud Cranor, PIO, City of Idaho Falls

Not in attendance:

- Jenny Burton, Station Manager, Envoy/American Airlines
- Randy Fife, City Attorney
- Mike Kirkham, City Attorney

- Airport Director Rick Cloutier welcomed attendees and asked everyone to introduce themselves.
- Reiter reviewed the agenda and then gave an overview of the principles of participation—a set of ground rules and expectations for TAC members.
- Reiter informed attendees that data collection and research is in progress for the inventory and forecast. The sources of data used for the forecast include tower reports, flight plans, and local data collected from airport staff. Flight Aware is not one of the data sources used.
- Reiter explained that the forecast includes projections for passengers, commercial service operations, general aviation operations, based aircraft, fleet mix, cargo volume, cargo operations, and the critical aircraft. The methodologies used to make these projections may include socioeconomic factors and historic activity or a combination of factors.
- Reiter went on to explain that the forecast is a major milestone in the master plan process because the traffic volume, and especially the critical aircraft, will drive the future requirements. Additionally, cargo activity and cargo aircraft may also become a major issue if operators bring large aircraft to the airport on a regular basis.
- Reiter estimated that a draft of the forecast would be sent to airport staff by Thanksgiving. Once airport staff have reviewed the forecast, it will be sent to the FAA for review and approval. Once the forecast is approved, there will be another public meeting and TAC meeting to present the inventory and the forecast.
- Reiter gave an overview of the public kickoff presentation and asked for feedback.
- The issue of TAC input was brought up during open discussion. Since we are still in the beginning of the master plan, there are no documents to review and comment on yet. That will change during facility requirements and development of alternatives.

- There was concern for the technical aspect and jargon of a master plan for non-aviation members as well as the public. This will be taken into consideration during the creation of the documents to make sure they are understandable to as many people as possible.
- Jayme Verish thanked everyone for serving on the TAC.
- Cloutier encouraged everyone to speak up and provide good feedback on the documents and alternatives presented.
- Reiter went over the next steps, which include getting the forecast to the FAA for review and approval, then schedule the next TAC and public meeting. FAA approval may take some time due to their workload. After forecast approval occurs, the master plan will move into the facility requirements then alternative development.
- Reiter asked the TAC for input on future TAC meeting formats. A virtual format was well received. Should anyone want to meet in person at the airport, they should contact airport staff so that distancing can be accommodated.
- Reiter concluded the meeting.

c. Principles of Participation

City of Idaho Falls
Idaho Falls Regional Airport Master Plan
Technical Advisory Committee

IDA IDAHO FALLS REGIONAL AIRPORT

Principles of Participation

Mission
The Idaho Falls Regional Airport Master Plan Technical Advisory Committee (Committee) will advise the Idaho Falls Regional Airport Master Plan project team and City of Idaho Falls as a representative voice of airport stakeholders.

Responsibilities of Committee Members
To accomplish the mission described above, Committee members are being asked to:

- Become familiar with existing planning and policy documents related to the airport.
- Become familiar with land uses, facilities, and environmental resources in the project area.
- Provide informed feedback to the project team (Airport staff and Consultant team) at the milestones in the planning process (see Meetings and Discussion Process below).
- Read all agenda and background materials distributed prior to the meetings by the project team.
- Publicize opportunities for members of their respective organizations, other organizations, and the general public to participate in the planning process, including the public workshops and website engagement activities.
- Listen carefully to others; the Committee will function best when we understand and value one another's views and experiences.
- Help create a respectful and productive working climate.

Representation
Committee members will be chosen by identifying organizations and agencies that represent the various elements that will be considered in the Airport Master Plan. Identified organizations will then be asked to choose individuals to represent them on the Committee.

Each Committee member is encouraged to report back to his or her respective constituency to inform them about the Committee's discussions and the progress of plan preparation. Meeting summaries will be prepared to facilitate this effort. Project team staff will be available to assist in this communication process, if desired.

If an invited Committee member declines participation in the Committee, or at any point becomes unable to serve, he or she will inform the project team, and the project team will find a replacement.

Discussion Process
Committee members agree to abide by the following discussion process during the meetings:

- All participants are welcome to speak freely.
- All comments will be brief and constructive so that others can also speak.
- All perspectives are valued.
- One person speaks at a time.
- The preferred deliberation process is collaborative problem solving. In cases of mixed opinions, alternative perspectives will be documented.
- Committee members treat each other with respect.
- A neutral third-party will facilitate the meetings.

Attendance
In order for the process to work effectively, full participation of representatives is essential. Committee members are asked to commit to consistently attend meetings, as well as attend public outreach events to directly hear and gather input from the community. Meetings will be generally held during the late afternoon on a weekday.

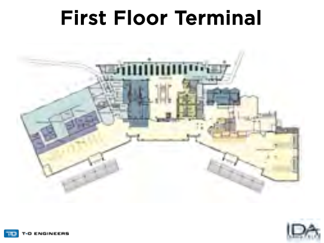
Support
A neutral third-party facilitator from the Consultant team will facilitate all Committee meetings. The role of the facilitator is to ensure all perspectives are heard through a collaborative discussion process. The project team will provide technical and logistical support, including making presentations, answering questions, coordinating meetings, and documenting meeting content.

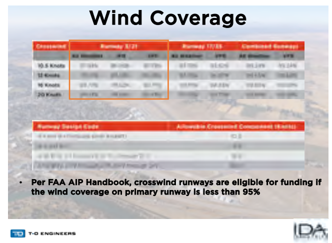
Meeting Agendas
The project team will be responsible for preparing the agendas, with consideration of input from Committee members. Agendas and assigned reference materials will be distributed by email in advance of each meeting.

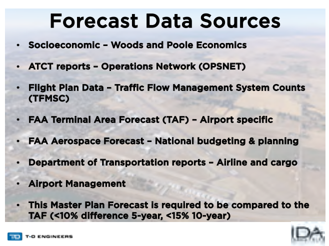
Information Sharing
Committee members may want to share information and documents with other Committee members during the planning process. To ensure that all members have the same information available to them, all documents are to be distributed through the established point of contact:

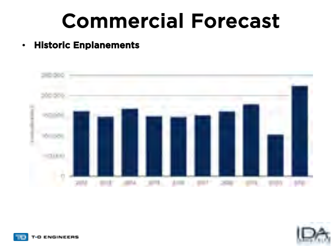
Wayne Reiter
Aviation Planner
T-O Engineers
wreiter@to-engineers.com

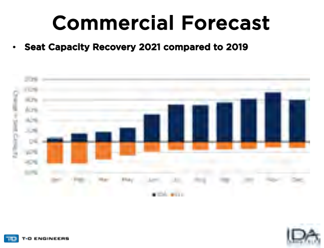
d. Presentation

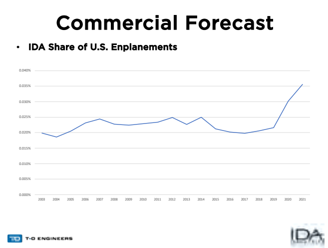


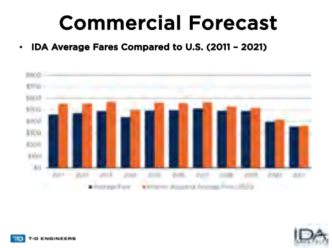


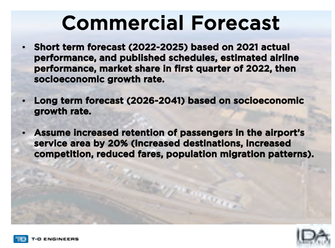


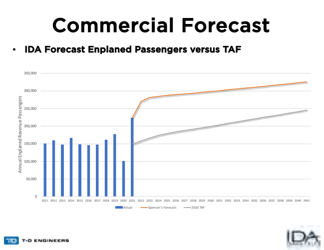


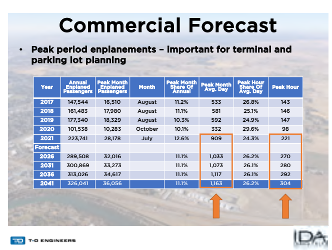




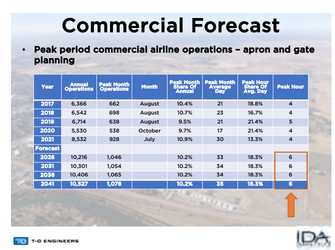




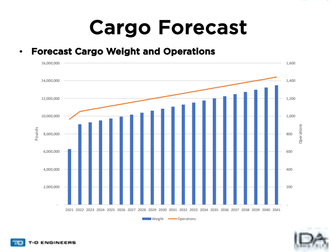




Year	Annual Enplaned Passengers	Peak Month Enplaned Passengers	Month	Peak Month Share Of Annual	Peak Month Avg. Day	Peak Hour Share Of Avg. Day	Peak Hour
2017	147,544	16,510	August	11.2%	533	26.8%	143
2018	161,483	17,980	August	11.1%	581	25.1%	146
2019	177,340	18,329	August	10.3%	592	24.9%	147
2020	101,538	10,283	October	10.1%	332	29.6%	98
2021	223,741	28,178	July	12.6%	909	24.3%	221
Forecast							
2026	289,508	32,016		11.1%	1,033	26.2%	270
2031	300,869	33,273		11.1%	1,073	26.1%	280
2036	313,026	34,617		11.1%	1,117	26.1%	292
2041	326,041	36,056		11.1%	1,163	26.2%	304



Year	Annual Operations	Peak Month Operations	Month	Peak Month Share Of Annual	Peak Month Average Day	Peak Hour Share Of Avg. Day	Peak Hour
2017	6,366	662	August	10.4%	21	18.8%	4
2018	6,542	698	August	10.7%	23	16.7%	4
2019	6,714	638	August	9.5%	21	21.4%	5
2020	5,530	538	October	9.7%	17	21.4%	4
2021	8,532	928	July	10.9%	30	13.3%	4
Forecast							
2026	10,216	1,046		10.2%	33	18.3%	6
2031	10,301	1,054		10.2%	34	18.3%	6
2036	10,406	1,065		10.2%	34	18.3%	6
2041	10,527	1,078		10.2%	35	18.3%	6



General Aviation Forecast

- Includes air taxi and military
- Based aircraft
- Local operations
- Itinerant operations

General Aviation Forecast

- Based Aircraft – 125 to 165
- Fleet mix percentages remain constant (from 5010)
  - Single engine – 74%
  - Multi-engine – 16%
  - Jet – 4%
  - Helicopters – 2%
  - Gliders – 2%

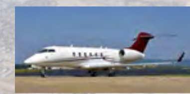
Year	Single Engine	Multi Engine	Jet	Helicopters	Gliders
2021 (Baseline)	93	20	5	4	3
2026	101	22	5	4	3
2031	109	24	5	4	3
2041	123	28	6	5	3

General Aviation Forecast

- Local Operations – 7,402 to 8,244
- Itinerant Operations – 17,228 to 20,610
- Military – based on TAF
  - Local – flat growth at 235
  - Itinerant – 259 to 389

General Aviation Forecast

- Critical aircraft – Representative aircraft based on Airport Reference Code (ARC) mix from TFMSC, OPSNET, and TAF
- Bombardier Challenger 300 (ARC C-II)



General Aviation Forecast

- General Aviation Forecast Summary

Year	Based Aircraft	Local		Itinerant		Total
		GA	Military	GA/Air Taxi	Military	
2021 (Baseline)	125	7,402	235	17,228	259	25,124
2026	135	7,604	235	18,017	286	26,142
2031	145	7,812	235	18,843	319	27,209
2041	165	8,244	235	20,610	389	29,478

General Aviation Forecast

- General Aviation TAF Comparison

Annual Operations	2021 (Baseline)	2026	2031	2041
Master Plan Forecast	25,124	26,142	27,209	29,478
FAA TAF	26,294	24,662	25,096	25,902
% Difference	-5%	6%	8%	14%

Based Aircraft	2021	2026	2031	2041
Master Plan Forecast	125	135	145	165
FAA TAF	171	171	171	171
% Difference	-27%	-21%	-15%	-4%

Master Plan Forecast Summary

Forecast Year	Itinerant						Local		Total Airport Operations
	Enpl	Airline Ops	Cargo (Lbs.)	Cargo Ops	GA Ops/Air Taxi	Military Ops	GA Ops	Military Ops	
2021 (Baseline)	223,741	7,856	6,288,882	676	17,228	259	7,402	235	33,656
2026	289,508	9,468	9,952,995	843	18,017	286	7,604	235	36,453
2031	300,869	9,484	11,072,550	918	18,843	319	7,812	235	37,611
2041	326,041	9,570	13,488,226	1,071	20,610	389	8,244	235	40,119
CAGR	1.9%	1.0%	3.9%	2.3%	0.9%	2.1%	0.5%	0%	0.9%

Facility Requirements

- Gap analysis between forecast aviation demand and existing conditions
- Based mainly on FAA design standards – in this case AC 150/5300-13B, *Airport Design*, released 3/31/2022
- Additional sources
  - Other advisory circulars (runway length, capacity, SRE, wildlife)
  - Focused planning studies (terminal)
  - Airport Cooperative Research Program (ACRP) guidance (cargo)
  - IASP (hangar and tie down)
  - NOAA (wind and declination)
  - Part 77 (airspace)
  - FAA Orders and engineering briefs (NAVAIDs)
  - SP+ (parking)
  - ITD Land Use Guidelines and IF comprehensive plan (land use, vision)

Facility Requirements - Airfield

- Capacity – Annual Service Volume (ASV)
- Runway length – recommendation, not a design standard
- Runway and taxiway dimensional standards – including safety buffers
- Airspace – Part 77
- Approach and departure surfaces
- Navigational Aids
- Instrument approaches

Facility Requirements - Airfield

- ASV = 215,000 annual operations (40,203 forecast or 19%)
- Existing runway lengths are adequate
- Runway shoulders and blast pads do not meet standard
- Runway line of site not met for both runways – ATCT
- Known penetrations in the Part 77 and approach surfaces (as shown in previous ALP)
- Taxiway widths vary – do not meet standards
- Runway incursion risk – Runway 17/35 at Taxiway C
- VOR-DME 1,000' critical area contains hangars

Facility Requirements - Airfield

- Runway 3 windcone is in the RSA
- Runway 17/35 does not meet funding eligibility based on wind coverage and capacity (AIP Handbook – Table G-1)
- Instrument approach procedures could be improved by eliminating terrain obstructions (Runway 21) and adding approach lighting to Runway 3

Facility Requirements – ADG-IV

- ADG-III Wingspan 79' to 118'
- ADG-IV Wingspan 118' to 171'
- Runway 3/21 – IT-OFZ would lower, and crosswind component would increase from 16 to 20 knots
- Taxiway standards:
  - TSA increase from 118' to 171'
  - TOFA increase from 171' to 243'
  - TLOFA increase from 158' to 224'
  - TW CL to fixed object increase from 85.5' to 121.5'
  - TL CL to fixed object increase from 79' to 112'

Facility Requirements – Aprons and Hangars

- Commercial apron – two parking spaces (gates) needed
  - Shift vehicle service road
  - Relocate deicing pad
- Cargo apron – additional space needed for 757 and GSE
- GA Tie-Downs – met by more efficient use of markings
- Hangars – 41 needed by 2041

Facility Requirements – Terminal

- Based on focused planning study conducted by Allliance
- Assumed two new airlines adding service – 737-700 and ERJ-145, outside of peak hour passenger activity
- Peak hour enplanements of 366, versus 304 from the master plan

Facility Requirements – Terminal

TERMINAL PLANNING TRIGGER POINTS SUMMARY – PREFERRED SCENARIO

Functional Area	2021		Forecast Planning Activity Levels			
	Existing	Recommended	2026	2031	2036	2041
General						
Annual Enplanements	223,741	-	441,541	470,865	502,423	535,937
Peak Hour Enplaned	228	-	302	322	343	366
Peak Hour Deplaned	240	-	285	303	324	345
Gates/Aircraft Positions						
Large Regional (Q400/E175/CRJ9)	-	5	5	5	5	6
Narrowbody (A320/B737W)	6	1	1	2	2	2
Total Aircraft Gates	6	6	6	7	7	8
Public Space Circulation Total (sf)	20,431	21,570	24,280	26,980	27,420	29,720
Security Screening Checkpoint (SSCP) Total (sf)	4,909	5,190	7,390	7,390	7,390	7,390
Number of Lanes	2	1	2	2	2	2
Queuing/Waiting Area Total (sf)	7,623	7,500	8,900	8,970	9,230	9,460
Gate Lounges/Holdrooms Total (sf)	12,642	10,900	10,900	13,900	13,900	15,480
Restrooms Total (sf)	2,781	5,330	5,660	6,260	6,730	6,730
Airline Space Total (sf)	3,379	2,730	4,330	4,330	4,550	4,780
Linear Ticket Counter Positions (Kiosk)	16	12(0)	19(0)	19(0)	20(0)	21(0)
Total Check-In Positions (Kiosk)	28(12)	15(3)	24(5)	24(5)	26(6)	27(6)
Total Linear Position Length (lf)	114	78	124	124	130	137
Other Airline Space Total (sf)	5,920	8,080	9,000	10,020	10,020	10,290
Concession Space Total (Pre Security) (sf)	4,641	2,070	2,630	2,710	2,790	2,880
Rental Car Counters	4	4	4	4	4	4
Concession Space Total (Post Security) (sf)	3,157	2,330	4,590	4,900	5,230	5,580
Non-Public Space Total (sf)	23,388	17,560	19,930	21,320	21,630	22,520
Total Functional & Support Terminal Area (sf)	85,600	80,060	93,860	102,670	104,700	110,410
Total Gross (sf)	88,871	83,260	97,610	106,780	108,890	114,830

Facility Requirements – Terminal

Facility Requirements – Terminal

Facility Requirements – Parking

VEHICLE PARKING JULY 2021

Parking Lots	Hourly	Daily	Economy
Avg Number of Vehicles Parked per Day	165	50	100
Avg Duration Each Vehicle Parked	1 hr 10 min	1 day	4 days
Avg % of Enplaned Passengers (909 PMAD)	18%	6%	11%
Avg % of Vehicles Parked (315 PMAD)	52%	16%	32%

VEHICLE PARKING REQUIREMENTS

Existing Spaces	144	291	478
Planning Activity Year	Hourly	Daily	Economy
2021	40	50	400
2026	49	57	455
2031	51	59	472
2036	53	61	492
2041	55	64	512

- Employee spaces from 72 to 305

Facility Requirements – Parking

Facility Requirements – Car Rental

RENTAL CAR READY/RETURN REQUIREMENTS

Existing Ready/Return Spaces	100
Planning Activity Year	Required
2021	98
2026	108
2031	118
2036	130
2041	143

RENTAL CAR QUICK TURNAROUND AREA REQUIREMENTS

QTA	2021 (Existing)	2026	2031	2036	2041
Fuel Dispensers	4	6	6	7	8
Wash Bays	4	6	6	7	8
Maintenance Bays	3	4	5	5	6
Overflow Spaces	90	129	141	155	170
Staging Spaces	40	57	63	69	76
Employee Spaces	15	21	24	26	28

Facility Requirements – Car Rental

Facility Requirements – Cargo

- Need more apron space for GSE - FedEx
- Need apron space to maneuver a 757 - FedEx
- FedEx building increase from 30,000 SF to 64,500 SF
- Space for a second major operator

Facility Requirements – Support

- SRE building expansion
- ARFF alternative locations
- ATCT alternative locations
- EV charging stations
- North Skyline Drive improvements, parking lot access points
- Passenger accessibility – contactless interface, wayfinding, ADA
- Drainage improvements

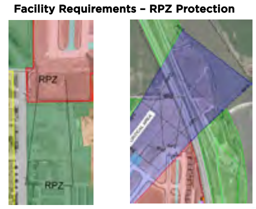
Facility Requirements – Land Use & Compliance

- Nonaeronautical uses
- RPZ protection from incompatible uses
- Prevention of wildlife attractants – mowing, standing water
- Land use zoning – work with Bonneville County to update
- Compliance documents – minimum standards and rules and regulations currently being updated

Facility Requirements – Nonaeronautical

Facility Requirements – RPZ Protection

Facility Requirements – RPZ Protection



Master Plan Next Steps

- Hold a public meeting
- Begin developing alternatives to meet the facility requirements
- Conduct an environmental site assessment of potential development areas
- Continue building the Airport Layout Plan and Exhibit A
- Hold a TAC/public meeting to present draft alternatives
- Receive public comment on the draft alternatives, select a preferred alternative
- Develop an implementation plan, complete the ALP
- Hold a TAC/public meeting to present the draft Master Plan/ALP

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APPENDIX B

FAA Forecast Approval

Idaho Falls
Regional Airport
2025 Airport Master Plan

October 2022

2025 Airport Master Plan
Kick-Off Meeting

CONTENTS

Appendix B
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

October 14, 2022

Rick Cloutier, C.M.
Airport Director
Idaho Falls Regional Airport
2140 N. Skyline Dr.
Idaho Falls, ID 83402

Idaho Falls Regional Airport
Idaho Falls, ID
Forecast Approval

Dear Mr. Cloutier:

The Federal Aviation Administration (FAA) reviewed forecast information for the subject airport. The forecast was received July 6, 2022. FAA approves the below forecast as presented in the on-going Master Plan's Chapter 5 – Forecast of Aviation Demand:

Table 5.1: Forecast Summary

	Base Year	Forecast Years			Compound Annual Growth Rate		
	2021	2026	2031	2041	5-Year	10-Year	20-Year
Operations							
Passenger Aircraft	7,856	9,468	9,484	9,570	3.80%	1.90%	0.99%
All-Cargo Aircraft	676	843	918	1,071	4.51%	3.11%	2.33%
Total Commercial	**8,532**	**10,311**	**10,402**	**10,641**	**3.86%**	**2.00%**	**1.11%**
Itinerant GA	17,228	18,017	18,843	20,610	0.90%	0.90%	0.90%
Local GA	7,402	7,604	7,812	8,244	0.54%	0.54%	0.54%
Total GA	**24,630**	**25,621**	**26,655**	**28,854**	**0.79%**	**0.79%**	**0.79%**
Itinerant Military	259	286	319	389	2.00%	2.11%	2.05%
Local Military	235	235	235	235	0.00%	0.00%	0.00%
Total Military	**494**	**521**	**554**	**624**	**1.07%**	**1.15%**	**1.17%**
Total Operations	**33,656**	**36,453**	**37,611**	**40,119**	**1.61%**	**1.12%**	**0.88%**
Passengers							
Total Enplanements	**223,741**	**289,508**	**300,869**	**326,041**	**5.29%**	**3.01%**	**1.90%**
Cargo							
Total Weight	**6,288,882**	**9,952,995**	**11,072,550**	**13,488,226**	**9.62%**	**5.82%**	**3.89%**
Based Aircraft							
Single-Engine	93	101	109	123	1.66%	1.60%	1.41%
Multi-Engine	20	22	24	28	1.92%	1.84%	1.70%
Jet	5	5	5	6	0.00%	0.00%	0.92%
Helicopter	4	4	4	5	0.00%	0.00%	1.12%
Glider	3	3	3	3	0.00%	0.00%	0.00%
Total Based Aircraft	**125**	**135**	**145**	**165**	**1.55%**	**1.50%**	**1.39%**

Source: IDA, U.S. Department of Transportation, FAA, Ricondo & Associates, Inc., T-O Engineers

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

The FAA also approves the following aircraft for the existing and future critical aircraft:

Air Carrier:	Airbus A319/A320
Air Cargo:	ATR 72
General Aviation:	Bombardier Challenger 300 (CL30)

We found the forecast to be supported by reasonable planning assumptions and current data. Your forecast appears to be developed using acceptable forecasting methodologies.

The approval of the forecast and critical aircraft does not constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on the ALP.

All future development will need to be justified by current activity levels at the time of proposed implementation. The approval of the forecast and critical aircraft does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on the ALP. Further, the approved forecasts may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

If you have questions, please call me at 406-441-5233.

Sincerely,

Jared Wingo
Community Planner
Helena ADO

Cc: Nathan Cuvala, T-O Engineers
Wayne Reiter, T-O Engineers

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APPENDIX C

Terminal Expansion Planning Study

Idaho Falls
Regional Airport
2025 Airport Master Plan

July 2022

2025 Airport Master Plan
Kick-Off Meeting

CONTENTS

Terminal Expansion Planning Study

ALLIIANCE

in association with

T·O ENGINEERS

TERMINAL EXPANSION PLANNING STUDY REPORT

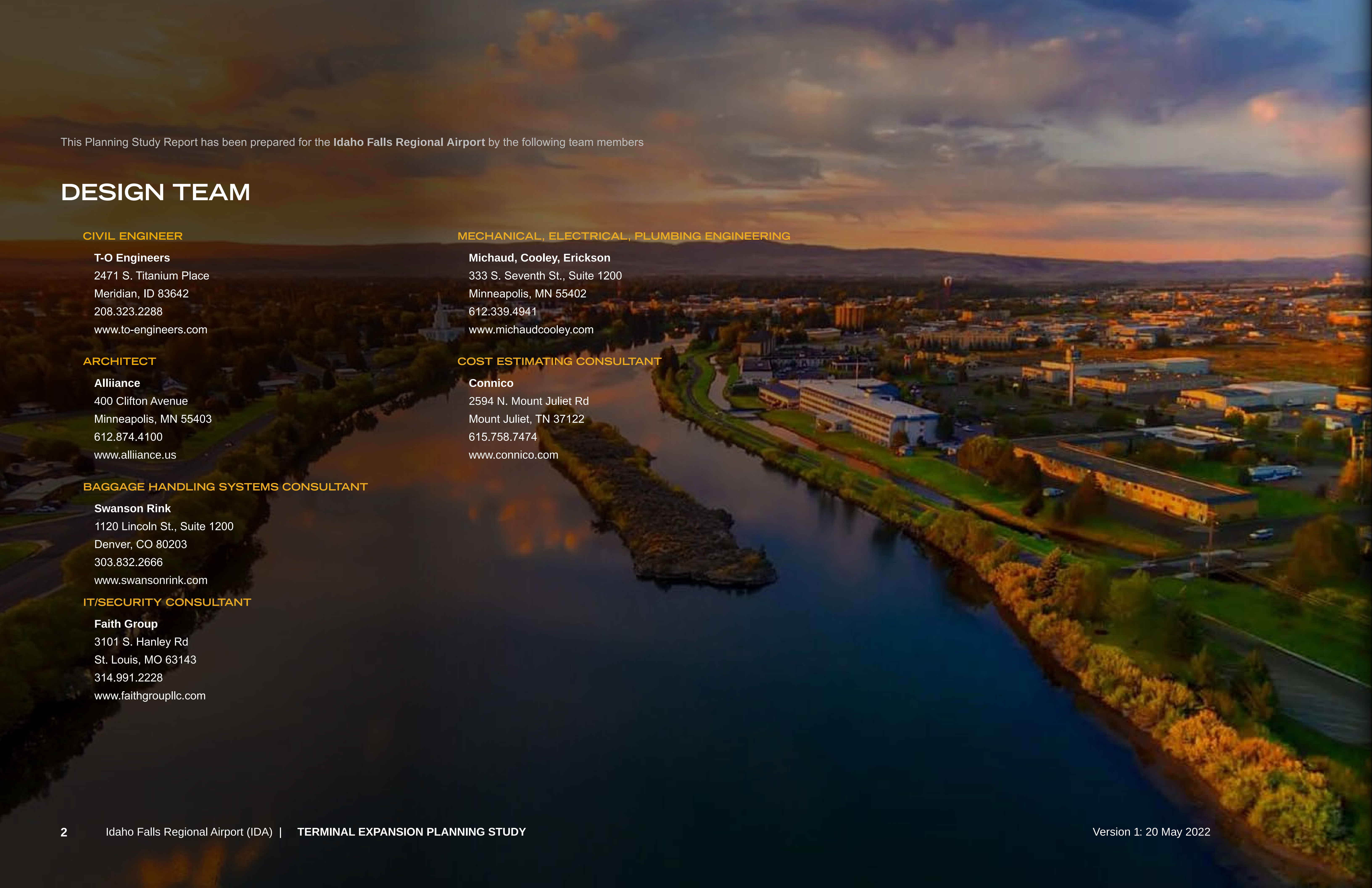
20 May 2022

IDAHO FALLS REGIONAL AIRPORT

IDAHO FALLS, IDAHO

Alliiance Commission No.: 2022029

Alliiance | 400 Clifton Avenue Minneapolis, Minnesota 55403 USA | 612.874.4100 | www.alliiance.us



This Planning Study Report has been prepared for the **Idaho Falls Regional Airport** by the following team members

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ISSUE HISTORY

Rev	Date	Description
1	05.20.2022	Issued to Owner

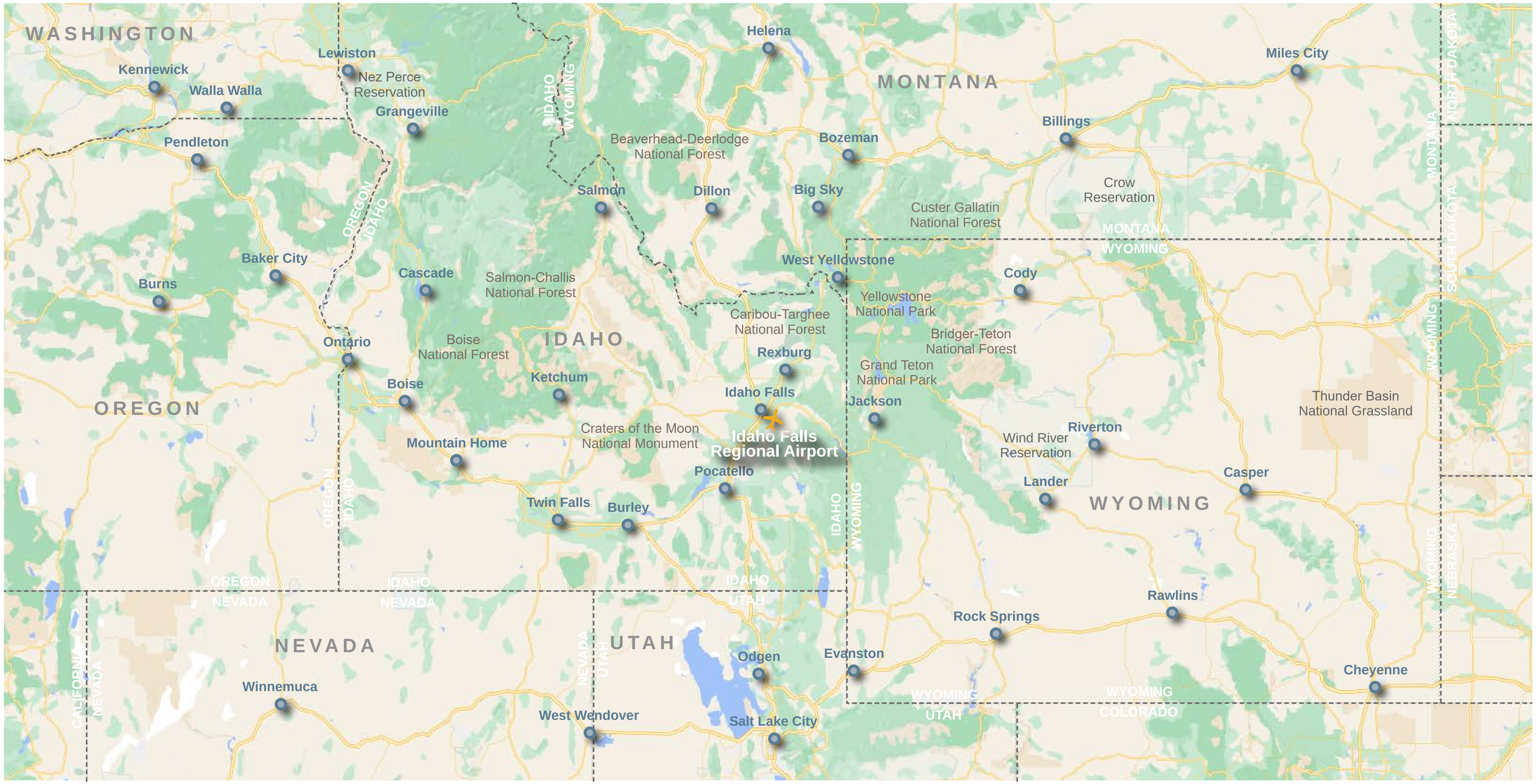
ABBREVIATIONS, ACRONYMS, AND INITIALISMS

ACRP	Airport Cooperative Research Program
ACS	Access Control System
ADG	Aircraft Design Group
ADO	Airport District Office (FAA)
AIT	Advanced Imaging Technology
ARFF	Aircraft Rescue and Fire Fighting
ATCT	Air Traffic Control Tower
ATS	Automatic Transfer Switches
BHS	Baggage Handling System
BIDS	Baggage Information Display System
BIM	Building Information Model
BRS	Baggage Reconciliation System
CAGR	Compound Annual Growth Rate
CMa	Construction Manager as Agent
CMAR	Construction Manager as Agent
CMc	Construction Manager as Constructor
CM/GC	Construction Manager / General Contractor
CMU	Concrete Masonry Unit
CPSS	Checkpoint Property Screening System
CR	Communications Room
CRPG	Checkpoint Requirements and Planning Guide (TSA)
CT	Computed Tomography
CUSS	Common Use Self Service
CUTE	Common Use Terminal Equipment
DAS	Distributed Antenna System
D-B	Design-Build
D-B-B	Design-Bid-Build
DDFS	Design Day Flight Schedule
EDS	Explosive Detection System
EQA	Equivalent Aircraft
EVIDS	Electronic Visual Information Display System
FAA	Federal Aviation Administration
FIDS	Flight Information Display System
GA	General Aviation
GC/CM	General Contractor / Construction Manager
GIDS	Gate Information Display System
GMP	Guaranteed Maximum Price
GPU	Ground Power Units
GSE	Ground Service Equipment
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IDA	Idaho Falls Regional Airport
IDF	Intermediate Distribution Frame
ILS	Instrument Landing System
IFP	Intelligent Field Panels
LAN	Local Area Network
LEO	Law Enforcement Office
LoS	Level of Service (IATA)
MCP	Motor Control Panels
MPOE	Main Point of Entry
MTR	Main Telecommunications Room
MUVIDS	Multi-User Visual Information Display System
NAVAIDS	Navigation Aids
O&D	Origination And Destination
PA	Public Address
PAL	Planning Activity Levels
PBB	Passenger Boarding Bridge
PCA	Pre-Conditioned Air
PDB	Progressive Design-Build
PGDS	Planning Guidelines and Design Standards (TSA)
PHP	Peak Hour Passenger
PMAD	Peak Month's Average Day
PSR	Private Screening Room
RMS	Resource Management System
RON	Remain Overnight
SPL	Sound Protection Level
SOC	Security Operations Center
SSCP	Security Screening Checkpoint
SIDA	Secure Identification Display Area
TAF	Terminal Area Forecast
TBD	To Be Determined
TDC	Travel Document Checker (TSA)
TOFA	Taxiway Object Free Area
TRB	Transportation Research Board
TSA	Transportation Security Administration
VSR	Vehicle Service Road
VSS	Video Surveillance System
WTMD	Walk-Through Metal Detector

01 PROJECT OVERVIEW

01 PROJECT OVERVIEW

AIRPORT CONTEXT



REGIONAL CONTEXT

Not to Scale

PROJECT INTRODUCTION

Given significant sustained growth in regional population and passenger traffic at Idaho Falls Regional Airport (IDA), Alliiance worked with T-O Engineers, the prime consultant, to develop conceptual planning alternatives for expansions and renovations of the existing terminal. Alliiance assessed high-level conceptual terminal expansion options based on the results from the Terminal Facilities Demand/Capacity analysis. This study also included an inventory and tabulation of the existing facility's spaces, including both public and non-public areas, in order to compare the demand associated with the future facility requirements.

Based on historical aviation statistics; an existing representative design day schedule; information relevant from the draft Master Plan forecast; and input from the Airport for near-term future flight activity; a 20-year design day and peak-hour forecast was developed by the consultant team to project future facility demand. It is important to understand the design day and peak hour forecast completed as part of this report differs significantly from a forecast of annual enplanements typically completed as part of an airport master plan. The starting point of this forecast was the average day of the peak month. The flight schedule of this day was used as the starting point and additional operations and destinations by both existing and potential carriers were added to the flight schedule to determine daily and peak hour operations. The facility demand was projected in 5-year increments which also served to provide "trigger points" or the point at which future demand would exceed current facility capacity. Priority areas for the studies included: Ticketing/ATOs/Baggage Makeup; Security Screening Checkpoint and Queueing; Restrooms, particularly Landside; Gate Holdrooms; and Baggage Laydown and Claim Hall.

PROJECT LOCATION

Idaho Falls Regional Airport (IDA), located in Idaho Falls, Idaho, is the state's second-busiest airport and is currently served by five airlines: Delta, Alaska, American, Allegiant, and United. Located in eastern Idaho, IDA serves as a gateway into the region and the surrounding states of Wyoming and Montana. Idaho Falls is a hotspot for outdoor tourism, located on the Snake River with convenient access to the Jackson Hole area, Grand Teton National Park, Yellowstone National Park, and several other recreational areas. Idaho Falls and the surrounding areas have been experiencing rapid population growth recently, particularly since 2020 and the start of the COVID-19 pandemic. As such, the airport has seen a corresponding increase in passenger traffic, taxing the existing facility's capacity.

02 EXISTING FACILITIES ANALYSIS

EXISTING CONTEXT BIRDSEYE
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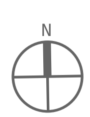

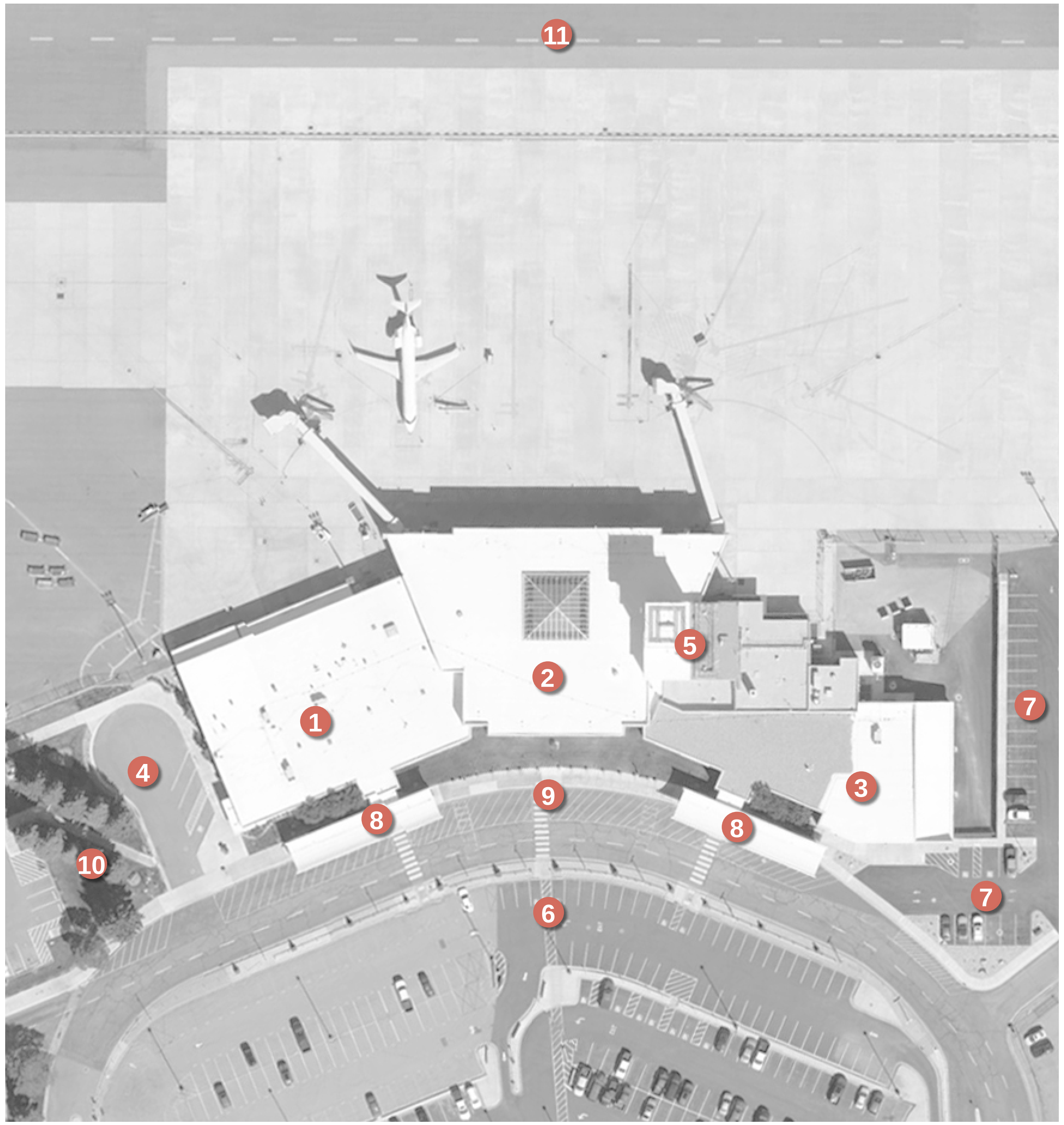

EXISTING SITE AERIAL
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N

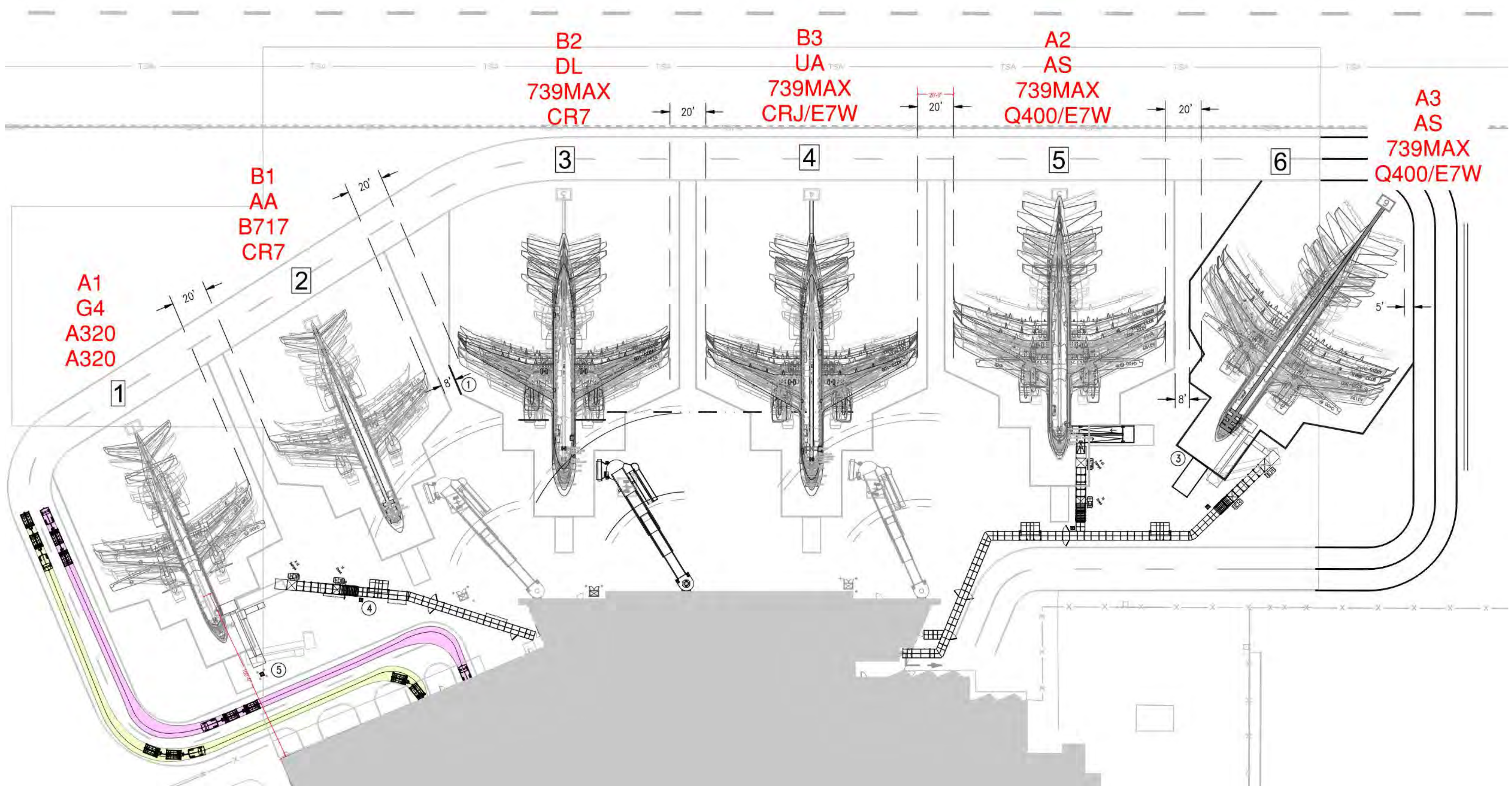
SITE CONFIGURATION

The terminal is positioned on the site such that the axis of its central portion containing the Great Hall, Checkpoint, and Gate Holdrooms is oriented slightly counterclockwise from due north-south. To the east of the terminal is the existing drive and curbside between the building and passenger parking lots. To the south of the terminal adjacent to the Ticketing Hall is a small cargo parking lot. To the north, adjacent to Baggage Laydown and the Baggage Claim Hall, are rental car parking lots.

DIAGRAM KEY NOTES

1. Terminal South: Ticketing, ATOs, Baggage Screening & Makeup
2. Terminal Central: Holdrooms, Checkpoint, Restrooms, Concessions, Airport Administration
3. Terminal North: Baggage Laydown and Claim, TSA, Building Support
4. Air Traffic Control Tower (ATCT)
5. Cargo Lot
6. Passenger / Guest Parking
7. Rental Car Lot
8. Curbside Canopy
9. Drop-off / Pickup Lane
10. Employee Break Area
11. Taxiway Alpha

Note: One passenger boarding bridge (PBB) and two ground boarding enclosed walkways are not shown.



EXISTING AIRCRAFT PARKING

Not to Scale

EXISTING AIRCRAFT PARKING AND APRON

AIRCRAFT PARKING, PASSENGER BOARDING BRIDGES, AND ENCLOSED WALKWAYS

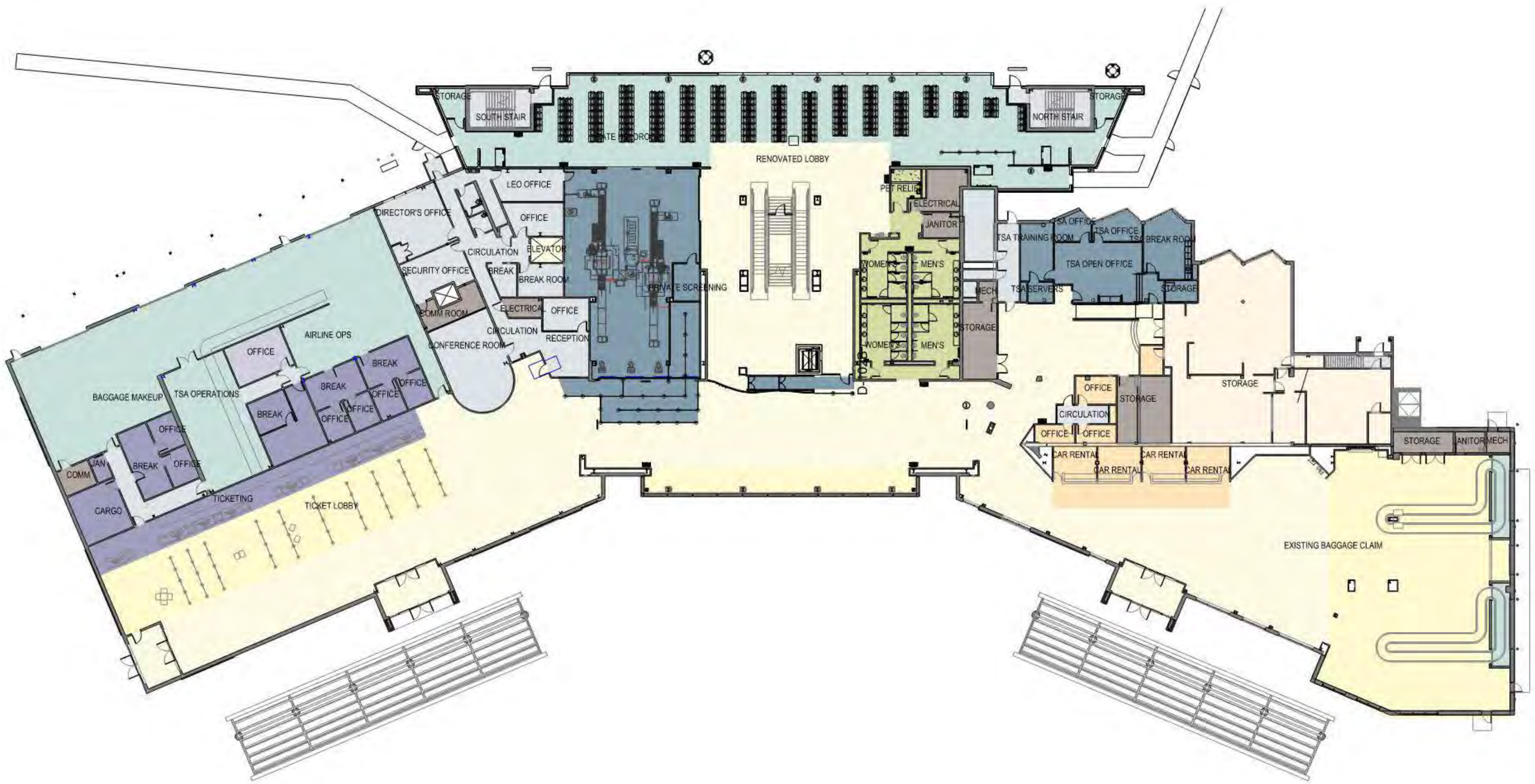
Commercial service aircraft currently park at one of the six gates in front of the terminal. The current aircraft fleet mix includes the CRJ 200/700/900; Q400; EMB 175; A220; A319/A320; and B737. The gates on the main/ground level are A gates while the gates on the upper level are B gates. There are currently three gates on each level labeled from one to three from south to north (i.e., A1, A2, A3, B1, B2, B3).

On the ground level, Gate A1 is currently marked to serve regional jet aircraft while Gates A2 and A3 will serve regional jet aircraft and up to A319/320 and 737 aircraft. The ground level parking positions are accessed by enclosed walkways and adjustable aircraft boarding ramps. Each aircraft parking position currently has 110V and 240V power. In addition, parking positions at A2 and A3 have aircraft ground power units (GPU).

On the upper level, Gate B1 is currently marked to serve regional jet aircraft while Gates B2 and B3 will serve up to the A319/A320 and 737 aircraft. Each upper-level gate has a passenger boarding bridge (PBB) along with GPU and pre-conditioned air (PCA) capable of serving the current aircraft fleet mix except for the Q400. There are currently two potable water cabinets along the west face of the terminal building and one additional cabinet along the ground walkway to Gate A1. The airline lavatory dump is currently located approximately 300 feet south of parking position A1.

The terminal apron is a combination of both asphalt and concrete pavement. All gates except for A1 and portion of A3 are on concrete pavement. There is also an aircraft deicing pad located behind Gate A1; however this pad is unusable when Gate A1 is in use.

EXISTING FLOOR PLANS



EXISTING GROUND LEVEL FLOOR PLAN

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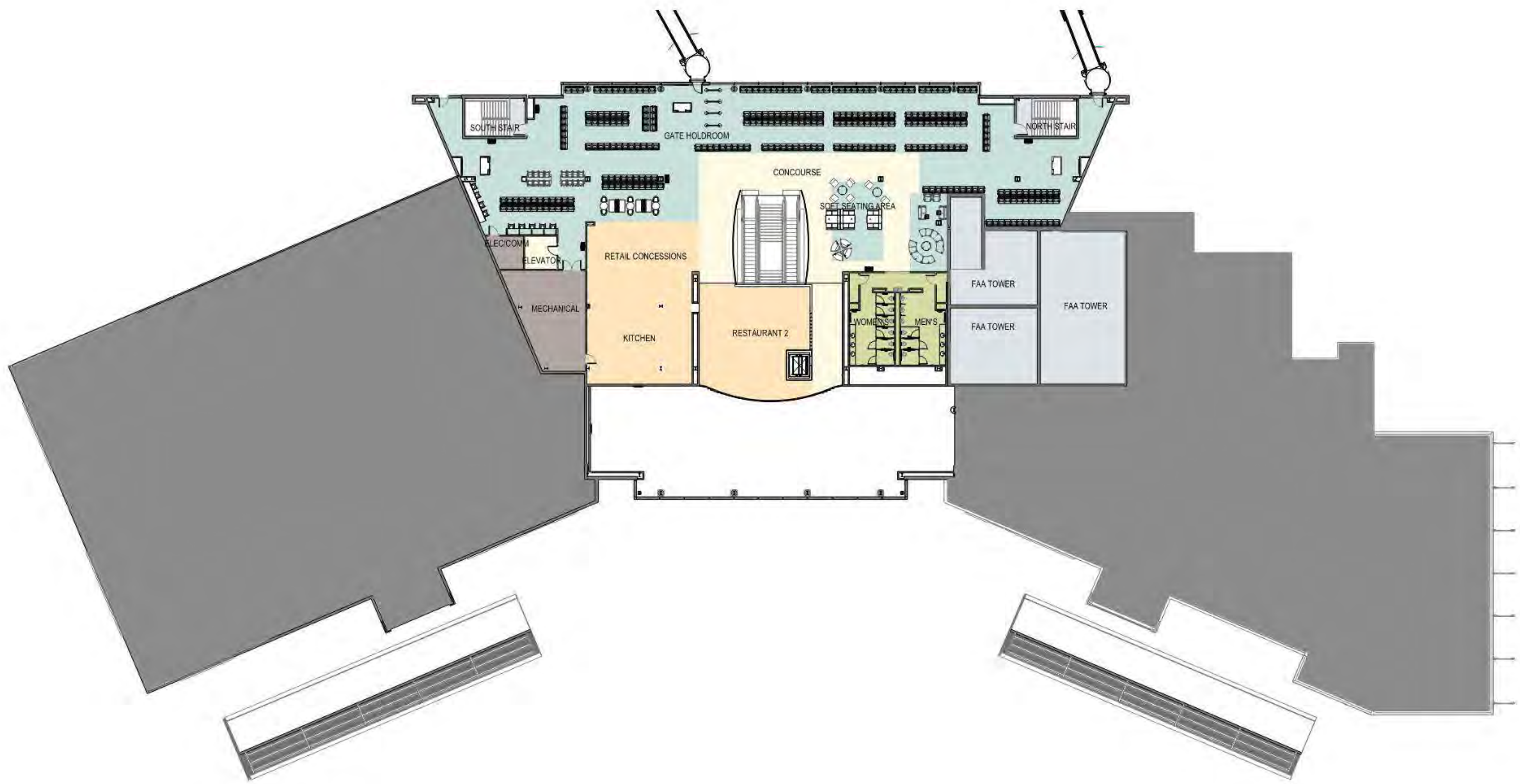
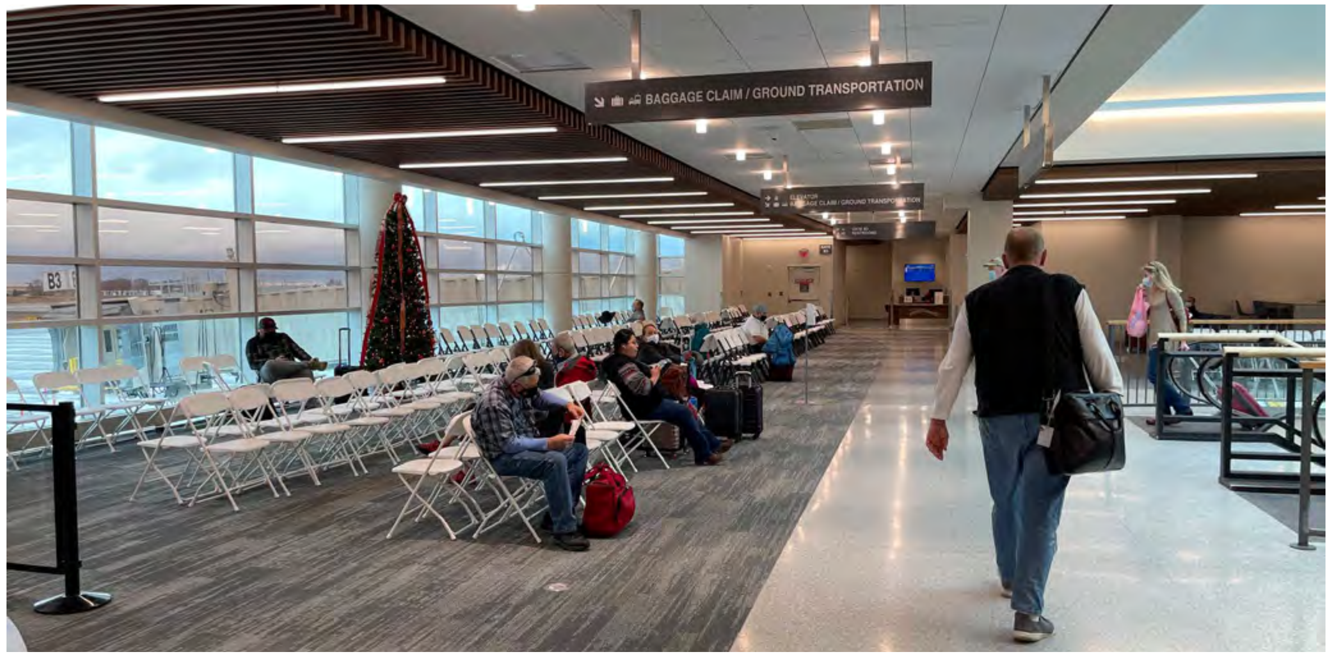
0' 16' 32' 64'

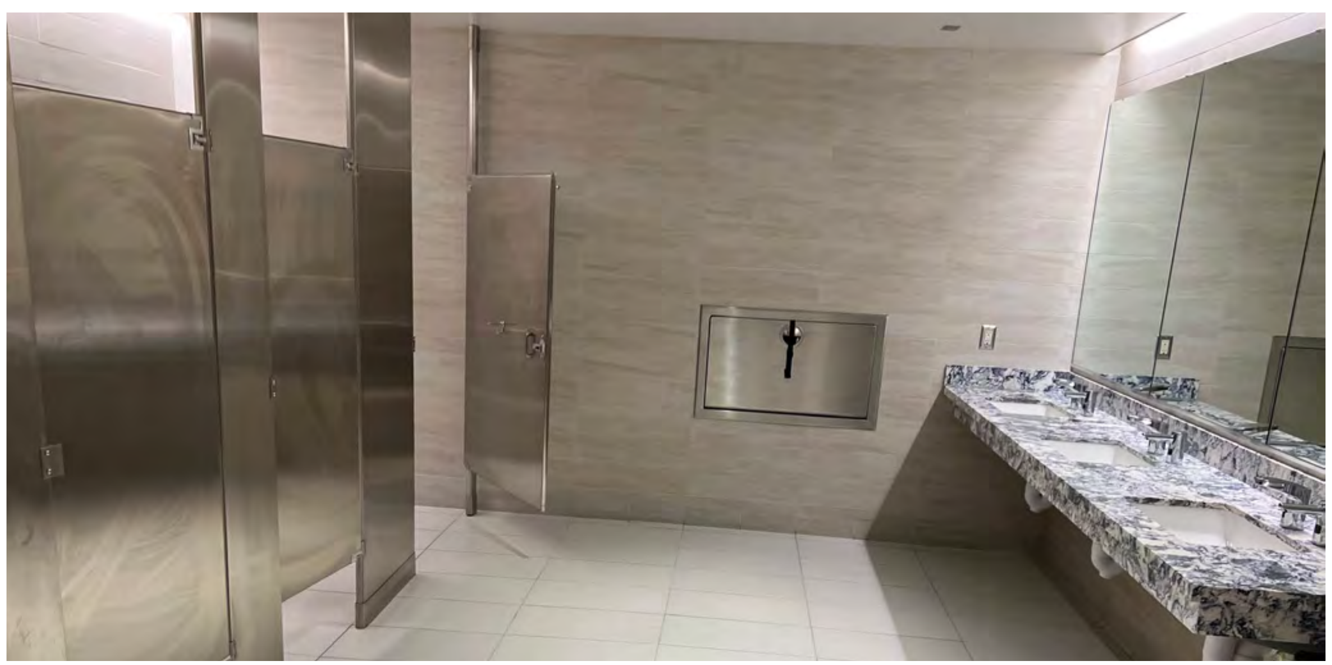


EXISTING UPPER LEVEL FLOOR PLAN

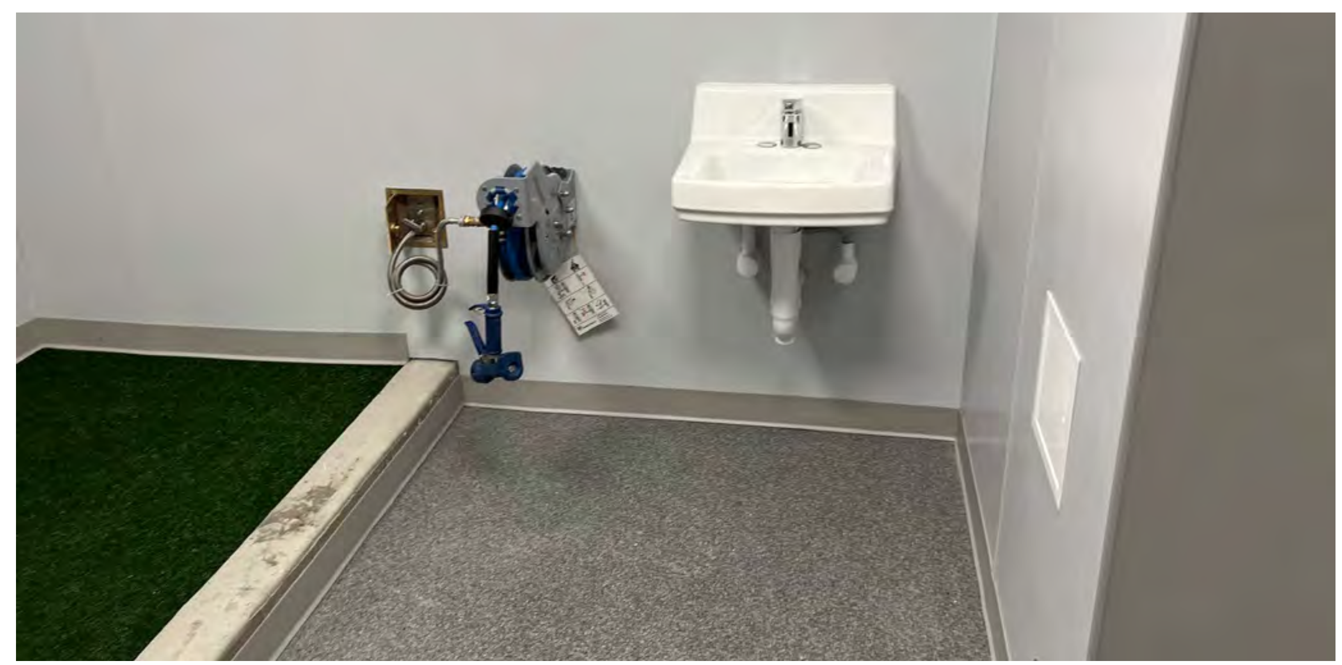


EXISTING UPPER LEVEL HOLDROOM

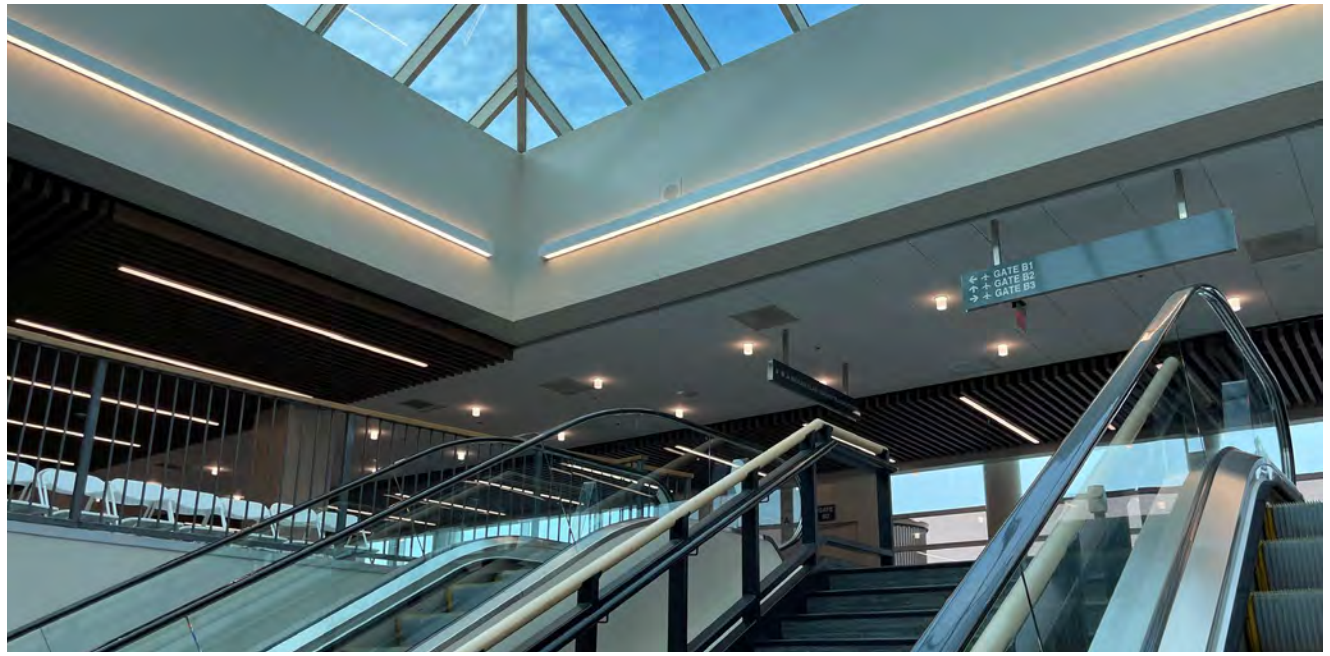
EXISTING GROUND LEVEL HOLDROOM



EXISTING AIRSIDE RESTROOMS



EXISTING SERVICE ANIMAL RELIEF AREA



EXISTING VERTICAL CIRCULATION ATRIUM

EXISTING AIRSIDE CONCESSIONS

INTERIOR CONDITIONS — AIRSIDE

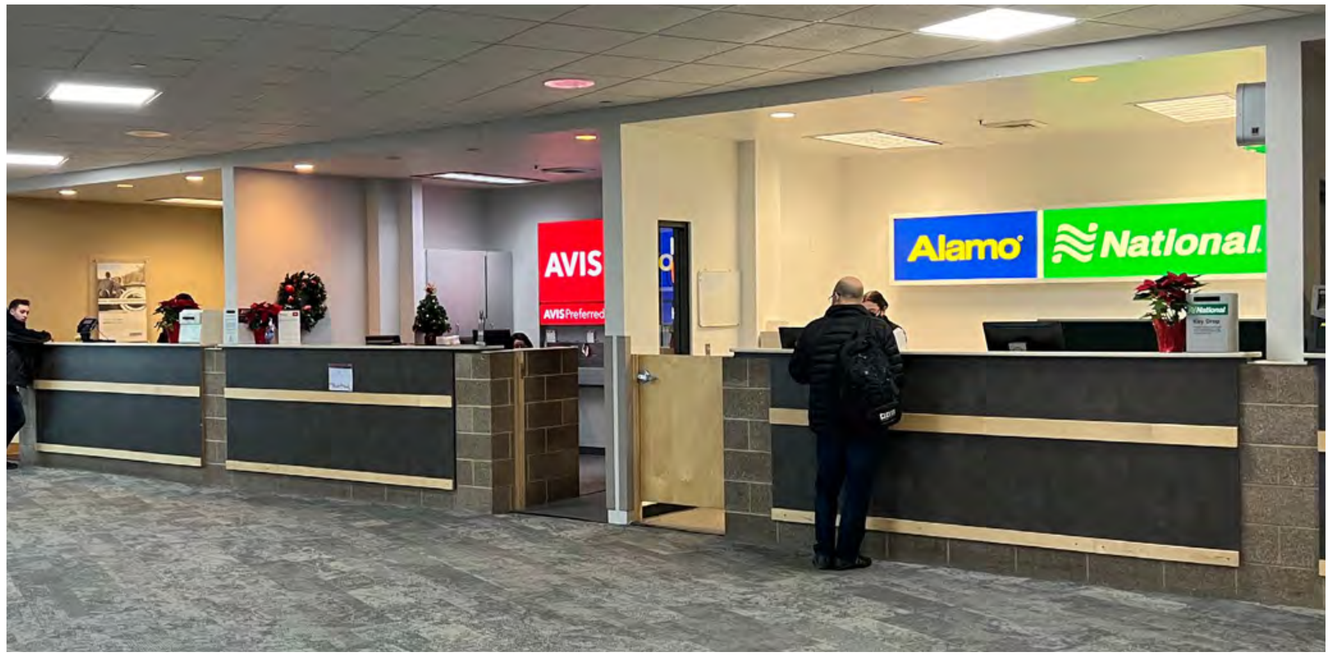
Much of the airside areas at IDA have been recently renovated including the gate holdrooms, restrooms, and concessions areas. The airside areas consist primarily of gate holdrooms on both levels. On the ground level, approximately 4,940 SF serves Allegiant and Alaska Airlines. On the upper level, approximately 7,700 SF is shared by United, American, and Delta. A range of seating types exists on the upper level including soft seating, while the ground level seating is limited to conventional beam seating. Refer to page 26, Gate Holdroom Planning, for additional information about the existing gate holdrooms. A large central atrium over the two escalators and stairs is daylit by a large skylight overhead. A landside elevator is located nearby adjacent to the new restaurant/bar area.

Accompanying the gate holdrooms are men's and women's restroom facilities on both levels, plus a Service Animal Relief Area (SARA) on the ground level. There are no facilities for Nursing Mothers currently. Refer to page 27, Restrooms Planning, for additional information about the existing airside restrooms.

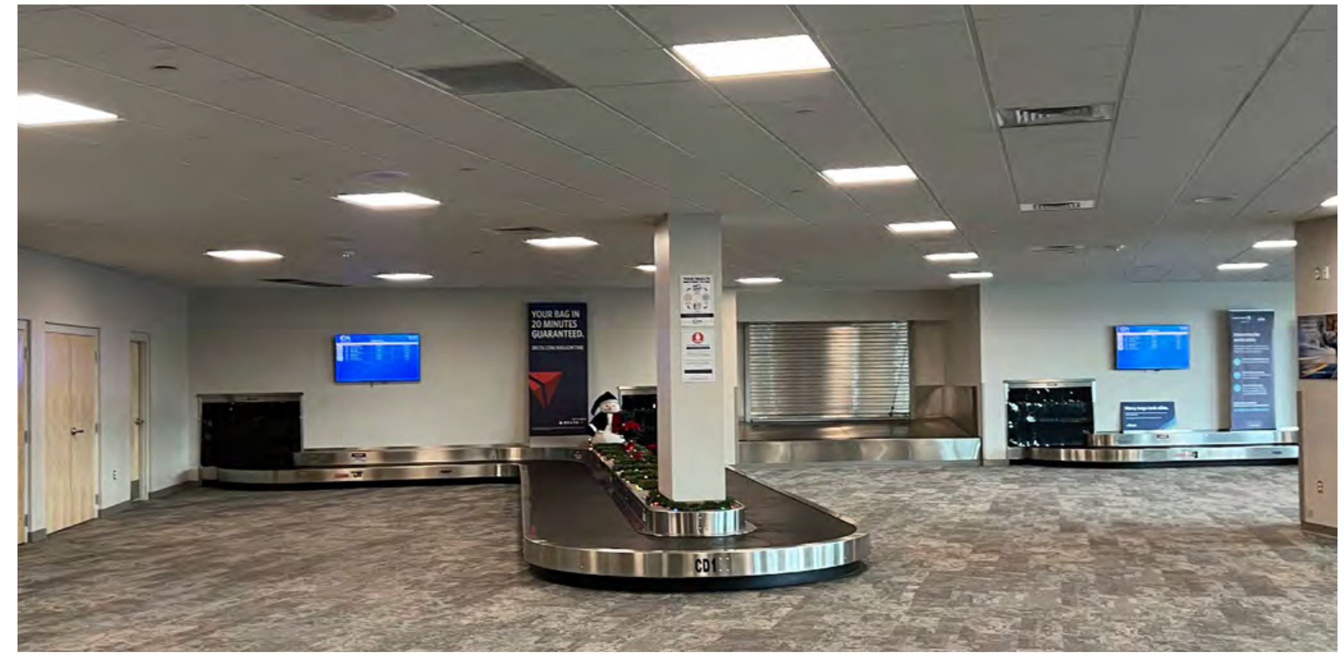
The airside concessions areas are currently located solely on the upper level; there are none on the ground level. A restaurant/bar and a grab-and-go retail space have been recently added or recreated as part of recent airside renovations at the airport.

The existing outbound baggage system is operating at, or near, its full capacity with significant limitations on the number of baggage carts that can be staged along the existing makeup pier. The single explosive detection system (EDS) machine serves current throughput needs but is anticipated to exceed capacity in coming years as described later in this report. The current baggage handling system configuration cannot be comfortably expanded to handle significant system load growth from additional flights or upgauging of current aircraft.

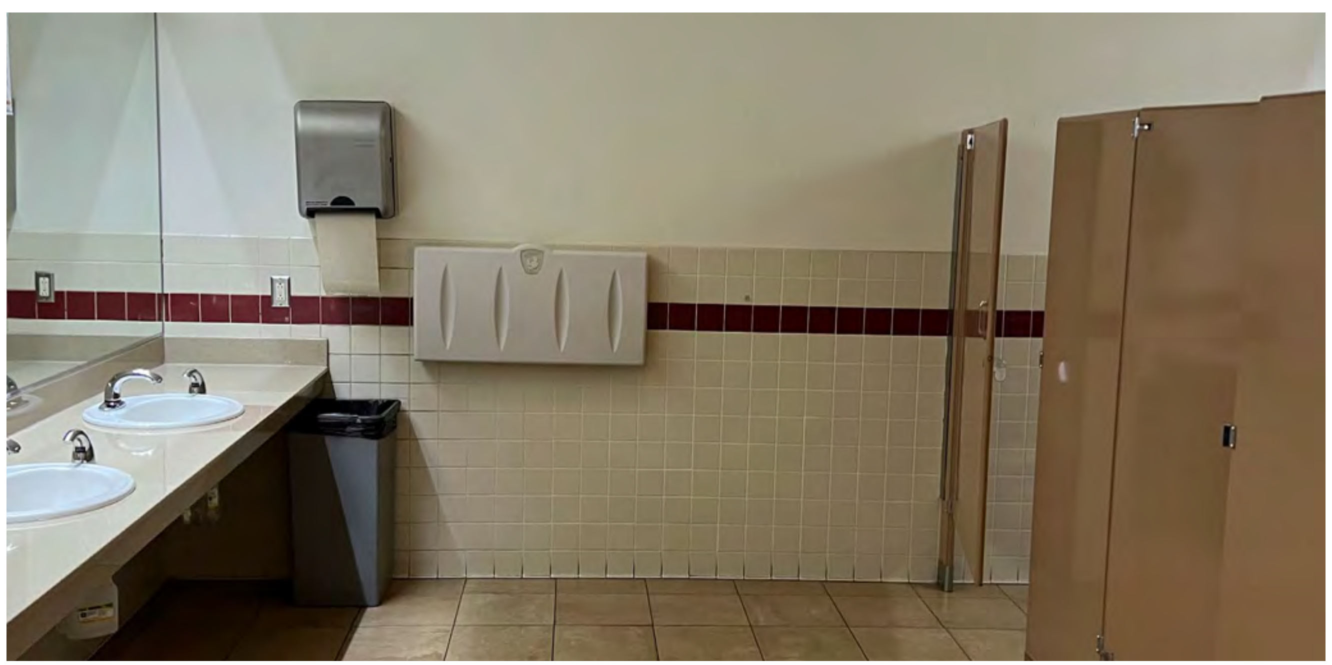
Other airside functions contained in the current configuration include mechanical, electrical, and plumbing infrastructure and support space. Additionally, there are two existing stair towers flanking either end of the gate holdrooms that link the two levels and serve for emergency egress. Finally, two small storage rooms on the ground level, one near each stair tower, are used by the airlines.



EXISTING RENTAL CARS

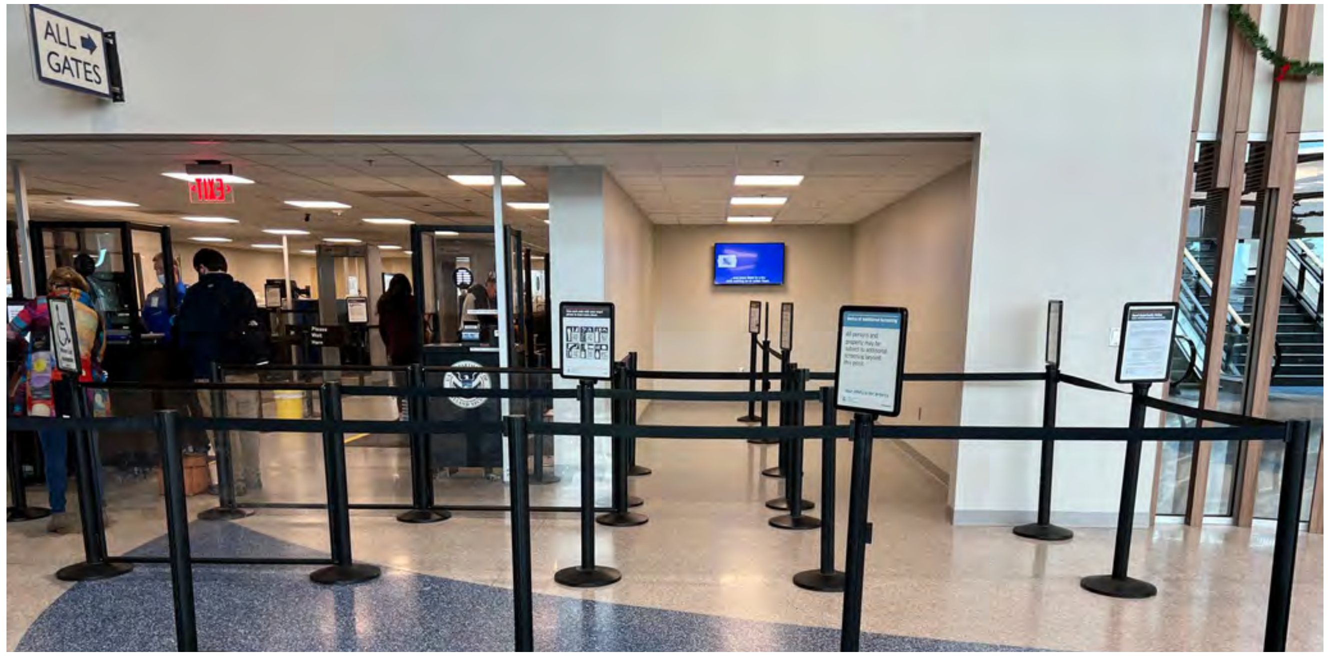


EXISTING BAGGAGE CLAIM

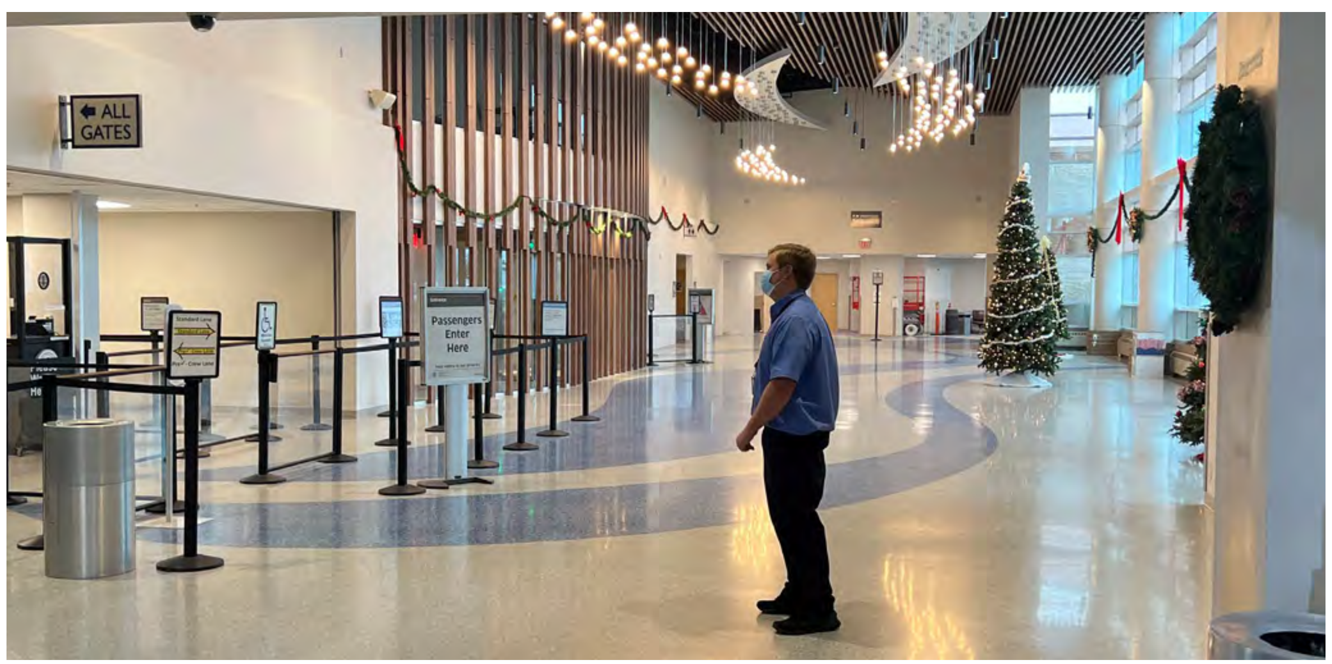


EXISTING LANDSIDE RESTROOMS

EXISTING BAGGAGE LAYDOWN



EXISTING CHECKPOINT



EXISTING GREAT HALL AND CHECKPOINT QUEUING AREA

INTERIOR CONDITIONS — LANDSIDE

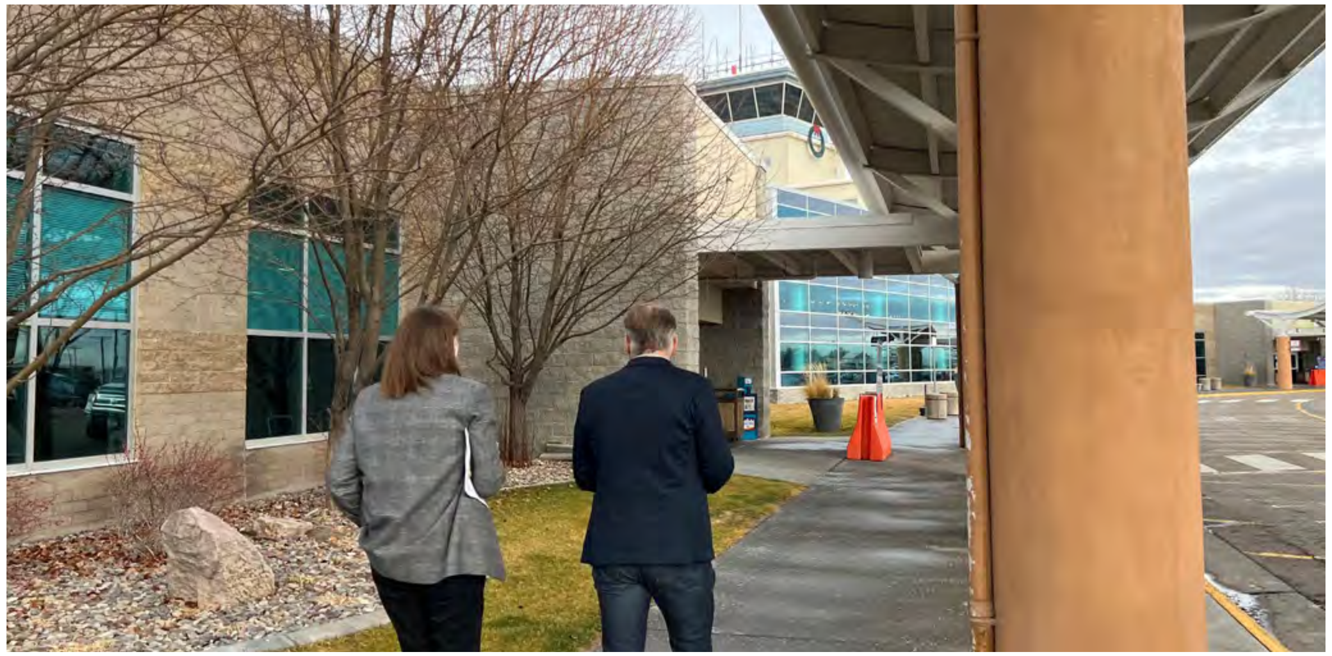
Presently, the airport is facing operational challenges in several of the landside areas of the terminal. At the Ticketing Hall, the insufficient depth of the space and the inefficient layout of the queue causes frequent issues with the queue backing up into the main circulation area within the Ticketing Hall. The front of the queue's stanchions are located within five feet of the ticket counters, constraining cross circulation and limiting access for passengers with mobility limitations in front of the counters (typical planning parameters recommend eight to ten feet for cross circulation). The Ticketing Hall and associated back-of-house functions (airline ticket offices (ATOs), storage, and baggage makeup) were last updated and expanded in 2012.

In the central portion of the building at the security screening checkpoint (SSCP), two screening lanes currently serve the airport's passenger traffic. The square footages allocated for queueing and recomposure for the checkpoint in the current configuration is insufficient. Currently, checkpoint queuing often spills out of the formal stanchioned queue areas and into the primary circulation throughfare of the Great Hall. Combined with the similar challenges at the adjacent ticketing queue, during peak periods of traffic, circulation throughout the Ticketing Hall and Great Hall is difficult. The screening lanes are cramped, smaller than planning guidelines recommend to serve two lanes, and the space limitations pose challenges to checkpoint operations by Transportation Security Administration (TSA) personnel.

One set of public restrooms serves the entirety of the landside area of the terminal, located near the security checkpoint queue in the Great Hall. These restrooms have not been updated in more than twenty years, and they could greatly benefit from updated finishes, systems, and amenities to improve the experience and comfort for passengers. Furthermore, having a single landside restroom block creates challenges during maintenance shutdowns, in that any time the restrooms need to be closed for regular or emergency maintenance, there are no other landside facilities available for passengers or staff. There is currently no airside family/changing table restroom; adding one would be highly recommended.

Currently, two L-shaped flat plate baggage carousels serve the Baggage Claim Hall. Combined, these two devices generally allow sufficient presentation length within the Hall for passengers to collect their bags. However, challenges arise when there are more than two near-simultaneous arriving flights needing to unload bags onto the carousels, due to limitations of the current laydown length. Under these circumstances, the claim hall may get congested as a third flight's passengers need to wait for their bags to be unloaded while the other two flights are using the carousels.

The rental car counters are located between the Great Hall and the Baggage Claim Hall, and the rental car queue protrudes into the circulation path impeding access and sight lines to the claim hall during peak periods. Today, a passenger picking up a rental car traverses the claim hall to the opposite corner of the building to a single opaque door which exits toward the rental car lots. Wayfinding to the rental car lot from inside the terminal seems to be a challenge, as evidenced by paper signs taped to the door. This exit does not have a vestibule nor a canopy, requiring passengers and their luggage to discharge directly into the elements en route to the rental car lot.


EXISTING CURBSIDE, LANDSCAPING, AND CANOPY — SOUTH

EXISTING BAGGAGE MAKEUP EXTERIOR — SOUTH


EXISTING CURTAINWALL AT CURBSIDE / GREAT HALL — CENTRAL

EXISTING SITE AREA, GENERATOR BUILDING — NORTH

03 FACILITY DEMAND/CAPACITY ANALYSIS

PLANNING ASSUMPTIONS

The overall terminal facility requirements were developed through the application of a variety of industry accepted planning standards and guidelines including: ACRP Report 25, Airport Passenger Terminal Planning and Design; FAA AC 150/5360-13A, Airport Terminal Planning; FAA AC 150/5300-13A, Airport Planning; the TSA Checkpoint Requirements and Planning Guide (CRPG); the TSA Planning Guidelines and Design Standards (PGDS) for Checked Baggage Inspection Systems Version 7.0; ACRP Report 226, Planning and Design of Airport Terminal Restrooms and Ancillary Spaces and the International Air Transport Association (IATA) Airport Development Reference Manual (ADRM), 11th Edition. Additionally, planning factors from comparable airports around the United States, communication with airport and local TSA staff, and knowledge of industry trends were also utilized.

IATA's Level of Service (LoS) standards are typically utilized by airport planners to qualitatively or quantitatively provide a LoS standard at various processing functions within the terminal building. An "Optimum" LoS was utilized when validating the functional passenger spaces and is often referred to as LoS "C" and defined by IATA as providing "Good LoS; condition of stable flow; acceptable brief delays; good level of comfort." Current area utilization ratios were determined using a 3D building information model (BIM) of the existing facility provided by T-O and the airport and the July 2021 Design Day Flight Schedule (DDFS), which serves to establish a baseline condition of demand compared to current facility capacities.

Airport terminal facilities are typically programmed using demand associated with future projections of annual and peak hour passengers and operations. Although annual activity is a good indicator of overall airport size, peak hour volumes more accurately reflect demand for specific passenger processing functions within the terminal facilities. It is important to understand the design day and peak hour forecasts completed as part of this report may differ significantly from a peak hour forecast derived from annual enplanements which is typically completed as part of a Master Plan. A Master Plan takes a top down approach where the level of annual enplanents is forecast and then ratios of existing activity levels are used to determine the peak hour. The forecast used for this study was a bottom up forecast with the starting point being the actual flight schedule of the average day of the peak month. This flight schedule was used as a base and through discussions with airport, additional operations by both existing and potential carriers were added to the flight schedule to determine peak hour activity levels. These operations were based on new service that has been announced as well a potential service this is still under development. At a facility like IDA, the peak hour activity level is extremely sensitive to the addition of any activity in the peak hour as the aircraft could range from a 70-seat regional jet up to a narrowbody 180+ seat aircraft. These peak hours are typically calculated from the peak month's average day (PMAD) and are commonly referred to as Design Hour passengers. A total of four DDFSs (2026, 2031, 2036, and 2041) were utilized for future calculations. Demand year 2031 represents the demand requirements to which all conceptual alternatives were developed to meet.

This analysis used two types of peak passenger levels based on Preferential Use and Common Use. Preferential Use passenger levels refer to the peak activity for each carrier that occurs over a "rolling" 60-minute period based on that airline's flight schedule. As a result, these Preferential Use peaks may happen at different times of the day and therefore do not typically coincide in the same clock hour. The assumption is that this peak demand is appropriate to use when determining the facility requirements for individual airlines that are operating under a Preferential Use agreement with the airport. These areas may include individual airlines' ticket counters, gates/holdrooms, and baggage claim facilities. Common use peak passenger levels refer to the cumulative peak passenger volume in a given "rolling" hour for all airlines at the airport. These common use peak demand levels are typically used for calculating non-airline specific functions such as passenger security screening, baggage screening, and public areas including general seating, meeter/greeter lobbies, and restroom facilities. For IDA, individual airline peak hours were utilized for ticketing requirements whereas the airport's common use peak hour was utilized for explosive detection system (EDS) baggage screening, baggage makeup, SSCP, and baggage claim facilities.

Other functional area projections are typically determined by their relationship to the number and type of aircraft or the number of gates/seats serving the terminal area. The relationship of area projections relative to aircraft operations or to gates/seats is also a typical way to compare airport building component requirements. These areas of the terminal can include airline operations space, inbound/outbound baggage operations, and secure public restrooms.

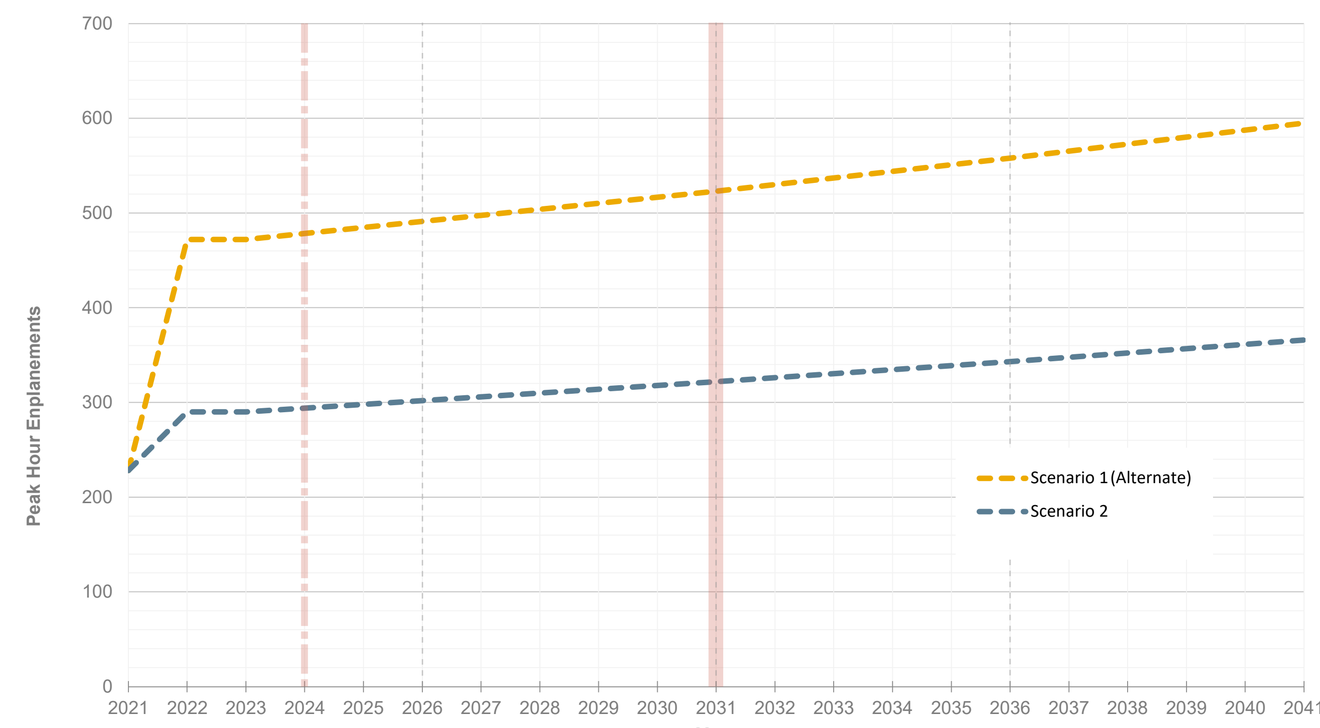


TABLE 3.1 FUTURE PEAK HOUR ENPLANEMENTS BY SCENARIO

Scenario 2								
YEAR	PEAK HOUR		AVG LOAD FACTOR	PK MONTH AVG DAY		PEAK MONTH[1]	ANNUAL ENPLANED PASSENGERS	CAGR[2]
	ENPL	DEP OPS		ENPL	DEP OPS			
Historical	21.7%			27		12.6%		
2021	228	3	75.9%	1,052	16	28,178	223,741	
Forecast	19.1%					11.1%		
2022	290	4	76.0%	1,357	20	42,067	378,982	69.4%
2023	290	4	76.0%	1,521	23	47,151	424,784	12.1%
2026	302	4	79.0%	1,581	23	49,011	441,541	1.3%
2031	322	4	84.0%	1,686	23	52,266	470,865	1.3%
2036	343	4	90.0%	1,799	23	55,769	502,423	1.3%
2041	366	4	95.0%	1,919	23	59,489	535,937	1.3%

TABLE 3.2 SCENARIO 2 — BASELINE (ADDITIONAL NARROWBODY AND REGIONAL JET OUTSIDE OF PEAK HOUR)

Notes:

1/Peak Month = 11.1% of Year (Master Plan)

2/Seats were grown at 1.3% CAGR

Scenario 1								
YEAR	PEAK HOUR		AVG LOAD FACTOR	PK MONTH AVG DAY		PEAK MONTH[1]	ANNUAL ENPLANED PASSENGERS	CAGR[2]
	ENPL	DEP OPS		ENPL	DEP OPS			
Historical	21.7%			27		12.6%		
2021	228	3	75.9%	1,052	16	28,178	223,741	
Forecast	31.0%					11.1%		
2022	472	6	76.0%	1,357	20	42,067	378,982	69.4%
2023	472	6	76.0%	1,521	23	47,151	424,784	12.1%
2026	491	6	79.0%	1,581	23	49,011	441,541	1.3%
2031	523	6	84.0%	1,686	23	52,266	470,865	1.3%
2036	558	6	90.0%	1,799	23	55,769	502,423	1.3%
2041	595	6	95.0%	1,919	23	59,489	535,937	1.3%

TABLE 3.3 SCENARIO 1 — ALTERNATE (ADDITIONAL NARROWBODY AND REGIONAL JET WITHIN PEAK HOUR)

Notes:

1/Peak Month = 11.1% of Year (Master Plan)

2/Seats were grown at 1.3% CAGR

FORECAST PLANNING SCENARIOS

Two forecast planning scenarios were developed to gauge the effects of the potential for two new airlines starting service to IDA, one airline flying next generation 737-700 aircraft and another airline utilizing Embraer ERJ145 regional jet aircraft. Scenario 1 (Sc1) analyzed the effects of both airlines operating flights within the airport's peak hour while Scenario 2 (Sc2) placed them operating outside the peak hour. These airlines represent potential service expansion opportunities and the aircraft types projected to use the airport in the future. Sc2 was chosen by the airport to serve as the baseline for future programmatic requirements representing the most realistic activity moving forward in the near-term.

Factors obtained from the Draft Master Plan forecast, such as aircraft load factors, peak month percentage of the year, and compound average annual growth rates (CAGR), were applied to the Sc2 representative 2022 DDFS in order determine overall annual enplanement activity. Additional flights were then added to the 2023 DDFS at the direction of the airport and then grown at a 1.3 percent CAGR in order to project the future 20-year demand. Table 3.1 and Table 3.2 tabulate this demand by passenger activity levels (PAL) in five-year increments. This same approach was applied to Sc1 (Table 3.3) and utilized in order to gauge the effects on certain areas of the terminal where adding additional flights in the peak hour could affect peak hour processing capacity. Each scenarios peak hours were developed utilizing a "rolling" 60-minute method applied to the DDFS to calculate peaking activity throughout the day. Table 3.4 (Sc2), and Table 3.5 (Sc1) graphs represent departing passengers with a TSA "Early Arrival Profile" applied which results in a more realistic account for how early passengers arrive to the terminal before their scheduled departure time. This results in a "distributed" peak which is approximately 61% of the peak departure hour.

OVERALL PROJECT DEMAND

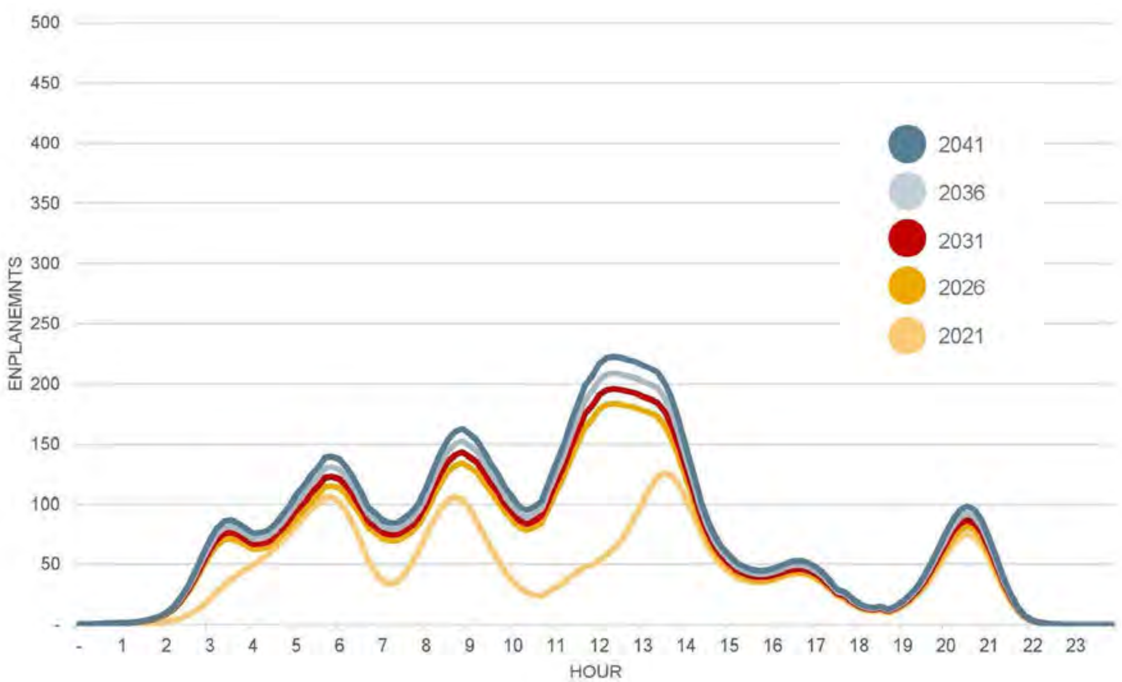


TABLE 3.4 SCENARIO 2 EARLY ARRIVALS PROFILE — BASELINE (ADDITIONAL NARROWBODY AND REGIONAL JET OUTSIDE OF PEAK HOUR)

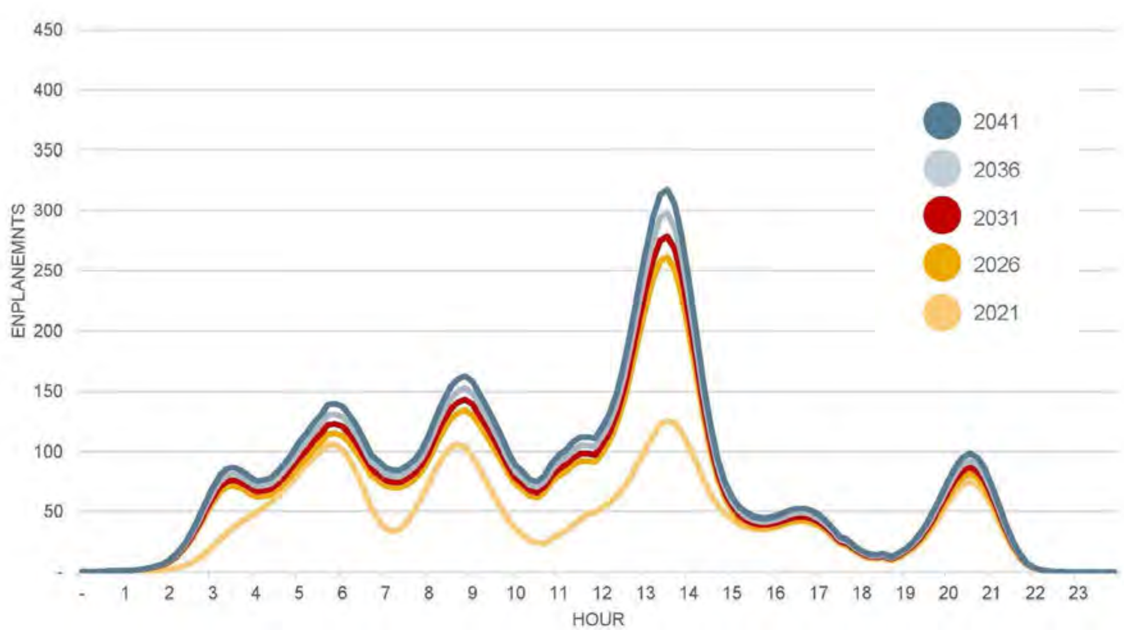


TABLE 3.5 SCENARIO 1EARLY ARRIVALS PROFILE — ALTERNATE (ADDITIONAL NARROWBODY AND REGIONAL JET WITHIN PEAK HOUR)

IDA Scenario 2 Trigger Point Summary	2021 Existing	2021 Recommended	2021 Capacity Threshold	Forecast 2026	Forecast 2031		Forecast 2036	Forecast 2041	
General									
Peak Hour Enplanements	228			302	322		343	366	
Aircraft Gates/PBB	6	6		6	7		7	8	
Aircraft Positions	6	6		8	8		8	8	
Public Space									
Circulation (public seating, ticketing, concourse, bag claim, general circ)	21,086 s.f.	22,050 s.f.	✗	✗	27,630 s.f.	✗	✗	30,440 s.f.	✗
Ticket Lobby Queue	2,558 s.f.	2,010 s.f.	✓	✗	3,180 s.f.	✗	✗	3,510 s.f.	✗
Passenger Security Screening & TSA Offices	4,909 s.f.	5,190 s.f.	✗	✗	7,390 s.f.	✗	✗	7,390 s.f.	✗
# of Screening Lanes	2	1	✓	!	2	!	!	2	!
Passenger Gate Holdrooms	12,642 s.f.	10,900 s.f.	!	!	13,900 s.f.	✗	✗	15,480 s.f.	✗
Baggage Claim (retrieval/device/meeter&greeter)	4,410 s.f.	5,010 s.f.	✗	✗	5,140 s.f.	✗	✗	5,230 s.f.	✗
# of Devices	2	2	!	!	2	!	!	2	!
Linear Frontage	182 l.f.	81 l.f.	✓	✓	96 l.f.	✓	✓	109 l.f.	✓
Restrooms (pre/post security)	2,781 s.f.	5,330 s.f.	✗	✗	6,260 s.f.	✗	✗	6,730 s.f.	✗
Airline Space									
Ticketing (counter, ATO)	3,379 s.f.	2,730 s.f.	✓	✗	4,330 s.f.	✗	✗	4,780 s.f.	✗
# of Agent Positions (excludes Kiosks)	16	12	✓	✗	19	✗	✗	21	✗
Outbound Baggage Screening	931 s.f.	1,800 s.f.	✗	✗	1,800 s.f.	✗	✗	1,800 s.f.	✗
# of EDS Machines	1	1	!	!	1	!	!	1	!
Outbound Baggage Makeup	1,481 s.f.	1,790 s.f.	✗	✗	2,880 s.f.	✗	✗	2,940 s.f.	✗
Airside Ops/Storage	1,137 s.f.	1,330 s.f.	✗	✗	1,790 s.f.	✗	✗	1,960 s.f.	✗
Inbound Bag Claim Laydown	341 s.f.	2,200 s.f.	✗	✗	2,200 s.f.	✗	✗	2,200 s.f.	✗
Inbound/Outbound Baggage Circulation & Cart Staging	2,030 s.f.	760 s.f.	✓	✓	1,080 s.f.	✓	✓	1,100 s.f.	✓
Other Offices/Support Space	0 s.f.	200 s.f.	✓	✓	270 s.f.	✓	✓	290 s.f.	✓
Concessions									
Landside/Storage (includes Rental Cars)	4,641 s.f.	2,070 s.f.	✓	✓	2,710 s.f.	✓	✓	2,880 s.f.	✓
Airside/Storage	3,157 s.f.	2,330 s.f.	✓	✗	4,900 s.f.	✗	✗	5,580 s.f.	✗
Non-Public Space									
Non-Airline Tenant Space	3,035 s.f.	950 s.f.	✓	✓	950 s.f.	✓	✓	950 s.f.	✓
Airport Administration	2,882 s.f.	3,110 s.f.	✗	✗	3,110 s.f.	✗	✗	3,110 s.f.	✗
Restrooms/Circulation	1,570 s.f.	1,720 s.f.	✗	✗	2,150 s.f.	✗	✗	2,210 s.f.	✗
Airport Operations (Maintenance,Janitorial,Storage,Shops)	3,545 s.f.	1,430 s.f.	✓	✓	1,830 s.f.	✓	✓	1,970 s.f.	✓
Building Systems (MEP,Communications/IT,Loading Docks,Structure)	12,357 s.f.	10,350 s.f.	✓	!	13,280 s.f.	✗	✗	14,280 s.f.	✗
TOTAL GROSS (sq ft)	**88,871 s.f.**	**83,260 s.f.**	!	✗	**106,780 s.f.**	✗	✗	**114,830 s.f.**	✗

TABLE 3.6 SCENARIO 2 TRIGGER POINTS — BASELINE (ADDITIONAL NARROWBODY AND REGIONAL JET OUTSIDE OF PEAK HOUR)

Legend
- ✓ Programmed area is less than existing
- ! Programmed area is at or over 85% of capacity
- ✗ Programmed area is greater than existing

IDA Scenario 1 (Alternate) Trigger Point Summary	2021			Forecast					
	Existing	Recommended	Capacity Threshold	2026	2031	2031	2036	2041	2041
General									
Peak Hour Enplanements	228			491	523		558	595	
Aircraft Gates/PBB	6	6		6	7		7	8	
Aircraft Positions	6	6		8	8		8	8	
Public Space									
Circulation (public seating, ticketing, concourse, bag claim, general circ)	21,086 s.f.	22,050 s.f.	✗	✗	28,880 s.f.	✗	✗	33,140 s.f.	✗
Ticket Lobby Queue	2,558 s.f.	2,010 s.f.	✓	✗	3,180 s.f.	✗	✗	3,510 s.f.	✗
Passenger Security Screening & TSA Offices	4,909 s.f.	5,190 s.f.	✗	✗	7,390 s.f.	✗	✗	9,590 s.f.	✗
# of Screening Lanes	2	1	✓	!	2	!	!	3	✗
Passenger Gate Holdrooms	12,642 s.f.	10,900 s.f.	!	✗	15,340 s.f.	✗	✗	18,530 s.f.	✗
Baggage Claim (retrieval/device/meeter&greeter)	4,410 s.f.	5,010 s.f.	✗	✗	5,520 s.f.	✗	✗	5,670 s.f.	✗
# of Devices	2	2	!	!	2	!	!	2	!
Linear Frontage	183 l.f.	81 l.f.	✓	✓	104 l.f.	✓	✓	119 l.f.	✓
Restrooms (pre/post security)	2,781 s.f.	5,330 s.f.	✗	✗	6,970 s.f.	✗	✗	8,040 s.f.	✗
Airline Space									
Ticketing (counter, ATO)	3,379 s.f.	2,730 s.f.	✓	✗	4,330 s.f.	✗	✗	4,780 s.f.	✗
# of Agent Positions (excludes Kiosks)	16	12	✓	✗	19	✗	✗	21	✗
Outbound Baggage Screening	931 s.f.	1,140 s.f.	✗	✗	2,240 s.f.	✗	✗	2,240 s.f.	✗
Outbound Baggage Makeup	1,481 s.f.	1,790 s.f.	✗	✗	7,490 s.f.	✗	✗	8,640 s.f.	✗
# of EDS Machines	1	1	!	!	2	✗	✗	2	✗
Airside Ops/Storage	1,137 s.f.	1,330 s.f.	✗	✗	2,070 s.f.	✗	✗	2,520 s.f.	✗
Inbound Bag Claim Laydown	341 s.f.	2,200 s.f.	✗	✗	2,200 s.f.	✗	✗	2,200 s.f.	✗
Inbound/Outbound Baggage Circulation & Cart Staging	2,030 s.f.	760 s.f.	✓	✗	2,470 s.f.	✗	✗	2,810 s.f.	✗
Other Offices/Support Space	0 s.f.	200 s.f.	✓	✓	310 s.f.	✓	✓	380 s.f.	✓
Concessions									
Landside/Storage (includes Rental Cars)	4,641 s.f.	2,070 s.f.	✓	✓	2,710 s.f.	✓	✓	2,880 s.f.	✓
Airside/Storage	3,157 s.f.	2,330 s.f.	✓	✗	4,900 s.f.	✗	✗	5,580 s.f.	✗
Non-Public Space									
Non-Airline Tenant Space	3,035 s.f.	950 s.f.	✓	✓	950 s.f.	✓	✓	950 s.f.	✓
Airport Administration	2,882 s.f.	3,110 s.f.	✗	✗	3,110 s.f.	✗	✗	3,110 s.f.	✗
Restrooms/Circulation	1,570 s.f.	1,660 s.f.	✗	✗	2,820 s.f.	✗	✗	3,060 s.f.	✗
Airport Operations (Maintenance,Janitorial,Storage,Shops)	3,545 s.f.	1,420 s.f.	✓	✓	2,060 s.f.	✓	✓	2,350 s.f.	✓
Building Systems (MEP,Communications/IT,Loading Docks,Structure)	12,357 s.f.	10,250 s.f.	✓	✗	14,900 s.f.	✗	✗	17,030 s.f.	✗
TOTAL GROSS (sq ft)	**88,871 s.f.**	**82,430 s.f.**	!	✗	**119,840 s.f.**	✗	✗	**137,010 s.f.**	✗

TABLE 3.7 SCENARIO 1 TRIGGER POINTS — ALTERNATE (ADDITIONAL NARROWBODY AND REGIONAL JET WITHIN PEAK HOUR)

Legend
- ✓ Programmed area is less than existing
- ! Programmed area is at or over 85% of capacity
- ✗ Programmed area is greater than existing

OVERALL PROJECT DEMAND

The programmatic approach to sizing facility areas as previously described is commonly used as the first step during the planning and preliminary design of any expansion project. As a project proceeds through the design process functions such as ticketing, baggage areas, gate holdrooms, circulation areas, concessions, and other space-based requirements will often change as a result of the physical configuration of the design and cost considerations. For any project it is recommended to build in additional capacity beyond opening day. This typically equates to an opening day plus five to ten years' worth of additional capacity. As such a peak hour activity level of 322 enplanements (2031) was used for the layout of the conceptual planning options. Industry best practice is to start planning for additional space which serves the public and baggage processing functions when demand reaches approximately 85% of existing capacity within the various areas of the terminal and related concourse areas. Crossing this capacity threshold triggers the need to begin planning, design, and the construction process to replace facilities in time to meet the growing passenger demand levels. Table 3.6 indicates the point at which this trigger point will be met by the various programmatic areas of the terminal by year. The demand requirements contained in this table is considered a minimum generic facilities requirement program that is recommended to support the design aircraft and their associated peak hour passenger activity levels. Overall total building projected demand is expected to exceed current facility capacity around a peak hour activity level of 300 enplanements. However, individual spaces should be reviewed for determining the time at which their capacity shortfalls will occur. A more detailed building program by area for Sc2 can be found in the Appendix.

For each scenario, gate requirements were also calculated using the enplanement per gate ratio approach. This assumed the airports future 2023 annual enplanements per their existing six gates would remain constant throughout the forecast horizon. Results indicate one additional gate would be required by 2031 with an additional gate by 2041 for a total of eight potential gates. As mentioned previously the apron will be able to accommodate ADG III type aircraft at every gate parking position. However, the base year flight schedule indicated the use of five large regional required gates and one narrowbody gate. Sc1 as indicated in Table 3.8 on the next page included a mix of four large regional and three narrowbody for a total of seven gates by 2031. This assumed one of the mainline carriers would upgauge from their use of large regional aircraft to a narrowbody type aircraft along with an additional narrowbody gate. Sc2 assumed the use of the existing five large regional gates and an additional narrowbody gate by 2031 as also shown in Table 3.8.

ADG		Seats	Existing 2021*	Existing Flight Schedule	Forecast 2026	Forecast 2031	Forecast 2036	Forecast 2041
SCENARIO 2 – Baseline			223,741		391,242	417,309	445,113	474,903
	II - Medium Regional (CRJ,ERJ)	50	-	-	-	-	-	-
	III - Large Regional (Q400,CR7,E70/75,CR9)	70-76	-	5	5	5	5	6
	III – Narrowbody (319/320,717/738)	110-189	6	1	1	2	2	2
Total Gates			**6**	**6**	**6**	**7**	**7**	**8**
% Regional			*0%*	*83%*	*83%*	*71%*	*71%*	*75%*
% Narrowbody			*100%*	*17%*	*17%*	*29%*	*29%*	*25%*
SCENARIO 1 - Alternate								
	II - Medium Regional (CRJ,ERJ)	50	-	-	-	-	-	-
	III - Large Regional (Q400,CR7,E70/75,CR9)	70-76	-	5	3	4	4	4
	III – Narrowbody (319/320,717/738)	110-189	6	1	3	3	3	4
Total Gates			**6**	**6**	**6**	**7**	**7**	**8**
% Regional			*0%*	*83%*	*50%*	*57%*	*57%*	*50%*
% Narrowbody			*100%*	*17%*	*50%*	*43%*	*43%*	*50%*

TABLE 3.8 SCENARIOS 2 & 1, GATE REQUIREMENTS BY SCENARIO AND YEAR

GATE HOLDROOM PLANNING

Gate holdroom sizes are based on the required mix of aircraft gates and the average seating capacity of each aircraft design group (ADG). These areas generally consist of the passenger seating area, the airlines podium and associated queue space, the loading bridge egress corridor, circulation and standing areas, and any additional square footage allowances for areas such as soft seating or charging stations. With the airlines at IDA currently operating on a Preferential Use lease agreement, the gate holdroom area requirements are based on the largest aircraft gauge per airline identified in the flight schedules. The mix of aircraft types can be found in the detailed space program found in the Appendix. Additional factors and assumptions include the following:

- An 85% aircraft load factor
- An IATA LoS C with 70% of the passengers seated at 18 SF per passenger and the other 30% standing at 13 SF
- A gate holdroom depth of 35 feet allows space to provide soft seating areas and a deeper queue area at the gate podiums.
- A ten percent seat increase or "seat inefficiency" factor for passengers who take up more than one seat with baggage or for those single party passengers who prefer to sit every other seat.

Whenever possible holdrooms are suggested to be configured in "shared" or "paired" layouts in order to take advantage of the adjacent gate holdroom's seating area. However, this is only achievable when no near simultaneous departures occur at the adjacent holdroom which is very dependent on airline scheduling patterns. For this analysis, a ten percent reduction factor for gates in a "paired" layout was utilized.

Based on the aircraft mix identified in the base and future DDFS the existing holdroom area cannot meet a peak hour activity level of 322 enplanements and will require a total of approximately 13,900 SF of gate holdroom area between the two levels, an increase of ten percent over what is currently available. The additional square feet will provide capacity for three large regionals and one narrowbody aircraft on the ground level and two large regionals and one narrowbody on the upper level.

RESTROOMS PLANNING

The program has been divided between the landside pre-security and airside post-security portions of the terminal and related concourse.

The rationale for calculating the number of restroom locations, fixtures, and associated area by landside and airside followed ACRP Report 226, Planning and Design of Airport Terminal Restrooms and Ancillary Spaces. It is recommended that restroom locations should provide, at a minimum, as many fixtures for women as are provided for men which is the case for both the pre- and post-security locations within the existing terminal. Currently the ground level of the terminal provides a single restroom location for men's and women's facilities. The post-security portions of the terminal provide one location on each level along with a Service Animal Relief Area (SARA) on the ground level. Existing pre-security square foot per fixture ratios averaged 86 SF while the post-security locations averaged 78 SF. For this analysis the following assumptions and guidelines were utilized for the pre-security portions of the terminal:

- A 25% female increase factor
- The O&D peak hour volume and their visitors (0.6)
- Approximately 118 SF per fixture plus 100 SF for a companion care restroom

For the post-security locations, the following assumptions were utilized:

- One restroom location for each level
- 50% peak 20-minute percent of peak hour
- 60% restroom utilization
- 50% men
- 25% female increase factor
- Approximately 118 SF per fixture plus 100 SF for each companion care restroom
- 140 SF SARA
- 128 SF Nursing Mother's Room per location

Based on the above factors and the calculation methods from ACRP Report 226, future demand for restrooms exceeds current facility capacity for both the pre- and post-security portions of the terminal in both total area and number of fixtures per gender (see Table 3.6). Each location would also benefit from additional women's fixtures and associated area.

BAGGAGE HANDLING SYSTEM (BHS) PLANNING & ASSUMPTIONS

The BHS load models constructed for the IDA planning study are based on the following parameters and assumptions:

- 0.6 checked bags per enplaned passenger
- Passenger arrival curve as defined by TSA PGDS
- Aircraft load factor set by year to approximate anticipated growth in enplanements:

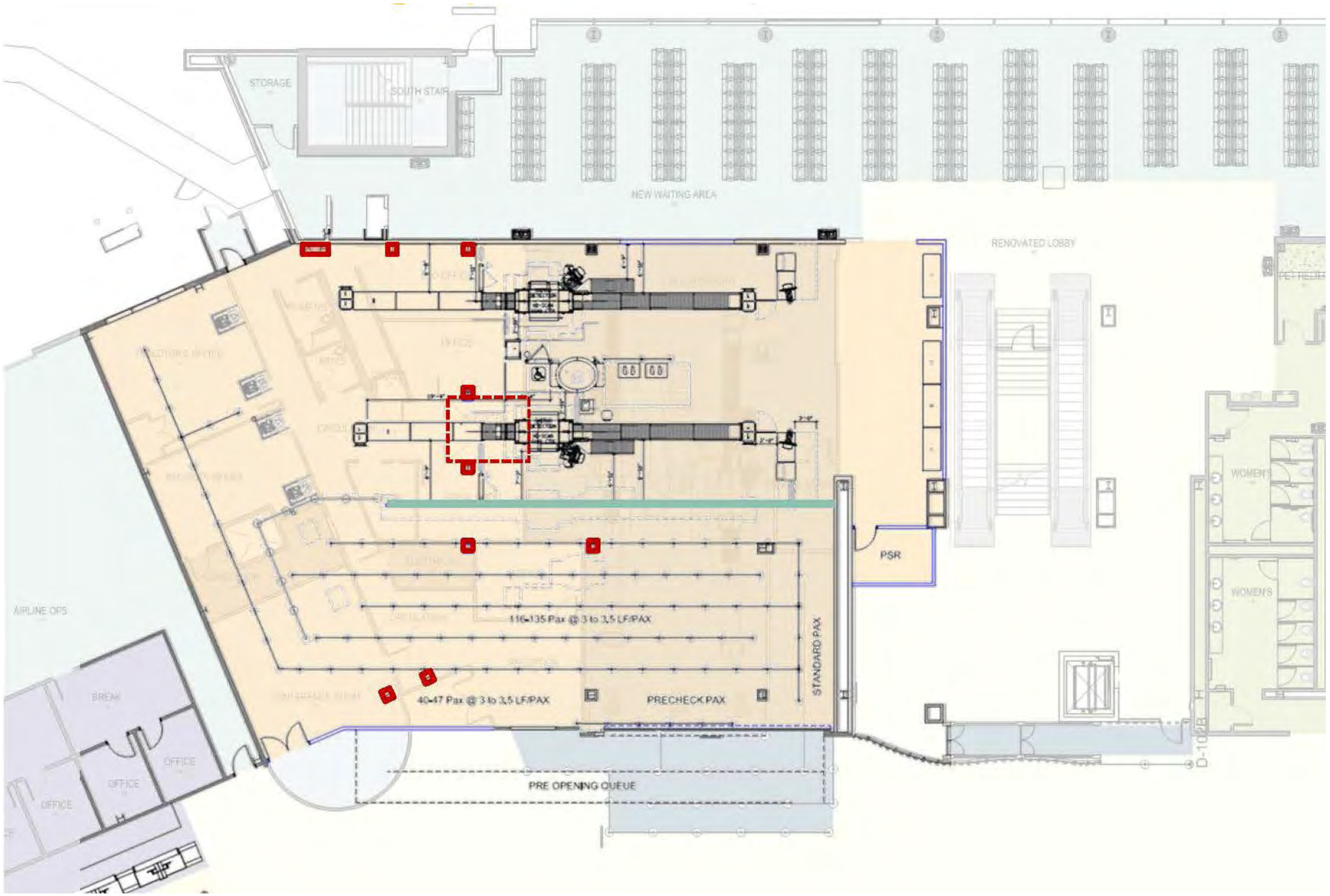
OUTBOUND BAGGAGE OPERATIONS

- Bags for each flight depart the makeup area at thirty minutes prior to scheduled departure.
- The Explosive Detection System (EDS) machine throughput used for BHS modeling is 180 BPH. This coincides with the reported throughput indicated in a letter to Rick Cloutier, IDA Airport Director from local TSA leadership.
- Active tug/cart trains (for outbound flights departing in less than sixty minutes) are parked parallel (connected for towing) along the makeup device.

INBOUND BAGGAGE OPERATIONS

- Inbound bags are loaded onto the inbound system starting twenty minutes after scheduled arrival; complete offloading takes twenty minutes.
- One-third of inbound bags are removed from the claim device in the same ten-minute interval they are loaded into the inbound system; the remainder are removed from the claim device in the following ten-minute interval.
- Passenger staging is 10'-0" deep measured directly out from the claim device presentation frontage.
- Acceptable LoS per IATA standard is 16.1 – 18.3 SF per passenger.

SECURITY CHECKPOINT



PROPOSED TWO-LANE CHECKPOINT LAYOUT

Not to Scale

SECURITY SCREENING CHECKPOINT PLANNING

The existing checkpoint has two standard lanes, updated in 2021, with approximately 2,500 SF provided for security screening (equipment and circulation), or 1,250 SF per lane. Current TSA checkpoint design and planning standards indicate a need for around 1,600 sf for a single lane, excluding the required queue space and any TSA office requirements. Additionally, the lack of sufficient queuing area in the current layout negatively impacts adjacent programmatic areas, such as circulation through and between the Ticketing Hall and the Great Hall. Current queue space is approximately 780 SF compared to the TSA recommended 1,200 SF for two lanes.

Future planning requirements and layouts were based on the previously mentioned TSA CRPG published September 2021. This includes space for the implementation of Computed Tomography (CT) x-ray equipment which is part of TSA's Checkpoint Property Screening System (CPSS) program as well as the potential use of Automated Security Lane (ASL) systems in use today throughout the country. Demand calculations were based on applying TSA early arrival profiles to the peak departure hour along with the following planning guidelines and communication with the Airport and local TSA:

- A peak 30-minute demand of approximately 31% of the peak hour was calculated from the baseline design day flight schedule and utilized for future planning years
- Average throughput of 150 passengers per lane per hour
- An additional 10% of the daily enplanement activity was added for employee and crew screening
- To calculate lane requirements an industry acceptable maximum waiting time of ten minutes in the queue was assumed
- A TSA queue recommendation of 600 SF per lane was utilized which equates to an IATA average LoS C of 12 SF per passenger
- Two Travel Document Checkers (TDC) per lane to provide stable passenger flow to the screening lanes
- Screening area includes one required Private Screening Room (PSR) at 110 SF

Utilizing the planning assumptions outlined above, no additional screening lanes would be required during the planning horizon. However, the existing condition is unable to meet the baseline scenario square footage demands and demonstrates the need for additional space for passenger security screening for the two lanes., and eventually, an additional screening lane. The Alternative Scenario (Sc1) was then analyzed to understand the impact of additional flights added to the peak hour. Results indicated a third lane would be required to support the additional demand by a peak hour activity level of 596 enplanements (2031) using a more aggressive 3% CAGR.

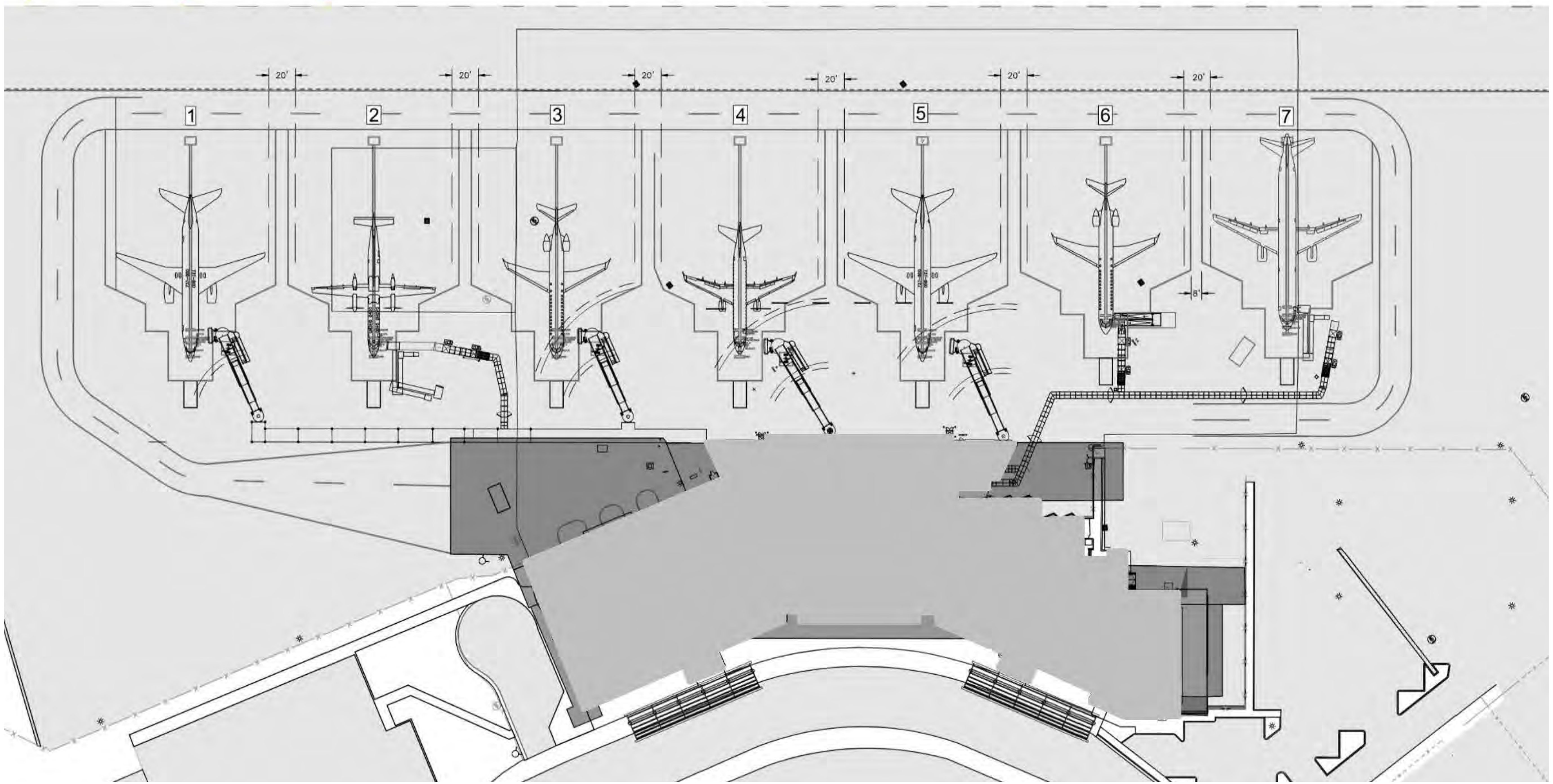
The recommended layout rotates the existing layout clockwise. To achieve this the Airport Administration offices would be relocated in an initial phase giving the checkpoint not only greater length and recomposure area, but a much-needed expanded queue space for peak periods of activity. Once the offices are relocated, the existing two lanes would be temporarily relocated within the same general area to allow for construction to begin on the space where the reoriented lanes would be installed.

The temporary queue would be located in the area vacated by a portion of the screening lanes with overflow extending to the existing secure concourse exit portal. Once the new area is complete, either the existing lanes would be relocated during a potential overnight operation, or new lanes would be installed prior to the opening of the new checkpoint. All required queues would be contained within the existing overhead door area with a separate queue for PreCheck passengers as depicted on the opposite page. The future third lane would bring overall screening capacity to 450 passengers per hour with queue capacity of up to nearly 200 passengers. See the Appendix for the proposed layout incorporating the third screening lane.

04 PREFERRED OPTION — EXTERIOR DEVELOPMENT

04 PREFERRED OPTION — EXTERIOR

AIRSIDE CIVIL PLANNING



PROPOSED NEW AIRCRAFT PARKING LAYOUT

Not to Scale

AIRCRAFT PARKING MODIFICATIONS

The expansion of the bag makeup area will necessitate the reconfiguration of the aircraft parking by pushing the parking positions at A1 and B1 back towards Taxiway B. These positions can be aligned with the parking positions at B2, B3 and A2. It is recommended the aircraft parking layout be reconfigured to accommodate the full airport fleet mix at each aircraft parking position. The reconfiguration of the parking position at B2 may require relocation of the PBB and associated rotunda column along with the addition of a fixed walkway section as this parking position will not be accessible within the limits of the current PBB. The ground loading walkway associated with A1 will need to be reconfigured and potentially extended to the new parking location.
When reconfiguring aircraft parking positions, consideration should be given to the potential of accommodating Aircraft Design Group (ADG) IV Taxiway Object Free Area (TOFA) along Taxiway B in the future. It is assumed tug access will be from the south end of the expanded area and will not conflict with passengers ground boarding at Gate A1.

The limits of the concrete at the apron should also be expanded so all aircraft parking is on concrete pavement. The deicing pad should be moved to a new location that can accommodate aircraft at any time, including the potential for general aviation (GA) and cargo aircraft. At the time additional gates are required, additional aircraft parking positions are available to the south of the existing apron and could be accessed from an expansion of the upper level gate holdroom over the bag makeup expansion area with an additional PBB. Future PBBs should include PCA and GPU units and be capable of accommodating the full aircraft fleet mix except for the Q400. Depending on the location of future cargo operations, additional aircraft parking positions may also be available to the north. Any new parking position should be designed for the full aircraft fleet mix with access to power and water.

PART 77 REVIEW

Title 14 Part 77 (Safe, Efficient Use and Preservation of the Navigable Airspace) is a federal regulation which protects the navigable airspace surrounding an airport. As the Idaho Falls Regional Airport has accepted Airport Improvement Program (AIP) grants in the past, protection of Part 77 airspace is required by the grant assurances associated with each grant. These grant assurances exist for the life of the project funded with the grant except for grants for land acquisition which exist in perpetuity. As IDA has accepted multiple grants for land acquisition, their grant assurances exist in perpetuity. The City of Idaho Falls and Bonneville County both protect the Part 77 airspace through local zoning code.

Currently, most of the terminal building is clear of the Part 77 airspace with the exceptions of the Air Traffic Control Tower (ATCT) and apron lights, both of which penetrate the Part 77 Transitional Surface. The ATCT was originally constructed in 1960 and is considered fixed by function. The tower currently has an obstruction light at its highest point, and it is also the location of the airport beacon. The apron lights were last rehabilitated in 2021, and a FAA Form 7460 was filed for replacement of the apron light fixtures. A No Hazard determination was issued for rehabilitation of the apron lighting even though they penetrate the Part 77 Transitional Surface. The closest point of the terminal building is approximately 750’ from the Runway 3-21 centerline. Runway 3-21 has a Category I Instrument Landing System (ILS) and is classified as a Precision Instrument Runway serving aircraft more than 12,500 pounds maximum gross weight.

Determining the allowable building height needs to take into consideration in both the primary and transitional surfaces. Runway 3-21 has a 1,000 foot wide primary surface centered on the runway. This surface would extend from the runway centerline towards the terminal building for a distance of 500 feet at the same elevation as the runway centerline. The transitional surface begins at the edge of the primary surface and slopes outward and upward at a 7:1 (H:V) slope until it reaches a height of 150 feet above the runway. In this case, the transitional surface is approximately 35.7 feet above the runway at the face of the terminal building.

Any expansion of the building will require the filing of an FAA Form 7460 for on-airport construction. A building height of less than 35.7’ above the runway centerline will likely receive a No Hazard determination. As the apron lights currently penetrate the Part 77 Transitional Surface by several feet, it is likely that additional building height is possible in this location. If additional building height beyond the height of the existing apron lights is required, an additional aeronautical study may be required.

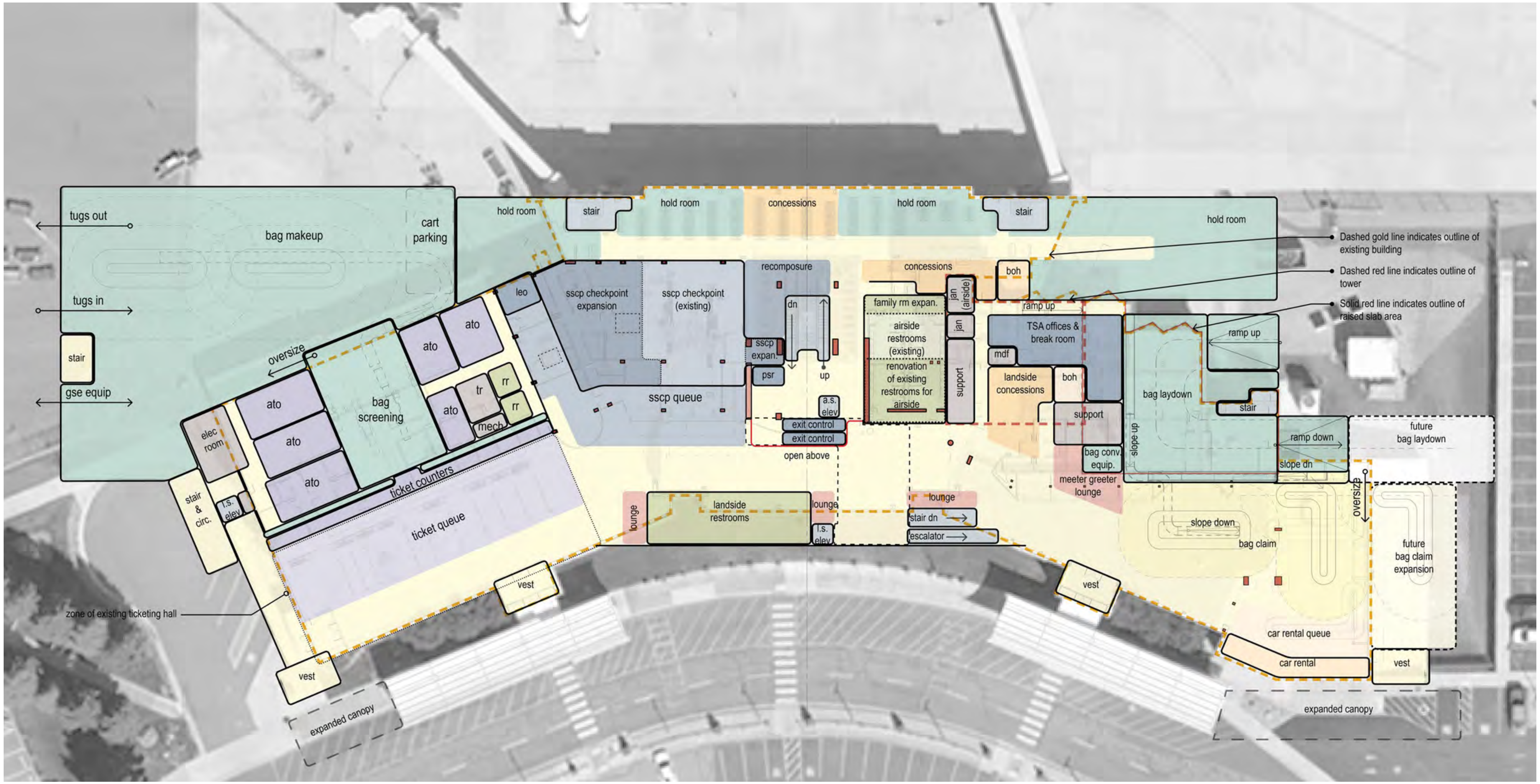
CURBSIDE IMPROVEMENTS

The building expansions alongside the curbside, including the new vestibules, have been located to not conflict with the existing sidewalk and road/curb alignments. Planned building expansions in this area will infill the existing open turf grass areas between the face of the existing terminal and the sidewalk. In conjunction with the building expansion at the curbside, new vestibules are added in the Ticketing Hall and in the Baggage Claim, providing convenient access to the curbside for passengers. New extensions to the existing curbside canopies serve the new vestibules and provide increased passenger protection over the sidewalk.

05 PREFERRED OPTION — INTERIOR DEVELOPMENT

05 PREFERRED OPTION — INTERIOR

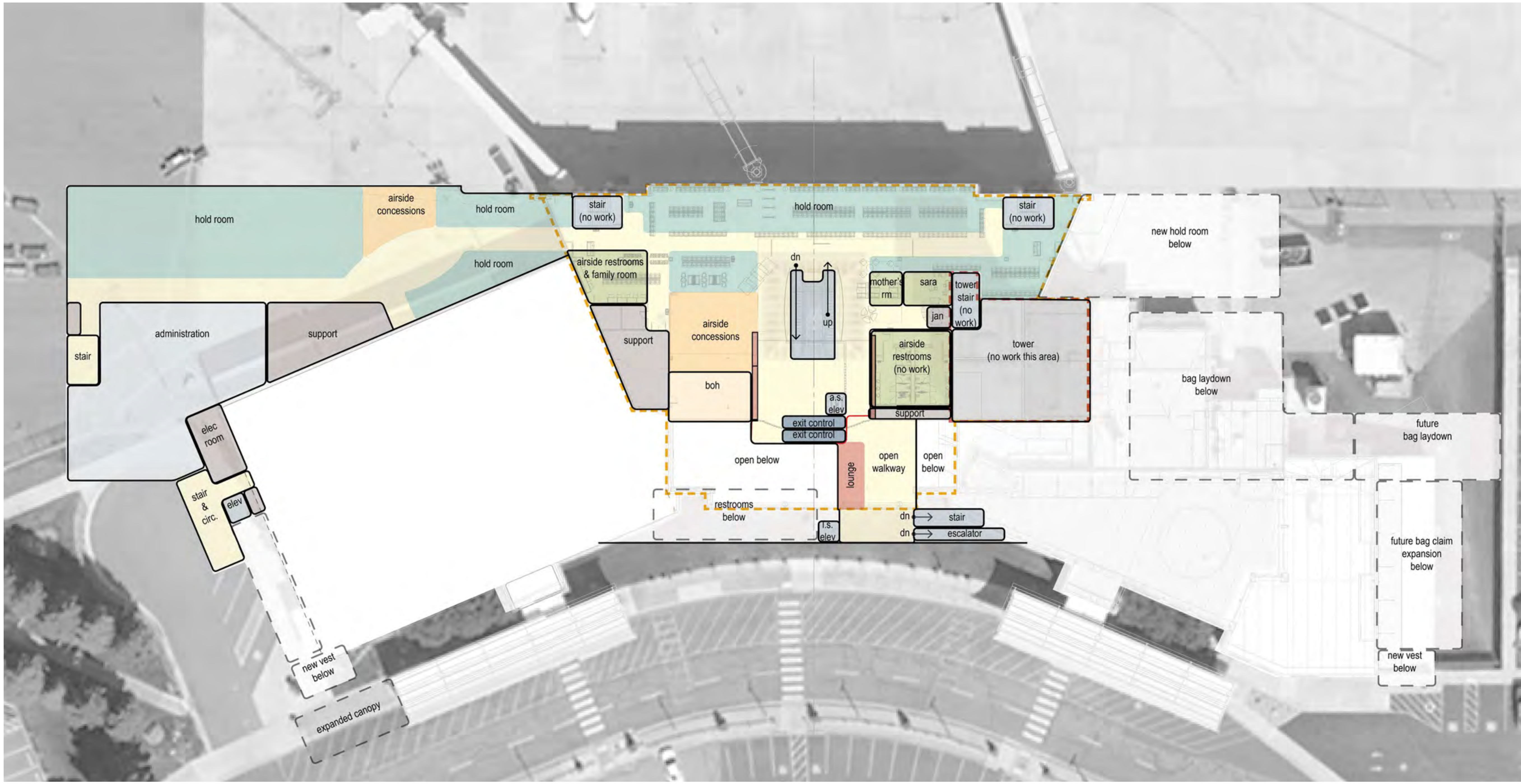
PREFERRED OPTION CONCEPT PLAN



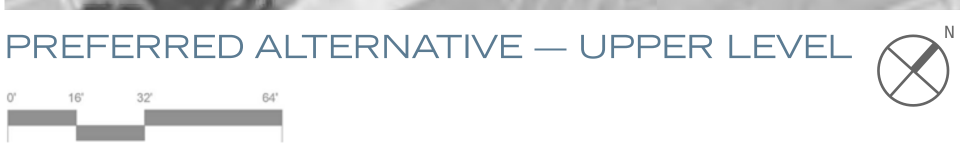
PREFERRED ALTERNATIVE — GROUND LEVEL

0' 16' 32' 64'

N

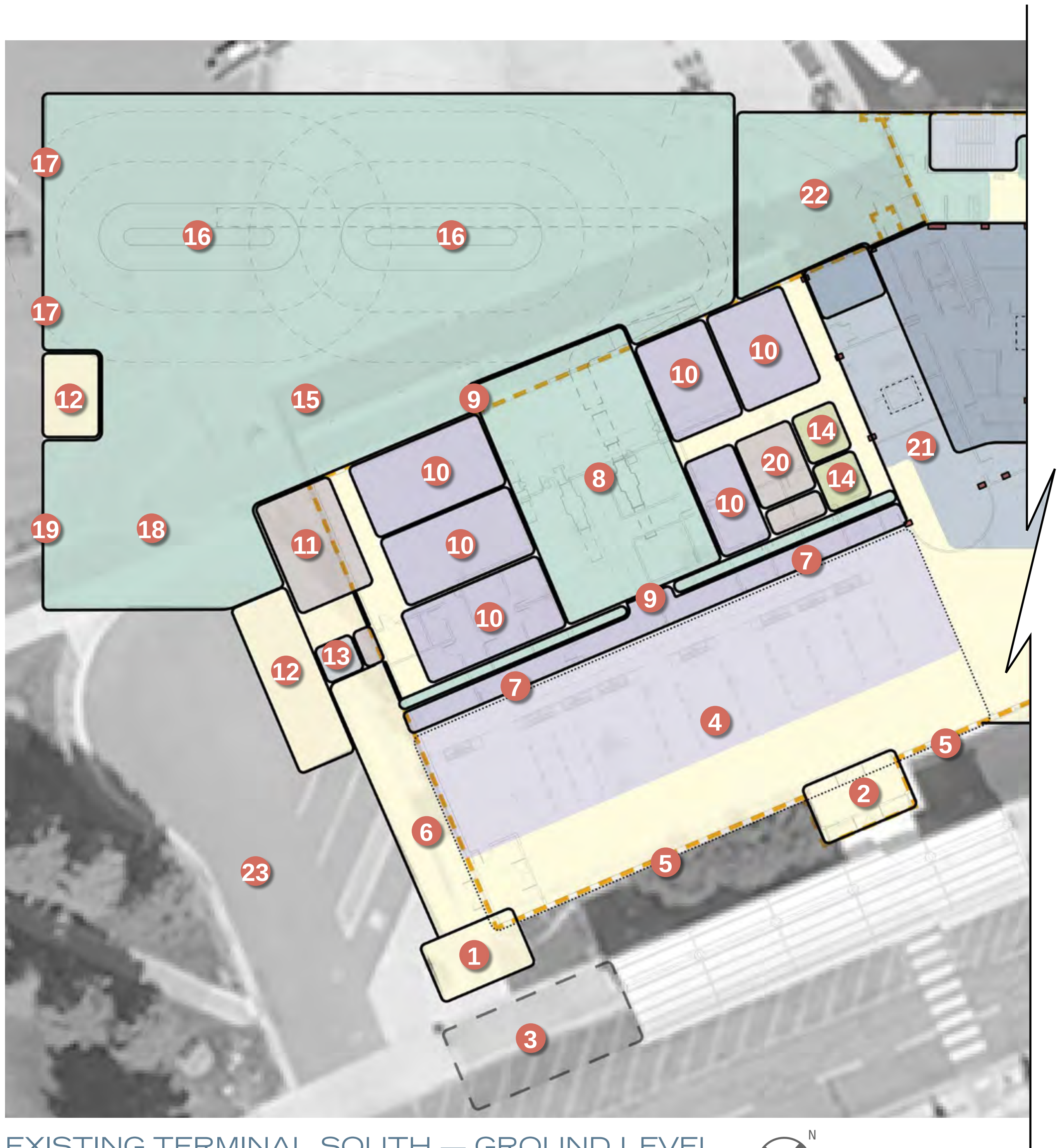


PREFERRED ALTERNATIVE — UPPER LEVEL



05 PREFERRED OPTION — INTERIOR

TERMINAL SOUTH — GROUND LEVEL



EXISTING TERMINAL SOUTH — GROUND LEVEL

DIAGRAM KEY NOTES

1. New vestibule
2. Existing vestibule to remain
3. New extension to existing curbside canopy
4. Renovated ticketing hall
5. Existing curtainwall to remain
6. Expanded ticketing hall — building expansion
7. New, repositioned ticketing counters
8. Expanded baggage screening room with possible second explosive detection system (EDS) machine
9. Oversize baggage access
10. New airline ticket office (ATO)
11. New electrical room at location of existing main feed
12. New stair (access to upper level)
13. New landside elevator
14. New non-public restrooms
15. New baggage makeup room — building expansion
16. New baggage makeup carousel
17. Overhead door — tugs/carts
18. New ground service equipment (GSE) parking — building expansion
19. Overhead door — GSE
20. New main telecommunications room (MTR)
21. Expanded security checkpoint and queue
22. Expanded gate holdroom
23. Redesigned cargo parking lot

TICKETING HALL — COUNTERS, QUEUEING, CIRCULATION

The proposed Ticketing Hall redesign reconfigures the space to allow improved circulation and adequate queuing space for the ticket counters and check-in kiosks. The existing front building façade in this area can remain in place, with minor modifications to extend the façade along the building expansion toward the south and create a new, expanded vestibule. The front of the ticket counters moves back to occupy the position of existing back wall at ticketing. This shift opens up more space in front of the counters for a reconfigured, deeper queue and additional space for kiosks. Furthermore, greater depth is provided for circulation, both between the queue and the counters and at the back of the queue along the front façade.

AIRLINE TICKET OFFICES AND SUPPORT SPACES

The renovated and expanded areas for airline ticket offices (ATOs) flank the enlarged baggage screening room and are accessed via corridors at each end of the ticket counters. The space has been sized to accommodate not only the existing airlines serving the airport (Delta, United, American, Alaska, and Allegiant), but also the additional airlines expected to add service to IDA. Additional support spaces in this area include non-public restrooms, airport maintenance and janitorial space, IT rooms (MDF/MTR/TR), and an electrical room.

CHECKED BAGGAGE SCREENING

The checked baggage screening room has been expanded both in length and width to provide increased functionality and ease of use by TSA agents. The larger footprint accommodates not only the single explosive detection system (EDS) screening machine on site today but also a second unit, whether the second unit is installed initially or at a later date. In the “Scenario 2 (baseline)” modeling, a second EDS does not become necessary within the 2041 planning horizon. By contrast, the “Scenario 1” modeling shows the single EDS used to full capacity immediately, with a second device required by 2031.

Take-back belts run along the back wall behind the ticket counters and carry the bags to the screening room as in the existing configuration. Oversized bags enter the screening room through a set of double doors in the back wall between the ticket counters and take-back belts that lead directly into the screening room. The size and positioning of the newly expanded screening room allows existing masonry bearing walls to remain in place.

BAGGAGE MAKEUP, AIRLINE OPERATIONS, EQUIPMENT STORAGE

The new baggage makeup room is housed in a building expansion off the back of the existing building near the existing baggage makeup area. As cart parking, loading, and maneuvering present the greatest issues in the current configuration, these arrangements are improved in the new layout. Two recirculating makeup carousels allow cart approach and parallel parking on both sides of the carousel, more than doubling the presentation length of the current setup. Using two carousels instead of a single unit grants the baggage handling system redundancy, allowing one carousel to operate even if the other is offline.

Bypass lanes outside of the cart parking lane are also provided to increase flexibility of operations. Instead of the perpendicular arrangement today, the parallel approach allows the carts to be parked alongside the carousel without needing to detach the carts from the tug or train, greatly increasing operational efficiency. Doors that lead directly from the baggage screening room to the baggage makeup area allow transport of oversized items to a designated pickup location. The remainder of the space available in this expansion can be used for airline operations, luggage cart parking and staging, as well as storage of ground service equipment (GSE), similar to areas provided today. This allows the storage functions to remain in place as long as possible during operations, versus today’s operations where items are parked under the exterior canopy at baggage makeup adjacent to the overhead doors during periods of low traffic. The items parked under the canopy in the current configuration then need to be relocated to allow access into and out of the adjacent overhead doors.

05 PREFERRED OPTION — INTERIOR

TERMINAL CENTRAL — GROUND LEVEL

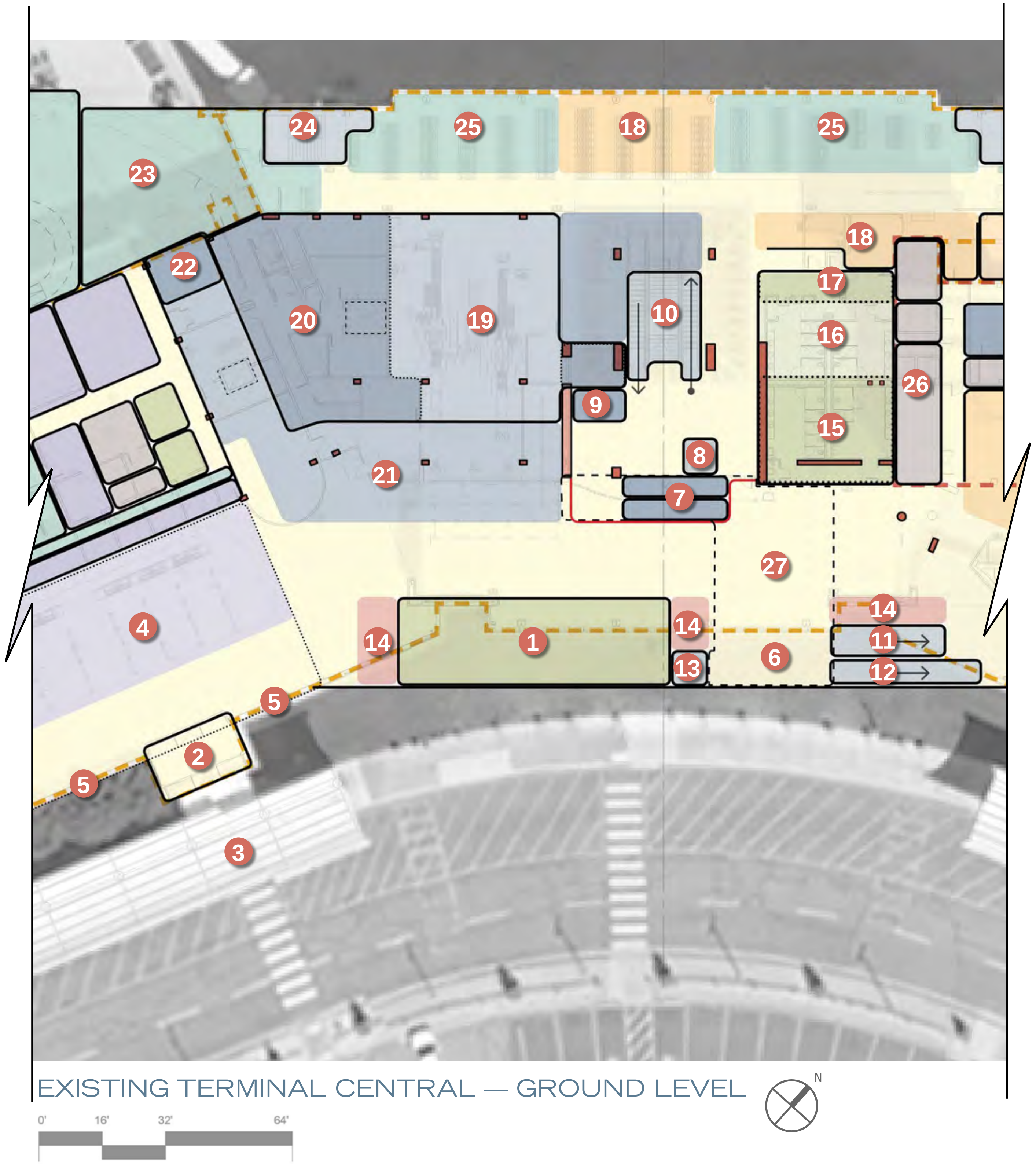


DIAGRAM KEY NOTES

1. New landside restrooms — building expansion
2. Existing vestibule to remain
3. Existing canopy to remain
4. Renovated ticketing hall
5. Existing curtainwall to remain
6. Expanded Great Hall — building expansion
7. Existing and new exit breach control device
8. Existing airside elevator to remain
9. New private screening room (PSR)
10. Existing stair and escalator to remain
11. New down escalator (access from upper level) — building expansion
12. New stair (access to/from upper level) — building expansion
13. New landside elevator — building expansion
14. New meeter-greeter/lounge seating — building expansion
15. Renovated restrooms — converted from landside to airside
16. Existing airside restrooms
17. Expanded airside restrooms
18. New airside concessions
19. Renovated existing checkpoint
20. New expanded security checkpoint
21. New expanded security checkpoint queue
22. New law enforcement office (LEO)
23. Expanded gate holdroom
24. Existing stair tower to remain
25. Existing holdroom to remain
26. Expanded building support
27. New elevated arrivals exit lane overhead

LANDSIDE RESTROOMS

The area currently occupied by the sole landside restroom block will be converted to airside restrooms. A new restroom block across the Great Hall from the security checkpoint and queue provides convenience to passengers before they begin the screening process and is directly accessible from both the ticketing and claim halls. Restroom layout and design will be further refined during the project's design phases, with passenger comfort and access, coupled with long-term design value, as top priorities.

AIRSIDE RESTROOMS, SARA, NURSING MOTHERS

The existing airside restrooms on both the ground level and the upper level have been recently renovated. These are expected to remain in place with limited modification as needed to tie new finishes and construction into existing finishes and construction. On the ground level, the existing airside restrooms will expand into the space currently occupied by the (unrenovated) landside restrooms, and the fixtures, partitions, systems, and finishes will be updated. Further opportunities to enhance passenger access and comfort, long-term durability, and ease of maintenance can be studied and incorporated as the design progresses.

On the upper level, additional restrooms, including a companion care restroom, and a nursing mothers' room are added within the existing building footprint in areas currently utilized for gate holdroom and lounge seating.

GATE HOLDROOMS

Both the ground level and the upper level gate holdrooms are planned to be expanded to accommodate larger aircraft, including simultaneous or near-simultaneous arrivals. At the time of this writing, the anticipated new airlines are planned to use gate holdrooms on the ground level, joining Allegiant and Alaska. Delta, American, and United are anticipated to remain on the upper level. The lower level gate holdrooms have been sized to accommodate three large regional aircraft and one narrowbody, while the upper level gate holdrooms have been sized for two large regionals and one narrowbody, for a combined total of seven gate areas. (Refer to page 26 for Gate Holdroom Planning requirements and page 32 for Proposed Apron Layout.)

The layout of the gate holdroom expansion allows preservation of the existing curtainwall overlooking the apron, the stair towers on the north and south ends, and the existing PBB locations. Additional circulation width increases passenger level of comfort by easing congestion and especially aids those with roller bags or mobility devices during periods of peak traffic. Passengers waiting to board their plane can lounge in the gate holdrooms overlooking the apron and airfield. Areas of soft, lounge seating are provided among the more conventional beam seating to meet a wide range of passenger needs and expectations.

GREAT HALL, ELEVATED EXIT LANE, NEW VERTICAL CIRCULATION

A new elevated exit lane allows arriving passengers to exit from the upper level secure area of the terminal and traverse the Great Hall before descending directly to the Baggage Claim Hall. New vertical circulation at the expansion to the central curbside façade serves arriving passengers providing access across the Great Hall and down to the baggage claim hall. To open up space for expansion of the existing security screening checkpoint and associated queueing, the offices and space for airport administration functions will need to relocated and could be relocated to the upper level of the terminal above the new baggage makeup area.

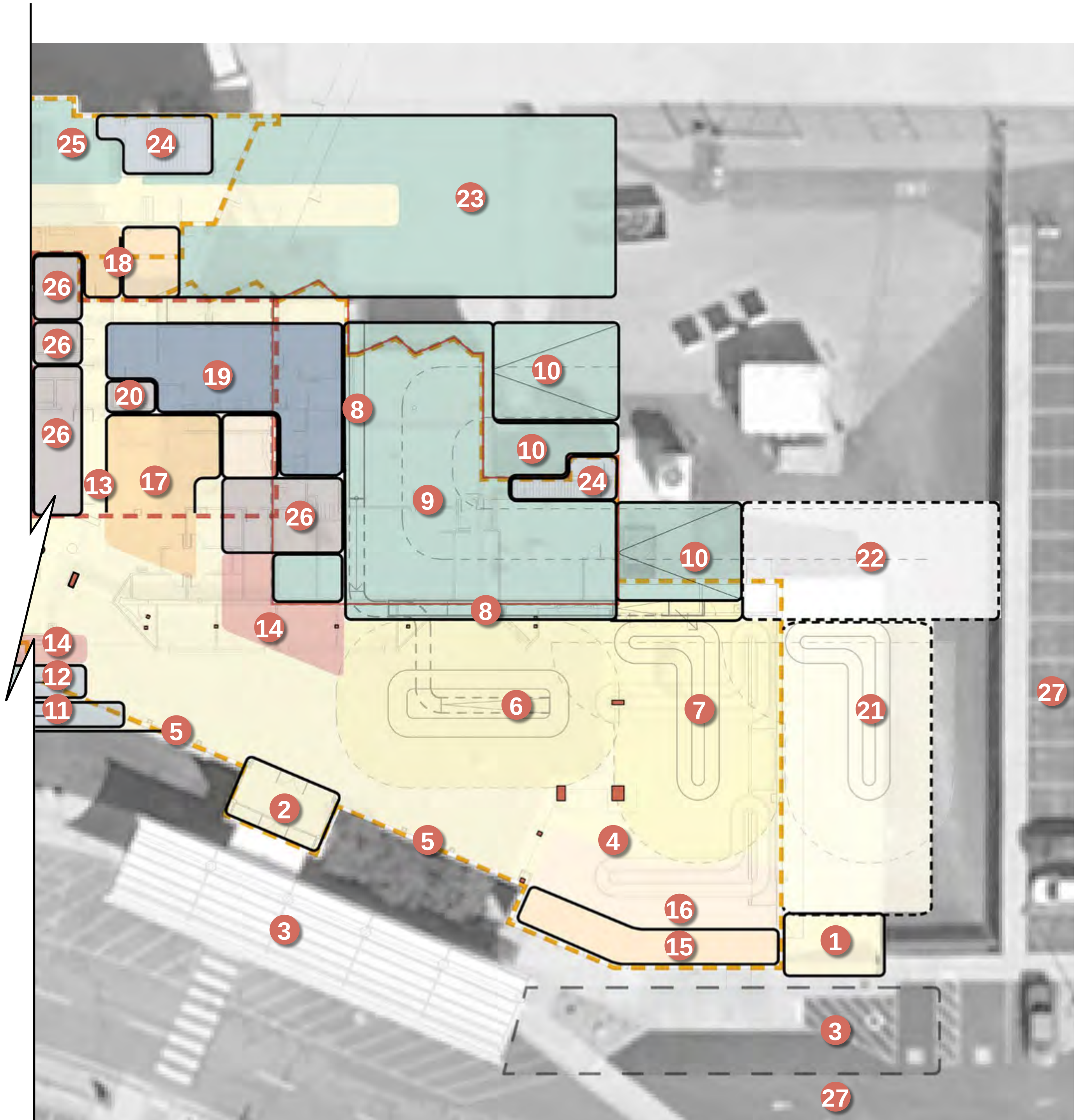
SECURITY SCREENING CHECKPOINT, QUEUEING, RECOMPOSURE

Given the space limitations at the current checkpoint, a priority in the new design will be providing additional capacity in the screening area for TSA operations and queuing area for passengers. Additionally, as TSA has been in the process of updating their checkpoint screening equipment across the nation, the design standards for screening lanes have evolved, and the new checkpoint at IDA should be designed to accommodate updated operating procedures and equipment per TSA communication received throughout this planning study and per best practice.

Several checkpoint layout options were studied to improve the operational efficiencies of the checkpoint, update systems and technologies, and to accommodate the future addition of a third screening lane with minimal disruption. The eventual full build checkpoint option anticipates rotating the long axis of the screening lanes ninety degrees, taking over the area currently occupied by airport administration functions, and increasing the areas dedicated to screening, queueing, and recomposure.

05 PREFERRED OPTION — INTERIOR

TERMINAL NORTH — GROUND LEVEL



EXISTING TERMINAL NORTH — GROUND LEVEL

0' 16' 32' 64'

N

DIAGRAM KEY NOTES

1. New vestibule
2. Existing vestibule to remain
3. Existing canopy to remain — new extension to existing canopy shown dashed
4. Renovated baggage claim hall
5. Existing curtainwall to remain
6. New slope-plate baggage claim carousel
7. Relocated or new flat-plate baggage claim carousel
8. Inbound baggage feed belts to claim carousels
9. Relocated baggage laydown within existing footprint
10. New baggage laydown elevated slab /ramp
11. New down escalator (access from upper level) — building expansion
12. New stair (access to/from upper level) — building expansion
13. New egress circulation as required and access to support spaces
14. New meeter-greeter/lounge seating
15. Relocated rental car counters
16. Relocated rental car queue
17. New landside concessions and back-of-house spaces
18. New airside concessions and back-of-house spaces
19. Renovated TSA office space (as needed)
20. Existing TSA IT room to remain
21. Future baggage claim hall and carousel — building expansion
22. Future baggage laydown — building expansion
23. Expanded gate holdroom — building expansion
24. Existing stair to remain
25. Existing holdroom to remain
26. Expanded building support
27. Rental parking area (redesigned as needed to accomodate current or future building expansion)

AIRSIDE CONCESSIONS

On the ground level, new airside concessions can be integrated in the central portion of the terminal within the area that is currently gate holdroom. This provides passengers with easy access to concessions in close proximity to their gates and also increases customer exposure to enhance concessions revenue opportunities. Additional concessions can be integrated opposite the main circulation within the gatehold. As this area is already served by plumbing for the existing SARA in this location, concessions plumbing can be tied into the current plumbing layout.

On the upper level, the existing concessions space can remain in place though with a slightly reduced footprint. The overall concessions footprint is now balanced between the first and second levels providing access to the new upper level arrivals exit lane. Additional concessions space is proposed on the west side of the building overlooking the airfield in the addition over the new baggage makeup area.

Additional airside restroom space, including a companion care restroom, are located on the west side of the concourse, with easy access from the existing holdrooms, concessions and the new holdroom space added over the new baggage makeup expansion.

LANDSIDE CONCESSIONS, MEETER-GREETER

The existing landside concessions areas in the terminal have been vacated, either for the long term as is the case in the former restaurant area, or due to pandemic-related issues in the case of retail alcoves in the baggage claim hall. The existing vacated restaurant area could be renovated with updates to finishes and systems to serve as a temporary home for airport administration, storage, or other support functions (such as baggage laydown in one of the planning options).

New landside concessions space within the existing building footprint is located in a position to provide convenient access from both the claim hall and the new meeter-greeter seating area for arriving passengers and their guests. Meeter-greeter seating is also provided on both levels near the new vertical circulation in the Great Hall.

BAGGAGE CLAIM

The existing baggage claim hall footprint is largely planned to be retained in the new design; however, the orientation of the carousels relative to each other will be rotated ninety degrees from the current configuration. This rotation brings multiple benefits, including creating opportunity in the claim hall for adding a third carousel in line with the other two as part of an expansion to the north in the future. Additionally, the rotation opens up the claim hall to be more wholly visible as a continuous space upon approach from the Great Hall, even once the third carousel comes online.

Depending on their condition at the time of construction, as well as the final configuration of the inbound baggage laydown system, portions of the existing carousels may be eligible for reuse in the new design. The size, shape, and type of claim carousel to be utilized in the design for construction will be affected in part by the location and arrangement of the baggage laydown area.

Refer to page 64 for the Baggage Handling System Narrative, a technical description of the BHS.

05 PREFERRED ALTERNATIVES — INTERIOR

TERMINAL SOUTH — UPPER LEVEL, TERMINAL NORTH — GROUND LEVEL

EXISTING TERMINAL SOUTH — UPPER LEVEL

DIAGRAM KEY NOTES

1. New vestibule below
2. Existing vestibule to remain below
3. New extension to existing curbside canopy below
4. Existing curbside canopy to remain below
5. Existing building roof to remain below
6. New ticketing hall expansion below
7. New airport administration suite
8. New building support
9. New landside stairs and circulation serving the airport administration suite
10. New airside circulation
11. New electrical room
12. New egress stair
13. New landside elevator
14. Face of existing building
15. New airside restrooms
16. New airside concessions
17. Expanded gate holdroom
18. Redesigned cargo parking lot

BAGGAGE LAYDOWN

A variety of options were studied relative to the configuration of the baggage laydown area to meet current and projected future needs. Currently, baggage laydown length and layout parameters are significant limiting factors to the airport's inbound baggage operations. Therefore, options studied for the layout of the laydown area focused on increasing laydown capacity by incorporating stripping pier belts that lead to the claim carousels. Another goal was long-term flexibility and planned improvements not impeding future expansions to the claim hall. The reorientation of the claim devices allows them to be positioned to maximize passenger access to the devices. From the stripping piers, the carousels can then recirculate the bags until they are collected by passengers; the volume of stored bags on the carousel does not interfere with or limit the stripping capacity as is the case in the current arrangement. The existing basement and its access in this area are anticipated to remain in place in both options.

In one option, the area of the former landside concessions/restaurant space is repurposed to become part of the laydown area. Infill to the existing elevated slab creates a level surface for bag unloading and tug/cart maneuvering, served by new tug ramps located outside of the existing building footprint. The existing slab elevation of the former restaurant space places the new primary laydown area in the range of 1'-6" – 2'-0" above the existing claim hall elevation. To accommodate this elevation differential, one of the existing flat plate claim carousels would need to be replaced with a slope plate device due to the need to deliver the bags from above. The exterior grade elevation around the new elevated slabs and ramps is expected to remain as is, less than 6 inches or so below the interior claim hall slab elevation. No additional modifications would be necessary to either carousel nor the stripping conveyors to allow the expansion of the claim hall to the north.

In an alternate baggage laydown option, the former concessions area can remain as is or be repurposed to serve another function besides baggage laydown operations. In this arrangement, the new laydown area occurs at the existing grade elevation outside the existing building footprint, close to the interior slab elevation. In this case, both carousels can remain the flat plate type. A new stripping pier feeds one of them, while the second carousel is fed directly through the exterior wall without stripping piers, similar to the arrangement today. Given the rotation of the carousels, the carousel's long leg would be adjacent to the exterior wall and a larger loading door could be implemented, effectively increasing the unloading/laydown length of the carousel. Although this configuration has less presentation length of the carousel in the initial build, more frontage will be opened up on the second carousel when the building is expanded in the future to accommodate the third carousel. Modifications to the second carousel would be required at the time of building expansion due to the initial method of feeding the carousel. This alternate baggage laydown option is shown in the Appendix.

Refer to page 64 for the Baggage Handling System Narrative.

RENTAL CARS, NORTH VESTIBULE

In the new layout, rental car counters and queueing have been relocated to the northwest corner of the claim hall within the existing building footprint, an area which is currently open circulation space. This moves the queue and its overflow out of the main path of circulation from the Great Hall to the Claim Hall, providing greater ease of flow during peak traffic periods and places the counters directly adjacent to the rental car parking lot. A new vestibule is added adjacent to the counter zone, replacing the existing unmarked door without a vestibule, providing customer access to the rental car parking lot immediately adjacent outside. The existing canopy is extended to and beyond the new vestibule, providing covered access to the rental car lot.

TSA OFFICES, SUPPORT SPACES

The existing TSA offices, break room, and support spaces are located to the north of the Great Hall, adjacent to the vacated restaurant space. The area will be largely untouched with the exception of general updates related to the addition of a egress corridor out of the Great Hall. Additionally, new airport support spaces such as janitorial/maintenance rooms, IT, and electrical rooms to support the function of the overall terminal will be added as required in this area.

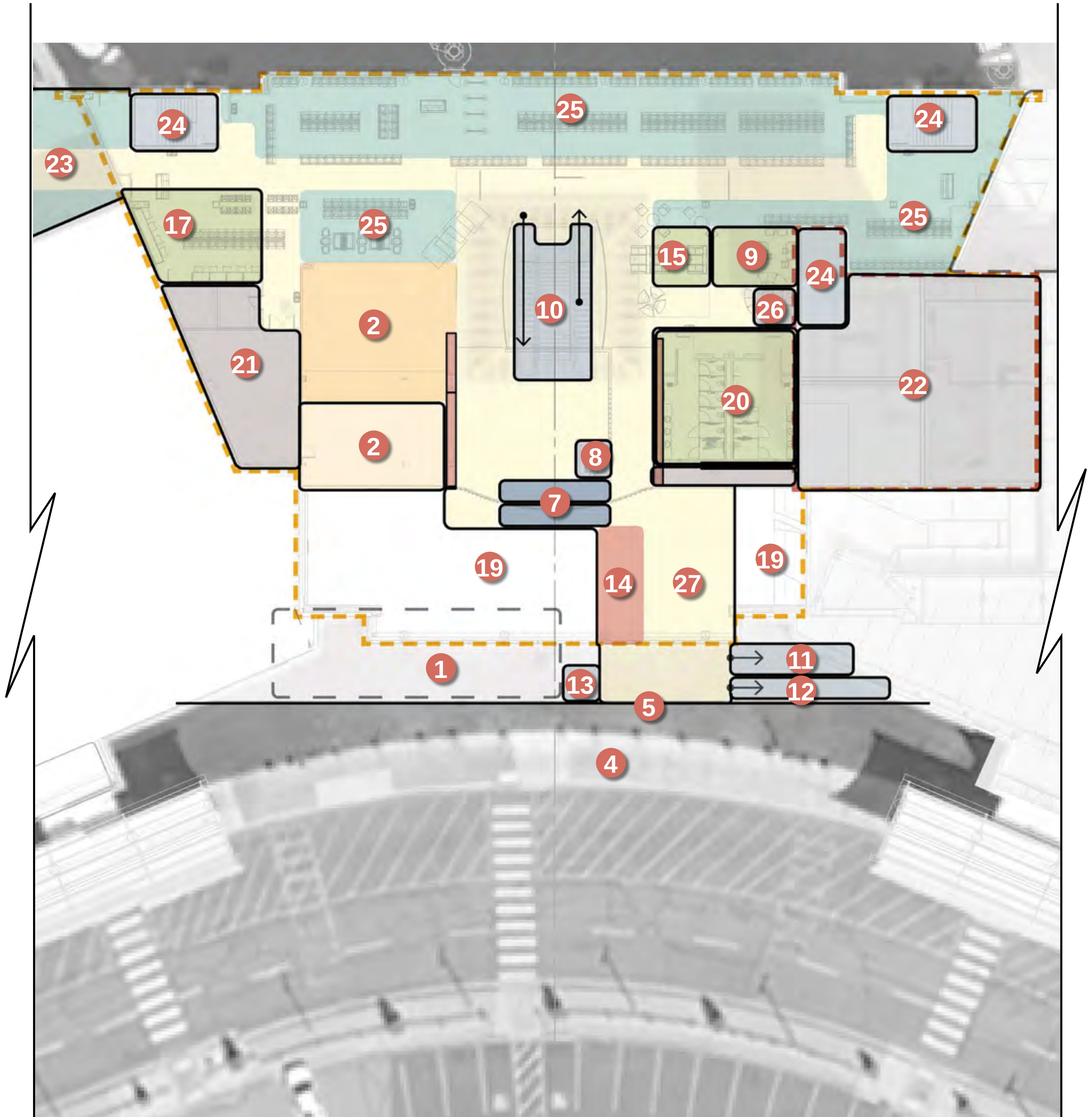
AIRPORT ADMINISTRATION

The existing airport administration offices, currently located on the ground level adjacent to the constrained SSCP, have been relocated to accommodate the necessary expansions to the SSCP. Review of the anticipated overall terminal long-term growth identified the area on the north end of the upper level, above the ground level gate holdroom expansion, to be the best location for the relocated administration offices given the expected future airfield expansion to the south. The airport administration offices could also be relocated to other locations including a facility separate from the terminal building. The impacts of relocation of the administration offices on project eligibility should be a consideration of future projects.

The new administration offices are sized to accommodate the anticipated office and support functions as well as training and airport board meeting rooms. Access to administration offices will be via the new upper level landside circulation at the west end of the Ticketing Hall.

05 PREFERRED ALTERNATIVES — INTERIOR

TERMINAL CENTRAL — UPPER LEVEL



EXISTING TERMINAL CENTRAL — UPPER LEVEL

DIAGRAM KEY NOTES

1. New landside restrooms below — building expansion
2. Existing airside concessions
3. Existing canopy to remain
4. Existing sidewalk to remain
5. New curbside curtainwall
6. Expanded Great Hall — building expansion
7. New exit breach control device(s)
8. Existing landside elevator to remain
9. New nursing mothers' suite
10. Existing stair and escalator to remain
11. New down escalator — building expansion
12. New stair (access to/from upper level) — building expansion
13. New landside elevator — building expansion
14. New meeter-greeter/lounge seating
15. New service animal relief area (SARA)
16. Not used
17. New airside restrooms
18. New airside concessions
19. Open to Great Hall below
20. Existing airside restrooms
21. Building support to remain
22. Air traffic control tower (ATCT) and FAA space to remain
23. Expanded gate holdroom
24. Existing stair tower to remain
25. Existing holdroom to remain
26. New janitor's closet
27. New elevated walkway arrivals exit lane

AIR TRAFFIC CONTROL TOWER

The space currently occupied by the FAA Air Traffic Control Tower (ATCT), as well as the second level footprint directly below it, is expected to remain as is in the preferred planning option. While FAA currently occupies the top level space, it is anticipated the control tower functions and space will be relocated elsewhere, outside of the main terminal. That said, it is not clear at the time of this writing when that relocation will occur, so the preferred alternatives do not propose repurposing that space. The portion of the FAA space that is currently mothballed may require significant rehabilitation and/or remediation to become usable space.

If the tower functions are relocated and the space is renovated as required, there may be possibilities to repurpose the space. This can be considered in further detail when the specific timing of the tower relocation is known.

BASEMENT MODIFICATIONS

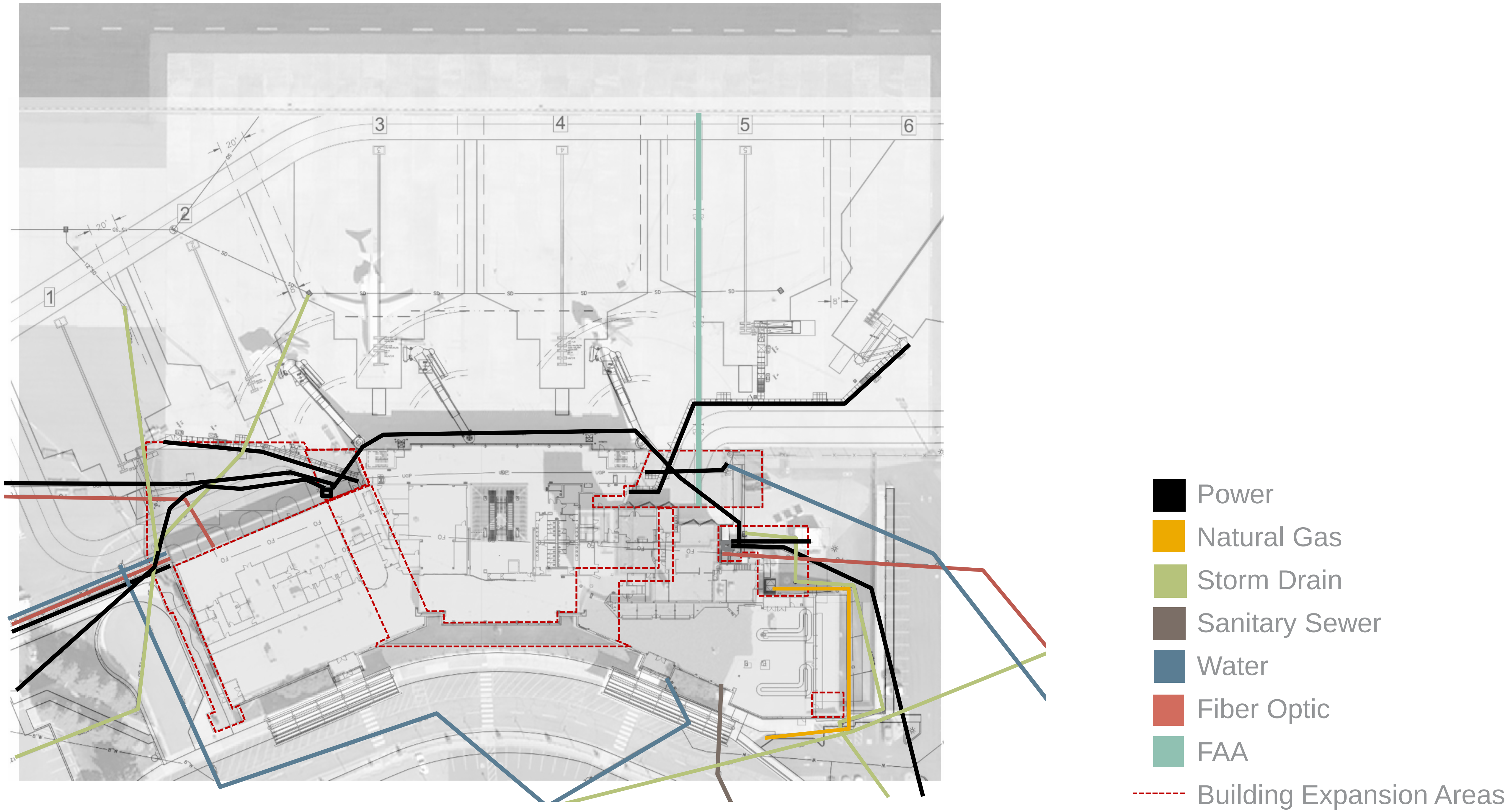
No significant architectural scope is expected in the basement; most scope will involve replacement of MEP, IT, and security systems and equipment. (Refer to page 56, MEP Systems Narratives and page 58, Technology and Security Systems Narrative.) Where possible, storage and maintenance functions will be consolidated, and more floor area may become available for additional equipment as needed. At the south end, new basement access will likely need to be provided to replace the stair that will be demolished as part of the security checkpoint expansion.

Modifications to the basement Main Point of Entry (MPOE), technology infrastructure, and equipment will also be required to support construction phasing and system enhancements scopes of work. This includes modifications to backbone cabling and infrastructure to support construction and transition to the new main telecommunications room (MTR).

Additionally, architectural, conditioning, and electrical enhancements are recommended to the MPOE area within the basement to support greater system resilience.


21
17

06 SYSTEMS NARRATIVES



EXISTING SITE UTILITIES
Not to Scale

CIVIL SITE UTILITES

As the terminal building has been expanded over time, utility services have been relocated or expanded with the various projects. Below is a summary of the various utilities that currently serve the terminal building. (Refer to page 59 for the IT/Security Systems Narrative.)

WATER

Existing Systems
The terminal is served by multiple water mains from three directions: south, east and north. The water main from the south is an 8” main from Borah Avenue that provides water to the hydrants on the south side of the building. This main loops in front of the terminal and joins another 8” main that comes across the airport parking lot from Skyline Drive. The main service to the building enters the basement near the entrance to baggage claim. The 8” main continues north and intercepts another 8” main line from Federal Way. This 8” line serves the fire hydrants on north side of the building and is a redundant loop for the main terminal service.

Potential Impacts
The hydrants on the south side of the building may be impacted by the potential expansion of the ticketing and bag makeup area. The hydrants on the north side of the building may be impacted by the expansion of the hold rooms to the north and reconfiguration and expansion of the baggage claim area.

SEWER

Existing System
There is one main sewer service to the building. The main sewer line parallels Skyline Drive and enters the building in roughly the same location as the water service, in the basement below the baggage claim entrance.

Potential Impacts
No impacts to the existing sewer service are anticipated by expansion of the building footprint, however consideration of the routing of new sewer services to the additional restroom space will need to be addressed during design.

STORM DRAIN

Existing System
There are two storm drainage systems near the terminal building, one that handles stormwater and one that handles runoff from the deicing of aircraft. The main stormwater drainage system consists of a series of inlets in the terminal aircraft apron on the west side of the building that flow to the south and intercept the main storm drainage line for the airfield along with another series of inlets, pipes and manholes on the east side of the building. The system on the east side also drains the area along Taxiway C and Taxiway G to the north. The roof drains for the terminal building also discharge to these systems either via direct connection or overland flow. The system of inlets and pipes in front of the terminal was installed in the early 2000s while the age of the system on the east side varies. The main these systems connect to near the airport operations budling is believed to have been installed in the 1940s and drains to a detention basin on the east side of the airfield behind the Red Baron Hangar. The overall stormwater drainage system for the airport appears to surcharge at the point the pipes from the terminal apron meet the pipes from the runway and taxiway system.
The second stormwater drainage system is associated with the deicing pad to the southwest of the existing terminal building. This pad is drained by an inlet in the center that leads to a holding tank just south of the terminal building. The stormwater drainage from this holding tank is pumped into a truck and treated by the city as part of their municipal system.

Potential Impacts
The expansion of the bag makeup will impact the several storm drainage lines including the stormwater drainage for the apron and the drainage for the deicing pad. These lines will need to be relocated. As the existing apron is currently impervious surface, the expansion of the building will likely have a minimal impact if any on the volume of stormwater runoff.

NATURAL GAS

Existing System
The terminal building has one service for natural gas that enters the building near the existing cooling tower on the north end. This is the only natural gas service for the building.

Potential Impacts
The expansion of the baggage claim area will impact the existing natural gas service and it will likely require relocation. Consideration should also be given to adding an additional natural gas service for redundancy.

TELECOMMUNICATIONS

Existing System
Various telecommunications companies serve the terminal building include City of Idaho Falls Fiber, CenturyLink (Lumen), Sparklight, and Syringa. The precise location of specific telecommunication utilities is unknown, but City of Idaho Falls utility maps show fiber optic services from both the south and north.

Potential Impacts
The expansion of the building to either the south or north will impact the existing telecommunication services. Depending on the depth of new foundations, these utilities may need to be relocated.

CIVIL SITE UTILITES (CONTINUED)

AIRFIELD LIGHTING

Existing System
The lighting regulators for the runway and taxiway lighting systems are located in the basement of the terminal building near the northwest corner.

Potential Impacts
The expansion of the hold rooms to the north may impact the airfield lighting homeruns. Depending on the depth of the required building foundation, these lines may need to be relocated. The airport is considering relocation of the airfield regulators from the basement to a standalone electrical vault building, but there is currently no timeline for the relocation.

FAA COMMUNICATION SYSTEMS

Existing Systems
As the Air Traffic Control Tower (ATCT) is currently located inside the terminal, various FAA communication lines from Navigation Aids (NAVAIDS) on the airfield are routed to the tower along with the Crash Alarm System that serves the ARFF station. The location of these communication lines is believed to be on the north side of the building, but exact locations are unknown.

Potential Impacts
Expansion of either the hold rooms to the north or the baggage claim has the potential to impact FAA communication systems. The potential relocation of these systems will need to be considered in the design of either projects. The airport is pursuing the relocation of the ATCT outside of the terminal building. If this relocation is accomplished prior to any expansion to the north, relocation of these systems may no longer be necessary.

MISCELLANEOUS UTILITIES

Existing Systems
There are numerous building utilities such as access control systems (ACS), parking lot lighting, and irrigation lines located around the perimeter of the building. (Refer to page 59 for the IT/Security Systems Narrative.)

Potential Impacts
Any building expansion will impact these systems and relocation will need to be addressed during design.

STRUCTURAL SYSTEMS

The terminal building's current configuration and structural system is the result of a series of renovations that have occurred since its original construction. While the terminal building has been expanded and renovated overtime, the overall footprint and structural system has remained relatively unchanged since a significant project in 1978 expanded the north wing, added the south wing, and added a second level in the center of the building. Additional projects in 2001, 2012, and 2019 have refined and expanded the structure to the current arrangement.

In general, the vertical structural system consists of either reinforced masonry shear walls or steel braced frames with cold-formed steel, non-load bearing partitions and aluminum storefront separating functional areas. Horizontal structural systems are generally composed of structural steel beams and girders supporting open-web steel floor and roof joists. The substructure is composed of cast-in-place concrete stem walls and piers supported by spread footings.

EXISTING SOUTH WING – TICKETING HALL, AIRLINE TICKET OFFICES, AIRLINE SUPPORT AREAS, AND BAGGAGE SCREENING

Existing System
The proposed ticketing hall, ATOs, airline support areas, and baggage screening areas are located in the south wing. In 2012, the south wing was significantly remodeled, and two additional bays were added extending the footprint roughly forty feet to the south. The south wing is a single-story structure supported by either wide flange steel columns and girders arranged on a rectangular grid spanning approximately 20-foot in each direction, or by concrete masonry units in the southernmost, post-2012 bays. The structure is primarily enclosed by concrete masonry unit (CMU) infill. The roof of the structure is composed of open-web steel joists, galvanized steel decking, and membrane roofing over rigid insulation. The roof spans from east to west with slopes of 0.5:12, draining to the approximate center of the structure. The top of masonry on both the east and west elevations is 18'-8" above finished floor.

Potential Impacts
The potential impacts proposed by the preferred alternative in the south wing are relatively low. Most of the impacts to the existing construction will be to non-load bearing partitions. Care will need to be taken to account for existing structural columns and CMU walls in the pre-2012 portion of the structure. The proposed expansion to the south and west will require the foundation and CMU bearing walls be expanded accordingly.

Additional Considerations
Adding a second level to the existing portion of the south wing would likely be an invasive undertaking. There is no indication to suggest that the structural system in this area was provisioned for the loads imposed by such an undertaking. That said, adding a second level to the portion of the south wing anticipated to be expanded under the scope of this work should be included in the structural design of the expansion, whether that level is added as part of initial scope or as a later phase.

EXISTING NORTH WING – LANDSIDE CONCESSIONS, TSA OFFICES, BAG CLAIM HALL, AND BAGGAGE LAYDOWN

Existing System
The proposed landside concessions, TSA offices, bag claim hall, and baggage laydown are located in the north wing. The north wing was originally constructed in 1978 and expanded in 2019. This wing encompasses the original building and includes two items that warrant additional consideration. First, portions of the original foundation are roughly two feet higher than the rest of the building. Second, the FAA air traffic control tower (ATCT) occurs above the first floor. Because both of these elements were constructed prior to 1978, only limited information is available regarding their construction and structural details.

The north wing, with the exception of the FAA ATCT, is a single-story structure supported by either wide flange steel columns and girders arranged on a rectangular grid, CMU, or reinforced concrete. The structure is enclosed by precast concrete panels or CMU infill. The roof of the structure is composed of open-web steel joists supporting two inches of concrete over steel deck.

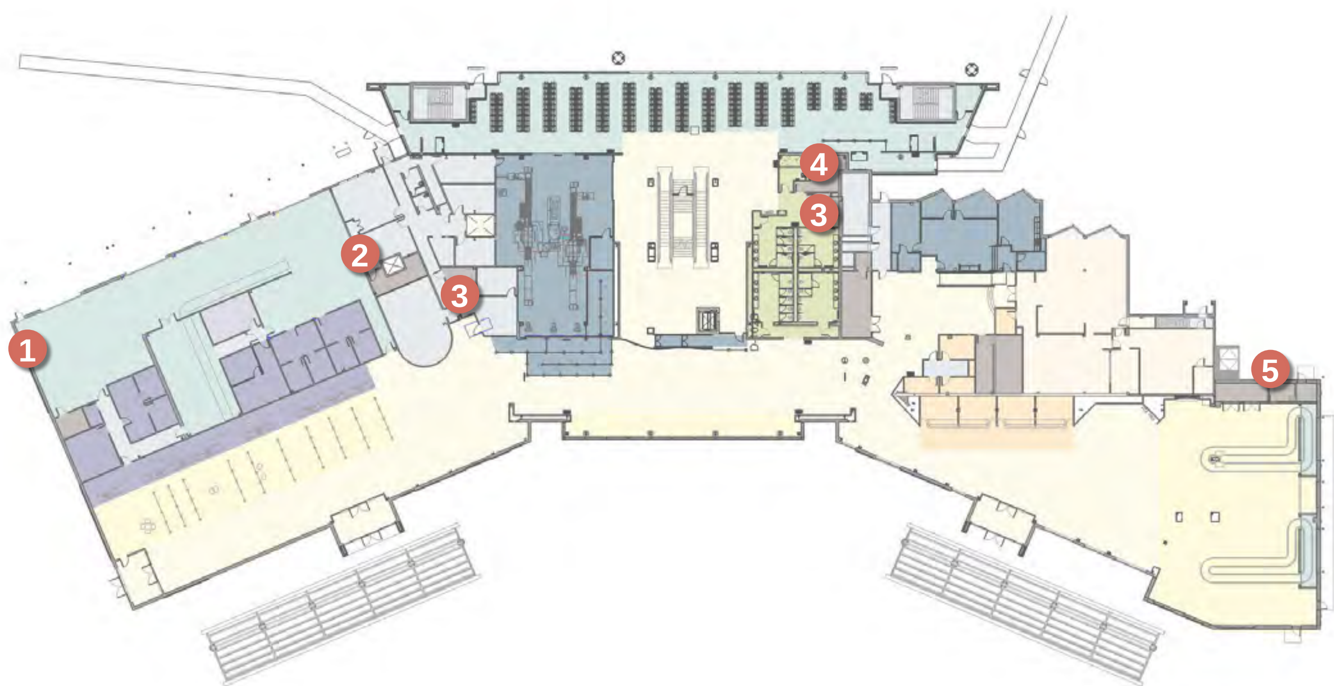
Potential Impacts
The potential impacts proposed by the preferred alternative in the north wing are generally related to the lack of flexibility associated with the existing elevated slab and control tower. The relocated bag laydown area will need to be able to accommodate the existing finished floor elevation, approximately two feet above the claim hall floor elevation. Impacts beneath the control tower appears to be primarily related to non-load bearing partitions. With that said, structural plans of the pre-1978 structure are not available, so confirmation of the primary structural components will be required during design phases. It appears that the control tower is supported by cast-in-place concrete walls which stop at the second level. Again, attention should be given during design refinement to accommodate existing columns and shear walls to the extent possible.

Additional Considerations
Access to the administration offices from the central portion of the structure is planned to occur as an open walkway on the second level. Careful consideration will be given to using existing roof structure over the north wing to support the new administration access while minimizing the disruption of the first level.

PROPOSED NORTH WING EXPANSION – GATE HOLDROOM AND AIRPORT ADMINISTRATION

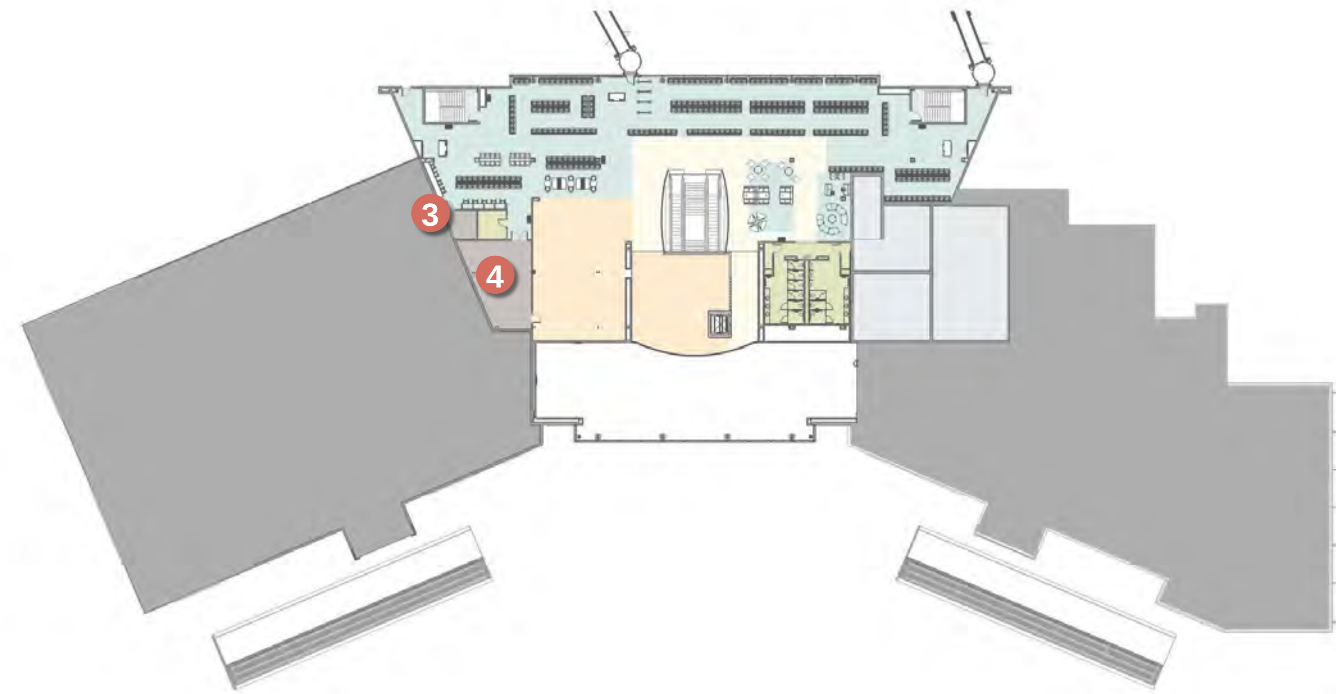
Potential Impacts
The proposed holdroom on the first floor and airport administrative offices on the second floor would extend the north wing to the west. Since this region is currently used for aircraft parking and baggage handling, there are no anticipated conflicts with existing structural systems. With that said, careful consideration should be given to utilities and other services that could be interrupted by the required foundation.

Additional Considerations
Access to the administration offices from the central portion of the structure would occur as an open walkway on the second level. Such an option would inevitably include the addition of columns in the Great Hall. Careful consideration will be given to using existing roof structure over the north wing to accommodate the new walkway while minimizing disruption to the first level.



EXISTING MEP INFRASTRUCTURE — GROUND LEVEL

Not to Scale



EXISTING MEP INFRASTRUCTURE — UPPER LEVEL

Not to Scale

DIAGRAM KEY NOTES

1. Existing main electrical feed
2. Existing mechanical shaft
3. Existing electrical room
4. Existing mechanical room
5. Existing baggage handling system (BHS) motor control panel (MCP)

Note: Basement areas serving MEP functions are not shown.

MECHANICAL AND PLUMBING SYSTEMS

EXISTING MECHANICAL INFRASTRUCTURE

1. Existing Chiller
    - A. 135 ton chiller is twenty years old, nearing end of useful life
    - B. Current size is adequate only for current building. Any expansion would require more capacity.
    - C. No redundancy. Single point of failure.
2. Existing Boiler
    - A. Over twenty years old, nearing end of useful life
    - B. Current size is adequate only for current building. Any expansion would require more capacity.
    - C. No redundancy. Single point of failure.
3. Existing HVAC
    - A. There are five indoor air handlers and at least four rooftop units currently serving the facility. The indoor air handlers are on the building chilled water and heating water systems. The rooftop units are natural gas heat and DX cooling.
    - B. Many of the units are smaller and serve adjacent areas. This causes both temperature and pressure differences in the spaces.
4. Existing plumbing
    - A. Majority of plumbing is original to the building.
    - B. Multiple repairs were observed to sanitary system during site visit and facility staff noted that it is difficult to repair and tie into the fragile existing cast iron system.

NEW MECHANICAL INFRASTRUCTURE

1. Chillers
    - A. A new chilled water system with redundancy will be provided with the expansion. System to include:
        - 1) Two or more screw chillers. Estimated at 75 tons each. Final sizing based on extent of expansion.
        - 2) Pumps and associated valving and components necessary for complete system
2. Boilers
    - A. A new heating water system with redundancy will be provided with the expansion. System to include:
        - 1) Two or more boilers. System will need further evaluation to determine if condensing boilers are an option.
        - 2) Pumps and associated valving and components necessary for complete system
3. Air Handlers
    - A. Existing air handlers in the building will be consolidated to provide better temperature and pressure control.
    - B. Existing rooftop air handlers will be consolidated to provide better temperature and pressure control. These units will be connected to the building heating and chilled water systems.
4. Plumbing System
    - A. With the renovations and floor plan changes of the building the plumbing system will be allowed to be upgraded. System improvements anticipated:
        - 1) New sanitary waste system
            - a. PVC piping below grade
            - b. Cast iron above grade
        - 2) New domestic water system
            - a. Copper with brazed/sweat joints
            - b. High efficiency natural gas water heating plant with circulators

ELECTRICAL SYSTEMS

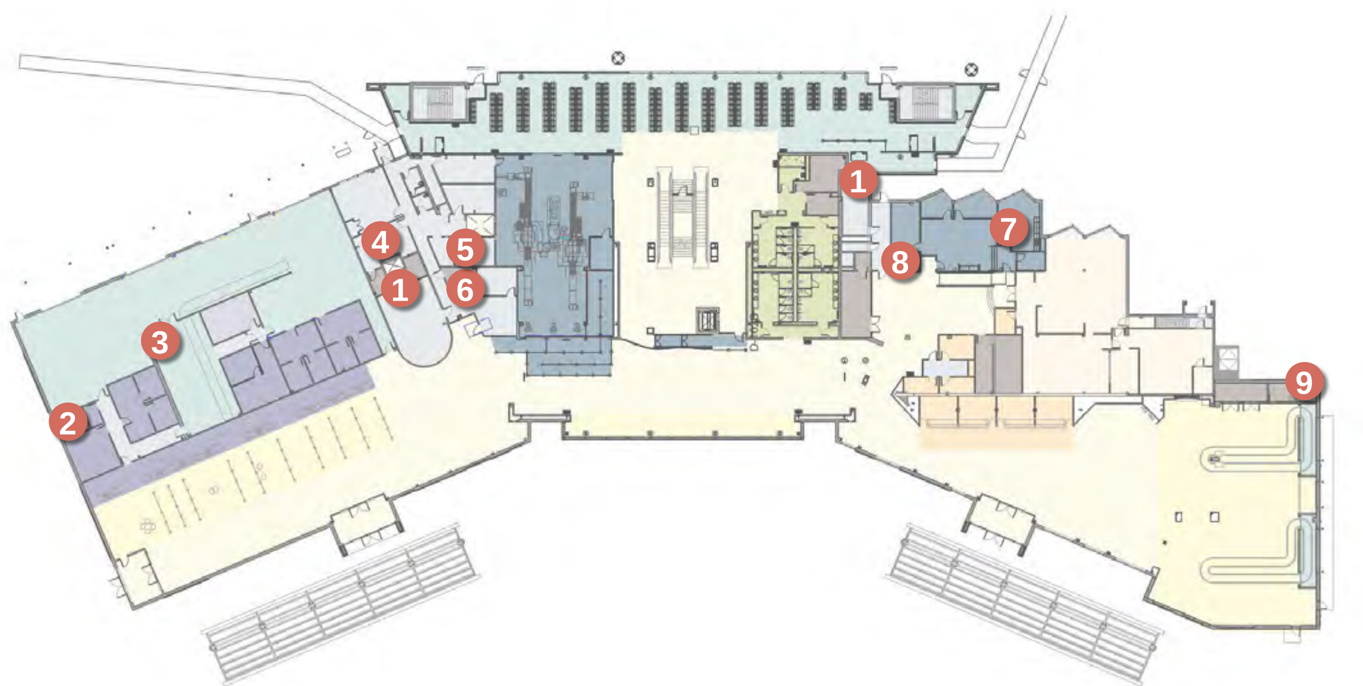
EXISTING ELECTRICAL INFRASTRUCTURE

1. Existing Terminal is fed from three electrical services.
    - A. 4000amp 208/120v service located in the basement on the north side of the terminal. Installed 1979. (fused switches)
    - B. 800amp 480/277v service located in basement under Administration Department. Installed 1979. (fused switches)
    - C. 800amp 480/277v service located on south wall of outbound bag room. Installed 2012. (circuit breakers)
    - D. Both of the electrical services installed in 1979 are at the end of their useful life. The manufacturer is no longer making replacement parts for this gear.
    - E. Both 480/277v services conflict with new growth. Specifically, the utility padmount transformers and feeder placement are a concern, depending on which Terminal Expansion scheme is selected.
2. Existing Generator
    - A. Existing 265kW/313kVA generator is twenty years old, nearing end of useful life.
    - B. With new planned Terminal expansion, a larger generator will be required to support growth. The size of the generator may vary, depending on what level of service is desired for the terminal while on generator.

NEW ELECTRICAL INFRASTRUCTURE

1. Electrical service
    - A. A new main electrical room will be required at the south end of the terminal (Approximately 12'x 20') this room could incorporate the existing 2012 service.
    - B. A new utility service will be required. This will include a new padmount transformer and utility connection cabinet for new electrical service.
    - C. A new 3000amp, 480/277v, 3-phase, 4-wire electrical service will be installed adjacent to the 2012 electrical service on the south end of the terminal. This service could be 100% backed up by generator power.

IT/SECURITY



EXISTING IT/SECURITY INFRASTRUCTURE — GROUND LEVEL

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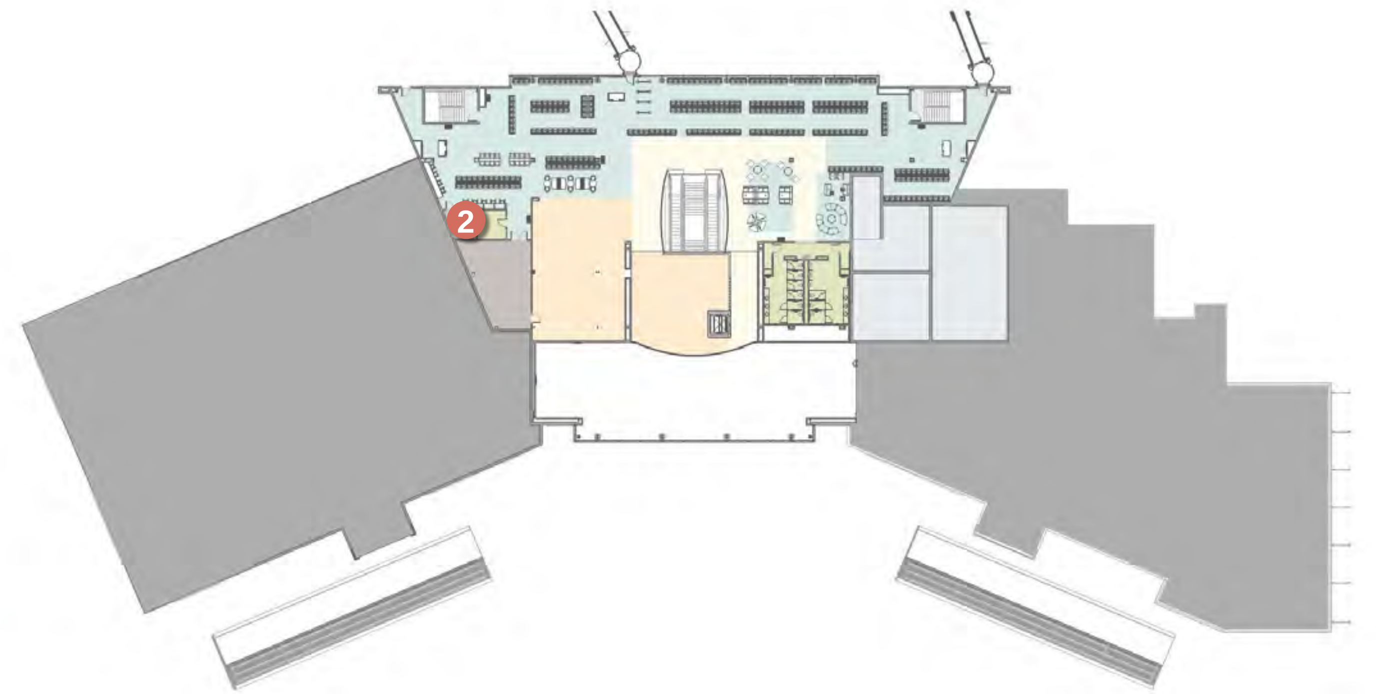


EXISTING IT/SECURITY INFRASTRUCTURE — UPPER LEVEL

Not to Scale

DIAGRAM KEY NOTES

1. Existing security equipment room
2. Existing airport telecommunications room (TR) and security equipment room
3. Existing TSA IT cabinet
4. Existing security monitoring room and badging office
5. Existing main communications room (MCR)
6. Existing main point of entry (MPOE) in basement below
7. Existing security panels in basement below
8. Existing TSA IT room
9. Existing security equipment closet

TECHNOLOGY AND SECURITY SYSTEMS

EXISTING CONDITIONS

Site-wide Communications Infrastructure
Main Point of Entry (MPOE) for analog copper cabling from utilities and fiber optic cable from Idaho Falls 911 Center is in the Terminal Basement.

Terminal Backbone Cabling
The fiber optic backbone system consists of multimode and single mode cables from the Level 1 Main Telecommunications Room to Communications Rooms (CRs) throughout the existing terminal and concourse. The cables are routed in a variety of cable trays and conduits. The strand count to each CR varies and is connected to the LAN network to operate the current data network and other special systems.

Terminal Horizontal Cabling
Horizontal cabling (the portion of the telecommunications infrastructure that extends from CRs to individual data outlets)has been installed as needed over time, consisting of Category 5e and 6 cables. In addition to the Airport's horizontal cabling, the terminal contains cabling that belongs to Telecom and airlines. These cables provide telephone, television, and data services.

Telecommunication Room Facilities
The existing Main Telecommunication Room (TR) is on the main level of the existing terminal and is fed from the MPOE room in the basement. Various other telecom rooms serve the voice, data, and security equipment.

Network/Wi-Fi
Idaho Falls City IT manages the airport's network switches, a part of City environment with one overall network with separate VLANs for airport systems. The network equipment is based upon Cisco products.
Lumen and Syringa are the current internet service providers (ISPs) at IDA. The airport Wi-Fi access points are managed by Silver Star, local ISP.

Voice Communications System
Idaho Falls City IT manages the airport's phones, currently Shoretel (Mitel).

Electronic Visual Information Display System (EVIDSs)
The existing system is Prodigiq, a cloud-based system for the FIDS / BIDS software. The EVIDS contains display devices throughout the existing terminal, concourse, gate podiums, and baggage claim areas. Flight Information Display System (FIDS) banks typically show arrivals and departures for the entire airport. Baggage Information Display Systems (BIDS) screens display flight baggage information at the baggage claim belts. A Gate Information Display System (GIDS) screen is located at each gate back wall to show information about the departing flight. The typical display device is a LCD flat panel with an attached PC. The FIDS has data feeds from the cloud hosted Prodigiq service to obtain flight schedule information and flight status updates.

Paging System
The existing multi-vendor paging system provides informational and regulatory announcements to passengers and the public. Most of the existing terminal and concourse are served by an outdated system. The PA head end equipment and amplifiers are located in the Basement MPOE room. Speaker coverage is provided in the terminal public spaces and hold rooms. Messages are initiated by paging microphones located at the gate agent positions.

Access Control System (ACS)
Existing Genetec Access Control Panels are provided in various TRs and other equipment rooms serve ACS portals in the Terminal. Genetec Security Center software is provided at the Video Surveillance System (VSS) control and monitoring workstations at the Terminal Security Operations Center. The ACS server is hosted by the City Data Center with Genetec Cloud Link device at the airport.

The ACS ID Badging computer is located in the Security Monitoring Room / Security Operations Center (SOC). ACS portals in the existing terminal typically consist of ACS readers, magnetic locks, balanced magnetic switches, and audio/visual devices.

Video Surveillance System/Storage
A combination of 3X Logic and HIK Vision IP fixed and pan-tilt-zoom (PTZ) cameras provide video surveillance in the Terminal and concourse. A 3X Logic network video recorder is provided in the Level 1 Security Equipment Room. Video control and monitoring workstations are provided in the SOC and utilize 3X Logic Video Management Software. Video is viewed on the large format SOC video monitors.

Tower Crash Phone System
Existing tower crash phones are located in the SOC, ARFF and City 911 Center. Dedicated ring down lines are having audio quality issues.

Radio / Distributed Antenna System (DAS)
The Radio system is part of the Idaho Falls City Radio system. The City 911 system dispatches to local police. Airport does have a dedicated radio channel.
There is no current DAS. Local cellular signal coverage is adequate for current needs.

Shared Use Passenger Processing System
There is no current Shared Use system at the airport. The Airlines use proprietary passenger processing systems.

TECHNOLOGY AND SECURITY SYSTEMS (CONTINUED)

RECOMMENDATIONS & SCOPE OF WORK

Telecommunications Rooms (TRs)

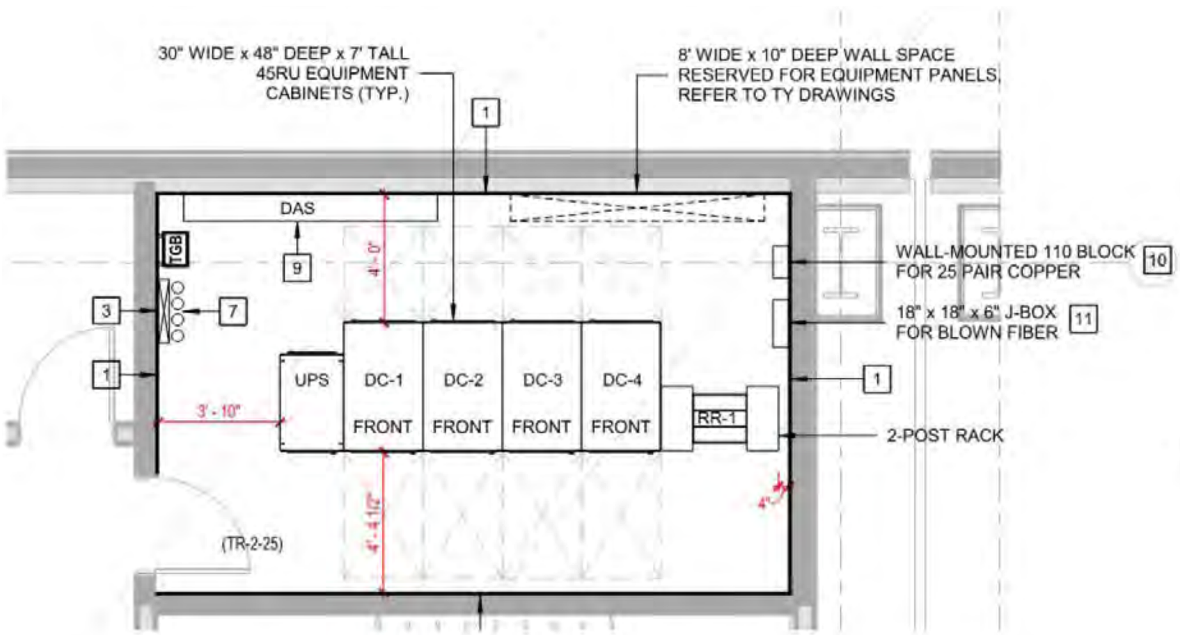
TRs shall consist of equipment cabinets, cable tray, ladder rack and conduit for IT and Communications Systems equipment and devices. The nature and complexity of the IT and Communications Systems within the TRs shall be dependent upon the types and locations of the rooms. TR space shall be required for different uses – airport systems, airline systems, tenant systems, and TSA systems. Locations for TRs shall be driven by the need for communications systems, and the requirement to provide coverage for all parts of the terminal and concourse within limitations of ethernet distance and other system cabling. It is anticipated the existing main telecommunication room (MTR) and the SOC in the Terminal shall be demolished based upon the new architectural layouts and a new MTR and SOC (20' x 20') will be required to be built in the terminal renovation.

TR Requirements

Communications Room locations shall depend on architecture and spacing required by maximum TIA/EIA cable length. It is anticipated the existing TRs in the Terminal may be impacted by the new architectural layouts and that new TR(s) (12' x 18') shall be required to be built in the terminal renovation.

Main Telecommunications Room (MTR) Locations

The MTR shall be located in the Main Level of the terminal. It shall contain core/distribution LAN equipment and head-end equipment for telephone, security, airport operations and other communications systems. The MTR shall serve as the primary hub for backbone cabling. Backbone cabling shall be provided from the MTR to all other TRs. The minimum room dimensions shall be 12' x 24'.



PROPOSED TYPICAL TR DIAGRAM

Not to Scale

TR Locations

TRs, also referred to as Intermediate Distribution Frames (IDFs), shall be located throughout the terminal and concourse to provide ubiquitous coverage within ethernet distance limitations. TR locations shall enable all areas of the terminal to be reached with horizontal data cabling less than 260 ft long, when routed parallel and perpendicular to the building structure. Horizontal data cabling for voice, data, wireless, security systems and other IT and Communications systems shall terminate in TRs. Each TR shall connect to the MTR using fiber optic and copper backbone cables. The minimum room dimensions shall be 12' x 18' for shared use TRs.

Space and Mounting

Equipment racks and cabinets shall be located to maintain approximately three feet between rows of cabinets or racks and walls or protruding edges of wall-mounted equipment. Sufficient space for HVAC equipment required to serve IT and Communications Rooms, either floor- or ceiling-mounted, shall be required.

Cabling in the MTR and TRs shall be supported by cable ladder rack above equipment cabinets and along the walls. Fire rated plywood or fire-retardant painted AC grade plywood shall be provided on MTR and TR walls for attachment of wall-mounted equipment. Anti-static flooring is recommended in the MTR and TRs.

Power and Environmental

All critical communications systems equipment shall require access to power backed up by emergency standby generators and Uninterruptible Power Supplies (UPS). The UPS shall be sized to support a minimum of twenty minutes of operation or until the emergency stand-by generators take over.

All TRs shall require year-round cooling average 72 degrees F.

Future Expansion Capability

The MTR and TRs shall be designed to facilitate changes and growth in the airport's operations. The intent shall be to provide rooms that have space allocated for future additional equipment cabinets. This shall require mechanical and electrical systems to have similar spare capacity or the capability to expand in the future.

Passive Infrastructure

The passive communications infrastructure shall include conduits, cable trays, fiber optic cabling, copper cabling and termination hardware. The passive infrastructure shall be designed with flexibility and sufficient capacity to act as the foundation for all communications and security systems.

Terminal Pathway Infrastructure, Backbone and Horizontal Cabling

Cable raceways shall consist of the conduit, cable tray or other similar pathways, and the termination boxes that carry low voltage cables.

The in-building backbone cables shall be OS2 9/125-micron single mode fiber optic cables to each TR from the MTR. The fiber optic backbone cabling system shall support high bandwidth requirements. Fiber optic cabling shall be terminated on LC connectors in patch panels at the MTR and TR equipment cabinets.

TECHNOLOGY AND SECURITY SYSTEMS (CONTINUED)

Copper backbone cabling shall be provided from the MTR to each TR as needed for Tenant voice and data communications. It shall consist of 100 ohm 25 multi-pair cable in compliance with ANSI/TIA/EIA-568-B.2. The copper cabling shall support analog and digital telephone requirements as needed.

The horizontal cabling shall consist of Category 6A Unshielded Twisted Pair (UTP) cables extending from each TR to each telecom outlet. Single mode or multimode fiber optic cabling may be terminated in telecom outlets where required for high bandwidth needs or exterior mounting. Horizontal fiber optic cabling shall be OM4 50/125-micron multimode on an as needed basis. Outlets shall be configured with a quantity of cables and types appropriate for the location. Pathways shall meet code requirements and conform to ANSI/TIA-569. The cabling shall be planned to accommodate future equipment needs, diverse and increasing user applications, ongoing maintenance, relocation, sustainability, flexibility and service changes. In TRs, all cables shall be terminated on rack mounted modular terminating patch panels.

The maximum horizontal cable length shall not exceed 260 ft for Category 6A cables. The additional length of patch cords and service loops within CRs shall not cause the total channel length to be more than 325 ft. In most areas of the terminal, wall-mounted RJ-45 outlets shall be used, cabled via metal conduit installed in the walls. Floor boxes shall be required in some areas.

Voice Communication Service
Existing Shoretel (Mitel) VOIP phones provided by the City IT department are expected to be utilized.

Local Area Network (LAN) / Wi-Fi
The LAN is a collection of communication equipment that connects computers, servers and peripherals, and allows them to communicate with one another. LAN switches shall be installed inside TRs that are interconnected using the fiber optic backbone. Connectivity from LAN switches to end user equipment is accomplished using the horizontal cable system.

All IP-based devices shall share the common physical LAN infrastructure and shall include video, voice and data services, wireless networks, building automation, overhead paging, airline VLANs, advertising system VLAN, and airport operating systems.

Core/Distribution Layer routing and switching shall be provided by equipment located within the MTR. Access Layer switching shall be provided by 48-port Power over Ethernet (PoE) and PoE+ switches configured in a stack topology with two connections to the MTR via the redundant backbone topology.

Any new network switches or wireless access points shall be Cisco and provided by the Idaho Falls City IT Department.

Electronic Visual Information Display System (EVIDS)
The Electronic Visual Information Display System shall be an extension of the Prodigiq system. The EVIDS is a set of client-server and web-based applications that manage and disseminate important flight information such as flight times and gate and baggage information to the traveling public, operational personnel, and airport administration. EVIDS shall encompass a number of sub-systems, including:

- Flight Information Display System (FIDS)
- Baggage Information Display System (BIDS)
- Gate Information Display System (GIDS)
- Counter Information Display System (CIDS)

Information shall be displayed to passengers and the public throughout the airport using banks of screens. Displays shall be positioned to minimize glare from exterior glass walls or skylights. Operational personnel may access flight information in airline offices and ramp operation spaces using displays or workstations.

System Design Guidelines, Hardware and Equipment Locations
Display screen quantities and orientation shall vary by location. The use of 55" LCD screens shall be the typical standard. Display screens shall be located at gate podium back walls, hold rooms, ticketing hall, baggage claim, concourse and security checkpoint. Display devices shall have display controllers connected to the airport network.

FIDS shall be located at several points in the terminal at landside and airside areas.

BIDS shall be located at baggage claim areas for the public and passengers. Outbound baggage make up areas shall be provided with baggage information displays for airline personnel. Baggage claim input stations shall be provided to allow airline ramp personnel to update flight information for baggage claim displays.

GIDS shall be provided at each gate podium back wall to display information for passengers as they wait in the hold room. The screens shall show updated flight status information in a format customizable per each operating airline.

CIDS shall be provided at each ticket counter to display airline information.

Space and Mounting Requirements
Casework design and millwork requirements shall be coordinated with Architect.

TECHNOLOGY AND SECURITY SYSTEMS (CONTINUED)

Common Use / Shared Use Systems

Common Use Systems are integrated systems for sharing of passenger processing systems to maximize airport facility access and allocation through non-dedicated resources. It is a viable alternative to the traditional approach, which uses proprietary/exclusive-use models. Common Use Systems are airport-operator-provided hardware and software systems that provide an interface through which airline-proprietary systems as well as common resources can operate with increased facility utilization and flexibility. The concept development of Common Use Systems shall be based on International Civil Aviation Association (ICAO) and International Air Transport Association (IATA) standards.

Common Use Systems encompass Common Use Terminal Equipment (CUTE), Common Use Self Service (CUSS), Baggage Reconciliation System (BRS), and Resource Management System (RMS). The Common Use Systems utilize common workstations and peripherals among the various operating airlines of which, upon authentication, the system connects the airline agent to the requested airline host system. The system provides full access to airline host applications (or local departure control for non-hosted or charter airlines) including searching flight information and passenger records, updating travel information, and printing boarding passes, baggage tags and flight manifests.

Common Use Systems may be utilized for specific gates as deemed by the airport in coordination with the airlines. Common Use Self Service kiosks may be utilized by customers of multiple airlines.

System Design Guidelines, Hardware, Equipment Locations

CUPPS workstations shall be provided with a computer workstation, flat screen monitor, multifunction keyboard, pointing device, automated ticketing and boarding pass printer, baggage tag printer, dot matrix printer (for printing manifests and passenger lists), and 2D bar code boarding gate reader (for scanning boarding passes at boarding gate locations).

CUSS kiosks shall be provided with a computer workstation, 2D bar code reader; credit card reader, optical and e-passport reader, touch screen, automated ticketing and boarding pass printer and baggage tag printer (or space for future implementation of baggage tag printer).

Deployment of common use systems shall require equipment at TBD gates, TBD check-in counters, TBD common-use self-service areas.

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Public Address (PA) System

The PA system shall provide the ability to distribute intelligible and uniform audio signals with the proper Sound Pressure Level (SPL) to specific groups of speakers or zones in public areas of the terminal. The system shall consist of field equipment, including speakers, cabling, paging microphones; and head end equipment, including overall paging control system, digital signal processor, and amplifiers.

The system shall provide “zoned” and “all call” paging as required. The PA system shall be an IP based system that utilizes the network for distribution of audio programming from the head end to the distributed PA amplifiers and field equipment. The ability to page from individual microphones/paging stations or the delivery of automated messages to specific zones shall be fully programmable. The system shall provide for the ability to page from the telephone system by authorized users, as required. The system shall record messages and queue the playback in order to avoid different messages at adjacent zones playing simultaneously.

PA System Design Guidelines

The terminal shall be zoned with the following functional areas grouped together. Large spaces shall be divided into multiple zones so that amplifier loading is not exceeded.

- Ticketing Lobbies
- Security Screening Checkpoint Queuing Areas
- Baggage Claim Areas
- Meeter/Greeter Lobbies
- Security Screening Checkpoint Post-Screening Areas
- Circulation Spaces / Common Concessions Areas
- Gate Hold Rooms

The PA system shall include the following typical equipment:

- Control System Units: These devices shall contain programming information for the system, direct announcements to be played on available channels, and shall store pre-recorded messages for playback.

They shall use the LAN to communicate with amplifiers and other devices

- Background Music Sources: These devices shall provide music signals for the system to play in selected areas while announcements are not being made
- Control Interface Modules: These devices interface with other systems, i.e. Fire Alarm System, to initiate action in the Public Address System or to allow the Public Address System to initiate action in another system
- Amplifiers: These devices shall amplify audio from the network and distribution to Public Address zones
- Ambient Noise Sensor Control Units: These devices receive and analyze ambient noise sensor signals and connect to the LAN to communicate with the amplifiers and system head-end
- Speakers: Ceiling and wall mounted speakers shall be utilized, depending on the architectural design and environment. Ceiling speakers shall be utilized wherever possible. Wall mounted speakers shall be utilized in areas where ceilings are too high or inaccessible for cable access.
- Ambient Noise Sensors: These devices shall be located in each Public Address zone to sense ambient noise levels so that volume levels can be adjusted automatically on a per-zone basis
- Microphones: These devices shall be located at in the SSCP, Ticketing and Gate Agent positions.

The system shall have servers located in the MTR. Amplifiers shall be distributed throughout the TRs. Amplifiers and microphone stations shall use the airport network to communicate with the paging system controllers.

Space and Mounting Requirements, Systems Integration
PA System head-end equipment amplifiers shall be housed inside TRs. Equipment shall be mounted inside lockable cabinets. Microphones shall require coordination with casework and airline service counters.
The PA system shall have interfaces with several systems including the following:

- Fire Alarm System
- EVIDS
- Telephone System

Access Control System (ACS)
The existing Genetec ACS System shall be extended to serve any new or renovated areas of the terminal or concourse.

The ACS shall provide the Airport with a CFR 1542 standards compliant and secure system for controlling and/or monitoring access of people crossing areas of differing security levels. The airport shall utilize the ACS in conjunction with the Video Surveillance System (VSS) to provide security and operational personnel with the information needed to securely operate, enforce and review safe airport operations. ACS design criteria has been formulated based on regulatory requirements, to provide a design basis for consistent security treatment between all security zones adhering to the Airport Security Plan.

The system shall control and monitor portals per current federal and local codes and regulations as well as airport operational requirements. Monitoring and control hardware and the associated system programming, integration, and configurations to support this operational model shall be provided.

ACS Architecture and Portal Locations
The server shall transmit ACS information for portals (doors, gates, etc.) throughout the Airport via intelligent field panels (IFPs). The ACS system topology shall provide IFP panels as necessary for the coverage of the terminal. The ACS system coverage shall provide protection for all security zone access points, critical infrastructure areas, airport defined restricted areas and airport operational and user requirements in the new facility.

Many of the portals that shall require access control treatment consist of doors and other openings that provide passage from the public areas (both public and sterile – post checkpoint) of the airport to the secure area of the airport.

Doors shall be grouped by types based on security and operational needs, as well as construction and architectural requirements. ACS controlled and monitored portal types and their respective locations include:

- Public to secure door
- Public to sterile door
- Sterile to secure doors
- Baggage belt opening
- Public to airline operations area/SIDA
- Public to sterile elevator
- Telecommunication room doors
- Jet bridge sterile to secure doors

Video Surveillance System (VSS)
The new VSS shall replace the 3X Logic system and provide surveillance per current federal, state, local and airport regulations and operational requirements. The VSS shall utilize the Genetec Security Center software for a unified security software interface with the ACS. All VSS servers and storage shall be commercial off-the-shelf, non-proprietary technology that shall support a wide variety of system architectures.
All new cameras shall be native IP cameras providing high resolution, high frame rate video feeds with the ability to stream live video to any authorized workstation connected to the network. High mega-pixel cameras shall be used to enhance surveillance capabilities and coverage by increasing resolution and field of views provided by each camera.

The VSS shall add video analytics capability to the system to enhance situational awareness. All devices shall be IP-based and leverage power over ethernet (PoE) for power.

Typical VSS camera locations are listed below:

- Terminal Perimeter Security
- Terminal Airport Operations Areas
- Security Screening Checkpoint, Queuing, Equipment and Passengers
- Baggage Belt Openings
- Outbound and Iinbound baggage conveyors
- Public to sterile doors – both sides
- Public to secure doors – both sides
- Airport and airline operations secured doors
- Public ticketing areas
- Public baggage claim areas
- Public lobby areas
- Public curbside areas
- Elevators and escalators entrances

Workstations, Monitoring, Video Storage, Infrastructure
VSS monitoring shall be located in the SOC. Additional workstations to expand existing monitoring shall be required based on expanded Airport Operational Model requirements and functions.

The storage requirements and hardware of the VSS shall be provided to support airport and VSS operational requirements for thirty days at full resolution and high-quality video.
Camera cabling: CAT 6A UTP cable shall be standardized for the horizontal run to cameras.

Tower Crash Phone System
A new crash phone system, compliant with FAA standards, shall be provided to replace the existing system. Speakers, strobes, and crash phones shall be provided in the SOC. New communication backbone cabling will be provided from the air traffic control tower (ATCT) to the SOC.

BAGGAGE HANDLING SYSTEMS

CHECKED BAGGAGE SCREENING ROOM AND INSPECTION SYSTEM

The bag screening room will be configured for two parallel CT-80DR screening machines. If only one CT-80DR is initially provided, the space reserved for the second screening machine will be filled with a roller conveyor connecting the second ticketing load belt with the second outbound makeup location. Additional roller tables will be used to transfer bags between the two screening lines until a second CT-80DR is installed, or during times when one screening machine has a significantly higher load than the other.

Ticket counter belts will be designed such that separate load belts feed each screening line. Transfer of baggage between the two lines (if any) will occur manually within the bag screening room.

OUTBOUND BAGGAGE MAKEUP ROOM

The outbound baggage make-up room will replace the existing conveyor pier with two flat-plate carousels providing, in total, at least 80 linear feet of tug and cart parking, to accommodate the anticipated number of 30-min concurrent outbound flights. A separate carousel for each screening line is preferred for redundancy and ease of access between the bag screening room and the make-up area. However, a single large carousel accepting bags from both screening lines is also an option.

INBOUND BAGGAGE LAYDOWN AND CLAIM CAROUSELS

The claim hall will be reconfigured to include one flat-plate claim device and one slope-plate device. The presentation frontage of these carousels will be comparable to the existing frontage. New stripping piers connecting to each carousel will provide, in total, at least 80 linear feet of tug and cart parking, sufficient for the anticipated number of inbound flights. This system configuration enables future expansion to the claim hall, including one or more future flat plate claim devices.

07 PROJECT PRIORITIES

OVERVIEW

Throughout the course of this planning study, a variety of project priorities were discussed based on airport needs; pinch points in the current facilities; construction phasing; and funding possibilities. Portions of the terminal that have the greatest operational challenges, such as Ticketing/Baggage Makeup/Baggage Screening, Landside Restrooms, and the Security Checkpoint and queue are targeted for the first implementation. Other portions of the terminal that have been recently updated or modified, such as the Gate Holdrooms and Baggage Claim, were lower priorities in the immediate future as their operational trigger points will be exceeded further into the future than the earlier priority areas.

PRIORITY 1

As described above, the first priority is largely focused on Terminal South and Terminal Central (Landside). It is anticipated to occur as two projects, phases of construction, and/or bid packages. These are referred to as Priority 1A and Priority 1B as follows:

PRIORITY 1A

A new building expansion will be built to the west off the airside portion of the current facility to create a new baggage makeup area. The existing baggage screening room will be renovated and expanded into areas currently occupied by ATOs. The ticket counter positions will move back and west to the location of the current backwall behind the counters. As the existing ATOs will be affected by the ticket counter relocation, the expansion of the baggage screening room, and addition of building support functions, the ATOs will be reconfigured and expanded to include space for anticipated new airlines.

Priority 1A includes a modest building expansion to accommodate new gate holdroom space on both levels to the south of the existing gate holdrooms. This gate holdroom expansion should aid in accommodating additional flights by larger aircraft that are anticipated to be part of future flight activity. Additionally, on the upper level, the shell (structure and exterior envelope) of a larger gate holdroom and building support expansion over baggage makeup is anticipated to occur as part of Priority 1 work, while the finishes of these areas will not occur until a later priority, Priority 2.

Landside, Priority 1A includes work in the Great Hall, incorporating a new elevated arrivals exit lane on the upper level that spans the Great Hall overhead. Consequently, the new vertical circulation at the curbside façade will be part of Priority 1A, as well as the addition of up to two new exit breach control devices on the upper level. New landside restrooms, meeter-greeter/lounge seating, and landside concessions will be also incorporated in this vicinity as part of Priority 1A. To accommodate the building expansion for these functions as well as needed increased circulation width, the existing curtainwall at Terminal Central will be demolished and a new façade will be built closer to the existing curbside sidewalk.

Extensions to the existing curbside façades and canopies will be constructed as part of Priority 1A, to connect to the new south vestibule at Ticketing as well as the new north vestibule off the Baggage Claim Hall in Priority 3. Associated with these building expansions and curbside modifications, adjacent parking lots, curbs, and sidewalks will have updates. Site utilities such as electrical services will be reconfigured/refed.

Of note is that the special systems work anticipated to occur as part of the terminal renovation and expansion has been categorized as part of Priority 1A work. This grouping was determined due to the fact that any critical infrastructure or special systems work performed in earlier phases should also be in place to serve later phases of construction or renovation. Additionally, multiple components of critical building systems are at their end-of-life for useful service, and there is currently no redundancy in place. Thus, the design team recommends replacing these systems at the soonest possible time. That said, there is the possibility that some of the special systems work and costs could possibly be delayed to later phases if required to meet the airport's project needs. Finally, given the preliminary nature of this planning study, and without the full design of the systems completed at this stage, the special systems have been estimated on a per-square-foot basis. At the design progresses, these can be estimated with a greater degree of precision and accuracy.

PRIORITY 1B

In Terminal Central, Priority 1B scope will include the renovation and expansion of the security checkpoint and associated queuing space. Initially, in Priority 1B, two screening lanes are anticipated to be deployed, with adequate footprint reserved for future implementation of the third screening lane in a later priority. Recomposure will expand and the law enforcement office (LEO) will be relocated. As the security checkpoint expansion is to occur in the current location of airport administration offices, the administration suite will be relocated within Priority 1B's new construction on the upper level over the baggage makeup building expansion, served by a new set of stairs and an elevator on the southwest end of the ticketing hall expansion.

PRIORITY 2

Priority 2 is anticipated to include the interior finishes of the upper level gate holdroom expansion, the shell of which will have been constructed during Priority 1. By the time Priority 2 is implemented, air traffic is likely to have outgrown the existing gate holdroom areas including the additional finished areas on both levels, and the upper level holdroom area that had been shelled out in Priority 1 will be completed with interior finishes. This concourse expansion will also likely include additional concessions and building support spaces as may be needed to support the expanded gate holdroom, which will be studied in further detail as the planning and building design progresses.

Airside restrooms will be expanded in Priority 2, including taking over the footprint currently occupied by the landside restrooms. Additional amenities such as a SARA, nursing mothers' facilities, and a companion care restroom will also be provided as part of the airside construction during Priority 2.

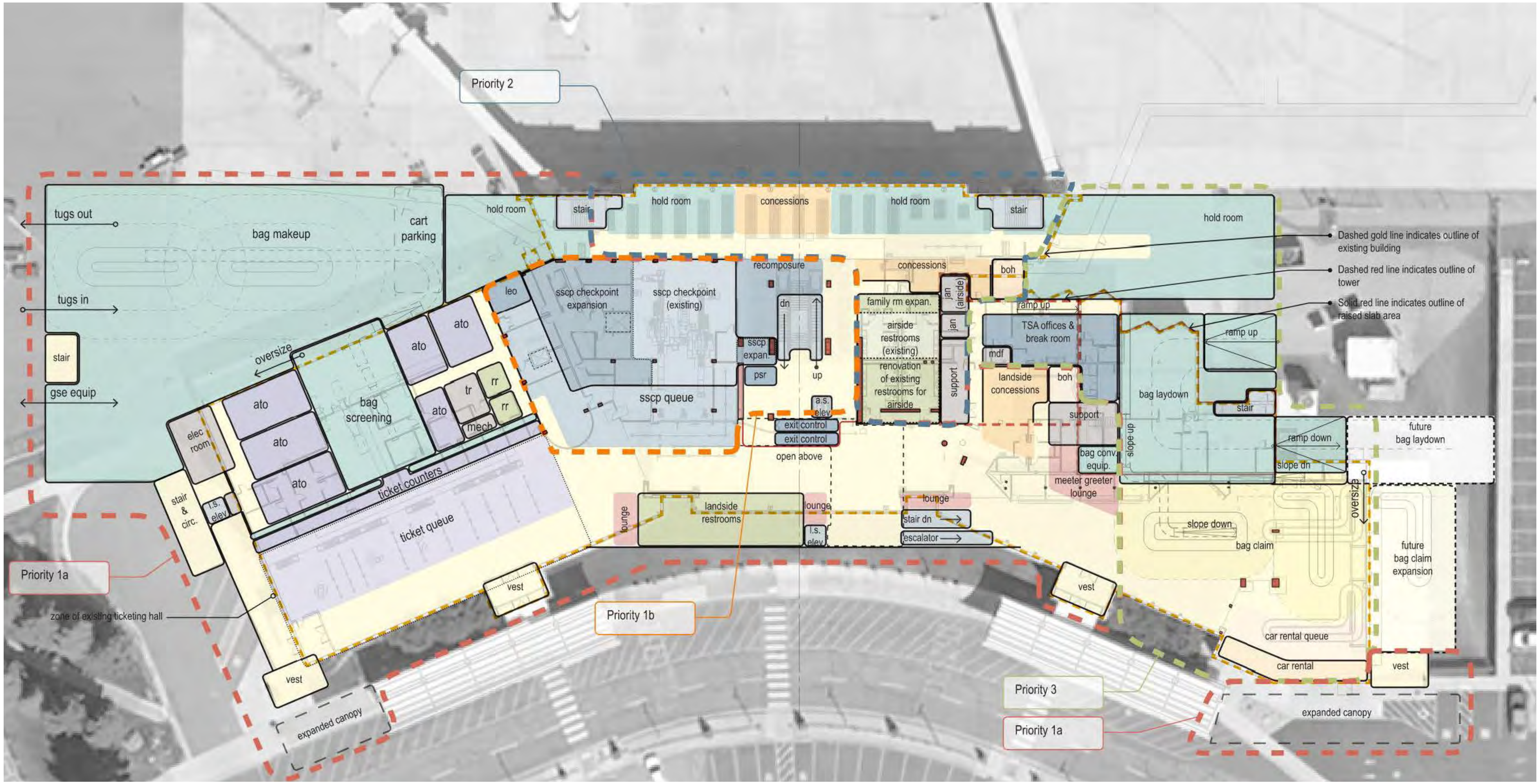
PRIORITY 3

Priority 3 primarily targets Terminal North. A new single-story building expansion built to the north of the existing concourse will accommodate additional gate holdroom space on the ground level. Baggage Claim will be renovated to allow the reorientation of the claim carousels' main axis by ninety degrees, and a new baggage laydown area will be constructed largely within the existing building footprint in the currently decommissioned landside concession area.

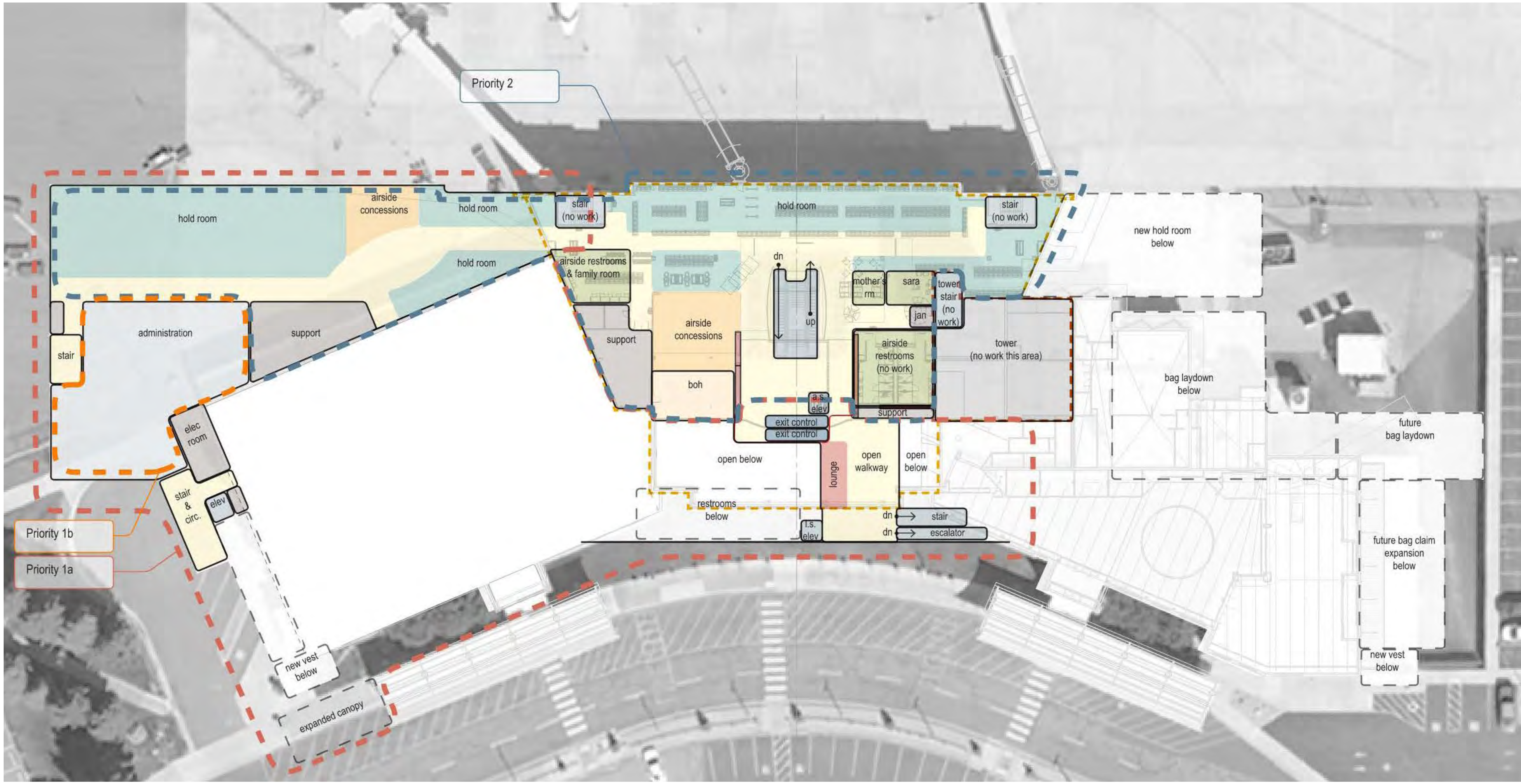
During Priority 3, rental car counters and associated queuing area will be relocated to the existing northeast corner of the Baggage Claim Hall.

Priority 3 will also include new egress circulation and limited renovation/expansion of the existing TSA office space in Terminal North, to be determined as needed at a later date.

PRIORITIES DIAGRAM — LEVEL 1



PREFERRED OPTION PRIORITIES — GROUND LEVEL



PREFERRED OPTION PRIORITIES — UPPER LEVEL

N

0' 16' 32' 64'

FUTURE PRIORITIES

Initial and future priorities' scopes will continue to evolve as the building design and planning progresses. At this time, it is anticipated that a future priority will include building expansions to the Baggage Claim Hall and baggage laydown to accommodate a third claim carousel and associated laydown space and belts.

08 ROUGH ORDER OF MAGNITUDE (ROM) COSTS & ANTICIPATED FUNDING ELIGIBILITY

08 ROM COSTS & FUNDING ELIGIBILITY

ROM COSTS BY PRIORITY

ROM COST SUMMARY

To the right is a summary of project anticipated rough-order-of-magnitude costs based on the preferred planning option and priorities shown in this terminal expansion study and documents. Given the preliminary nature of the planning study, and prior to development of more complete design and documentation, the estimated costs shown here are expected to be further refined and validated as the project moves into design. As construction systems and finishes, plus accompanying building special systems, have not yet been designed or determined at this early stage of planning, the numbers included here are rough estimate placeholders and may not reflect the actual costs. Furthermore, there is the option to shift portions of work from one priority to another or to a separate project. For example, in the cost estimate at right, special systems and building support equipment have been largely included in Priority 1, but some of that work might be able to be deferred until later phases.

The following are direct construction costs, or “hard costs” for the project. A more detailed breakdown of estimated costs can be found in the full cost report included as part of the Appendix.

Estimating design evolution has been included at 15% in the numbers under the column labeled “High.” This represents changes to, or further development of, the base assumptions for building components included here, providing some leeway for changes in scope or design that may arise through design phases.

While not shown in the chart, general contractor overhead has been included in the full cost estimate report at 19% (refer to the full cost estimate starting on page 105 in the Appendix). Given possible efficiencies between project phasing and the benefits gained in a CM/GC or other alternative project delivery methods arrangements, this percentage may be able to be reduced.

The values shown represent 2022 dollars and are not inclusive of escalation. Contingencies (owner’s contingency and project contingency) and owner’s soft costs are also not included. Owner’s soft costs might include but are not limited to design fees, construction manager fees, airport project staff, cost estimating, and other miscellaneous costs.

	Unit Cost		Estimate	
PROJECT	**Low**	**High [1]**	**Low**	**High [1]**
PRIORITY 1A				
· Terminal South: Ticketing expansion/renovation -- vestibules and canopy extension, ATOs, airline storage, IT/building support, landside circulation, non-public restrooms, baggage screening and makeup expansion/renovation, upper level shell space (future gate holdroom, building support, admin) · Terminal Central (Airside): Ground level gatehold room expansion · Terminal Central (Landside): Great Hall renovation/expansion -- landside restrooms, janitor/support, baggage MCP room, meeter-greeter/public seating, vertical circulation, landside concessions, general circulation; elevated arrivals exit lane				
Substructure	$12.04	$13.85	$ 835,318	$ 960,616
Shell	$120.00	$138.00	$ 8,327,686	$ 9,576,838
Interiors	$73.90	$84.99	$ 5,128,704	$ 5,898,010
Services	$208.49	$239.76	$ 14,469,010	$ 16,639,362
Equipment & Furnishings	$8.18	$9.41	$ 567,591	$ 652,730
Special Construction & Demolition	$5.42	$6.23	$ 376,106	$ 432,522
Building Sitework	$37.56	$43.19	$ 2,606,341	$ 2,997,292
Subtotal Direct Costs			*$ 32,310,757*	*$ 37,157,370*
PRIORITY 1B				
· Terminal South (Upper Level): Airport adminstration suite interior fit-out · Terminal Central (Ground Level): Checkpoint renovation/expansion into existing admin area				
Substructure	$0.00	$0.00	$ -	$ -
Shell	$0.00	$0.00	$ -	$ -
Interiors	$72.97	$83.92	$ 1,133,616	$ 1,303,658
Services	$132.11	$151.93	$ 2,052,512	$ 2,360,389
Equipment & Furnishings	$4.00	$4.60	$ 62,144	$ 71,466
Special Construction & Demolition	$3.32	$3.82	$ 51,573	$ 59,309
Building Sitework	$0.00	$0.00	$ -	$ -
Subtotal Direct Costs			*$ 3,299,845*	*$ 3,794,822*
PRIORITY 2				
· Terminal Central (Airside): Gate holdrooms renovation/expansion - holdrooms circulation, airside concessions, airside restrooms and amenities, vertical circulation, general circulation, arrivals secure exits, janitor/building support				
Substructure	$5.08	$5.84	$ 189,648	$ 218,095
Shell	$0.00	$0.00	$ -	$ -
Interiors	$84.82	$97.54	$ 3,164,915	$ 3,639,652
Services	$147.76	$169.92	$ 5,513,317	$ 6,340,315
Equipment & Furnishings	$30.80	$35.42	$ 1,149,252	$ 1,321,640
Special Construction & Demolition	$3.60	$4.14	$ 134,370	$ 154,526
Building Sitework	$1.19	$1.37	$ 44,450	$ 51,118
Subtotal Direct Costs			*$ 10,195,953*	*$ 11,725,346*
PRIORITY 3				
· Terminal North: Baggage Claim renovation - rental cars counters and queue, vestibules; Baggage Laydown expansion; TSA offices/building support renovation				
Substructure	$9.74	$11.20	$ 184,560	$ 212,244
Shell	$54.78	$63.00	$ 1,037,654	$ 1,193,302
Interiors	$73.70	$84.76	$ 1,396,052	$ 1,605,460
Services	$225.76	$259.62	$ 4,276,556	$ 4,918,039
Equipment & Furnishings	$4.00	$4.60	$ 75,772	$ 87,138
Special Construction & Demolition	$8.76	$10.07	$ 165,912	$ 190,799
Building Sitework	$47.30	$54.40	$ 896,061	$ 1,030,470
Subtotal Direct Costs			*$ 8,032,566*	*$ 9,237,451*
TOTAL PROBABLE DIRECT COST [2]			**$ 53,839,121**	**$ 61,914,989**

Notes:

[1] Prices designated "High" include 15% estimating design evolution.

[2] Not included: general contractor's markups and overhead, owner's soft costs, owner's contingencies, escalation.

FUNDING INTRODUCTION

Idaho Falls Regional Airport (IDA) is included in the National Plan of Integrated Airport Systems (NPIAS), and it is eligible to receive Airport Improvement Program (AIP) and Passenger Facility Charge (PFC) funding through the Federal Aviation Administration (FAA) for projects that meet requirements stipulated by the FAA. Generally, costs for construction, reconstruction, or rehabilitation may be eligible for funding, while maintenance is considered ineligible. The AIP Handbook defines spaces' eligibility as "public use areas that are directly related to the movement of passengers and baggage in terminal facilities."

Projects to improve and expand the terminal building will be funded by a combination of AIP grants, PFCs, and local funds. The eligibility of each project will vary in accordance with the specific elements and scope of work, based on FAA criteria. These criteria are described in the FAA's AIP Handbook and FAA Order 5500.1, Passenger Facility Charge. For the elements that remodel or expand the terminal building, the eligibility will be based on the use of the individual spaces that make up each project. For the replacement of MEP systems that serve the entire building, the eligibility will be based on the overall eligibility of the entire terminal building at the conclusion of the project. Items such as passenger boarding bridges and walkways would be 100% eligible.

For projects funded under the AIP program, the $20 million cap for discretionary funding at Nonhub airports will need to be considered in the funding of future projects. AIP 44 and AIP 47 both used AIP discretionary funding totaling approximately $10.9 million. This would leave approximately $9.1 million in remaining discretionary funding unless the $20 million cap is increased or lifted. Bipartisan Infrastructure Law (BIL) terminal funding is also available for FY22-25. This funding is administered under the AIP program but does not count towards the $20 million discretionary cap. The match on BIL funds, 95%, is also slightly higher than normal match of 93.75% at IDA.

ANTICIPATED ELIGIBLE AREAS

The charts on the following pages represents areas of the project currently anticipated to be eligible to receive funding through AIP or other federal funding sources. The FAA Airport District Office (ADO) serving IDA based in Helena, MT will be responsible for reviewing and determining the project's actual eligibility for AIP/PFC funding.

Currently IDA is designated as a Nonhub commercial service airport according to the FAA. As enplanements continue to increase, the airport may move from Nonhub to Small Hub. The eligibility of projects at small hub airports is more restrictive than the eligibility at non hub airports. The analysis below was completed assuming the airport remains a non-hub airport when these projects are implemented.

PRIORITY 1A

The elements associated with this project are estimated at an overall eligibility of 83%. This eligibility assumes both that the airport administration offices will be relocated to the new second level over the new baggage makeup area, and that the ATO remodel is included as part of the project. If the airport administration offices were relocated to a different area inside the terminal or to a new facility outside the terminal, the eligibility of the project would increase to 90%. If the ATO offices were completed as a separate project the eligibility would increase to 93%.

PRIORITY 1B

The elements associated with this project are estimated at an overall eligibility of 83%. This eligibility assumes the airport administration offices are relocated as part of the project. If the administration offices were completed as a separate project, the overall eligibility would increase to 98%.

PRIORITY 2

The elements associated with this project are estimated at an overall eligibility of 89%. This eligibility assumes the concessions are included as part of the project. If the concessions were completed as a separate project, the overall eligibility would increase to 94%.

PRIORITY 3

The elements associated with this project are estimated at an overall eligibility of 88%. This eligibility assumes the TSA break room is included as part of the project. If the TSA break room were completed as a separate project, the overall eligibility would increase to 96%.

09 PROJECT DELIVERY METHODS

09 PROJECT DELIVERY METHODS

OVERVIEW

PROJECT DELIVERY METHODS BASED ON RELATIONSHIPS BETWEEN PROJECT TEAM MEMBERS

INTRODUCTION

The success of a large-scale project such as a terminal renovation and expansion depends on the contributions of the various team members, including the owner, the design team, and the contractor, as well as the strength of the arrangement of relationships between these players.

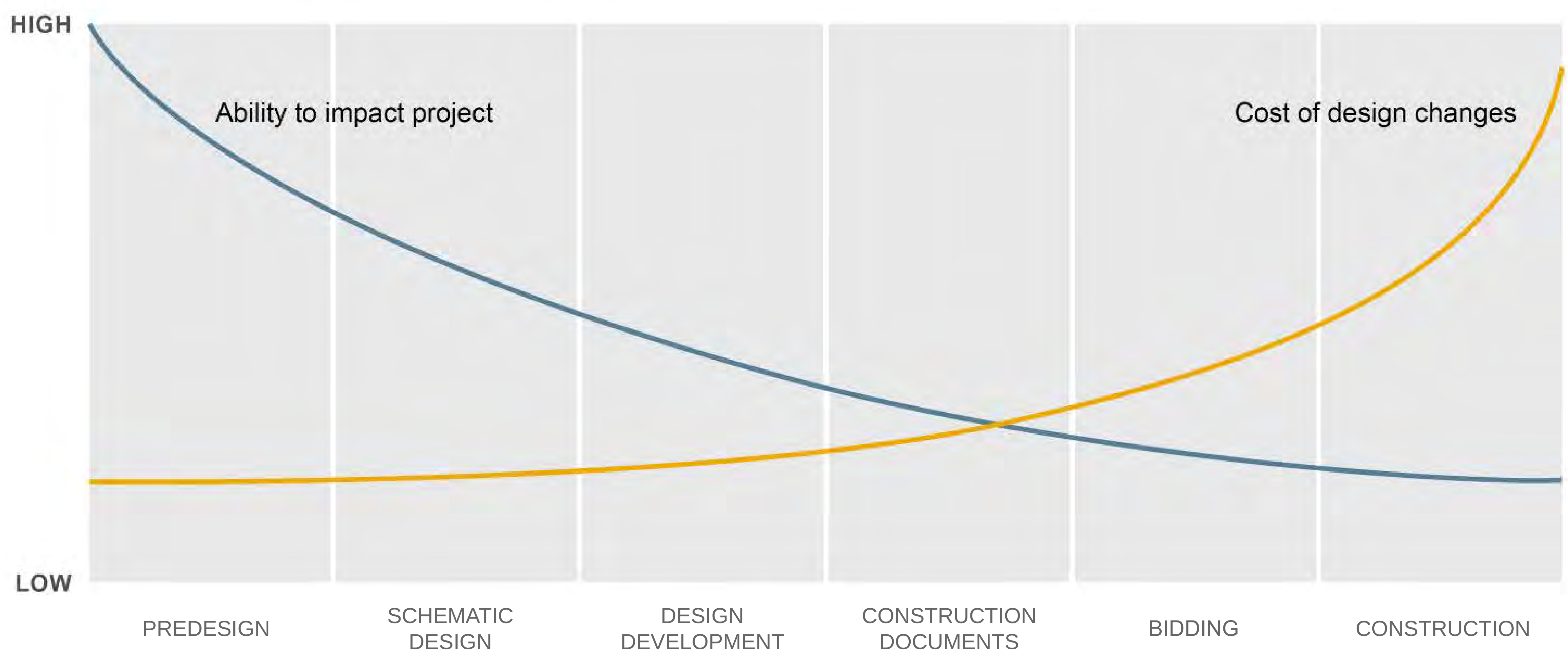
While historically projects of all types and scales have typically utilized “conventional” project delivery, or design-bid-build, increasingly owners are choosing to consider alternative project delivery methods to leverage the efficiencies and strengths of other methods.

The cost of design changes is inversely proportional to the level of development of the design, or more specifically the project design phases. Early in the project, such as during planning studies or concept/schematic design phases, changes to the design will have relatively small direct cost impact to the project, both in time and financial expense. As the project progresses through design, more aspects are further resolved and coordinated, and a seemingly small change may have more significant impact on cost and time. Once a project is bid out, or other contractual cost relationships with the contractor are established, design changes become more costly to implement.

As the owner’s chosen delivery method for a project has considerable influence on subsequent design, planning, and coordination, it is ideal to establish a path forward as early as possible in the design process. If a contractor partner is to be brought aboard the project team during the design phases ahead of construction, significant benefits and efficiencies can be gained through the relationship.

Regardless of the particular delivery method a project utilizes, ultimately, the biggest factor in the project’s success is the presence of the right partners. Having prior airport experience is critical. This background allows team members on the design and construction teams to understand the nuances of airline/airport operations, to effectively guide stakeholders, and to appreciate the challenges and importance of keeping the airport up and running during construction with minimal impacts to passengers.

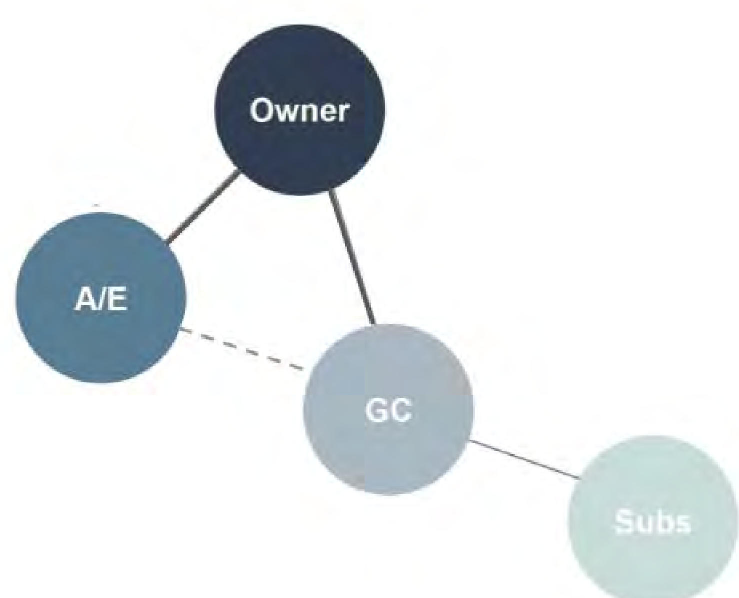
At IDA, as a part of the terminal planning study process, the design team has discussed with the airport and the design team a variety of alternative project delivery methods; they are as follows:



PROJECT COST RELATIVE TO CHANGES AND PHASE OF DESIGN

09 PROJECT DELIVERY METHODS

CONVENTIONAL; DESIGN-BID-BUILD



CONVENTIONAL; DESIGN-BID-BUILD STRUCTURE

CONVENTIONAL; DESIGN-BID-BUILD

In a “Conventional” or Design-Bid-Build (D-B-B) arrangement, the owner enters a relationship with the design team at the start of the project. The owner and the design team work together through all design phases until the project is ready to bid out to a general contractor (GC). Upon successful bid, the general contractor enters a direct relationship with the owner, while the design team remains an active partner in coordinating and communicating between the owner and the GC. The GC also has direct relationships with their subcontractors who perform various portions of the construction work. The owner is contracted separately with the GC and with the design team.

ADVANTAGES

The Conventional or Design-Build-Build delivery method has many advantages for project owners and other team members:

- As it is the “traditional” delivery method with which people are likely most familiar, there is generally comfort of the familiar for the owner and for the design and construction teams’ members.
- It can be a simpler process to manage compared to others as it is a more linear process with clear-cut contractual relationships and expectations of roles and responsibilities.
- The project scope is very clearly defined and documented in the construction contract documents.
- Both the design team and the contractor remain contracted with, and accountable to, the owner.
- Lowest price (bid) generally wins the construction contract. Pricing by contractors is usually developed to be cost-competitive.
- This method offers can offer greater bidding opportunities for GCs and subcontractors.

DISADVANTAGES

Conversely, there are also several disadvantages associated with the Conventional, or Design-Build-Build, delivery method.

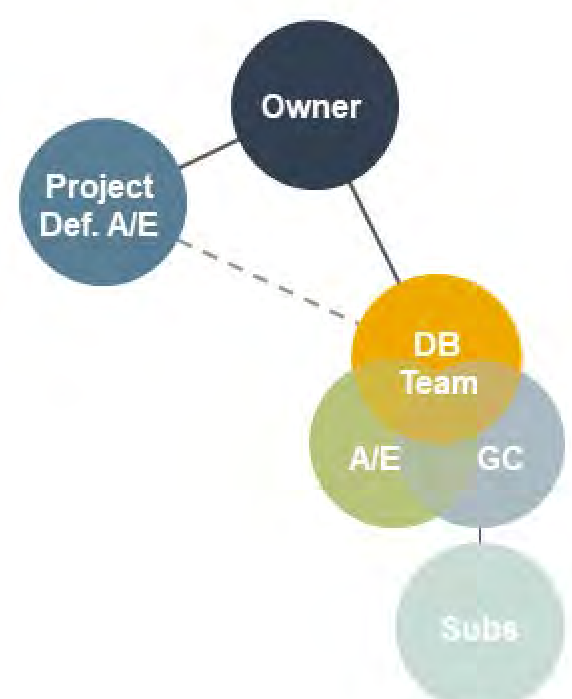
- The delivery method may result in a longer project schedule duration.
- In this arrangement, prices are not established until bids are received; this means redesign and/or rebid may be required if bids received exceed the project budget.
- Quality of contractors and subcontractors is not assured; depending on whether the bidding process involves a qualification-based selection process, some contractors or their subcontractors may not be fully qualified in the type of work and work environment (i.e. a busy airport operating around the clock).
- This set-up can foster adversarial relationships between all parties, increasing the probability of disputes.
- As the contractor is not engaged until bidding, there is no design phase input from the contractor team.
- Given the formality of the bidding process and subsequent relationship with the successful bidder, this method is less optimal for projects that are sensitive to sequencing, scheduling, or changes during construction.
- Change orders or other claims may increase the owner’s final project cost; the owner ‘owns’ the project’s financial risk.

DESIGN-BUILD

In general, Design-Build (D-B) means that the owner has a contract with one entity. The Design-Builder is typically a general contractor, and the architect, engineers, and other consultants responsible for the design are under contract to the contractor. The contractor then constructs the project. Often, the engineering of mechanical, HVAC, and electrical systems is performed by subcontractors in lieu of design engineers.

The **Design-Build** model means that the owner hires the design and construction teams under a single contract. In this way, the design and construction teams act cooperatively to achieve the best result for the owner, often with the goal of fast-tracking design and construction timelines. The owner generally provides performance standards to the team, who then work to find the best means and methods to achieve those standards within a given budget.

Working closely together, both the designer and contractor can ensure that what is designed is feasible from both a cost and constructability standpoint. The contractor is involved before designs even begin, helping to develop clear expectations and analyze building structure types, components, and finishes with the design teams.



DESIGN-BUILD STRUCTURE

The **Progressive Design-Build (PDB)** method is almost a hybrid between Design-Build and CM/GC. In this case, the general contractor and design teams are still under a single contract, but they are brought into the development process even earlier than is typical. Importantly, this method usually involves awarding the contract to the contractor and design teams based solely on qualifications. As designs progress to a set of drawings that is 50 – 75% complete, the team establishes a Guaranteed Maximum Price for the work. The advantage of this option for delivery method is that the owner has the team involved very early in the process, and still takes on the lowered risk of contracting with a single entity.

The **Design-Build with Bridging Documents**, a third method, the owner typically contracts with a project definition consultant, which could be or would include an architect, to define the scope and conceptual/ schematic design of the project which are reflected in the bridging documents. The owner also contracts later with an entity comprised of a design-build team (architectural, engineering, and construction consultants) who submit proposals based upon the bridging documents. The bridging documents developed by the owner in conjunction with the project definition consultant serve as a guide for the design-build team to further develop the design and construction details and complete the construction documents. The builder then constructs the project.

ADVANTAGES

Some possible advantages gained through the Design-Build method include:

- The efficiency of the collaborative, non-combative relationship between the design team and the contractor assists in achieving a schedule that is generally more compressed, or quicker, than conventional Design-Bid-Build.
- This collaboration can frequently lead to innovative solutions.
- The Design-Build method can reduce risk and costs to the owner.

DISADVANTAGES

Conversely, the disadvantages that may be associated with a Design-Build project include the following:

- The nature of contractual agreements in Design-Build projects may result in an increased risk of loss of control of project in terms of functionality, features, or quality. The owner may have more limited input in final product, risk/cost, or feature/cost evaluation.
- The Design-Build arrangement may result in diminished continuity in design and quality across other projects occurring before or after the project, with possibly diminished cohesion of design across the facility or from project to project.
- The design may be less creative or innovative than one where the designer is more independent of the construction considerations.
- There may end to to be a gap of accountability between the project definition consultant and the design-build team.

CONSTRUCTION MANAGER AS AGENT (CM AS AGENT)

In a Construction Manager as Agent (also known as CM as Agent or CMa) arrangement, the construction manager agent (CMa) acts as the owner's agent and manages the construction process performed by another contractor and their subcontractors. The owner is separately contracted with the design team, the CMa, and the contractors who construct the project. Most often, there are muliple contractors under direct contract to the owner, though the scope of work can be packaged by specification sections to reduce the quantity of direct contracts. The design team works closely with the CMa, though their relationship is not directly contracted, and together they closely coordinate the work of the contractors on behalf of the owner.

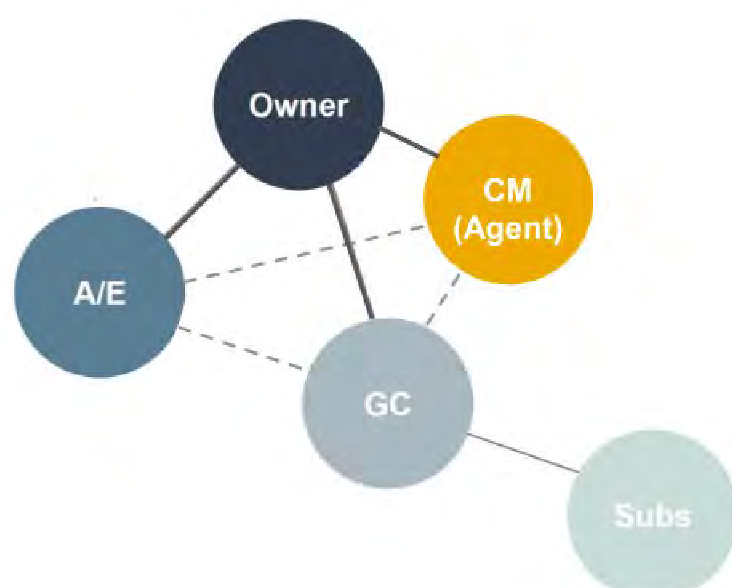
ADVANTAGES

The CMa or Construction Manager as Agent delivery method offers the following advantages for project owners and other team members:

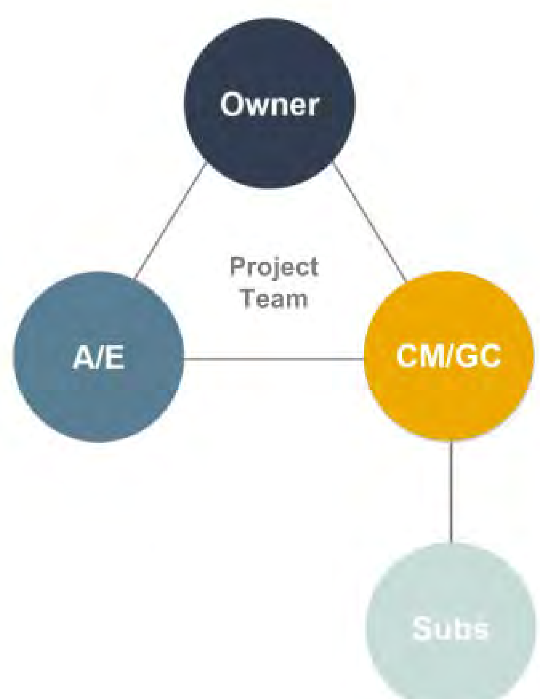
- The CM's expertise can be leveraged during the design phases to assist with budgeting, planning, and constructability.
- The CMa assists with many project management tasks, acting as an extension to airport staff.

DISADVANTAGES

On the other hand, the primary disadvantage of the CMa method includes the possible duplication of some administrative/coordination tasks.



CONSTRUCTION MANAGER AS AGENT STRUCTURE



CONSTRUCTION MANAGER / GENERAL CONTRACTOR STRUCTURE

CONSTRUCTION MANAGER / GENERAL CONTRACTOR (CM/GC)

The Construction Manager / General Contractor (GC/CM) delivery method is also known as Construction Manager at Risk (CMAR), Construction Manager as Constructor (CMc), or General Contractor / Construction Manager (GC/CM). In a project utilizing a Construction Manager / General Contractor (CM/GC) structure (as it is called in Idaho), the owner contracts with the design team similarly to the other project delivery methods. However, unlike the other methods, the owner contracts directly with the contractor (CM/GC) during the design phase. The CM/GC serves as an active partner during the design phases, sharing insights on cost and construction efficiencies. As the design progresses, a guaranteed maximum price (GMP) is determined, the maximum cost to the owner regardless of any changes to actual construction costs. The CM/GC transitions from a consulting role during design to become the active constructor contracting with subcontractors and trade partners during construction.

ADVANTAGES

There are a variety of advantages associated with the CM/GC project delivery method, including the following:

- This process allows the selection of a contractor based upon qualifications, experience, and the strength of their anticipated team.
- Based on the qualifications-based process above, subcontractors can be more effectively vetted.
- The CM/GC's and their subcontractors' expertise can be leveraged during the design phases to assist with budgeting, planning, and constructability.
- This method allows continuous budget control due to the GMP.
- CM/GC projects can be brought to completion quicker than traditionally-delivered projects with a more compressed design and construction schedule.
- Given the collaborative nature of the contractual relationships between the owner, the design team, and the CM/GC, this delivery method leverages the ability to develop a responsive, flexible project or set of projects.

DISADVANTAGES

On the other hand, below are some possible disadvantages that may arise from a CM/GC arrangement:

- It may be difficult for the owner (without a CM as owner's agent) to evaluate the GMP set by the CM/GC or to determine whether the best price has been achieved for the work.
- Because of the lack of competition between contractors on overhead, fee, and subcontractor costs, a project of this type may result in higher costs than one utilizing conventional design-bid-build methods.
- Due to "details" not included in the GMP, additional owner costs may arise during construction, though these can often be covered through owner contingencies.

"LESSONS LEARNED" — CM/GC AND OTHER ALTERNATIVE DELIVERY METHODS IN FAA PROJECTS

Given Alliiance and T-O's previous work, including in Idaho, for projects utilizing CM/GC or other alternative delivery methods, the design team shared some 'lessons learned' to help ensure a smoother process for all stakeholders.

First, getting buy-in from the FAA is critical for any project requiring FAA approval or receiving FAA funding, and the sooner this mutual agreement can be reached, the sooner the benefits of this delivery method can be leveraged. Although alternative delivery methods are becoming more common, the FAA is most familiar with traditional design-bid-build project delivery method and thus will have the most comfort with that method, though as an organization they are starting to engage more frequently in alternative project delivery methods. Similarly, it is important to get the support of other funding sources or operational entities, such as the local city or county governing authority.

The CM/GC should be selected through qualifications. Minimum qualification requirements should include prior work with the FAA and a demonstrated understanding of FAA funding and documentation processes.
This project delivery method is to be coordinated early through the front end specifications for the project. The front-end specifications should include FAA requirements and airport-specific preferences for the work.

In Idaho, the CM/GC process for public projects is governed by Idaho State Statute – Title 54: Professions, Vocations, and Businesses, Chapter 45: Public Works Construction Management Licensing Act.

APPENDIX

DETAILED SPACE PROGRAM — SCENARIO 2 (BASELINE)

GENERAL STATISTICS

The table to the right reflects the estimated passengers, enplanements, and aircraft positions for Scenario 2 (Baseline), accomodating the service of an additional narrowbody and an additional large regional jet outside of the peak hour.

IDA-Idaho Falls Regional Airport - SC2	Existing Terminal Space (sf) Full Capacity	2021 Recommended Facilities	2026 Recommended Facilities	2031 Recommended Facilities	2036 Recommended Facilities	2041 Recommended Facilities
GENERAL STATISTICS						
General [1]						
Overall Airport Statistics						
Annual Passengers	**447,482**	**447,482**	**883,082**	**941,730**	**1,004,846**	**1,071,874**
Annual Enplanements	223,741	223,741	441,541	470,865	502,423	535,937
Peak Hour Passenger Statistics						
Peak Hour Enplaned	**228**	**228**	**302**	**322**	**343**	**366**
Peak Hour Deplaned	**240**	**240**	**285**	**303**	**324**	**345**
Total Peak Hour[2]	**364**	**364**	**451**	**481**	**513**	**548**
Gates/Positions(International)						
Aircraft Gates/Positions						
I Small Regional (Cessna/Metro)	-	-	-	-	-	-
II Medium Regional (BE1/CRJ,CR7/ERJ/SF340)	-	-	-	-	-	-
III Large Regional (Q400/CR9/E170,175,190)	-	5	5	5	5	6
III Narrowbody (A320/B737w)	6	1	1	2	2	2
Total Gates/Total Passenger Boarding Bridges:	**6**	**6**	**6**	**7**	**7**	**8**
Total EQA[2]:	**5.9**	**3.8**	**3.8**	**5.1**	**5.1**	**5.6**
Total NBEG[3]:	**6.0**	**6.0**	**6.0**	**7.0**	**7.0**	**8.0**
Total Aircraft Positions:	**6**	**6**	**8**	**8**	**8**	**8**

[1] Annual Passenger numbers are taken from the TO/Alliiance Forecast based on future Airport activity

[2] EQA (Equivalent Aircraft) normalizes gate based on seating capacity of accommodated aircraft.

[3] NBEG (Narrow Body Equivalent Gate): Used to normalize the apron frontage demand and capacity to that of a typical narrowbody aircraft gate.

Sources: TO and Alliiance Analysis

TABLE A.1 SCENARIO 2 GENERAL STATISTICS — BASELINE (ADDITIONAL NARROWBODY AND REGIONAL JET OUTSIDE OF PEAK HOUR)

DETAILED SPACE PROGRAM — SCENARIO 2 (BASELINE) (CONTINUED)

SUMMARY

The table to the right summarizes the space requirements by year for all areas of the terminal (public, airline, concessions, non-public).

IDA-Idaho Falls Regional Airport - SC2		Existing Terminal Space (sf) Full Capacity	2021 Recommended Facilities	2026 Recommended Facilities	2031 Recommended Facilities	2036 Recommended Facilities	2041 Recommended Facilities
SUMMARY							
General							
2021-2041 Annual Enplanements		223,741	223,741	441,541	470,865	502,423	535,937
Annual O&D Enplanements (%)		223,741 (100.%)	223,741 (100.%)	441,541 (100.%)	470,865 (100.%)	502,423 (100.%)	535,937 (100.%)
Peak Hour Enplaned Domestic		228	228	302	322	343	366
Peak Hour Deplaned Domestic		240	240	285	303	324	345
Gates/Contact Aircraft Positions		6	6	6	7	7	8
Public Space							
Circulation (Ticketing,Baggage Claim,Seating,General Circ,Airside Post Security)	sf	20,431	21,570	24,280	26,980	27,420	29,720
TSA Security Screening Area (queue, screening, offices)	sf	4,909	5,190	7,390	7,390	7,390	7,390
Queuing/Waiting Areas (Public Seating, Ticket Lobby, Baggage Claim Hall, Meeter/Greeter)	sf	7,623	7,500	8,900	8,970	9,230	9,460
Gate Holdrooms	sf	12,642	10,900	10,900	13,900	13,900	15,480
Restrooms (Pre/Post Security)	sf	2,781	5,330	5,660	6,260	6,730	6,730
Other Space/Amenity (Misc Tenant, Displays, Information counters, etc.)	sf	-	-	-	-	-	-
Subtotal:		**48,386**	**50,490**	**57,130**	**63,500**	**64,670**	**68,780**
Airline Space	Units						
Domestic Airline Space (Queue, Counter, ATO, BSO)	sf	3,379	2,730	4,330	4,330	4,550	4,780
Other Airline Space (Bag Makeup, Laydown, Bag Screening, Airside Ops/Offices, Misc)	sf	5,920	8,080	9,000	10,020	10,020	10,290
Subtotal:		**9,299**	**10,810**	**13,330**	**14,350**	**14,570**	**15,070**
Concessions							
Landside Concessions (pre-Security)	sf	4,641	2,070	2,630	2,710	2,790	2,880
Airside Concessions (post-Security)	sf	3,157	2,330	4,590	4,900	5,230	5,580
Subtotal:		**7,798**	**4,400**	**7,220**	**7,610**	**8,020**	**8,460**
Non-Public Space							
Non-Airline Tenant Space (Airport Admin/Support, Storage, Misc. Tenants)	sf	5,917	4,060	4,060	4,060	4,060	4,060
Restrooms/Circulation	sf	1,570	1,720	2,040	2,150	2,160	2,210
Airport Operations (Maintenance,Janitorial,Storage,Shops)	sf	3,545	1,430	1,700	1,830	1,870	1,970
Building Systems (MEP,Communications/IT,Loading Docks,Structure)	sf	12,357	10,350	12,130	13,280	13,540	14,280
Subtotal:		**23,388**	**17,560**	**19,930**	**21,320**	**21,630**	**22,520**
Total							
Total Functional & Support Terminal Area:		**85,600** [2]	**80,060**	**93,860**	**102,670**	**104,700**	**110,410**
Total Gross Terminal Area:		**88,871** [2]	**83,260**	**97,610**	**106,780**	**108,890**	**114,830**

[1]Areas based on exiting airline allocations
[2]Represents the total available functional and gross terminal square footage (leased, non-leased, airport owned, and any vacant areas) and totals may not sum due to rounding

TABLE A.2 SCENARIO 2 FACILITY REQUIREMENTS BY YEAR — BASELINE (ADDITIONAL NARROWBODY AND REGIONAL JET OUTSIDE OF PEAK HOUR)

DETAILED SPACE PROGRAM — SCENARIO 2 (BASELINE) (CONTINUED)

PUBLIC AREAS

The table to the right details the space requirements by year for the public areas of the terminal.

IDA-Idaho Falls Regional Airport - SC2		Existing Terminal Space (sf) Full Capacity	2021 Recommended Facilities	2026 Recommended Facilities	2031 Recommended Facilities	2036 Recommended Facilities	2041 Recommended Facilities
PUBLIC SPACE							
Circulation							
Ticket Lobby Circulation	sf	1,727	1,170	1,850	1,850	1,950	2,050
Baggage Claim Circulation	sf	3,323	1,500	1,500	1,500	1,500	1,500
Airside Concourse Circulation (Incl. Fire/Service Stairs to Apron)	sf	3,247	6,970	6,970	8,130	8,130	9,300
General Public Circulation (Includes Vestibules, Vert Circ, Corridors)	sf	12,134	11,930	13,960	15,500	15,840	16,870
	Subtotal:	**20,431**	**21,570**	**24,280**	**26,980**	**27,420**	**29,720**
Security Screening Checkpoint (SSCP)	Units						
Number of Lanes	pos	2	1	2	2	2	2
Security Screening Area (includes exit corridor)	sf	2,638	3,090	4,690	4,690	4,690	4,690
Queuing Area	sf	777	600	1,200	1,200	1,200	1,200
TSA Offices	sf	1,494	1,500	1,500	1,500	1,500	1,500
	Subtotal:	**4,909**	**5,190**	**7,390**	**7,390**	**7,390**	**7,390**
Queuing/Waiting Areas	Units						
Public Seating	sf	655	480	610	650	690	720
Ticket Lobby/Queue (including any free standing kiosks)	sf	2,558	2,010	3,180	3,180	3,350	3,510
Baggage Claim Area							
Claim Devices (Flat Plate)	no	2	2	2	2	2	2
Linear Frontage Required (Public Side)	lf	182	81	90	96	102	109
Linear Frontage Programmed (Public Side)	lf	-	180	180	180	180	180
Baggage Claim Hall (Includes Device, Queues & Circulation w/in Positive Claim area)	sf	4,410	4,500	4,500	4,500	4,500	4,500
Domestic Meeter/Greeter Lobby	sf	-	510	610	640	690	730
	Subtotal:	**7,623**	**7,500**	**8,900**	**8,970**	**9,230**	**9,460**
Gate Lounges/Holdrooms							
Gates							
Medium Regional (BE1/CRJ,CR7/ERJ/SF340)	sf	-	-	-	-	-	-
Large Regional (Q400/CR9/E170,175,190)	sf	-	7,890	7,890	7,890	7,890	9,470
Narrowbody (A320/B737w)	sf	-	3,010	3,010	6,010	6,010	6,010
	Subtotal:	**12,642**	**10,900**	**10,900**	**13,900**	**13,900**	**15,480**
Restrooms							
Restrooms - Airside (post-Security)	sf	1,786	3,400	3,400	4,000	4,470	4,470
Restrooms - Landside (pre-Security)	sf	855	1,530	1,860	1,860	1,860	1,860
SARA	sf	140	140	140	140	140	140
Nursing Mothers Room	sf	-	260	260	260	260	260
	Subtotal:	**2,781**	**5,330**	**5,660**	**6,260**	**6,730**	**6,730**

TABLE A.3 SCENARIO 2 FACILITY REQUIREMENTS BY YEAR — BASELINE (ADDITIONAL NARROWBODY AND REGIONAL JET OUTSIDE OF PEAK HOUR)

DETAILED SPACE PROGRAM — SCENARIO 2 (BASELINE) (CONTINUED)

AIRLINE, CONCESSIONS, NON-PUBLIC AREAS

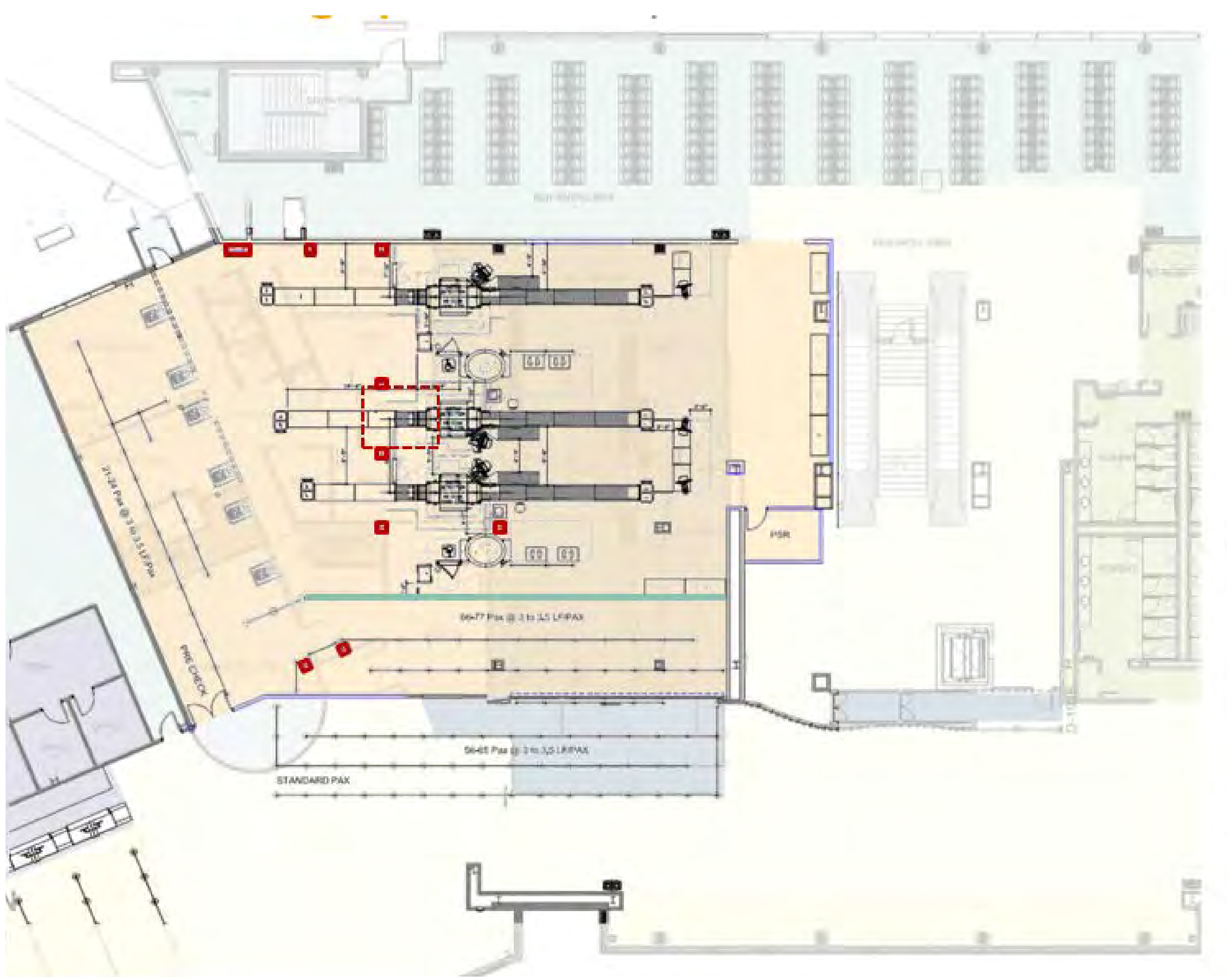
The table to the right details the space requirements by year for airline, concessions, and non-public areas of the terminal.

IDA-Idaho Falls Regional Airport - SC2		Existing Terminal Space (sf) Full Capacity	2021 Recommended Facilities	2026 Recommended Facilities	2031 Recommended Facilities	2036 Recommended Facilities	2041 Recommended Facilities
AIRLINE SPACE							
Domestic Airline Space	Units						
Ticket Counter							
Linear Counter Check-in Positions (Kiosk)	pos	16	12(0)	19(0)	19(0)	20(0)	21(0)
Total Check-in Positions (Kiosk)	pos	28(12)	15(3)	24(5)	24(5)	26(6)	27(6)
Total Linear Position Length	lf	114	78	124	124	130	137
Counter Area (Includes any curb check)	sf	1,052	780	1,240	1,240	1,300	1,370
Airline Ticket Offices (ATO)	sf	2,327	1,950	3,090	3,090	3,250	3,410
	Subtotal:	**3,379**	**2,730**	**4,330**	**4,330**	**4,550**	**4,780**
Other Airline Space							
Outbound Bag Make-Up[1]	sf	1,481	1,790	2,500	2,880	2,880	2,940
Checked Baggage Screening (TSA Space)[1]	sf	931	1,800	1,800	1,800	1,800	1,800
Level 1 Inspection Units	no	1	1	1	1	1	1
Airside Operations/Storage (IT,Offices,etc.)	sf	1,137	1,330	1,330	1,790	1,790	1,960
Inbound Baggage Claim Laydown (secure)[1]	sf	341	2,200	2,200	2,200	2,200	2,200
Inbound/Outbound Baggage Circulation & Storage	sf	2,030	760	970	1,080	1,080	1,100
Other Airline Offices/Systems & Support, Misc	sf	-	200	200	270	270	290
	Subtotal:	**5,920**	**8,080**	**9,000**	**10,020**	**10,020**	**10,290**
CONCESSIONS SPACE							
Landside Concessions (pre-Security)	Units						
Rental Car							
Number of Counters	pos	4	4	4	4	4	4
Counter Area/Offices	sf	1,028	1,030	1,030	1,030	1,030	1,030
Queue	sf	458	460	460	460	460	460
Landside Concessions	sf	2,137	450	880	940	1,000	1,070
Support/Storage (Prep Areas,Offices, etc)	sf	1,018	130	260	280	300	320
	Subtotal:	**4,641**	**2,070**	**2,630**	**2,710**	**2,790**	**2,880**
Airside Concessions (post Security)							
Airside Concessions	sf	2,213	1,790	3,530	3,770	4,020	4,290
Support/Storage (Prep Areas,Offices, etc)	sf	944	540	1,060	1,130	1,210	1,290
	Subtotal:	**3,157**	**2,330**	**4,590**	**4,900**	**5,230**	**5,580**
NON-PUBLIC SPACE							
Non-Airline Tenant Space	Units						
Airport Administration							
Offices/Support/Storage	sf	2,882	3,110	3,110	3,110	3,110	3,110
Airport Police (Includes Locker Facilities)	sf	248	250	250	250	250	250
Misc Tenant (FAA Tower)	sf	2,787	700	700	700	700	700
	Subtotal:	**5,917**	**4,060**	**4,060**	**4,060**	**4,060**	**4,060**
Restrooms/Circulation							
Non-Public Restrooms	sf	114	110	220	220	220	220
Non-Public Circulation (Includes Vertical Circ)	sf	1,456	1,610	1,820	1,930	1,940	1,990
	Subtotal:	**1,570**	**1,720**	**2,040**	**2,150**	**2,160**	**2,210**
Building Systems							
Airport Operations (Maintenance,Janitorial,Storage,Shops)	sf	3,545	1,430	1,700	1,830	1,870	1,970
Mechanical/Electrical/Plumbing(MEP)/Communications/IT	sf	9,086	7,150	8,380	9,170	9,350	9,860
Building Structure/Non-net/Void	sf	3,271	3,200	3,750	4,110	4,190	4,420
	Subtotal:	**15,901**	**11,780**	**13,830**	**15,110**	**15,410**	**16,250**

TABLE A.3 (CONTINUED) SCENARIO 2 FACILITY REQUIREMENTS BY ENPLANEMENTS — BASELINE (ADDITIONAL NARROWBODY AND REGIONAL JET OUTSIDE OF PEAK HOUR)

APPENDIX

SECURITY CHECKPOINT PLANNING, PREFERRED OPTION AREAS



THREE-LANE SECURITY CHECKPOINT

Not to Scale

THREE-LANE SECURITY CHECKPOINT

The diagram to the left depicts the possible addition of a third screening lane at the security screening checkpoint. A third lane can be incorporated into the area initially used for checkpoint queuing during the two-lane arrangement. The queue then expands into the Great Hall, maintaining adequate clear circulation width between the queue and the front building façade.

PREFERRED OPTION AREA BREAKDOWN

The tables to the right indicate the approximate areas shown in the preferred planning option. The areas are broken down by location within the building as well as categorized based on the project priorities. For more information on planned project priorities, refer to Section 7.

Priority 1a	Length	Remodel Area	New Construction	Area Totals	Notes
Ticketing:					
Ticketing Counters	130'	1,233		1,233	Full Ticketing Hall area to be renovated as part of the expansion
Ticketing Queue + Cross Circulation		5,784		5,784	
Ticketing Circulation		1,034	905	1,939	
ATO's		3,033		3,033	
Stair & circulation to 2nd level Admin space			586		
elevator			102		
elevator equipment room			53		
Bag Screening and Makeup:				0	
Bag Screening		2,197	0	2,197	
Bag Makeup			14,403	14,403	
Secure Circulation		825	130	955	
Level 1 Holdroom Additon			1,520	1,520	
Level 2 Shell Space			16,168	16,168	
Central Commons, level 1:				0	
Landside Restrooms		1,815		1,815	
Janitor/Support		114		114	
Airport/Support		425		425	
Bag Conveyor Equipment Room		287		287	shell out for future equip relocation
Landside Concessions - FOH		915		915	
Landside Concessions - BOH		341		341	
General Circulation		6,892	462	7,354	Remodel includes new ramp to raised floor zone
Meeter Greeter/Seating		449	639	1,087	
Vertical Circulation		670		670	New inlcudes open stair, escalator, elevator + elevator equipment room.
Central Commons, level 2:				0	
General Circulation		393	480	873	
New open walkway/balcony			1,987	1,987	vertical circulatin elements included on level 1
Additional Level 1 Spaces:					
enclosed stair (from Admin)			284	284	
Non-Public Restrooms		221		221	
TR/IT/DATA		314		314	
Electrical			603	603	
Mechanical/Chase		87		87	
Support Spaces/Airport			211	211	
Vestibules		360	360	720	
Level 2 Additional Spaces					
Electrical Room			450	450	
Stair & circulation to 2nd level Admin space			586	586	
elevator			102	102	
support			53	53	
Sub-Total		27,388	40,085		
Priority 1a Total SF				**67,473**	

Priority 1b	Remodel Area	New Construction	Area Totals	Notes
Security Checkpoint:				
SSCP Passenger Screening	4,344		4,344	Existing portion of SSCP recently renovated. SSCP expansion to match existing (± 2146 sf existing space)
Private Screening Room	112		112	
Law Enforcement Office	221		221	
SSCP Queue	2,500		2,500	
Recomposure	844		844	
Arrivals Secure Exits	107	107	215	
General Circulation/Arrivals Exit	1,298		1,298	*moved from Priority 2*
Level 2				
Administration		4,771	4,771	Interior buildout of shell space construcited in Priority 1
Sub-Total	9,425	4,878		
Priority 2 Total SF			**14,304**	

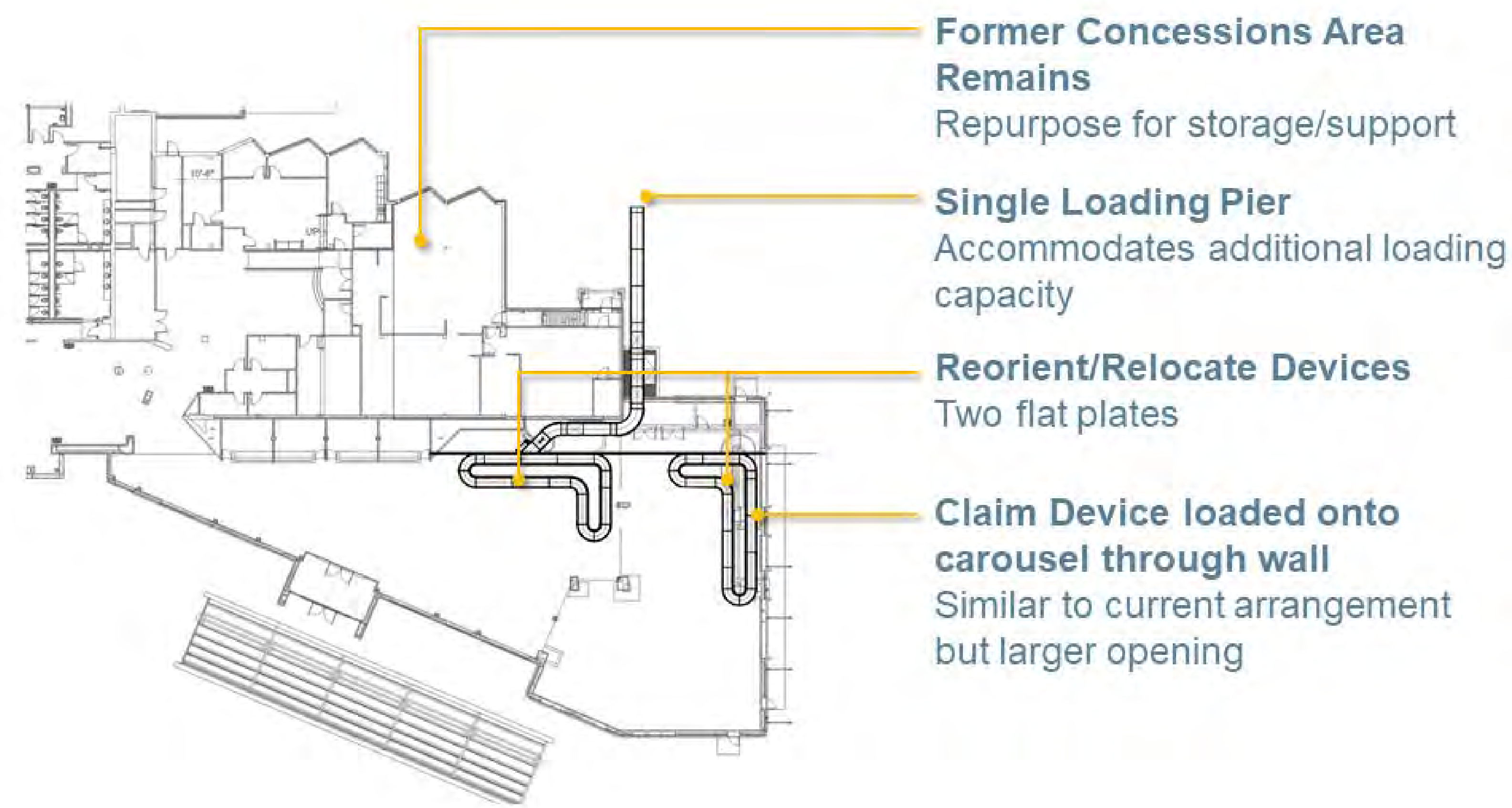
Priority 2	Remodel Area	New Construction	Area Totals	Notes
Gatehold				
Level 1 - Airside				
Gate Hold Rooms	2,431	1,843	4,274	Hold rooms recently renovated. Renovation to hold rooms only as impacted by addition of new concessions. *North Holdroom Addition moved to Priority 3*
Hold Room Circulation	1,831	0	1,831	*Holdroom Addition circulation moved to Priority 3*
Airside Concessions - FOH	1,346		1,346	
Airside Concessions - BOH	245		245	
Airside Restrooms + Amenities	1,914		1,914	Renovation of the current landside restooms, addition of new family restroom, and opening up to the existing (recently renovated airside restrooms, +630 sf)
Janitor/Support	146		146	
Airport/Support				
Vertical Circulation	1,322		1,322	Remodel includes existing egress stairs, open stair, escalators and elevator
Arrivals Secure Exits		214	214	
Level 2 - Airside			0	
Gate Hold Rooms - Level 2	4,860		4,860	Hold rooms recently renovated. Renovation only as impacted by new work
Hold Room Circulation - Level 2	2,435		2,435	
Level 2 Shell Space Buildout:				11,113
Holdroom		6,345		
Concessions		668		
Support		1,272		
circulation		2,828		
Airside Concessions - FOH	1,231		1,231	
Airside Concessions - BOH	697		697	
Airside Restrooms	1,710		1,710	Existing airside restroom were recently renovaged (± 1,093 sf)
Airside Mother's Room, SARA	498		498	
Janitor/Support	97		97	
Airport/Support	941		941	
Mechanical/Chase	196		196	
General Circulation	2,019		2,019	
Sub-Total	23,919	13,170		
Priority 2 Total SF			**37,089**	

Priority 3	Remodel Area	New Construction	Area Totals	Notes
TSA Break Area	1,277		1,277	
TR/IT/DATA (MDF)	80		80	
Bag Claim				
Bag Claim and Claim Circulation	5,645		5,645	includes 1 new sloped plate device and reuse of 1 existing flateplate device
Conveyor Equipment Room				shelled out in priority 1
Rental Car Counters	1,045		1,045	
Rental Car Queue	480		480	
Vestibules	360	360	720	
Baggage Laydown			0	
Bag Laydown Area	2,846	966	3,812	At raised slab level. New includes new slab at raised slab level.
ramps from grade to raised level		1,440	1,440	
existing stair to basement	186		186	
Level 1 Hold Room addition:				
Hold room		3,749		*moved from Priority 2*
circulation		411.26		*moved from Priority 2*
Sub-Total	11,919	6,926		
Priority 3 Total SF			**18,845**	

Summary	**0**	**0**	**0**
Priority 1a	27,388	40,085	67,473
Priority 1b	9,425	4,878	14,304
Priority 2	23,919	13,170	37,089
Priority 3	11,919	6,926	18,845
Total Area			**137,711**

INBOUND BAGGAGE ALTERNATIVE

To the right is an alternative inbound baggage handling system arrangement. This option is described in detail on page 45.



ALTERNATIVE INBOUND BAGGAGE ARRANGEMENT

Not to Scale

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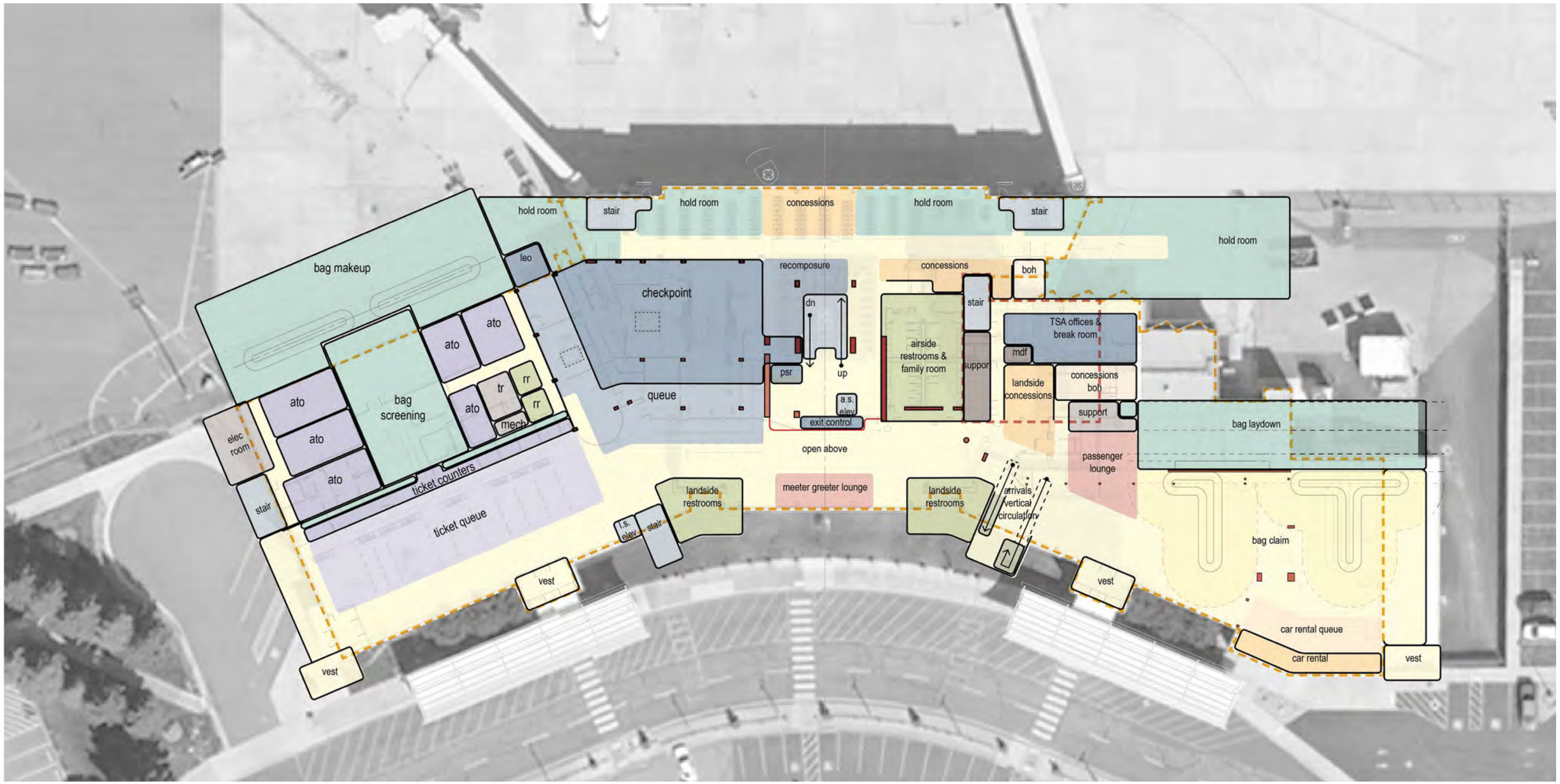
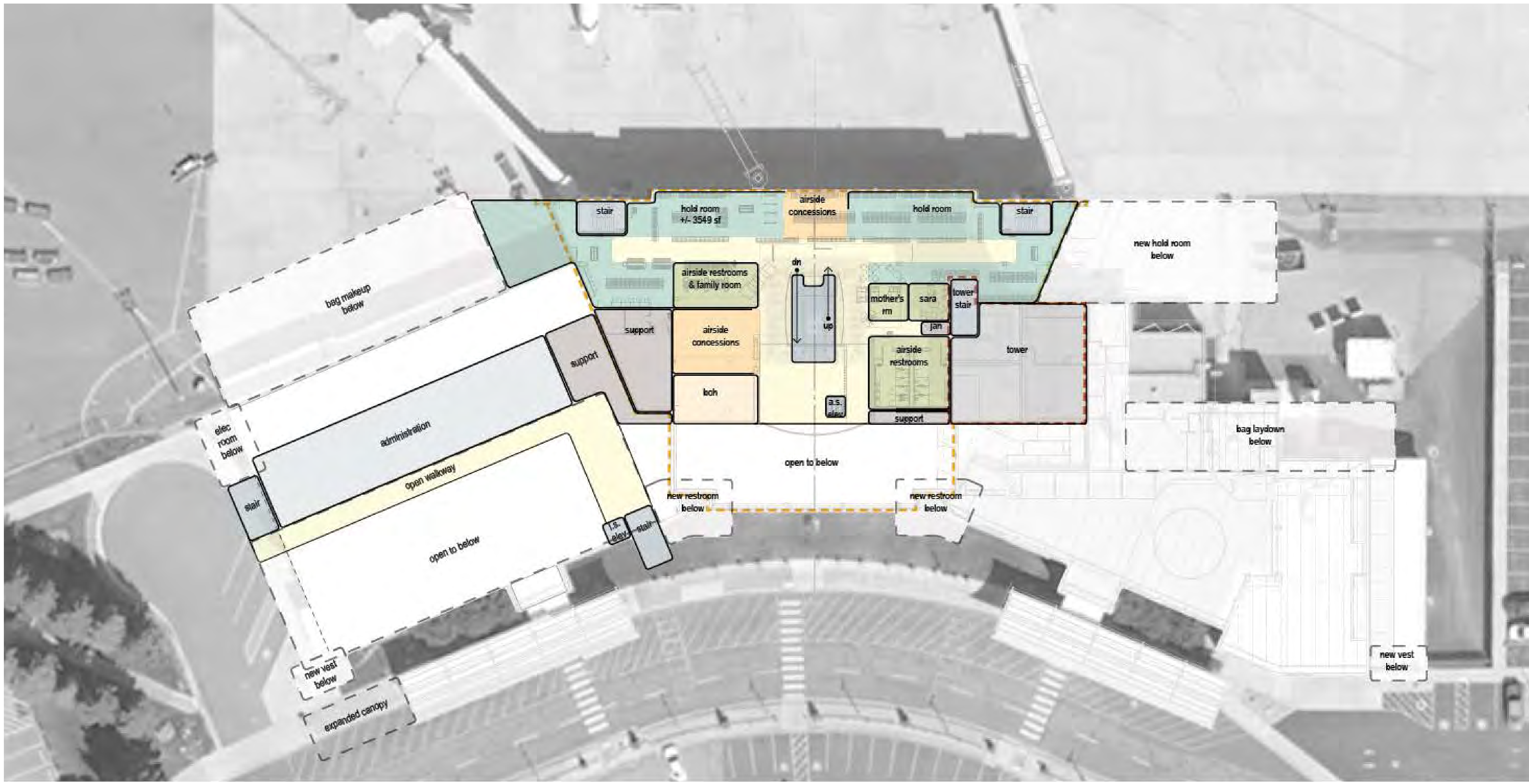
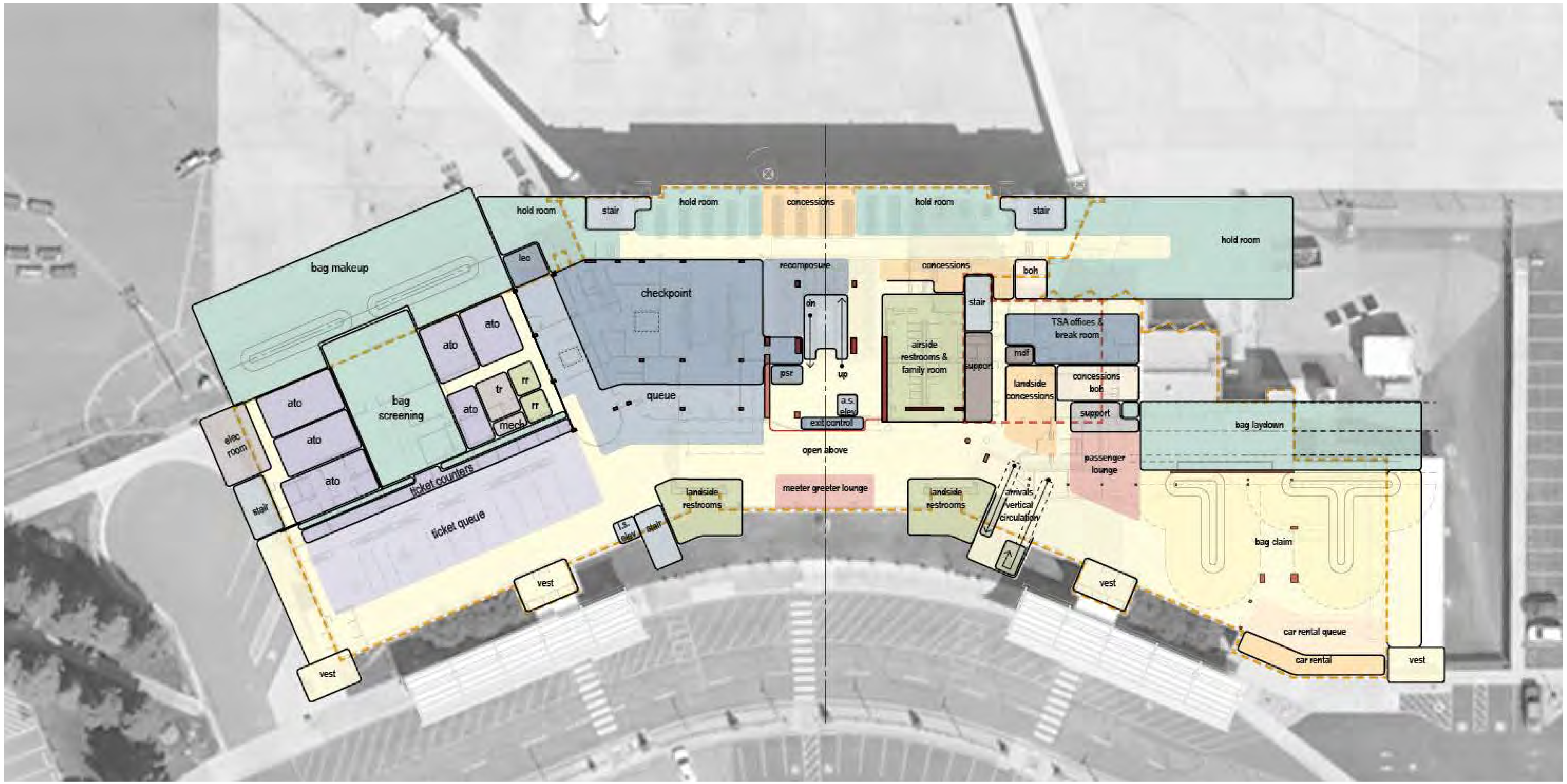


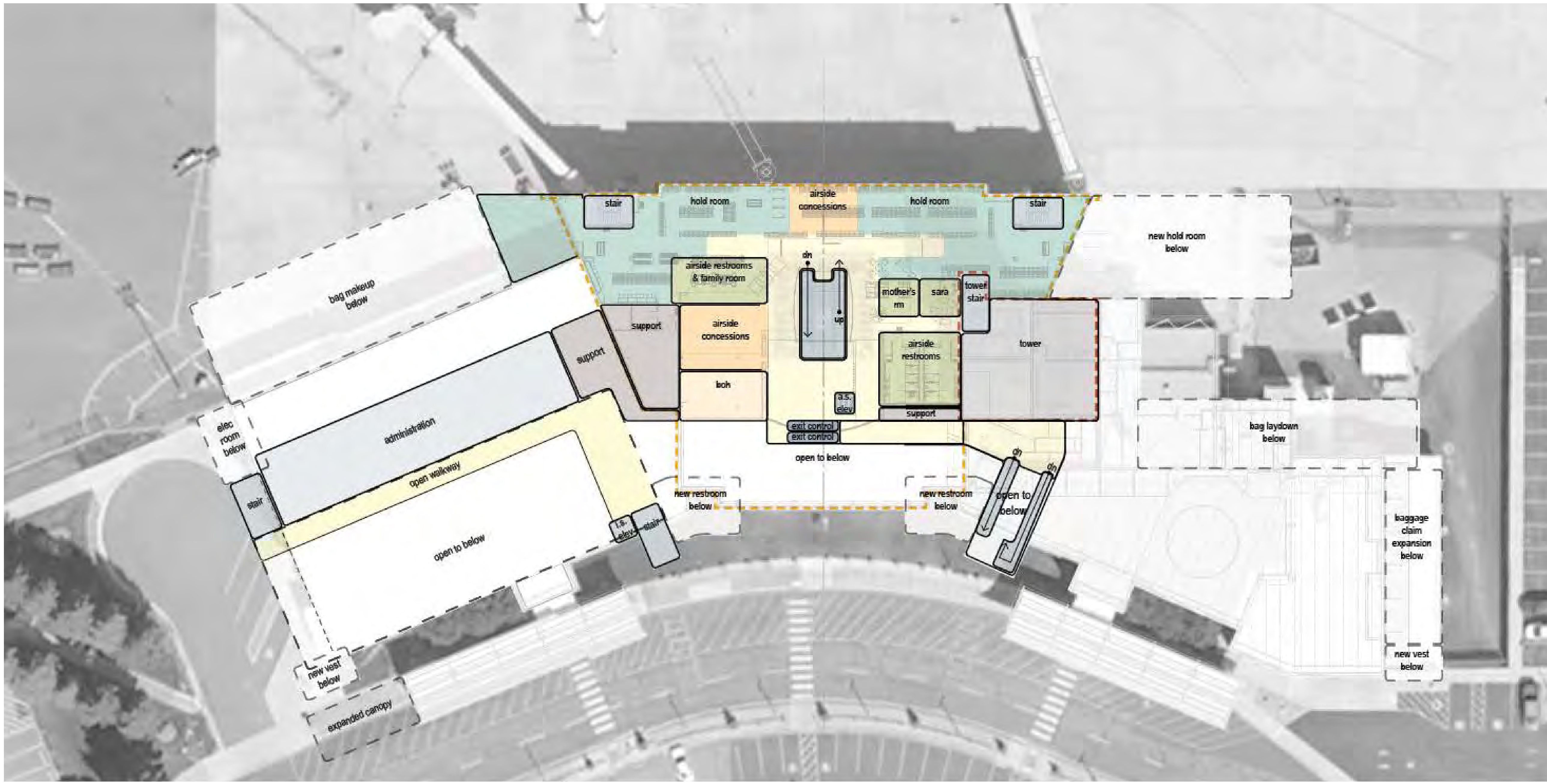
INITIAL OPTION 1A — GROUND LEVEL



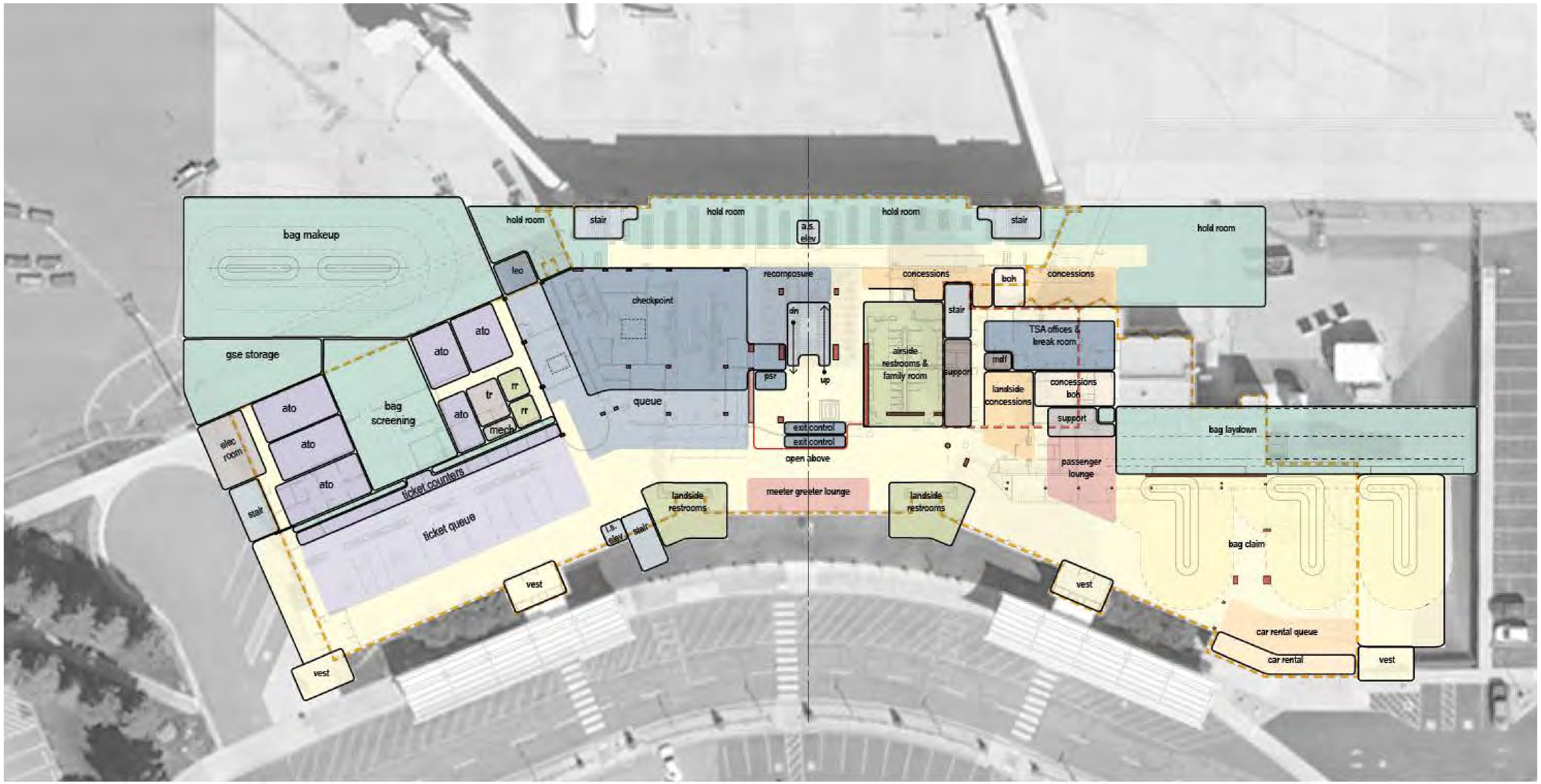
INITIAL OPTION 1A — UPPER LEVEL



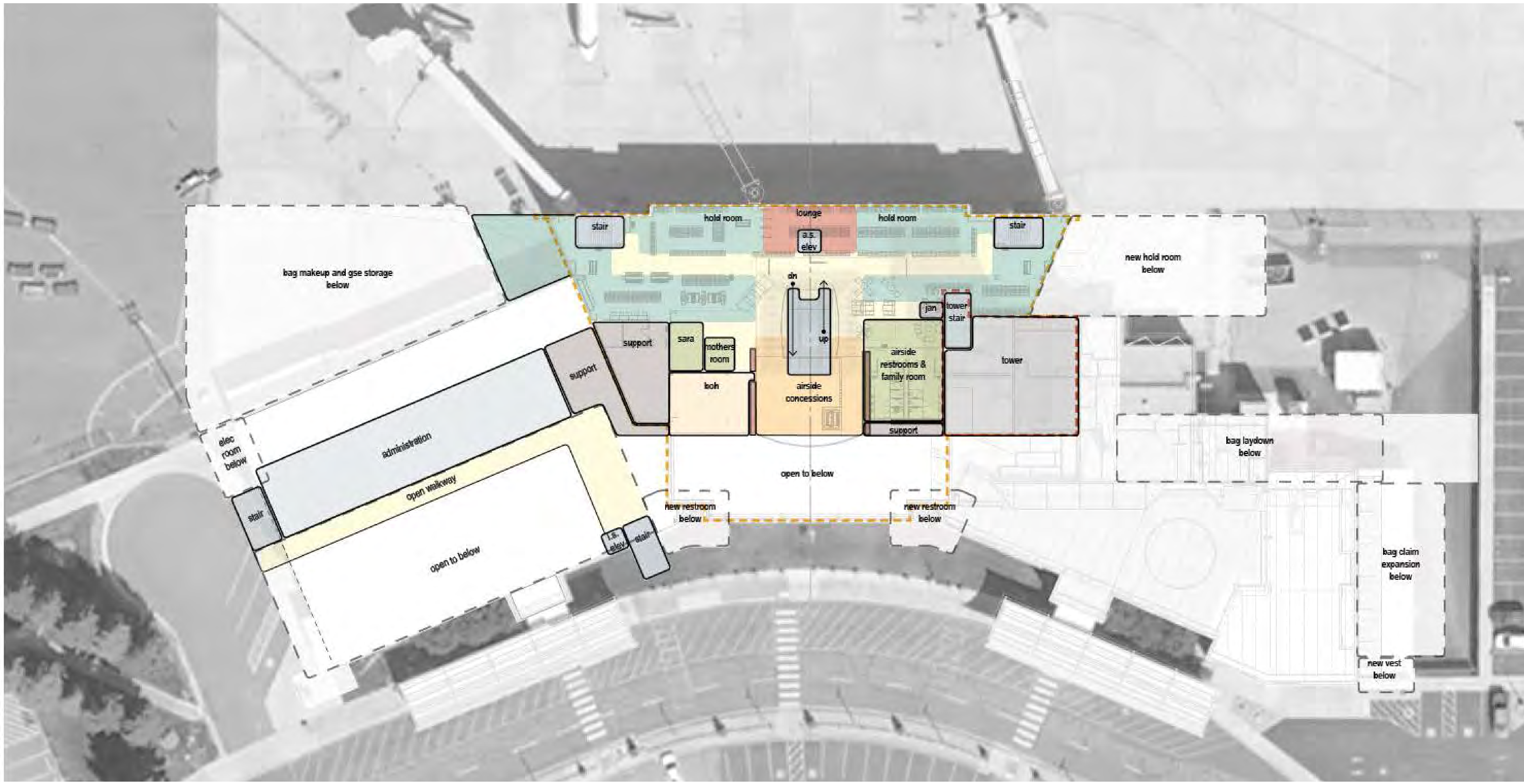
INITIAL OPTION 1B — GROUND LEVEL



INITIAL OPTION 1B — UPPER LEVEL

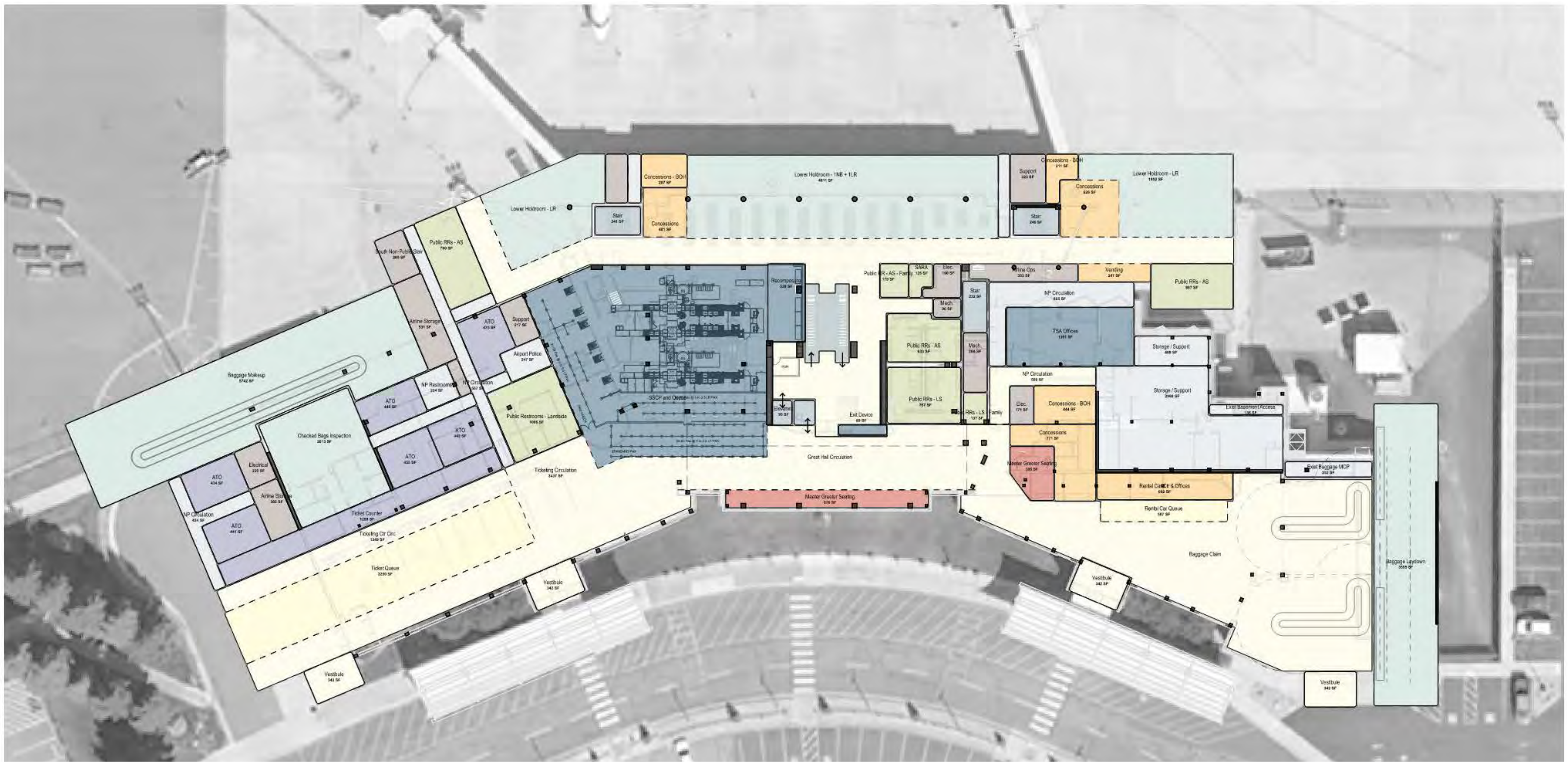


INITIAL OPTION 1C — GROUND LEVEL

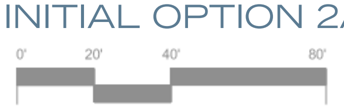


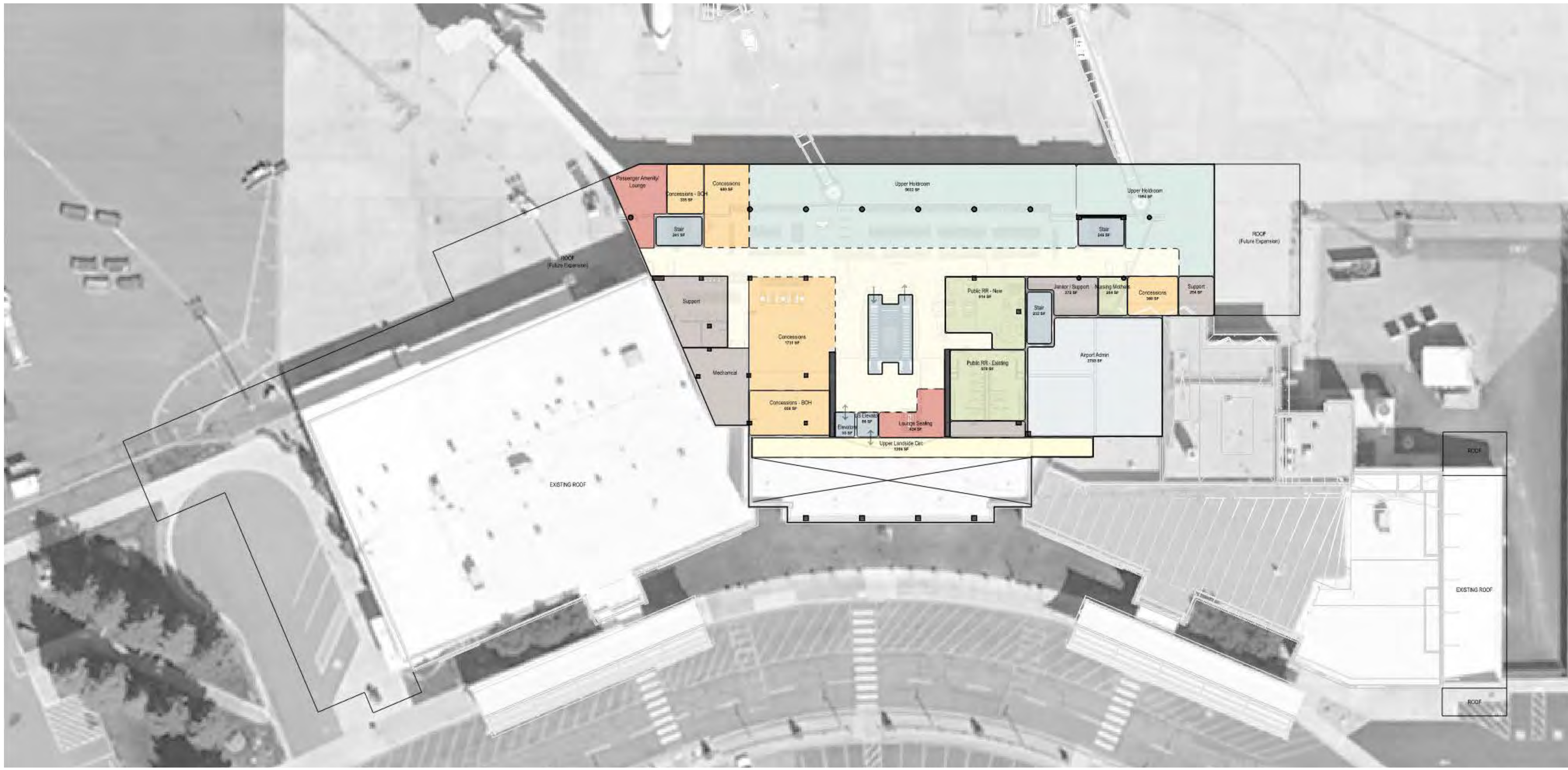
INITIAL OPTION 1C — UPPER LEVEL

APPENDIX
INITIAL PLANNING OPTIONS

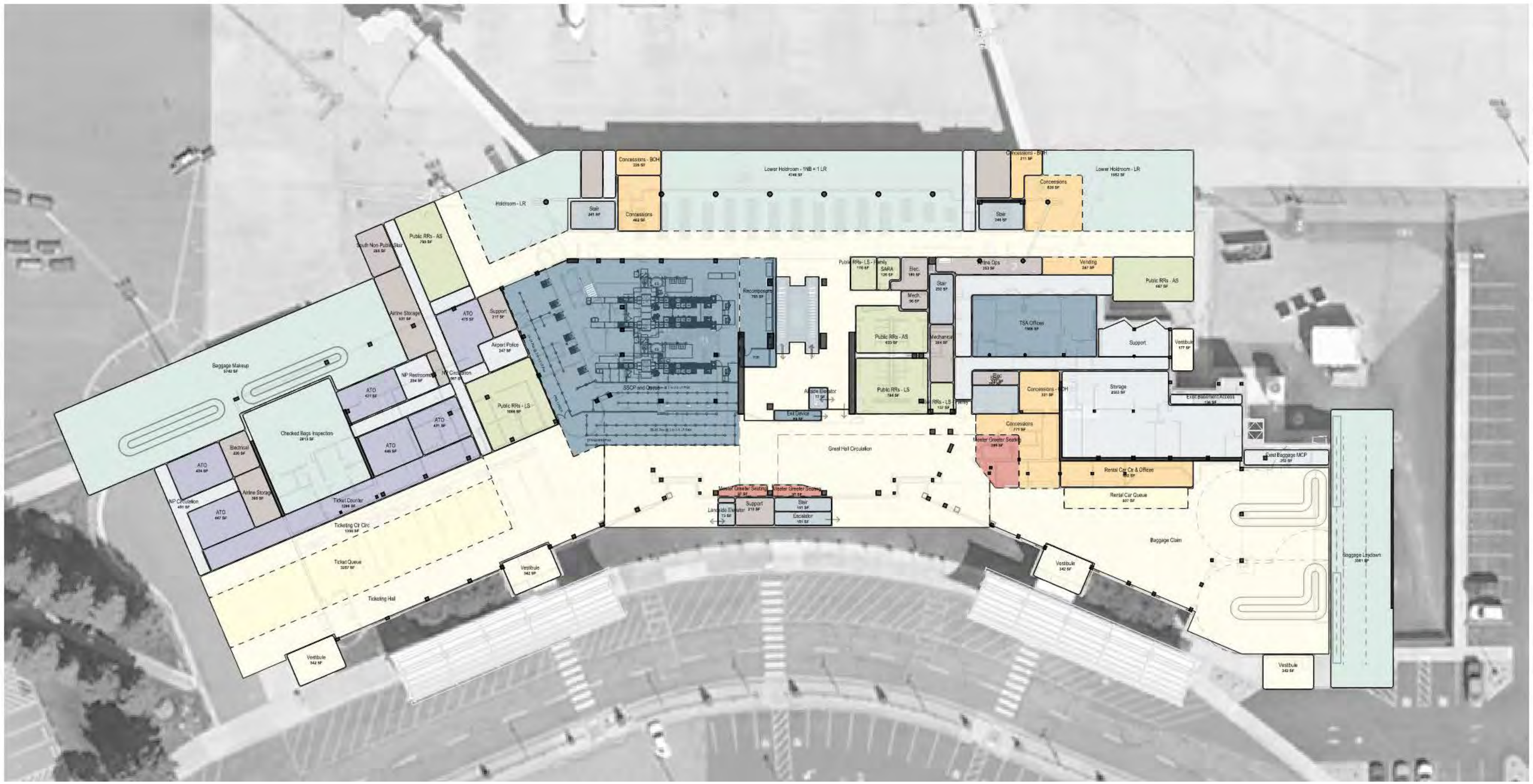


INITIAL OPTION 2A — GROUND LEVEL





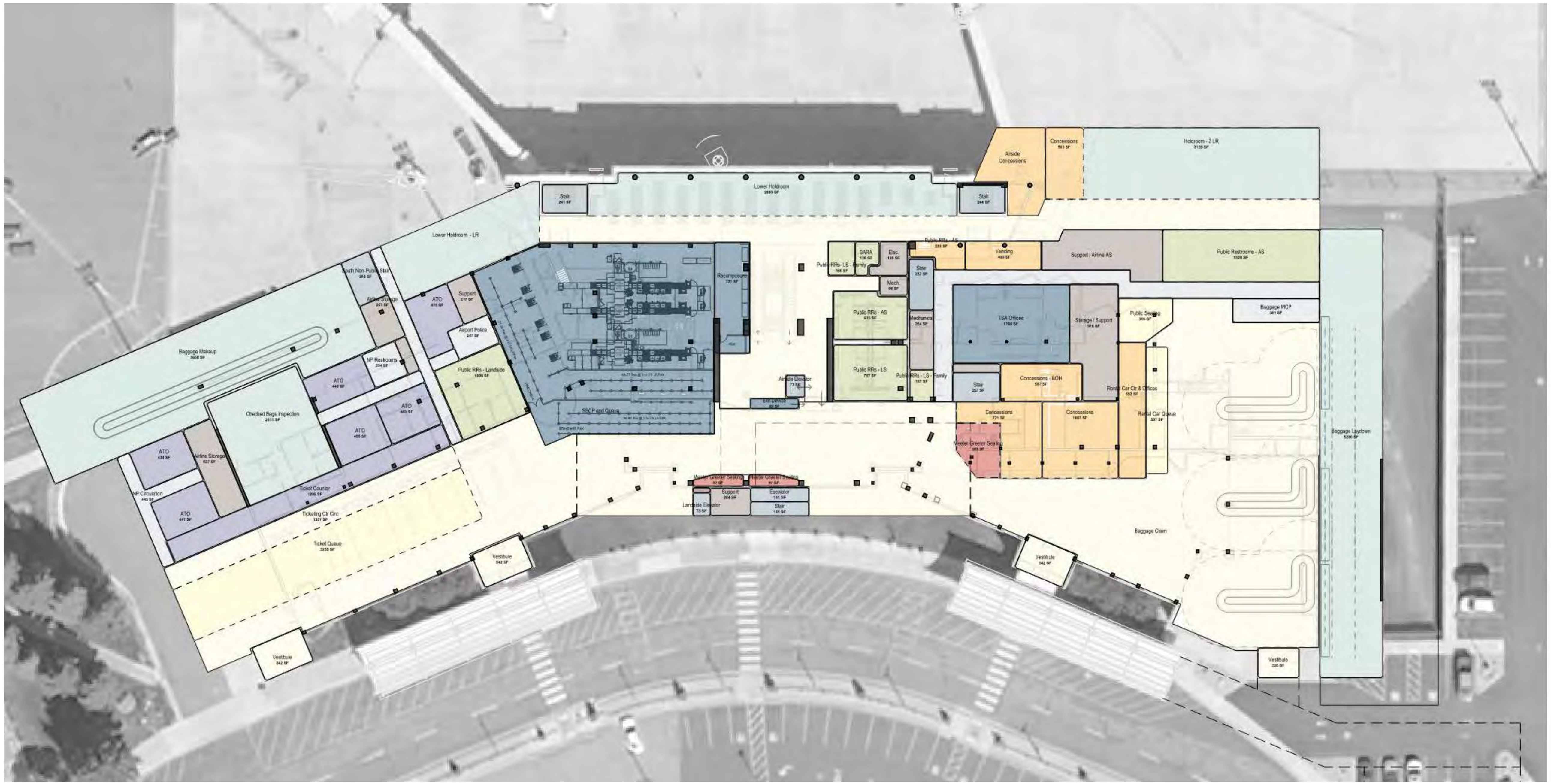
INITIAL OPTION 2A — UPPER LEVEL



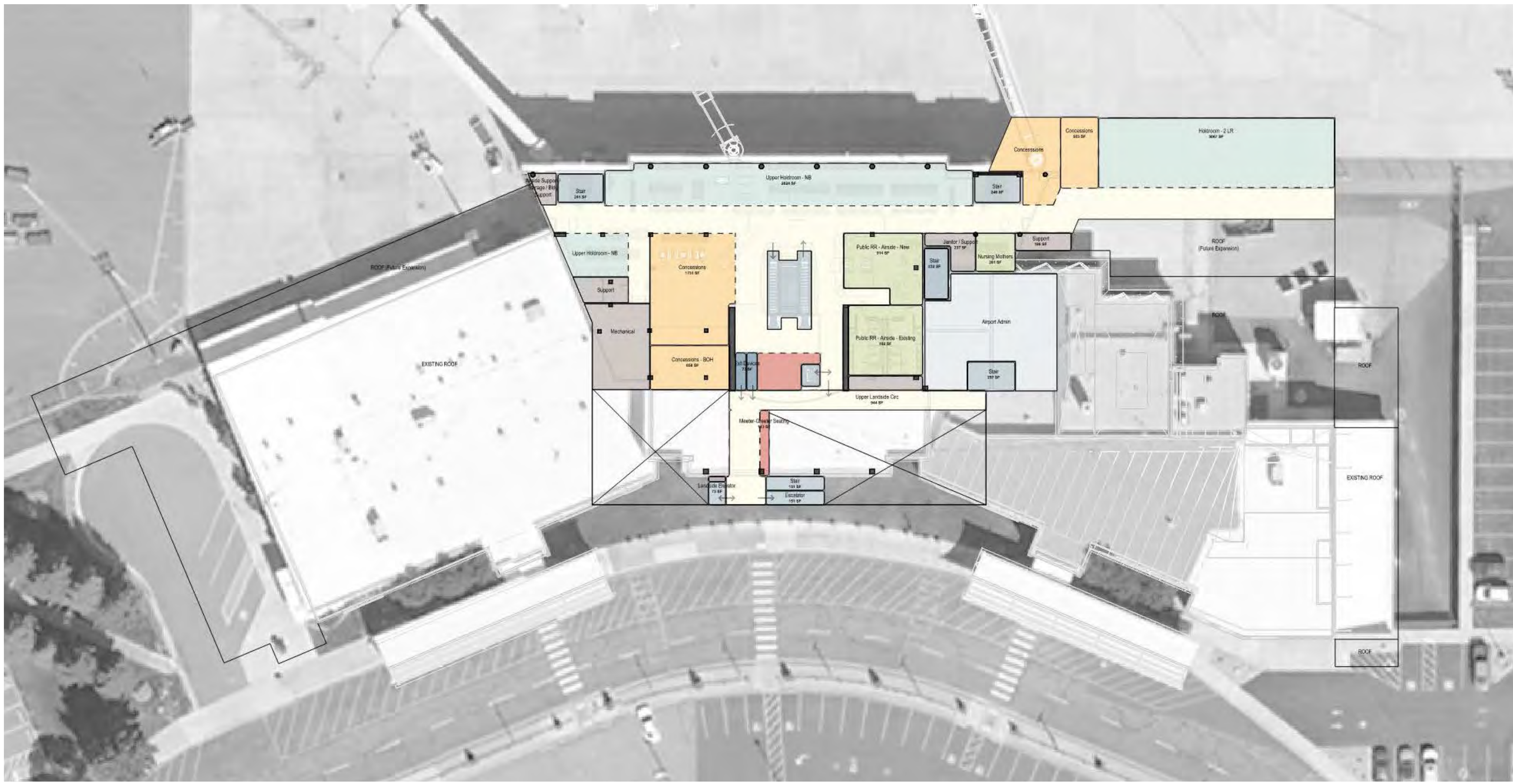
INITIAL OPTION 2B — GROUND LEVEL

INITIAL OPTION 2B — UPPER LEVEL

0' 20' 40' 80'



INITIAL OPTION 2C — GROUND LEVEL



INITIAL OPTION 2C — UPPER LEVEL

0' 20' 40' 80'

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FULL ROM COST ESTIMATE & REPORT

On the following pages is the full ROM Cost Estimate and Report prepared by Connico, Inc. A summary of project direct costs can be found on page 73.

APPENDIX
ROM COST REPORT

Idaho Falls Regional Airport

Idaho Falls, Idaho

IDA IDAHO FALLS REGIONAL AIRPORT

Prepared for:

Alliiance
400 Clifton Avenue
Minneapolis, MN 55403

CONNICO

Terminal Expansion Project

Concept Design Estimate

Report Date:

March 21, 2022

Revision Date:

April 28, 2022

Revision No.:

4

CONNICO

2594 N. Mount Juliet Road
Mount Juliet, TN 37122
(615) 758-7474

April 28, 2022

Eric Peterson
Alliiance
400 Clifton Avenue
Minneapolis, MN 55403

RE: Terminal Expansion Project
Idaho Falls Regional Airport
Idaho Falls, Idaho
Concept Design Estimate - Revision 4

Dear Eric:

We are pleased to present the draft Concept Design Estimate for the referenced project. The Estimate has been drawn from the information noted in Exhibit A.

Included within the report are our Estimate Notes, which outline the criteria and allowances that were used to produce the estimate.

We appreciate the opportunity to work with you on this project. Should you have any questions or need additional information, please contact us at your convenience.

Sincerely,

The Connico Team

Charl J. Neser, MRICS, CCP
Director
cjneser@connico.com

Connico File No. 4886.21

Table of Contents

CONNICO

Terminal Expansion Project
Idaho Falls Regional Airport
April 28, 2022

INTRODUCTION

TASK OUTLINE

- Alliiance retained Connico as cost consultants to provide an estimate of probable cost for the Terminal Expansion Project project at Idaho Falls Regional Airport in Idaho Falls, Idaho. The estimate was based on plans, specifications, and other information, as noted in Exhibit A of this report.

- In providing estimates of probable construction cost, the client understands that Connico has no control over the cost or availability of labor, equipment, or materials, or over market conditions or the contractor's method of pricing, and that Connico's estimates of probable construction costs are made based on Connico's professional judgment and experience. Connico makes no warranty, express or implied, that the bids or the negotiated cost of the work will not vary from Connico's estimate of probable construction cost.

- The estimate of probable cost has been prepared based on information prepared/provided by others. Connico has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions that may be incorporated because of erroneous information provided by others.

PROJECT DESCRIPTION

The project includes the expansion and renovation of the existing airport: Ticket Lobby, Bag Screening, Outbound Bag Makeup, Airline Ticket Offices, GSE Storage and landside restrooms.

MARKET INFORMATION

- The United States commercial construction sector showed growth in 2021 as it continues to recover from the COVID-19 pandemic. The construction industry is anticipated to continue this growth in 2022 and should incur a significant boost as it is augmented by legislation passed in late 2021. However, as new projects come online and contractor backlog increases, contractors may become more selective in the projects they pursue.

- Construction projects continue to experience significant shortages of skilled labor, supply chain disruptions, and increases in basic construction material prices. It does not appear that these factors will be alleviated in the near term when coupled with recent inflationary pressures. Consequently, the culmination of all these factors has resulted in bid day pricing inconsistencies that are difficult to forecast.

- While the construction industry looks to continue its growth, lingering impacts of the COVID-19 pandemic remain due to the evolution of additional variants. If this continues, the possibility of local, regional, or global shutdowns could further strain the supply chain market and construction industry recovery.

CONNICO

Terminal Expansion Project
Idaho Falls Regional Airport
April 28, 2022

- The estimate attempts to incorporate known impacts due to market conditions, material pricing and labor impacts existing in the current market. However, the estimate cannot, and does not, reflect all potential economic impacts that may affect the construction market or the cost of the work. The impacts on material and labor availability have not been fully realized and the bidding and construction environment is in active flux as we continue to face uncertainty. Construction costs or durations may be impacted by any of these conditions. We would recommend that the Owner carry a contingency fund in their project budget to address market volatility.

CONNICO

Terminal Expansion Project
Idaho Falls Regional Airport
April 28, 2022

ESTIMATE NOTES

GENERAL

- Connico did not perform a site observation in preparing this estimate.
- The Conceptual Design Estimate has been developed using "cost per square foot" models based on other similar projects.

MARKUPS AND SOFT COSTS

- The following "direct" markups on the cost of work are included in the estimate, based on traditional design, bid, build:

General Contractor Markups

Project Logistics & Labor Factor	3.0%
General Requirements, Phasing & Temporary Construction	2.0%
General Conditions	8.0%
General Contractor's Overhead & Profit	3.0%
Insurance	2.0%
Payment & Performance Bonds	1.0%
Sustainability Requirements	0.0%
Escalation	0.0%

- The "indirect" markups (also known as 'Owner's Soft Costs') has not been included in the estimate.
- A fifteen percent (15%) estimating design evolution has been included in the estimate for unforeseen work and final detailing that may be necessary to accomplish the project scope of work. The design evolution is not intended to be used for additions to the general scope of work.
- A project logistics & labor factor allowance has been included in the estimate to account for the loss of productivity resulting from (1) staging of labor from the staging / parking area to the project site (2) working at an occupied airport (3) working in a congested site / challenging conditions. This item is included as an allowance as it is subject to the vagaries of "market and bidding conditions" at the time the project is bid.
- An allowance for insurance is included in the estimate. There are many variables that will impact the cost of insurance including, but not limited to, the contractor's performance history, project size, complexity, location, and phasing. Additionally, insurance costs will change if the owner selects an owner- or contractor controlled insurance program.
- An allowance for payment and performance bonds is included in the estimate. There are many variables that will impact the cost of payment and performance bonds including, but not limited to, the contractor's performance history, project size, complexity, location, and phasing.

CONNICO

Terminal Expansion Project
Idaho Falls Regional Airport
April 28, 2022

- The estimate is costed on the understanding that there will be free and open competition at all levels of contracting, that there will not be a restricted bidders list either for general or trade contractors, that there will be a minimum three general contract bidders and at minimum three sub bids will be available for each trade involved. The owner can facilitate these conditions by ensuring that the project is publicly advertised for bids in general circulation as well as trade publications where advertisements for bid are regularly posted, that prequalification requirements, if prequalification of either general or sub bidders is contemplated, are not unduly restrictive, and by maintaining good industry relations.
- The estimate does not include an owner's construction contingency to be utilized for changes or additions to the scope of work during construction.
- The estimate does not include a project contingency.
- The estimate is based on commodity and labor pricing as of the date of this estimate with no adjustment for escalation.
- The estimate is costed on the understanding that there will be a requirement to utilize "prevailing wages" on the project.
- Temporary site storage and parking for contractor is assumed to be remote from the site and will necessitate bussing construction personnel to the jobsite.
- Allowances included in the estimate are amounts the owner should expect to spend.

IDA IDAHO FALLS REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		**Revision**	4
Original Date	2022-03-21	**Revision Date**	2022-04-28
Assumed Bid Opening Date		**Connico PN**	4886.21
Project Lead	CJN	**Checked by**	IDK

Terminal Expansion Project

SUMMARY

DESCRIPTION		TOTAL
PRIORITY 1a - TICKETING & BAGGAGE HANDLING	$	44,736,800
PRIORITY 1b - SECURITY CHECKPOINT	$	4,568,895
PRIORITY 2 - AIRSIDE HOLDROOM AREA	$	14,117,101
PRIORITY 3 - BAGGAGE HANDLING.	$	11,121,721
Opinion of Probable Project Cost	**$**	**74,544,517**

The following markups are included in the project costs:

Estimating Design Evolution	15.0%
General Contractors Markups	
Project Logistics & Labor Factor	3.0%
General Requirements, Phasing & Temporary Construction	2.0%
General Conditions	8.0%
General Contractors Overhead & Profit	3.0%
Insurance	2.0%
Payment & Performance Bonds	1.0%
Sustainability Requirements	0.0%
Escalation	0.0%

Connico
4886.21 IDA Term. Exp. ROM Est. 2022-04-26 rev 4 cjn

CONNICO

Terminal Expansion Project
Idaho Falls Regional Airport
April 28, 2022

ESTIMATE DETAIL

IDA IDAHO FALLS REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		**Revision**	4
Original Date	2022-03-21	**Revision Date**	2022-04-28
Assumed Bid Opening Date		**Connico PN**	4886.21
Project Lead	CJN	**Checked by**	IDK

PRIORITY 1a - TICKETING & BAGGAGE HANDLING

SUMMARY

	DESCRIPTION			COST PER SQUARE FOOT	TOTAL
A	**Substructure**			$ 12.04	$ 835,318
	Standard Foundations	$	490,974		
	Special Foundations	$	90,000		
	Slab on Grade	$	254,344		
B	**Shell**			$ 120.00	$ 8,327,687
	Superstructure	$	3,326,510		
	Exterior Closure	$	4,467,670		
	Roofing	$	533,508		
C	**Interiors**			$ 73.90	$ 5,128,705
	Interior Construction	$	801,547		
	Stairs	$	255,200		
	Interior Finishes	$	4,071,958		
D	**Services**			$ 208.49	$ 14,469,011
	Conveying	$	480,000		
	Baggage Handling System	$	1,759,000		
	Plumbing	$	936,019		
	HVAC	$	3,806,480		
	Fire Protection	$	419,132		
	Electrical	$	5,164,900		
	Communications	$	1,084,101		
	Electronic Safety & Security	$	819,378		
E	**Equipment & Furnishings**			$ 8.18	$ 567,592
	Equipment	$	173,495		
	Passenger Boarding Bridges	$	290,000		
	Furnishings	$	104,097		
F	**Special Construction & Demolition**			$ 5.42	$ 376,106
	Special Construction	$	50,000		
	Selective Building Demolition	$	326,106		
	Hazardous Material Abatement	$	-		
G	**Building Sitework**			$ 37.56	$ 2,606,340
	Site Preparation	$	276,090		
	Site Improvements	$	1,400,250		
	Site Mechanical Utilities	$	10,000		
	Site Electrical Utilities	$	920,000		
	Subtotal			***$ 465.59***	***$ 32,310,758***
15.0%	Estimating Design Evolution				$ 4,846,614

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4886.21 IDA Term. Exp. ROM Est. 2022-04-26 rev 4 cjn

PRIORITY 1a - TICKETING & BAGGAGE HANDLING

SUMMARY

DESCRIPTION		COST PER SQUARE FOOT		TOTAL
Subtotal - Cost of Work		***$ 535.42***	***$***	***37,157,372***
	General Contractors Markups			
3.0%	Project Logistics & Labor Factor		$	1,114,721
2.0%	General Requirements, Phasing & Temporary Construction		$	765,442
8.0%	General Conditions		$	3,123,003
3.0%	General Contractors Overhead & Profit		$	1,264,816
2.0%	Insurance		$	868,507
1.0%	Payment & Performance Bonds		$	442,939
0.0%	Sustainability Requirements		$	-
Opinion of Probable Construction Cost		***$ 644.64***	***$***	***44,736,800***
0.0%	Escalation		$	-
Opinion of Probable Project Cost		***$ 644.64***	***$***	***44,736,800***

Connico
4886.21 IDA Term. Exp. ROM Est. 2022-04-26 rev 4 cjn

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		**Revision**	4
Original Date	2022-03-21	**Revision Date**	2022-04-28
Assumed Bid Opening Date		**Connico PN**	4886.21
Project Lead	CJN	**Checked by**	IDK

PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
Terminal Renovation & Expansion				
Level 1				
Ticketing:				
Ticketing Counters	1,234		1,234	sf
Ticketing Queue + Cross Circulation	5,785		5,785	sf
Ticketing Circulation	1,034	905	1,939	sf
ATO'S	3,034		3,034	sf
Stair & Circulation To 2nd Level Admin Space		587	587	sf
Elevator		103	103	sf
Elevator Equipment Room		53	53	sf
Bag Screening And Makeup:				
Bag Screening	2,550		2,550	sf
Bag Makeup		14,403	14,403	sf
Secure Circulation	826	131	957	sf
Holdroom Addition		1,521	1,521	sf
Central Commons				
Landside Restrooms	1,815		1,815	sf
Janitor/Support	114		114	sf
Airport/Support	425		425	sf
Bag Conveyor Equipment Room	287		287	sf
Landside Concessions - FOH	915		915	sf
Landside Concessions - BOH	342		342	sf
General Circulation	7,466	463	7,929	sf
Meeter Greeter/Seating	449	639	1,088	sf
Vertical Circulation	671		671	sf
Additional Level 1 Spaces:				
Enclosed Stair (From Admin)		285	285	sf
Non-Public Restrooms	221		221	sf
TR/IT/Data	315		315	sf
Electrical		604	604	sf
Mechanical/Chase	87		87	sf
Support Spaces/Airport		211	211	sf
Vestibules	360	360	720	sf
Level 2				
Shell Space (Hold Room; Admin; Stairs)		17,542	17,542	sf
Central Commons				
General Circulation		481	481	sf
New Open Walkway/Balcony		1,987	1,987	sf
Additional Spaces				
Electrical Room		450	450	sf
Stair & Circulation To 2nd Level Admin Space		587	587	sf

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

SUMMARY

	DESCRIPTION		COST PER SQUARE FOOT		TOTAL
	Subtotal - Cost of Work	*$*	*535.42*	*$*	*37,157,372*
	General Contractors Markups				
3.0%	Project Logistics & Labor Factor			$	1,114,721
2.0%	General Requirements, Phasing & Temporary Construction			$	765,442
8.0%	General Conditions			$	3,123,003
3.0%	General Contractors Overhead & Profit			$	1,264,816
2.0%	Insurance			$	868,507
1.0%	Payment & Performance Bonds			$	442,939
0.0%	Sustainability Requirements			$	-
	Opinion of Probable Construction Cost	*$*	*644.64*	*$*	*44,736,800*
0.0%	Escalation			$	-
	Opinion of Probable Project Cost	*$*	*644.64*	*$*	*44,736,800*

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IDA
IDAHO FALLS
REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		Revision	4
Original Date	2022-03-21	Revision Date	2022-04-28
Assumed Bid Opening Date		Connico PN	4886.21
Project Lead	CJN	Checked by	IDK

PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
Terminal Renovation & Expansion				
Level 1				
Ticketing:				
Ticketing Counters	1,234		1,234	sf
Ticketing Queue + Cross Circulation	5,785		5,785	sf
Ticketing Circulation	1,034	905	1,939	sf
ATO'S	3,034		3,034	sf
Stair & Circulation To 2nd Level Admin Space		587	587	sf
Elevator		103	103	sf
Elevator Equipment Room		53	53	sf
Bag Screening And Makeup:				
Bag Screening	2,550		2,550	sf
Bag Makeup		14,403	14,403	sf
Secure Circulation	826	131	957	sf
Holdroom Addition		1,521	1,521	sf
Central Commons				
Landside Restrooms	1,815		1,815	sf
Janitor/Support	114		114	sf
Airport/Support	425		425	sf
Bag Conveyor Equipment Room	287		287	sf
Landside Concessions - FOH	915		915	sf
Landside Concessions - BOH	342		342	sf
General Circulation	7,466	463	7,929	sf
Meeter Greeter/Seating	449	639	1,088	sf
Vertical Circulation	671		671	sf
Additional Level 1 Spaces:				
Enclosed Stair (From Admin)		285	285	sf
Non-Public Restrooms	221		221	sf
TR/IT/Data	315		315	sf
Electrical		604	604	sf
Mechanical/Chase	87		87	sf
Support Spaces/Airport		211	211	sf
Vestibules	360	360	720	sf
Level 2				
Shell Space (Hold Room; Admin; Stairs)		17,542	17,542	sf
Central Commons				
General Circulation		481	481	sf
New Open Walkway/Balcony		1,987	1,987	sf
Additional Spaces				
Electrical Room		450	450	sf
Stair & Circulation To 2nd Level Admin Space		587	587	sf

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
Elevator		103	103	sf
Support		53	53	sf
Total Area	**27,930**	**41,468**	**69,398**	**sf**

DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
A SUBSTRUCTURE					
A10 Foundations					
A1010	Standard Foundations				
A1011	Column Foundations, Wall Foundations, Grade Beams, Foundation Wall	21,267	sf	$ 20.00	$ 425,340
A1012	Perimeter Drainage	21,267	sf	$ 0.50	$ 10,634
A1013	Dewatering	1	ls	$ 5,000.00	$ 5,000
A1014	Allowance for New Foundation in Existing Interior of Building	1	ls	$ 50,000.00	$ 50,000
A1030	Special Foundations				
A1031	New PBB Foundation	1	ea	$ 65,000.00	$ 65,000
A1032	New Fixed Bridge Foundation	1	ea	$ 25,000.00	$ 25,000
A1050	Slab on Grade				
A1051	5" Slab on Grade	6,864	sf	$ 6.50	$ 44,616
A1052	8" Slab on Grade	14,403	sf	$ 8.50	$ 122,426
A1053	Elevator and Escalator Pits	2	ea	$ 15,000.00	$ 30,000
A1054	Misc. Trenches, Pits & Bases	20	cy	$ 750.00	$ 14,769
A1055	Under-slab Drainage & Insulation	21,267	sf	$ 2.00	$ 42,534
Subtotal - Substructure					***$ 835,318***
B SHELL					
B10 Superstructure					
B1010	Floor Construction				
B1011	Steel Floor Structure (Allowance 23 lb/sf)	230	tns	$ 5,800.00	$ 1,333,333
B1012	Steel Floor Deck	19,990	sf	$ 6.00	$ 119,940
B1013	Miscellaneous Steel (5%)	11	tns	$ 6,200.00	$ 71,264
B1014	Concrete Fill to Steel Floor Deck	19,990	sf	$ 7.75	$ 154,923
B1015	Elevated Floor Slab Fireproofing	19,990	sf	$ 7.00	$ 139,930
B1016	Add Allowance for Misc. Steel Framing at Junction to Existing Floor Structure	1	alw	$ 25,000.00	$ 25,000

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION		QUANTITY	UNIT	UNIT COST	TOTAL
B1030	Roof Construction				
B1031	Steel Roof Structure (Allowance 18 lb/sf)	191	tns	$ 5,800.00	$ 1,110,137
B1032	Steel Roof Deck	21,267	sf	$ 5.35	$ 113,778
B1033	Miscellaneous Steel (5%)	10	tns	$ 6,200.00	$ 59,335
B1034	Roof Fireproofing	21,267	sf	$ 7.00	$ 148,869
B1035	Add Allowance for Misc. Steel Framing at Junction to Existing Floor Structure	1	alw	$ 50,000.00	$ 50,000
B1036	Allowance for Blast Protection				Excluded
B20 Exterior Closure					
B2010	Exterior Walls				
B2011	Metal Panel	1,370	sf	$ 45.00	$ 61,650
B2012	Back-up System to Metal Panel	1,370	sf	$ 20.00	$ 27,400
B2013	CMU	7,754	sf	$ 20.00	$ 155,080
B2014	Back-up System to CMU	7,754	sf	$ 10.00	$ 77,540
B2015	Parapet Detail	700	lf	$ 55.00	$ 38,500
B2030	Exterior Windows				
B2031	Curtain Wall	24,500	sf	$ 165.00	$ 4,042,500
B2050	Exterior Doors				
B2051	Exterior Doors	1	alw	$ 15,000.00	$ 15,000
B2052	Glass Door - Double (Vestibule)	4	pr	$ 12,500.00	$ 50,000
B30 Roofing					
B3010	Roof Coverings				
B3011	Membrane Roof Assembly	21,267	sf	$ 22.50	$ 478,508
B3012	Parapet Detail	700	lf	$ 50.00	$ 35,000
B3013	Patch & Repair Existing Roof Assembly	1	alw	$ 15,000.00	$ 15,000
B3030	Roof Openings				
B3031	Roof Hatch	2	alw	$ 2,500.00	$ 5,000
Subtotal - Shell					***$ 8,327,687***
C INTERIORS					
C10 Interior Construction					
C1010	Partitions				
C1011	Interior Partitions	69,398	sf	$ 2.50	$ 173,495
C1012	Rough Carpentry & Blocking	69,398	sf	$ 1.00	$ 69,398
C1013	Caulking, Sealants & Firestopping	69,398	sf	$ 1.25	$ 86,748

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
C1014 Misc. Metals, Bracing, Countertop Supports, Equipment Supports, etc.	69,398 sf		$ 1.00	$ 69,398
C1030 Interior Doors				
C1031 Interior Doors - Allowance			Incl. see	C3010
C1050 Specialties				
C1051 Fire Extinguishers & Cabinets	69,398 sf		$ 0.05	$ 3,470
C1052 Code Signage	69,398 sf		$ 0.25	$ 17,350
C1053 Interior Wayfinding Signage	69,398 sf		$ 3.50	$ 242,893
C1054 Miscellaneous Specialties	69,398 sf		$ 2.00	$ 138,796
C20 Stairs				
C2010 Stair Construction				
C2011 Stair - Public		4 flts	$ 45,000.00	$ 180,000
C2030 Stair Finishes				
C2031 Stair Tread & Landing Finishes - Public		4 flts	$ 15,000.00	$ 60,000
C2032 Stair Handrail & Balustrade Finishes - Public		4 flts	$ 3,800.00	$ 15,200
C30 Interior Finishes				
C3010 Interior Finishes				
C2011 *Level 1*				
C2012 Ticketing:				
C2013 Ticketing Counters	1,234 sf		$ 707.00	$ 872,438
C2014 Ticketing Queue + Cross Circulation	5,785 sf		$ 70.00	$ 404,950
C2015 Ticketing Circulation	1,939 sf		$ 70.00	$ 135,730
C2016 ATO'S	3,034 sf		$ 55.00	$ 166,870
C2017 Stair & Circulation To 2nd Level Admin Space	587 sf		$ 55.00	$ 32,285
C2018 Elevator	103 sf		$ 55.00	$ 5,665
C2019 Elevator Equipment Room	53 sf		$ 55.00	$ 2,915
C2020 Bag Screening And Makeup:				$ -
C2021 Bag Screening	2,550 sf		$ 35.00	$ 89,250
C2022 Bag Makeup	14,403 sf		$ 25.00	$ 360,075
C2023 Secure Circulation	957 sf		$ 75.00	$ 71,775
C2024 Holdroom Addition	1,521 sf		$ 85.00	$ 129,285
C2025 Central Commons				
C2026 Landside Restrooms	1,815 sf		$ 125.00	$ 226,875
C2027 Janitor/Support	114 sf		$ 45.00	$ 5,130
C2028 Airport/Support	425 sf		$ 55.00	$ 23,375
C2029 Bag Conveyor Equipment Room	287 sf		$ 45.00	$ 12,915
C2030 Landside Concessions - FOH	915 sf		$ 25.00	$ 22,875
C2031 Landside Concessions - BOH	342 sf		$ 25.00	$ 8,550

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
C2032 General Circulation	7,929 sf		$ 70.00	$ 555,030
C2033 Meeter Greeter/Seating	1,088 sf		$ 75.00	$ 81,600
C2034 Vertical Circulation	671 sf		$ 55.00	$ 36,905
C2035 Additional Level 1 Spaces:				
C2036 Enclosed Stair (From Admin)	285 sf		$ 55.00	$ 15,675
C2037 Non-Public Restrooms	221 sf		$ 125.00	$ 27,625
C2038 TR/IT/Data	315 sf		$ 45.00	$ 14,175
C2039 Electrical	604 sf		$ 45.00	$ 27,180
C2040 Mechanical/Chase	87 sf		$ 45.00	$ 3,915
C2041 Support Spaces/Airport	211 sf		$ 55.00	$ 11,605
C2042 Vestibules	720 sf		$ 90.00	$ 64,800
C2043 *Level 2*				
C2044 Shell Space (Hold Room; Admin; Stairs)	17,542 sf		$ 25.00	$ 438,550
C2045 Central Commons				
C2046 General Circulation	481 sf		$ 70.00	$ 33,670
C2047 New Open Walkway/Balcony	1,987 sf		$ 65.00	$ 129,155
C2048 Additional Spaces				
C2049 Electrical Room	450 sf		$ 45.00	$ 20,250
C2050 Stair & Circulation To 2nd Level Admin Spac	587 sf		$ 55.00	$ 32,285
C2051 Elevator	103 sf		$ 55.00	$ 5,665
C2052 Support	53 sf		$ 55.00	$ 2,915
Subtotal - Interiors				***$ 5,128,705***
D SERVICES				
D10 Conveying System				
D1010 Elevators & Lifts				
D1011 Elevators & Lifts		2 stp	$ 65,000.00	$ 130,000
D1020 Escalators & Moving Walks				
D1021 Escalators		1 ea	$ 350,000.00	$ 350,000
D1030 Baggage Handling Equipment				
D1031 Baggage Handling Equipment - Outbound (Swanson Link Estimated Costs)		1 ls	$ 1,759,000.00	$ 1,759,000
D20 Plumbing				
D2010 Plumbing Systems				
D2011 *Priority 1*				
D2012 Remolded Spaces	27,930 sf		$ 10.50	$ 293,265
D2013 New Construction	41,468 sf		$ 15.50	$ 642,754
D30 HVAC				
D3010 HVAC Systems				

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
D3011 Priority 1				
D3012 Remodeled Spaces	27,930 sf		$ 38.00	$ 1,061,340
D3013 New Construction	41,468 sf		$ 38.00	$ 1,575,784
D3014 Air Handling Unit & RTU Upgrades	69,398 sf		$ 7.50	$ 520,485
D3110 Controls and Instrumentation				
D3111 Controls and Instrumentation	69,398 sf		$ 7.50	$ 520,485
D3210 Systems Testing & Balancing				
D3211 Systems Testing & Balancing	69,398 sf		$ 1.85	$ 128,386
D40 Fire Protection				
D4010 Sprinkler Systems				
D4011 Priority 1				
D4012 Remodeled Spaces	27,930 sf		$ 3.50	$ 97,755
D4013 New Construction	41,468 sf		$ 7.75	$ 321,377
D50 Electrical				
D5010 Electrical Systems				
D5011 Electrical Infrastructure				
D5012 3000 Amp Service	1 ea		$ 1,025,500.00	$ 1,025,500
D5013 800 Amp Service	1 ea		$ 152,970.00	$ 152,970
D5014 2000kw Generator / Transfer Switch	1 ea		$ 1,610,000.00	$ 1,610,000
D5015 Electrical Demo, Existing Terminal	27,930 sf		$ 2.00	$ 55,860
D5016 Distribution Equipment	69,398 sf		$ 3.75	$ 260,243
D5017 Feeder Conduit & Wire	69,398 sf		$ 5.70	$ 395,569
D5018 Wiring Devices	69,398 sf		$ 6.25	$ 433,738
D5019 Equipment Power and Connection	69,398 sf		$ 2.25	$ 156,146
D5020 Exit Corridor Power	2 ea		$ 3,415.00	$ 6,830
D5021 Lighting and Controls	69,398 sf		$ 13.00	$ 902,174
D5022 Grounding and Lightning Protection	41,468 sf		$ 4.00	$ 165,872
D6010 Communications				
D6011 IDF Rooms	1 ea		$ 65,000.00	$ 65,000
D6012 Backbone Cabling IDF to Existing MTR	1 alw		$ 16,300.00	$ 16,300
D6013 Telephone, Radio, Wi-Fi	69,398 sf		$ 3.25	$ 225,544
D6014 EVIDS	69,398 sf		$ 5.50	$ 381,689
D6015 Public Address Systems	69,398 sf		$ 3.00	$ 208,194
D6016 Common Use System	69,398 sf		$ 2.70	$ 187,375
D7010 Electronic Safety & Security				
D7011 Access Control	69,398 sf		$ 4.00	$ 277,592
D7012 Video Surveillance System				
D7013 Cameras	69,398 sf		$ 3.00	$ 208,194
D7014 Workstations	2 ea		$ 10,500.00	$ 21,000

PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
D7015 Video Storage	1 alw		$ 35,000.00	$ 35,000
D7016 Fire Alarm	69,398 sf		$ 4.00	$ 277,592
Subtotal - Services				***$ 14,469,011***
E EQUIPMENT & FURNISHINGS				
E10 Equipment				
E1010 Equipment				
E1011 Concessions Equipment - Not in Scope				Excluded
E1012 Security Equipment - Not in Scope				Excluded
E1013 FIS Equipment - Not in Scope				Excluded
E1014 FIDS, BIDS, MUFIDS	69,398 sf		$ 2.00	$ 138,796
E1015 Dynamic Signage				Excluded
E1016 Misc. Equipment Allowance	69,398 sf		$ 0.50	$ 34,699
E1030 Passenger Boarding Bridges				
E1031 Relocate Existing PBB	1 ea		$ 150,000.00	$ 150,000
E1032 New Fix Passenger Boarding Bridge Extension	35 lf		$ 4,000.00	$ 140,000
E20 Furnishings				
E2010 Fixed Furnishings				
E2011 Misc. Casework Allowance	69,398 sf		$ 1.50	$ 104,097
Subtotal - Equipment & Furnishings				***$ 567,592***
F SPECIAL CONSTRUCTION & DEMOLITION				
F10 Special Construction				
F1010 Special Construction				
F1011 Basement Level MEP Rooms Allowance	1 alw		$ 50,000.00	$ 50,000
F20 Selective Building Demolition				
F2010 Building Elements Demolition				
F2011 Demolish Exterior Closure at Existing Building	11,301 sf		$ 15.00	$ 169,515
F2012 Selective Interiors Demolish - Existing Building	27,930 sf		$ 3.50	$ 97,755
F2013 Misc. Demolition	1 alw		$ 15,000.00	$ 15,000
F2014 Remove Debris to Dumpster	468 cy		$ 32.00	$ 14,976
F2015 Dumpster Pulls	16 ea		$ 350.00	$ 5,460
F2016 Dump Fees	468 cy		$ 50.00	$ 23,400

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION			REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
F30 Hazardous Material Abatement						
F3010	Hazardous Material Abatement					
	F3011	Hazardous Material Abatement				Excluded
Subtotal - Special Construction & Demolition						***$ 376,106***
G BUILDING SITEWORK						
G10 Site Preparation						
G1010	Civil General Requirements					
	G1011	Safety and Security	1 ls		$ 76,000.00	$ 76,000
		Temporary Construction Items & Erosion	1 ls		$ 49,700.00	$ 49,700
	G1012	Control				
	G1013	Drainage and Utility Allowance	1 ls		$ 36,700.00	$ 36,700
G1020	Site Demolition					
	G1021	Demo Existing Apron Paving	1,682 sy		$ 20.00	$ 33,640
	G1022	Demo Existing Concrete Walkway	1,720 sf		$ 1.50	$ 2,580
	G1023	Demo Existing Security Fencing	150 lf		$ 10.00	$ 1,500
	G1024	Demo Existing PBB	1 ea		$ 15,000.00	$ 15,000
G1030	Site Earthwork					
	G1031	Grading Building Footprint	0.6 ace		$ 3,500.00	$ 2,100
	G1032	Backfill - Apron Paving Areas to Make up Levels	1,682 cy		$ 35.00	$ 58,870
G20 Site Improvements						
G2010	Pavement					
	G2011	New Security Fencing	150 lf		$ 85.00	$ 12,750
	G2012	Allowance for Road and Parking, Walkway Alterations	1 ls		$ 15,000.00	$ 15,000
G2030	Site Development					
	G2031	New Sidewalk Canopy Expansion	3,050 sf		$ 450.00	$ 1,372,500
G30 Site Mechanical Utilities						
G3010	Site Mechanical Utilities					
	G3011	Site Mechanical Utilities - Allowance	1 alw		$ 10,000.00	$ 10,000
G40 Site Electrical Utilities						
G4010	Site Electrical Utilities					
	G4011	Site Electrical Utilities Allowance	1 alw		$ 765,000.00	$ 765,000

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PRIORITY 1a - TICKETING & BAGGAGE HANDLING

DETAIL

DESCRIPTION			REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
G4030	Site Lighting					
	G4031	Relocate Apron Lighting	2 ea		$ 25,000.00	$ 50,000
	G4032	Wall Packs, Canopy and Pole Lighting	1 alw		$ 105,000.00	$ 105,000
Subtotal - Building Sitework						***$ 2,606,340***
Subtotal					***$ 465.59***	***$ 32,310,758***
15.0%	Estimating Design Evolution					$ 4,846,614
Subtotal - Cost of Work					***$ 535.42***	***$ 37,157,372***
General Contractors Markups						
3.0%	Project Logistics & Labor Factor					$ 1,114,721
2.0%	General Requirements, Phasing & Temporary Construction					$ 765,442
8.0%	General Conditions					$ 3,123,003
3.0%	General Contractors Overhead & Profit					$ 1,264,816
2.0%	Insurance					$ 868,507
1.0%	Payment & Performance Bonds					$ 442,939
0.0%	Sustainability Requirements					$ -
Opinion of Probable Construction Cost					***$ 644.64***	***$ 44,736,800***
0.0%	Escalation					$ -
Opinion of Probable Project Cost					***$ 644.64***	***$ 44,736,800***

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Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		Revision	4
Original Date	2022-03-21	Revision Date	2022-04-28
Assumed Bid Opening Date		Connico PN	4886.21
Project Lead	CJN	Checked by	IDK

PRIORITY 1b - SECURITY CHECKPOINT

SUMMARY

	DESCRIPTION		COST PER SQUARE FOOT	TOTAL
A	**Substructure**		$ -	$ -
	Standard Foundations	$ -		
	Slab on Grade	$ -		
B	**Shell**		$ -	$ -
	Superstructure	$ -		
	Exterior Closure	$ -		
	Roofing	$ -		
C	**Interiors**		$ 72.97	$ 1,133,616
	Interior Construction	$ 179,441		
	Stairs	$ -		
	Interior Finishes	$ 954,175		
D	**Services**		$ 132.11	$ 2,052,512
	Conveying	$ -		
	Baggage Handling System	$ -		
	Plumbing	$ 114,195		
	HVAC	$ 852,150		
	Fire Protection	$ 85,448		
	Electrical	$ 515,328		
	Communications	$ 423,247		
	Electronic Safety & Security	$ 62,144		
E	**Equipment & Furnishings**		$ 4.00	$ 62,144
	Equipment	$ 38,840		
	Passenger Boarding Bridges	$ -		
	Furnishings	$ 23,304		
F	**Special Construction & Demolition**		$ 3.32	$ 51,573
	Special Construction	$ -		
	Selective Building Demolition	$ 51,573		
	Hazardous Material Abatement	$ -		
G	**Building Sitework**		$ -	$ -
	Site Preparation	$ -		
	Site Improvements	$ -		
	Site Mechanical Utilities	$ -		
	Site Electrical Utilities	$ -		
	Subtotal		***$ 212.40***	***$ 3,299,844***
15.0%	Estimating Design Evolution			$ 494,977

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PRIORITY 1b - SECURITY CHECKPOINT

SUMMARY

	DESCRIPTION	COST PER SQUARE FOOT	TOTAL
	Subtotal - Cost of Work	***$ 244.26***	***$ 3,794,821***
	General Contractors Markups		
3.0%	Project Logistics & Labor Factor		$ 113,845
2.0%	General Requirements, Phasing & Temporary Construction		$ 78,173
8.0%	General Conditions		$ 318,947
3.0%	General Contractors Overhead & Profit		$ 129,174
2.0%	Insurance		$ 88,699
1.0%	Payment & Performance Bonds		$ 45,237
0.0%	Sustainability Requirements		$ -
	Opinion of Probable Construction Cost	***$ 294.08***	***$ 4,568,895***
0.0%	Escalation		$ -
	Opinion of Probable Project Cost	***$ 294.08***	***$ 4,568,895***

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IDA IDAHO FALLS REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		Revision	4
Original Date	2022-03-21	Revision Date	2022-04-28
Assumed Bid Opening Date		Connico PN	4886.21
Project Lead	CJN	Checked by	IDK

PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
Terminal Renovation & Expansion				
Level 1				
Security Checkpoint				
SSCP Passenger Screening	4,475		4,475	sf
Private Screening Room	150		150	sf
Law Enforcement Office	221		221	sf
SSCP Queue	2,501		2,501	sf
Recomposure	910		910	sf
Arrivals Secure Exits / Circulation	1,650	108	1,758	sf
Vertical Circulation	750		750	sf
Level 2				
Administration (Finishes Only)		4,771	4,771	sf
Total Area	**10,657**	**4,879**	**15,536**	**sf**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
A SUBSTRUCTURE				
A10 Foundations				
A1010 Standard Foundations				
A1011 Standard Foundations				Not Required
A1050 Slab on Grade				
A1051 Slab on Grade				Not Required
Subtotal - Substructure				*$ -*
B SHELL				
B10 Superstructure				
B1010 Floor Construction				
B1011 Floor Construction				Not Required

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
B1030 Roof Construction				
B1031 Roof Construction				Not Required
B20 Exterior Closure				
B2010 Exterior Walls				
B2011 Exterior Walls				Not Required
B2030 Exterior Windows				
B2031 Curtain Wall				Not Required
B2050 Exterior Doors				
B2051 Exterior Doors				Not Required
B30 Roofing				
B3010 Roof Coverings				
B3011 Membrane Roof Assembly				Not Required
Subtotal - Shell				*$ -*
C INTERIORS				
C10 Interior Construction				
C1010 Partitions				
C1011 Interior Partitions	15,536	sf	$ 2.50	$ 38,840
C1012 Rough Carpentry & Blocking	15,536	sf	$ 1.00	$ 15,536
C1013 Caulking, Sealants & Firestopping	15,536	sf	$ 1.25	$ 19,420
C1014 Misc. Metals, Bracing, Countertop Supports, Equipment Supports, etc.	15,536	sf	$ 1.00	$ 15,536
C1030 Interior Doors				
C1031 Interior Doors - Allowance				Incl. see C3010
C1050 Specialties				
C1051 Fire Extinguishers & Cabinets	15,536	sf	$ 0.05	$ 777
C1052 Code Signage	15,536	sf	$ 0.25	$ 3,884
C1053 Interior Wayfinding Signage	15,536	sf	$ 3.50	$ 54,376
C1054 Miscellaneous Specialties	15,536	sf	$ 2.00	$ 31,072
C20 Stairs				
C2010 Stair Construction				
C2011 Stair Construction				Not Required

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION		REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
C30	**Interior Finishes**				
C3010	Interior Finishes				
C3011	*Level 1*				
C3012	Security Checkpoint				
C3013	SSCP Passenger Screening	4,475 sf		$ 55.00	$ 246,125
C3014	Private Screening Room	150 sf		$ 65.00	$ 9,750
C3015	Law Enforcement Office	221 sf		$ 55.00	$ 12,155
C3016	SSCP Queue	2,501 sf		$ 70.00	$ 175,070
C3017	Recomposure	910 sf		$ 65.00	$ 59,150
C3018	Arrivals Secure Exits / Circulation	1,758 sf		$ 70.00	$ 123,060
C3019	Vertical Circulation	750 sf		$ 25.00	18750
C3020	*Level 2*				
C3021	Administration (Finishes Only)	4,771 sf		$ 65.00	$ 310,115
	Subtotal - Interiors				***$ 1,133,616***
D	***SERVICES***				
D10	**Conveying System**				
D1010	Elevators & Lifts				
D1011	Elevators & Lifts				Not Required
D1020	Escalators & Moving Walks				
D1021	Escalators & Moving Walks				Not Required
D1030	Baggage Handling Equipment				
D1031	Baggage Handling Equipment				Not Required
D20	**Plumbing**				
D2010	Plumbing Systems				
D2011	*Level 1*				
D2012	Remodel Area	10,765 sf		$ 9.50	$ 102,268
D2013	*Level 2*				
D2014	Remodel Area	4,771 sf		$ 2.50	$ 11,928
D30	**HVAC**				
D3010	HVAC Systems				
D3011	*Level 1*				
D3012	Remodel Area	10,765 sf		$ 38.00	$ 409,070
D3013	*Level 2*				
D3014	Remodel Area	4,771 sf		$ 38.00	$ 181,298
D3015	Air Handling Unit & RTU Upgrades	15,536 sf		$ 7.50	$ 116,520

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION		REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
D3110	Controls and Instrumentation				
D3111	Controls and Instrumentation	15,536 sf		$ 7.50	$ 116,520
D3210	Systems Testing & Balancing				
D3211	Systems Testing & Balancing	15,536 sf		$ 1.85	$ 28,742
D40	**Fire Protection**				
D4010	Sprinkler Systems				
D4011	*Level 1*				
D4012	Remodel Area	10,765 sf		$ 5.50	$ 59,208
D4013	*Level 2*				
D4014	Remodel Area	4,771 sf		$ 5.50	$ 26,241
D50	**Electrical**				
D5010	Electrical Systems				
D5011	Electrical Demo, Existing Terminal	10,657 sf		$ 2.00	$ 21,314
D5012	Distribution Equipment	15,536 sf		$ 3.75	$ 58,260
D5013	Feeder Conduit & Wire	15,536 sf		$ 5.70	$ 88,555
D5014	Wiring Devices	15,536 sf		$ 6.25	$ 97,100
D5015	Equipment Power and Connection	15,536 sf		$ 2.25	$ 34,956
D5016	SSCP Equipment Power	1 ea		$ 13,175.00	$ 13,175
D5017	Lighting	15,536 sf		$ 13.00	$ 201,968
D6010	Communications				
D6011	TSA IDF Room	1 ea		$ 30,000.00	$ 30,000
D6012	Backbone Cabling TSA IDF to MTR	1 alw		$ 25,000.00	$ 25,000
D6013	Telephone, Radio, Wi-Fi	15,536 sf		$ 3.25	$ 50,492
D6014	EVIDS	15,536 sf		$ 5.50	$ 85,448
D6015	Public Address Systems	15,536 sf		$ 3.00	$ 46,608
D6016	SSCP Equipment Data Cabling	1 alw		$ 35,000.00	$ 35,000
D6017	Common Use System	15,536 sf		$ 2.70	$ 41,947
D7010	Electronic Safety & Security				
D7011	Access Control	15,536 sf		$ 4.00	$ 62,144
D7012	Video Surveillance System	15,536 sf		$ 3.00	$ 46,608
D7013	Fire Alarm	15,536 sf		$ 4.00	$ 62,144
	Subtotal - Services				***$ 2,052,512***
E	***EQUIPMENT & FURNISHINGS***				
E10	**Equipment**				
E1010	Equipment				

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
C30 Interior Finishes				
C3010 Interior Finishes				
C3011 *Level 1*				
C3012 Security Checkpoint				
C3013 SSCP Passenger Screening	4,475 sf		$ 55.00	$ 246,125
C3014 Private Screening Room	150 sf		$ 65.00	$ 9,750
C3015 Law Enforcement Office	221 sf		$ 55.00	$ 12,155
C3016 SSCP Queue	2,501 sf		$ 70.00	$ 175,070
C3017 Recomposure	910 sf		$ 65.00	$ 59,150
C3018 Arrivals Secure Exits / Circulation	1,758 sf		$ 70.00	$ 123,060
C3019 Vertical Circulation	750 sf		$ 25.00	18750
C3020 *Level 2*				
C3021 Administration (Finishes Only)	4,771 sf		$ 65.00	$ 310,115
Subtotal - Interiors				***$ 1,133,616***
D SERVICES				
D10 Conveying System				
D1010 Elevators & Lifts				
D1011 Elevators & Lifts				Not Required
D1020 Escalators & Moving Walks				
D1021 Escalators & Moving Walks				Not Required
D1030 Baggage Handling Equipment				
D1031 Baggage Handling Equipment				Not Required
D20 Plumbing				
D2010 Plumbing Systems				
D2011 *Level 1*				
D2012 Remodel Area	10,765 sf		$ 9.50	$ 102,268
D2013 *Level 2*				
D2014 Remodel Area	4,771 sf		$ 2.50	$ 11,928
D30 HVAC				
D3010 HVAC Systems				
D3011 *Level 1*				
D3012 Remodel Area	10,765 sf		$ 38.00	$ 409,070
D3013 *Level 2*				
D3014 Remodel Area	4,771 sf		$ 38.00	$ 181,298
D3015 Air Handling Unit & RTU Upgrades	15,536 sf		$ 7.50	$ 116,520

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
D3110 Controls and Instrumentation				
D3111 Controls and Instrumentation	15,536 sf		$ 7.50	$ 116,520
D3210 Systems Testing & Balancing				
D3211 Systems Testing & Balancing	15,536 sf		$ 1.85	$ 28,742
D40 Fire Protection				
D4010 Sprinkler Systems				
D4011 *Level 1*				
D4012 Remodel Area	10,765 sf		$ 5.50	$ 59,208
D4013 *Level 2*				
D4014 Remodel Area	4,771 sf		$ 5.50	$ 26,241
D50 Electrical				
D5010 Electrical Systems				
D5011 Electrical Demo, Existing Terminal	10,657 sf		$ 2.00	$ 21,314
D5012 Distribution Equipment	15,536 sf		$ 3.75	$ 58,260
D5013 Feeder Conduit & Wire	15,536 sf		$ 5.70	$ 88,555
D5014 Wiring Devices	15,536 sf		$ 6.25	$ 97,100
D5015 Equipment Power and Connection	15,536 sf		$ 2.25	$ 34,956
D5016 SSCP Equipment Power	1 ea		$ 13,175.00	$ 13,175
D5017 Lighting	15,536 sf		$ 13.00	$ 201,968
D6010 Communications				
D6011 TSA IDF Room	1 ea		$ 30,000.00	$ 30,000
D6012 Backbone Cabling TSA IDF to MTR	1 alw		$ 25,000.00	$ 25,000
D6013 Telephone, Radio, Wi-Fi	15,536 sf		$ 3.25	$ 50,492
D6014 EVIDS	15,536 sf		$ 5.50	$ 85,448
D6015 Public Address Systems	15,536 sf		$ 3.00	$ 46,608
D6016 SSCP Equipment Data Cabling	1 alw		$ 35,000.00	$ 35,000
D6017 Common Use System	15,536 sf		$ 2.70	$ 41,947
D7010 Electronic Safety & Security				
D7011 Access Control	15,536 sf		$ 4.00	$ 62,144
D7012 Video Surveillance System	15,536 sf		$ 3.00	$ 46,608
D7013 Fire Alarm	15,536 sf		$ 4.00	$ 62,144
Subtotal - Services				***$ 2,052,512***
E EQUIPMENT & FURNISHINGS				
E10 Equipment				
E1010 Equipment				

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
E1011 Concessions Equipment - Not in Scope				Excluded
E1012 Security Equipment - Not in Scope				Excluded
E1013 FIS Equipment - Not in Scope				Excluded
E1014 FIDS, BIDS, MUFIDS	15,536 sf		$ 2.00	$ 31,072
E1015 Dynamic Signage				Excluded
E1016 Misc. Equipment Allowance	15,536 sf		$ 0.50	$ 7,768
E1030 Passenger Boarding Bridges				
E1031 New Passenger Boarding Bridge				Not Required
E20 Furnishings				
E2010 Fixed Furnishings				
E2011 Misc. Casework Allowance	15,536 sf		$ 1.50	$ 23,304
Subtotal - Equipment & Furnishings				***$ 62,144***
F SPECIAL CONSTRUCTION & DEMOLITION				
F10 Special Construction				
F1010 Special Construction				
F1011 Special Construction				Not Required
F20 Selective Building Demolition				
F2010 Building Elements Demolition				
F2011 Selective Interiors Demolish - Existing Building	10,657 sf		$ 3.50	$ 37,300
F2012 Misc. Demolition	1 alw		$ 5,000.00	$ 5,000
F2013 Remove Debris to Dumpster	99 cy		$ 32.00	$ 3,168
F2014 Dumpster Pulls	3 ea		$ 350.00	$ 1,155
F2015 Dump Fees	99 cy		$ 50.00	$ 4,950
F30 Hazardous Material Abatement				
F3010 Hazardous Material Abatement				
F3011 Hazardous Material Abatement				Excluded
Subtotal - Special Construction & Demolition				***$ 51,573***
G BUILDING SITEWORK				
G10 Site Preparation				
G1010 Civil General Requirements				
G1011 Civil General Requirements				Not Required
G1020 Site Demolition				

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
G1021 Site Demolition				Not Required
G1030 Site Earthwork				
G1031 Site Earthwork				Not Required
G20 Site Improvements				
G2010 Pavement				
G2011 Pavement				Not Required
G2030 Site Development				
G2031 Site Development				Not Required
G30 Site Mechanical Utilities				
G3010 Site Mechanical Utilities				
G3011 Site Mechanical Utilities				None Required
G40 Site Electrical Utilities				
G4010 Site Electrical Utilities				
G4011 Site Electrical Utilities				None Required
G4030 Site Lighting				
G4031 Site Lighting				None Required
Subtotal - Building Sitework				***$ -***
Subtotal			***$ 212.40***	***$ 3,299,844***
15.0% Estimating Design Evolution				$ 494,977
Subtotal - Cost of Work			***$ 244.26***	***$ 3,794,821***

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PRIORITY 1b - SECURITY CHECKPOINT

DETAIL

DESCRIPTION		REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
General Contractors Markups					
3.0%	Project Logistics & Labor Factor				$ 113,845
2.0%	General Requirements, Phasing & Temporary Construction				$ 78,173
8.0%	General Conditions				$ 318,947
3.0%	General Contractors Overhead & Profit				$ 129,174
2.0%	Insurance				$ 88,699
1.0%	Payment & Performance Bonds				$ 45,237
0.0%	Sustainability Requirements				$ -
Opinion of Probable Construction Cost				*$ 294.08*	*$ 4,568,895*
0.0%	Escalation				$ -
Opinion of Probable Project Cost				*$ 294.08*	*$ 4,568,895*

Connico
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IDA
IDAHO FALLS
REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		Revision	4
Original Date	2022-03-21	Revision Date	2022-04-28
Assumed Bid		Connico PN	4886.21
Opening Date			
Project Lead	CJN	Checked by	IDK

PRIORITY 2 - AIRSIDE HOLDROOM AREA

SUMMARY

	DESCRIPTION		COST PER SQUARE FOOT	TOTAL
A	**Substructure**		$ 5.08	$ 189,648
	Standard Foundations	$ 86,362		
	Special Foundations	$ 65,000		
	Slab on Grade	$ 38,286		
B	**Shell**		$ -	$ -
	Superstructure	$ -		
	Exterior Closure	$ -		
	Roofing	$ -		
C	**Interiors**		$ 84.82	$ 3,164,915
	Interior Construction	$ 430,965		
	Stairs	$ -		
	Interior Finishes	$ 2,733,950		
D	**Services**		$ 147.76	$ 5,513,317
	Conveying	$ -		
	Baggage Handling System	$ -		
	Plumbing	$ 556,710		
	HVAC	$ 2,528,866		
	Fire Protection	$ 205,222		
	Electrical	$ 1,272,903		
	Communications	$ 539,173		
	Electronic Safety & Security	$ 410,443		
E	**Equipment & Furnishings**		$ 30.80	$ 1,149,252
	Equipment	$ 93,283		
	Passenger Boarding Bridges	$ 1,000,000		
	Furnishings	$ 55,970		
F	**Special Construction & Demolition**		$ 3.60	$ 134,370
	Special Construction	$ -		
	Selective Building Demolition	$ 134,370		
	Hazardous Material Abatement	$ -		
G	**Building Sitework**		$ 1.19	$ 44,450
	Site Preparation	$ 41,950		
	Site Improvements	$ -		
	Site Mechanical Utilities	$ 2,500		
	Site Electrical Utilities	$ -		
	Subtotal		*$ 273.25*	*$ 10,195,951*
15.0%	Estimating Design Evolution			$ 1,529,393

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

SUMMARY

DESCRIPTION	COST PER SQUARE FOOT	TOTAL
Subtotal - Cost of Work	*$ 314.24*	*$ 11,725,344*
General Contractors Markups		
3.0% Project Logistics & Labor Factor		$ 351,760
2.0% General Requirements, Phasing & Temporary Construction		$ 241,542
8.0% General Conditions		$ 985,492
3.0% General Contractors Overhead & Profit		$ 399,124
2.0% Insurance		$ 274,065
1.0% Payment & Performance Bonds		$ 139,773
0.0% Sustainability Requirements		$ -
Opinion of Probable Construction Cost	*$ 378.34*	*$ 14,117,101*
0.0% Escalation		$ -
Opinion of Probable Project Cost	*$ 378.34*	*$ 14,117,101*

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IDA IDAHO FALLS REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		**Revision**	4
Original Date	2022-03-21	**Revision Date**	2022-04-28
Assumed Bid Opening Date		**Connico PN**	4886.21
Project Lead	CJN	**Checked by**	IDK

PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
Terminal Renovation & Expansion				
Level 1				
Gate Hold Rooms	2,594	367	2,961	sf
Hold Room Circulation	1,779		1,779	sf
Airside Concessions - FOH	1,531		1,531	sf
Airside Concessions - BOH	264		264	sf
Airside Restrooms + Amenities	1,887		1,887	sf
Janitor/Support	773		773	sf
Vertical Circulation	335		335	sf
Level 2				
Gate Hold Rooms	7,345	4,532	11,877	sf
Hold Room Circulation	2,056	5,702	7,758	sf
Concessions		1,938	1,938	sf
Support		2,442	2,442	sf
Vertical Circulation		612	612	sf
Airside Concessions - BOH	769		769	sf
Airside Restrooms	1,790		1,790	sf
Airside Mother's Room, SARA	489		489	sf
Janitor/Support	108		108	sf
Total Area	**21,720**	**15,593**	**37,313**	**sf**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
A SUBSTRUCTURE				
A10 Foundations				
A1010 Standard Foundations				
A1011 Column Foundations, Wall Foundations, Grade Beams, Foundation Wall	4,164	sf	$ 20.00	$ 83,280
A1012 Perimeter Drainage	4,164	sf	$ 0.50	$ 2,082
A1013 Dewatering	1	ls	$ 1,000.00	$ 1,000
A1030 Special Foundations				
A1031 PBB Foundation	1	ea	$ 65,000.00	$ 65,000

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
A1050 Slab on Grade				
A1051 5" Slab on Grade	4,164 sf	$	6.50	$ 27,066
A1052 Elevator and Escalator Pits				Not Required
A1053 Misc. Trenches, Pits & Bases	4 cy	$	750.00	$ 2,892
A1054 Under-slab Drainage & Insulation	4,164 sf	$	2.00	$ 8,328
Subtotal - Substructure				***$ 189,648***
B SHELL				
B10 Superstructure				
B1010 Floor Construction				
B1011 Floor Construction				Not Required
B1030 Roof Construction				
B1031 Roof Construction				Not Required
B20 Exterior Closure				
B2010 Exterior Walls				
B2011 Metal Panel - Walkway				Not Required
B2030 Exterior Windows				
B2031 Exterior Windows				Not Required
B2050 Exterior Doors				
B2051 Exterior Doors				Not Required
B30 Roofing				
B3010 Roof Coverings				
B3011 Roof Coverings				Not Required
B3030 Roof Openings				
B3031 Roof Hatch				Not Required
Subtotal - Shell				***$ -***
C INTERIORS				
C10 Interior Construction				
C1010 Partitions				
C1011 Interior Partitions	37,313 sf	$	2.50	$ 93,283

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
C1012 Rough Carpentry & Blocking	37,313 sf	$	1.00	$ 37,313
C1013 Caulking, Sealants & Firestopping	37,313 sf	$	1.25	$ 46,641
C1014 Misc. Metals, Bracing, Countertop Supports, Equipment Supports, etc.	37,313 sf	$	1.00	$ 37,313
C1030 Interior Doors				
C1031 Interior Doors - Allowance				Incl. see C3010
C1050 Specialties				
C1051 Fire Extinguishers & Cabinets	37,313 sf	$	0.05	$ 1,866
C1052 Code Signage	37,313 sf	$	0.25	$ 9,328
C1053 Interior Wayfinding Signage	37,313 sf	$	3.50	$ 130,596
C1054 Miscellaneous Specialties	37,313 sf	$	2.00	$ 74,626
C20 Stairs				
C2010 Stair Construction				
C2011 Stair - Public				Not Required
C30 Interior Finishes				
C3010 Interior Finishes				
C3011 *Level 1*				
C3012 Gate Hold Rooms	2,961 sf	$	85.00	$ 251,685
C3013 Hold Room Circulation	1,779 sf	$	80.00	$ 142,320
C3014 Airside Concessions - FOH	1,531 sf	$	25.00	$ 38,275
C3015 Airside Concessions - BOH	264 sf	$	45.00	$ 11,880
C3016 Airside Restrooms + Amenities	1,887 sf	$	125.00	$ 235,875
C3017 Janitor/Support	773 sf	$	45.00	$ 34,785
C3018 Vertical Circulation	335 sf	$	25.00	$ 8,375
C3019 *Level 2*				
C3020 Gate Hold Rooms	11,877 sf	$	85.00	$ 1,009,545
C3021 Hold Room Circulation	7,758 sf	$	70.00	$ 543,060
C3022 Concessions	1,938 sf	$	25.00	$ 48,450
C3023 Support	2,442 sf	$	45.00	$ 109,890
C3024 Vertical Circulation	612 sf	$	25.00	$ 15,300
C3025 Airside Concessions - BOH	769 sf	$	25.00	$ 19,225
C3026 Airside Restrooms	1,790 sf	$	125.00	$ 223,750
C3027 Airside Mother's Room, SARA	489 sf	$	75.00	$ 36,675
C3028 Janitor/Support	108 sf	$	45.00	$ 4,860
Subtotal - Interiors				***$ 3,164,915***
D SERVICES				
D10 Conveying System				
D1010 Elevators & Lifts				

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

	DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
	D1011 Elevators & Lifts				Existing
D1020	Escalators & Moving Walks				
	D1021 Escalators				Existing
D1030	Baggage Handling Equipment				
	D1031 Baggage Handling Equipment				Not Required
D20	**Plumbing**				
D2010	Plumbing Systems				
	D2011 *Level 1*				
	D2012 Remodel Area	9,530 sf		$ 14.25	$ 135,803
	D2013 *Level 2*				
	D2014 Remodel Area	27,783 sf		$ 14.25	$ 395,908
	D2015 *Central Plant Upgrades*				
	D2016 Domestic Hot Water Boilers and Accessories; Nat Gas	1 ls		$ 25,000.00	$ 25,000
D30	**HVAC**				
D3010	HVAC Systems				
	D3011 *Level 1*				
	D3012 Remodel Area	9,530 sf		$ 38.00	$ 362,140
	D3013 *Level 2*				
	D3014 Remodel Area	27,783 sf		$ 38.00	$ 1,055,754
	D3015 Air Handling Unit & RTU Upgrades	37,313 sf		$ 9.50	$ 354,474
	D3016 *Central Plant Demo*				
	D3017 Disconnect and Remove Existing Boiler, Chiller & Accessories	1 ea		$ 17,000.00	$ 17,000
	D3018 Extract and Dispose of Chiller Refrigerant	1 ls		$ 5,000.00	$ 5,000
	D3019 Demo Existing Piping, Valves etc in Central Mechanical Room	1 ls		$ 7,500.00	$ 7,500
	D3020 *Central Plant Upgrades*				
	D3021 New Screw Chillers; 75 tons	2 ea		$ 66,375.00	$ 132,750
	D3022 Chiller Accessories; Expansion Tanks, Air Separator etc.	1 ls		$ 25,000.00	$ 25,000
	D3023 Heating Hot Water Boilers; 1500MBH	2 ea		$ 27,500.00	$ 55,000
	D3024 Boiler Accessories; Expansion Tanks, Chemical Treatment etc.	1 ls		$ 15,000.00	$ 15,000
	D3025 Piping Modifications in Mechanical Rm	1 ls		$ 75,000.00	$ 75,000
D3110	Controls and Instrumentation				
	D3111 Controls and Instrumentation	37,313 sf		$ 9.52	$ 355,220
D3210	Systems Testing & Balancing				
	D3211 Systems Testing & Balancing	37,313 sf		$ 1.85	$ 69,029

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

	DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
D40	**Fire Protection**				
D4010	Sprinkler Systems				
	D4011 *Level 1*				
	D4012 Remodel Area	9,530 sf		$ 5.50	$ 52,415
	D4013 *Level 2*				
	D4014 Remodel Area	27,783 sf		$ 5.50	$ 152,807
D50	**Electrical**				
D5010	Electrical Systems				
	D5011 Electrical Demo, Existing Terminal	21,720 sf		$ 2.00	$ 43,440
	D5012 Distribution Equipment	37,313 sf		$ 3.75	$ 139,924
	D5013 Feeder Conduit & Wire	37,313 sf		$ 5.70	$ 212,684
	D5014 Wiring Devices	37,313 sf		$ 6.25	$ 233,206
	D5015 Equipment Power and Connection	37,313 sf		$ 4.25	$ 158,580
	D5016 Lighting	37,313 sf		$ 13.00	$ 485,069
D6010	Communications				
	D6011 MDF/IDF Rooms				Not Required
	D6012 Backbone Cabling				Not Required
	D6013 Telephone, Radio, Wi-Fi	37,313 sf		$ 3.25	$ 121,267
	D6014 EVIDS	37,313 sf		$ 5.50	$ 205,222
	D6015 Public Address Systems	37,313 sf		$ 3.00	$ 111,939
	D6016 Common Use System	37,313 sf		$ 2.70	$ 100,745
D7010	Electronic Safety & Security				
	D7011 Access Control	37,313 sf		$ 4.00	$ 149,252
	D7012 Video Surveillance System	37,313 sf		$ 3.00	$ 111,939
	D7013 Fire Alarm	37,313 sf		$ 4.00	$ 149,252
	Subtotal - Services				***$ 5,513,317***
E	***EQUIPMENT & FURNISHINGS***				
E10	**Equipment**				
E1010	Equipment				
	E1011 Concessions Equipment - Not in Scope				Excluded
	E1012 Security Equipment - Not in Scope				Excluded
	E1013 FIS Equipment - Not in Scope				Excluded
	E1014 FIDS, BIDS, MUFIDS	37,313 sf		$ 2.00	$ 74,626
	E1015 Dynamic Signage				Excluded
	E1016 Misc. Equipment Allowance	37,313 sf		$ 0.50	$ 18,657
E1030	Passenger Boarding Bridges				

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
E1031 New Passenger Boarding Bridge	1 ea		$ 1,000,000.00	$ 1,000,000
E20 Furnishings				
E2010 Fixed Furnishings				
E2011 Misc. Casework Allowance	37,313 sf		$ 1.50	$ 55,970
Subtotal - Equipment & Furnishings				*$ 1,149,252*
F SPECIAL CONSTRUCTION & DEMOLITION				
F10 Special Construction				
F1010 Special Construction				
F1011 Special Construction				Not Required
F20 Selective Building Demolition				
F2010 Building Elements Demolition				
F2011 Demolish Exterior Closure at Existing Building	1,460 sf		$ 15.00	$ 21,900
F2012 Selective Interiors Demolish - Existing Building	21,720 sf		$ 3.50	$ 76,020
F2013 Misc. Demolition	1 alw		$ 15,000.00	$ 15,000
F2014 Remove Debris to Dumpster	229 cy		$ 32.00	$ 7,328
F2015 Dumpster Pulls	8 ea		$ 350.00	$ 2,672
F2016 Dump Fees	229 cy		$ 50.00	$ 11,450
F30 Hazardous Material Abatement				
F3010 Hazardous Material Abatement				
F3011 Hazardous Material Abatement				Excluded
Subtotal - Special Construction & Demolition				*$ 134,370*
G BUILDING SITEWORK				
G10 Site Preparation				
G1010 Civil General Requirements				
G1011 Safety and Security	1 ls		$ 1,300.00	$ 1,300
G1012 Temporary Construction Items & Erosion	1 ls		$ 900.00	$ 900
G1013 Drainage and Utility Allowance	1 ls		$ 700.00	$ 700
G1020 Site Demolition				
G1021 Demo Existing Apron Paving	463 sy		$ 20.00	$ 9,253
G1022 Demo Existing Asphalt Paving	2,850 sf		$ 1.50	$ 4,275
G1023 Demo Existing Security Fencing	100 lf		$ 10.00	$ 1,000

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
G1030 Site Earthwork				
G1031 Grading Building Footprint	4,164 sf		$ 2.00	$ 8,328
G1032 Backfill - Apron Paving Areas to Make up Levels	463 cy		$ 35.00	$ 16,193
G20 Site Improvements				
G2010 Pavement				
G2011 Pavement				Not Required
G2030 Site Development				
G2031 Site Development				Not Required
G30 Site Mechanical Utilities				
G3010 Site Mechanical Utilities				
G3011 Site Mechanical Utilities - Allowance		1 alw	$ 2,500.00	$ 2,500
G40 Site Electrical Utilities				
G4010 Site Electrical Utilities				
G4011 Site Electrical Utilities				Not Required
G4030 Site Lighting				
G4031 Site Lighting				Not Required
Subtotal - Building Sitework				*$ 44,450*
Subtotal			*$ 273.25*	*$ 10,195,951*
15.0% Estimating Design Evolution				$ 1,529,393
Subtotal - Cost of Work			*$ 314.24*	*$ 11,725,344*

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PRIORITY 2 - AIRSIDE HOLDROOM AREA

DETAIL

DESCRIPTION		REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
General Contractors Markups					
3.0%	Project Logistics & Labor Factor				$ 351,760
2.0%	General Requirements, Phasing & Temporary Construction				$ 241,542
8.0%	General Conditions				$ 985,492
3.0%	General Contractors Overhead & Profit				$ 399,124
2.0%	Insurance				$ 274,065
1.0%	Payment & Performance Bonds				$ 139,773
0.0%	Sustainability Requirements				$ -
Opinion of Probable Construction Cost				*$ 378.34*	*$ 14,117,101*
0.0%	Escalation				$ -
Opinion of Probable Project Cost				*$ 378.34*	*$ 14,117,101*

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IDA
IDAHO FALLS
REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliiance		
Client Project No.		**Revision**	4
Original Date	2022-03-21	**Revision Date**	2022-04-28
Assumed Bid Opening Date		**Connico PN**	4886.21
Project Lead	CJN	**Checked by**	IDK

PRIORITY 3 - BAGGAGE HANDLING.

SUMMARY

	DESCRIPTION		COST PER SQUARE FOOT	TOTAL
A	**Substructure**		$ 9.74	$ 184,560
	Standard Foundations	$ 120,080		
	Slab on Grade	$ 64,480		
B	**Shell**		$ 54.78	$ 1,037,653
	Superstructure	$ 387,878		
	Exterior Closure	$ 454,825		
	Roofing	$ 194,950		
C	**Interiors**		$ 73.70	$ 1,396,052
	Interior Construction	$ 218,792		
	Stairs	$ -		
	Interior Finishes	$ 1,177,260		
D	**Services**		$ 225.76	$ 4,276,556
	Conveying	$ -		
	Baggage Handling System	$ 1,150,000		
	Plumbing	$ 179,959		
	HVAC	$ 1,001,138		
	Fire Protection	$ 104,187		
	Electrical	$ 1,159,174		
	Communications	$ 473,726		
	Electronic Safety & Security	$ 208,373		
E	**Equipment & Furnishings**		$ 4.00	$ 75,772
	Equipment	$ 47,358		
	Passenger Boarding Bridges	$ -		
	Furnishings	$ 28,415		
F	**Special Construction & Demolition**		$ 8.76	$ 165,912
	Special Construction	$ -		
	Selective Building Demolition	$ 165,912		
	Hazardous Material Abatement	$ -		
G	**Building Sitework**		$ 47.30	$ 896,060
	Site Preparation	$ 76,060		
	Site Improvements	$ -		
	Site Mechanical Utilities	$ 10,000		
	Site Electrical Utilities	$ 810,000		
	Subtotal		*$ 424.04*	*$ 8,032,565*
15.0%	Estimating Design Evolution			$ 1,204,885

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PRIORITY 3 - BAGGAGE HANDLING.

SUMMARY

DESCRIPTION	COST PER SQUARE FOOT	TOTAL
Subtotal - Cost of Work	$ 487.64	$ 9,237,450
General Contractors Markups		
3.0% Project Logistics & Labor Factor		$ 277,123
2.0% General Requirements, Phasing & Temporary Construction		$ 190,291
8.0% General Conditions		$ 776,389
3.0% General Contractors Overhead & Profit		$ 314,438
2.0% Insurance		$ 215,914
1.0% Payment & Performance Bonds		$ 110,116
0.0% Sustainability Requirements		$ -
Opinion of Probable Construction Cost	$ 587.12	$ 11,121,721
0.0% Escalation		$ -
Opinion of Probable Project Cost	$ 587.12	$ 11,121,721

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IDA IDAHO FALLS REGIONAL AIRPORT

Project Title	Terminal Expansion Project		
Location	Idaho Falls Regional Airport		
Submittal Stage	Concept Design		
Client Name	Alliance		
Client Project No.		Revision	4
Original Date	2022-03-21	Revision Date	2022-04-28
Assumed Bid Opening Date		Connico PN	4886.21
Project Lead	CJN	Checked by	IDK

PRIORITY 3 - BAGGAGE HANDLING.

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
Terminal Renovation & Expansion				
Level 1				
Hold Rooms		4,167	4,167	sf
TSA Break Area	1,465		1,465	sf
Bag Claim				
Bag Claim And Claim Circulation	6,340		6,340	sf
Rental Car Counters	562		562	sf
Rental Car Queue	481		481	sf
MDF		107	107	sf
Baggage Laydown				
Bag Laydown Area	4,148	966	5,114	sf
Ramps From Grade To Raised Level		520	520	sf
Existing Stair To Basement	187		187	sf
Total Area	**13,183**	**5,760**	**18,943**	**sf**

DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL
A SUBSTRUCTURE				
A10 Foundations				
A1010 Standard Foundations				
A1011 Column Foundations, Wall Foundations, Grade Beams, Foundation Wall	5,760	sf	$ 20.00	$ 115,200
A1012 Perimeter Drainage	5,760	sf	$ 0.50	$ 2,880
A1013 Dewatering	1	ls	$ 2,000.00	$ 2,000
A1050 Slab on Grade				
A1051 8" Slab on Grade	5,760	sf	$ 8.50	$ 48,960
A1052 Elevator and Escalator Pits				Not Required
A1053 Misc. Trenches, Pits & Bases	5	cy	$ 750.00	$ 4,000
A1054 Under-slab Drainage & Insulation	5,760	sf	$ 2.00	$ 11,520
Subtotal - Substructure				*$ 184,560*
B SHELL				

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PRIORITY 3 - BAGGAGE HANDLING.

DETAIL

	DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
B10	**Superstructure**				
B1030	Roof Construction				
B1031	Steel Roof Structure (Allowance 18 lb/sf)	52 tns		$ 5,800.00	$ 300,672
B1032	Steel Roof Deck	5,760 sf		$ 5.35	$ 30,816
B1033	Miscellaneous Steel (5%)	3 tns		$ 6,200.00	$ 16,070
B1034	Roof Fireproofing	5,760 sf		$ 7.00	$ 40,320
B1035	Allowance for Blast Protection				Excluded
B20	**Exterior Closure**				
B2010	Exterior Walls				
B2011	CMU	3,593 sf		$ 20.00	$ 71,860
B2012	Back-up System to CMU	3,593 sf		$ 10.00	$ 35,930
B2013	Parapet Detail	307 lf		$ 55.00	$ 16,885
B2030	Exterior Windows				
B2031	Curtain Wall	1,910 sf		$ 165.00	$ 315,150
B2050	Exterior Doors				
B2051	Exterior Doors	1 alw		$ 15,000.00	$ 15,000
B30	**Roofing**				
B3010	Roof Coverings				
B3011	Membrane Roof Assembly	5,760 sf		$ 22.50	$ 129,600
B3012	Parapet Detail	307 lf		$ 50.00	$ 15,350
B3013	Patch & Repair Existing Roof Assembly	1 alw		$ 50,000.00	$ 50,000
B3030	Roof Openings				
B3031	Roof Hatch				Not Required
	Subtotal - Shell				***$ 1,037,653***
C	***INTERIORS***				
C10	**Interior Construction**				
C1010	Partitions				
C1011	Interior Partitions	18,943 sf		$ 2.50	$ 47,358
C1012	Rough Carpentry & Blocking	18,943 sf		$ 1.00	$ 18,943
C1013	Caulking, Sealants & Firestopping	18,943 sf		$ 1.25	$ 23,679
C1014	Misc. Metals, Bracing, Countertop Supports, Equipment Supports, etc.	18,943 sf		$ 1.00	$ 18,943
C1030	Interior Doors				
C1031	Interior Doors - Allowance				Incl. see C3010

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PRIORITY 3 - BAGGAGE HANDLING.

DETAIL

	DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
C1050	Specialties				
C1051	Fire Extinguishers & Cabinets	18,943 sf		$ 0.05	$ 947
C1052	Code Signage	18,943 sf		$ 0.25	$ 4,736
C1053	Interior Wayfinding Signage	18,943 sf		$ 3.50	$ 66,301
C1054	Miscellaneous Specialties	18,943 sf		$ 2.00	$ 37,886
C20	**Stairs**				
C2010	Stair Construction				
C2011	Stairs				Existing
C30	**Interior Finishes**				
C3010	Interior Finishes				
C3011	*Level 1*				
C3012	Hold Rooms	4,167 sf		$ 85.00	$ 354,195
C3013	TSA Break Area	1,465 sf		$ 65.00	$ 95,225
C3014	Bag Claim				
C3015	Bag Claim And Claim Circulation	6,340 sf		$ 65.00	$ 412,100
C3016	Rental Car Counters	562 sf		$ 65.00	$ 36,530
C3017	Rental Car Queue	481 sf		$ 65.00	$ 31,265
C3018	MDF	107 sf		$ 45.00	$ 4,815
C3019	Baggage Laydown				
C3020	Bag Laydown Area	5,114 sf		$ 45.00	230130
C3021	Ramps From Grade To Raised Level	520 sf		$ 25.00	$ 13,000
C3022	Existing Stair To Basement	187 sf			Existing
	Subtotal - Interiors				***$ 1,396,052***
D	***SERVICES***				
D10	**Conveying System**				
D1010	Elevators & Lifts				
D1011	Elevators & Lifts				Existing
D1020	Escalators & Moving Walks				
D1021	Escalators				Existing
D1030	Baggage Handling Equipment				
D1031	Baggage Handling Equipment - Inbound (Swanson Link Estimated Costs)	1 ls		$ 1,150,000.00	$ 1,150,000
D20	**Plumbing**				
D2010	Plumbing Systems				

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PRIORITY 3 - BAGGAGE HANDLING.

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
D2011 *Level 1*				
D2012 New & Remodel Areas	18,943 sf		$ 9.50	$ 179,959
D30 HVAC				
D3010 HVAC Systems				
D3011 *Level 1*				
D3012 New & Remodel Areas	18,943 sf		$ 38.00	$ 719,834
D3013 Air Handling Unit & RTU Upgrades	18,943 sf		$ 5.50	$ 104,187
D3110 Controls and Instrumentation				
D3111 Controls and Instrumentation	18,943 sf		$ 7.50	$ 142,073
D3210 Systems Testing & Balancing				
D3211 Systems Testing & Balancing	18,943 sf		$ 1.85	$ 35,045
D40 Fire Protection				
D4010 Sprinkler Systems				
D4011 *Level 1*				
D4012 New & Remodel Areas	18,943 sf		$ 5.50	$ 104,187
D50 Electrical				
D5010 Electrical Systems				
D5011 Electrical Infrastructure				
D5012 2000 Amp Service	1 ea		$ 650,400.00	$ 650,400
D5013 Electrical Demo, Existing Terminal	13,183 sf		$ 2.00	$ 26,366
D5014 Wiring Devices	18,943 sf		$ 9.00	$ 170,487
D5015 Equipment Power and Connection	18,943 sf		$ 2.25	$ 42,622
D5016 Lighting	18,943 sf		$ 13.00	$ 246,259
D5017 Grounding and Lightning Protection	5,760 sf		$ 4.00	$ 23,040
D6010 Communications				
D6011 MDF Room	1 ea		$ 65,000.00	$ 65,000
D6012 Backbone Cabling TSA IDF to MTR	1 alw		$ 135,000.00	$ 135,000
D6013 Telephone, Radio, Wi-Fi	18,943 sf		$ 3.25	$ 61,565
D6014 EVIDS	18,943 sf		$ 5.50	$ 104,187
D6015 Public Address Systems	18,943 sf		$ 3.00	$ 56,829
D6016 Common Use System	18,943 sf		$ 2.70	$ 51,146
D7010 Electronic Safety & Security				
D7011 Access Control	18,943 sf		$ 4.00	$ 75,772
D7012 Video Surveillance System	18,943 sf		$ 3.00	$ 56,829
D7013 Fire Alarm	18,943 sf		$ 4.00	$ 75,772

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PRIORITY 3 - BAGGAGE HANDLING.

DETAIL

DESCRIPTION	REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
Subtotal - Services				***$ 4,276,556***
E EQUIPMENT & FURNISHINGS				
E10 Equipment				
E1010 Equipment				
E1011 Concessions Equipment - Not in Scope				Excluded
E1012 Security Equipment - Not in Scope				Excluded
E1013 FIS Equipment - Not in Scope				Excluded
E1014 FIDS, BIDS, MUFIDS	18,943 sf		$ 2.00	$ 37,886
E1015 Dynamic Signage				Excluded
E1016 Misc. Equipment Allowance	18,943 sf		$ 0.50	$ 9,472
E1030 Passenger Boarding Bridges				
E1031 New Passenger Boarding Bridge				Not Required
E20 Furnishings				
E2010 Fixed Furnishings				
E2011 Misc. Casework Allowance	18,943 sf		$ 1.50	$ 28,415
Subtotal - Equipment & Furnishings				***$ 75,772***
F SPECIAL CONSTRUCTION & DEMOLITION				
F10 Special Construction				
F1010 Special Construction				
F1011 Special Construction				Not Required
F20 Selective Building Demolition				
F2010 Building Elements Demolition				
F2011 Demolish Exterior Closure at Existing Building	5,261 sf		$ 15.00	$ 78,915
F2012 Selective Interiors Demolish - Existing Building	13,183 sf		$ 3.50	$ 46,141
F2013 Demolish Portion of Existing Building	105 sf		$ 50.00	$ 5,250
F2014 Misc. Demolition	1 alw		$ 15,000.00	$ 15,000
F2015 Remove Debris to Dumpster	220 cy		$ 32.00	$ 7,040
F2016 Dumpster Pulls	7 ea		$ 350.00	$ 2,567
F2017 Dump Fees	220 cy		$ 50.00	$ 11,000
F30 Hazardous Material Abatement				
F3010 Hazardous Material Abatement				
F3011 Hazardous Material Abatement				Excluded
Subtotal - Special Construction & Demolition				***$ 165,912***

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PRIORITY 3 - BAGGAGE HANDLING.

DETAIL

DESCRIPTION		REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
G BUILDING SITEWORK					
G10 Site Preparation					
G1010 Civil General Requirements					
G1011 Safety and Security		1	ls	$ 26,100.00	$ 26,100
G1012 Temporary Construction Items & Erosion		1	ls	$ 17,100.00	$ 17,100
G1013 Drainage and Utility Allowance		1	ls	$ 12,700.00	$ 12,700
G1020 Site Demolition					
G1021 Demo Existing Asphalt Paving		5,760	sf	$ 1.50	$ 8,640
G1030 Site Earthwork					
G1031 Grading Building Footprint		5,760.0	sf	$ 2.00	$ 11,520
G20 Site Improvements					
G2010 Pavement					
G2011 Pavement					Not Required
G30 Site Mechanical Utilities					
G3010 Site Mechanical Utilities					
G3011 Site Mechanical Utilities - Allowance		1	alw	$ 10,000.00	$ 10,000
G40 Site Electrical Utilities					
G4010 Site Electrical Utilities					
G4011 Site Electrical Utilities Allowance		1	alw	$ 765,000.00	$ 765,000
G4030 Site Lighting					
G4031 Relocate Apron Lighting		1	ea	$ 25,000.00	$ 25,000
G4032 Wall Packs and Pole Lighting		1	alw	$ 20,000.00	$ 20,000
Subtotal - Building Sitework					***$ 896,060***
Subtotal				***$ 424.04***	***$ 8,032,565***
15.0%	Estimating Design Evolution				$ 1,204,885
Subtotal - Cost of Work				***$ 487.64***	***$ 9,237,450***

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PRIORITY 3 - BAGGAGE HANDLING.

DETAIL

DESCRIPTION		REMODEL AREA	NEW CONSTR.	TOTAL	UNIT
General Contractors Markups					
3.0%	Project Logistics & Labor Factor				$ 277,123
2.0%	General Requirements, Phasing & Temporary Construction				$ 190,291
8.0%	General Conditions				$ 776,389
3.0%	General Contractors Overhead & Profit				$ 314,438
2.0%	Insurance				$ 215,914
1.0%	Payment & Performance Bonds				$ 110,116
0.0%	Sustainability Requirements				$ -
Opinion of Probable Construction Cost				***$ 587.12***	***$ 11,121,721***
0.0%	Escalation				$ -
Opinion of Probable Project Cost				***$ 587.12***	***$ 11,121,721***

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CONNICO

Terminal Expansion Project
Idaho Falls Regional Airport
April 28, 2022

EXHIBITS

Exhibit A
Document List

CONNICO

Terminal Expansion Project
Idaho Falls Regional Airport
April 28, 2022

Exhibit A – Document List

- The Estimate reflects the information listed herein:

Drawing or File	Date
2022.03.01 IDA MTG-04_FINAL	March 07, 2022
2018-04-11 - Airport Utilities	March 07, 2022
2022.03.04 Hybrid Concept c1	March 07, 2022
2022.03.10_Hybrid Concept c3	March 07, 2022
2022.03.10_Hybrid Concept c3_IT-Security	March 07, 2022
2022.03.11 Hybrid c3 Areas	March 07, 2022
2022.03.11 IDA Inbound BHS Sketch	March 07, 2022
2022.03.11_IDA Comb Sys Narratives_toConnico	March 07, 2022
2022.03.11_IDA Existing Plans	March 07, 2022
2022.03.11_IDA Hybrid Concept c3 plans	March 07, 2022
2022.03.14 Hybrid c3 Areas_UPDATED	March 07, 2022
2022.03.14_IDA Hybrid Concept c3 plans_UPDATE	March 07, 2022
2022.03.14_IDA ROM Areas Description	March 07, 2022
2022.03.15 Hybrid c3 Areas	March 07, 2022
2022.03.15_IDA Hybrid Concept c3 plans_UPDATE	March 07, 2022
RE_ IDA ROM Costing Materials	March 07, 2022
Utilities West Side of Terminal	March 07, 2022

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APPENDIX D

Environmental Site Assessment

Idaho Falls
Regional Airport
2025 Airport Master Plan

July 2022

2025 Airport Master Plan
Kick-Off Meeting

CONTENTS

Phase I Environmental Site Assessment

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Phase I
Environmental Site Assessment

Idaho Falls Airport
Master Plan Update

Foote Drive,

Idaho Falls, Bonneville County, Idaho

Prepared by:
North Wind Environmental Consulting Services

1425 Higham St.

Idaho Falls, Idaho 83402

July 2023

Phase I Environmental Site Assessment
Idaho Falls Airport
Master Plan Update
Foote Drive,
Idaho Falls, Bonneville County, Idaho

July 2023

Prepared by:
North Wind Environmental Consulting Services
1425 Higham St.
Idaho Falls, Idaho 83402

EXECUTIVE SUMMARY

North Wind Environmental Consulting Services, LLC (NWECS) performed a Phase I Environmental Site Assessment (ESA) to examine the current recognized environmental conditions on a parcel of privately owned land located along the east side of Foote Drive (between Foote Drive and I-15), in Idaho Falls, Idaho. The parcel encompasses approximately 15 acres, and is hereafter referred to as the subject property. NWECS performed the Phase I ESA in conformance with the scope and limitations of American Society of Testing Materials (ASTM) Standard E 1527-21, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. This standard is consistent with the U.S. Environmental Protection Agency's (EPA) 40 CFR Part 312, "Standards and Practices for All Appropriate Inquiries; Final Rule."

Portions of the subject property have been developed and contain structures and a tree farm and community gardens, which are currently leased to private individuals and groups by the Idaho Falls Regional Airport. NWECS completed the site reconnaissance for the Phase I ESA of the subject property on June 28, 2023.

Recognized environmental conditions are the presence, or likely presence, of any hazardous substances or petroleum products on the property under conditions that indicate an existing release, a past release, or a material threat of a release on the property or into the ground, groundwater, or surface water of the property. *De minimis* (small or insignificant) conditions are excluded as they do not generally present a material risk or harm to public health or the environment and would not be the subject of enforcement actions by appropriate government agencies.

Due to the type of operations which occur at the subject property, materials which have the risk of causing recognized environmental conditions are present. However, these materials have been stored and handled properly by the current lessee and only one *De minimis* recognized environmental condition was observed during the site assessment. No further surveys are recommended for the subject property.

General Information

Consultant: North Wind Environmental Consulting Services, LLC 1425 Higham Street Idaho Falls, Idaho 83402 Phone: 208-528-8718 Fax: 208-528-8714	Lat.: 43.5133360 Long.: -112.0587310 Client: Wayne J. Reiter (of Ardurra, a representative for the Idaho Falls Airport) 7950 N Meadowlark Way Suite A Coeur d’Alene, Idaho
Site Survey Date: June 28, 2023 Report Date: July 10, 2023 Owner: Idaho Falls Regional Airport	Site Rep.: Ms. Jayme Verish, C.M., ASC Assistant Airport Director – Operations & Maintenance 2140 N. Skyline Drive Idaho Falls, Idaho

Environmental Professional: <u>Scott Webster</u>

Senior Reviewer: <u>Kelly Green</u>

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in EPA’s 40 CFR 312.10. I have performed a Phase I ESA in conformance with the scope and limitations of ASTM E 1527-21 and EPA’s 40 CFR 312 of the subject property. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have reviewed this all appropriate inquiry in conformance with the standards and practices set forth in ASTM E 1527-21 and 40 CFR Part 312.

Scott Webster

Scott Webster
Biologist

7/7/2023
Date

CONTENTS

ACRONYMS AND ABREVIATIONS

AST	aboveground storage tank
ASTM	American Society of Testing Materials
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EDR	Environmental Data Resources, Inc.
EPA	U. S. Environmental Protection Agency
ESA	Environmental Site Assessment
FINDS	Facility Index System/Facility Registry System
FIRM	Federal Insurance Rate Map
ft	feet
LUST	leaking underground storage tank
NOAA	National Oceanic and Atmospheric Administration
NWECS	North Wind Environmental Consulting Services
PADS	PCB Activity Database Systems
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
USGS	U.S. Geological Survey

Phase I Environmental Site Assessment

1. INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) is to identify and list any recognized environmental conditions associated with the subject property, and to report historical use information for the subject property. The subject property is located along the eastern side of Foote Drive on property owned by the Idaho Falls Regional Airport in Idaho Falls, Idaho. Similar information was gathered and reported for nearby properties that may affect surface or subsurface conditions at the subject property.

1.2 Detailed Scope of Services

This ESA was prepared in accordance with the American Society of Testing Materials (ASTM) E1527-21, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, which is consistent with the final rule for the U.S. Environmental Protection Agency's (EPA) Standard Code of Federal Regulation (CFR) 40 CFR 312, "Standards and Practices for All Appropriate Inquiries." This ESA included a site reconnaissance, interviews with people knowledgeable about the use and conditions of the subject property, assimilation of property records, reviews of environmental databases for information regarding chemical or hazardous waste releases on the subject property or surrounding area, and preparation of a report detailing the ESA. Data contained in this report was collected on-site on June 28, 2023.

A Phase I ESA does not include sampling or testing of air, soil, groundwater, surface water, or building materials. These activities would be carried out in a Phase II ESA, if required. Additions to the ASTM standard were not made.

1.3 Significant Assumptions

North Wind Environmental Consulting Services, LLC (NWECS) assumes that conditions observed during the site reconnaissance, and noted within reasonably ascertainable historical documentation, are representative of the history of the subject property.

1.4 Limitations and Exceptions

To develop the history of the property, NWECS examined reasonably ascertainable historical sources likely to be useful to identify recognized environmental conditions. This assessment did not address ASTM E1527-21 non-scope considerations, such as asbestos-containing materials, radon, lead-based paint, lead in drinking water, and wetlands. However, due to the professional knowledge of NWECS personnel conducting the site survey, these items were included in the general scan, where possible, and wetlands were noted within the subject property.

1.5 Special Terms and Conditions

The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluation. The conclusions presented in the report are based solely on the services described therein and not of scientific tasks or procedures beyond the scope of agreed-upon services, or the time and budgeting constraints imposed by the client. No subsurface exploratory drilling or sampling was done under this scope of work. No chemical analyses have been performed during the course of this ESA.

Some of the information provided is based on personal interviews and research of available documents, records, and maps held by the appropriate government and private agencies. This is subject to the limitations of historical documentation, availability and accuracy of pertinent records, and the personal recollection of those persons interviewed.

1.6 User Reliance

This report is based on the agreed upon Scope of Services between NWECS and Ardurra and is subject to the limitations and restrictions defined therein. It has been prepared for the exclusive use of the Client. No other person or organization is entitled to use or rely upon any part of it without written consent of NWECS, except that the Client may release or authorize the release of all or part(s) of this report to third parties on the condition that such third party agrees that it shall have no legal recourse against NWECS or its parent or subsidiaries, and that it shall indemnify and defend NWECS or its parent or subsidiaries from and against all claims arising out of or in conjunction with such use or reliance. Furthermore, the ESA may only be relied upon for 180 days. After that time period, the ESA may be updated by site reconnaissance to determine whether conditions at the subject property have changed, and by re-examining updated regulatory agency lists to determine whether newly listed sites may affect the subject property.

This ESA was conducted in accordance with ASTM E 1527-21 standard. This practice does not address whether requirements, in addition to appropriate inquiry, have been met in order to qualify for Comprehensive Environmental Response, Compensation, and Liability Act's (CERCLA) (42 USC § 9601) innocent landowner defense. This practice does not address requirements of any state, local, or federal laws other than the appropriate inquiry provisions of CERCLA's innocent landowner defense. Users are cautioned that federal, state, and local laws may impose environmental assessment obligations that are beyond the scope of this practice. Users should also be aware that there are likely to be other legal obligations with regard to hazardous substances or petroleum products discovered on property that are not addressed in this practice, and that may pose risks of civil and/or criminal sanctions for non-compliance.

It should be noted that this investigation did not include subsurface sampling and analysis but was limited to the observation of surface conditions at the time of the site reconnaissance. The conclusions of NWECS regarding the property are based solely on the observations of existing conditions, review of existing reports, personal interviews, and interpretations of the property history.

2. LOCATION AND LEGAL DESCRIPTION

The subject property is composed of a parcel of land comprising approximately 15 acres. The subject property is located between Foote Drive and I-15 on the northwest side of the City of Idaho Falls in Bonneville County, Idaho.

2.1 Site and Vicinity General Characteristics

The subject property is located in the City of Idaho Falls and the topography of the subject property is relatively flat with small depressions associated with historic use as a gravel pit. The subject property and the adjoining properties are zoned as Light Manufacturing and Heavy Commercial by the City of Idaho Falls Planning and Zoning Office. An aerial image of the property location and U.S. Geological Survey (USGS) Topographic maps are included in Appendix B along with site photos.

2.2 Description of Structures, Roads, and Other Improvements on the Subject Property

The subject property consists of a single parcel of land which has been divided into multiple plots all of which are owned by the Idaho Falls Regional Airport; therefore, they are discussed as a single parcel of land which comprises approximately 15 acres. There are two structures on the parcel; a storage structure owned by the airport and a second structure which acts as a maintenance shop and RV storage area within the plot rented by Holley Tree Farm. Within the fenced area associated with the Holley Tree Farm there is one 500-gallon aboveground storage tank (AST) which contains red diesel for off road use.

Power to the subject property is supplied by Idaho Falls Power, and water is provided by the City of Idaho Falls. There is currently no septic or sewer system installed on the subject property.

2.3 Current Uses of the Adjoining and Neighboring Properties

Current uses of the adjoining properties were observed during the site reconnaissance. The subject property is bounded to the west by Foote Drive and to the east by the highway right of way associated with Interstate 15. The subject property is bounded to the north by property owned by the Idaho Falls Regional Airport and is operated through a lease to Holley Tree Farm. The subject property is bounded to the south by a parcel owned and operated by National Oceanic and Atmospheric Administration (NOAA) Air Resources Laboratory Field Research Division.

3. USER PROVIDED INFORMATION

3.1 Title Records

A title search was prepared for the subject property exclusively. The title search is not a guarantee of title, a commitment to insure, or a policy of title insurance. NWECS does not guarantee nor include any warranty of any kind, whether expressed or implied, about the validity of all information included in this title search. This information is retrieved as it is recorded from the various agencies that make it available and is designed to aid in determining previous land use only. The total liability is limited to the fee paid for this report.

The subject property is currently owned by the City of Idaho Falls. Table 1 has a record of the transfer of title for the subject property back to 1973. Section 4.4.1 describes historical land use based upon personal interviews and a title search.

Table 1. Results of title search for subject property.

Instrument No.	Description	Date	Seller	Buyer
449361	Plat/Deed	May 17, 1973	City of Idaho Falls	Airport Industrial Park Addition, Division 3

3.2 Environmental Liens or Activity and Use Limitations

No indications of environmental liens or other limitations were provided to NWECS. Legal records and information collected from current and previous owners who were interviewed have indicated that no environmental liens or concerns are active at this time.

3.3 Reason for Performing Phase I

The purpose of this Phase I ESA is for a renewal of the airport master plan and to identify any potential environmental concerns and to meet the requirements necessary to qualify for the landowner liability protections (LLPs) under CERCLA.

4. RECORDS REVIEW

4.1 Standard Environmental Record Sources

As part of this assessment, NWECS reviewed the most recently available standard environmental databases provided by EPA, Idaho Department of Environmental Quality (IDEQ), and the EDR database search (Appendix D). A customized area search was performed to ASTM's recommended distances radiating out from the subject property. Table 2 contains a detailed summary of the database research findings.

Table 2. Summary of environmental database results.

FOCUS MAP SUMMARY					
DATABASE	**TOTAL PLOTTED**	**DATABASE**	**TOTAL PLOTTED**	**DATABASE**	**TOTAL PLOTTED**
Federal Records					
NPL	1	RCRA NONGEN / NLR	0	RADINFO	0
Proposed NPL	0	US ENG Controls	0	FINDS	0
Delisted NPL	0	US INST Control	0	RAATS	0
NPL Liens	0	ERNS	0	RMP	0
CERCLIS	0	DOT OPS	0	PCB Transformer	0
CERC-NFRAP	0	US CDL	0	Federal Facility	0
Liens 2	0	US Brownfields	0	EPA Watch List	0
RCRA CORRACTS	2	DOD	0	FEMA UST	0
RCRA-TSDF	0	FUDS	0	SEMS	0
RCRA-LQG	0	CONSENT	0		0
RCRA-SQG	0	ROD	1		0
RCRA-VSQG	1	PADS	0		0
State and Local Records					
UIC	0	UST	7	MINES	1
LUST	1	SPILLS	0	Brownfields	0
Additional Environmental Records					
Local Lists of Hazardous Waste /Contaminated Sites					
US HIST CDL	0	ID CDL	0		
ID ALLSITES	23	US CDL	0		
Records of Emergency Release Reports					
HMIRS		ID SPILLS	0	ID SPILLS 90	0
Records of Emergency Release Reports					
RCRA NonGen / NLR	2	FINDS		ID TIER 2	
SCRD DRYCLEANERS	0	ID Financial Assurance		EPA WATCH LIST	0

FOCUS MAP SUMMARY					
DATABASE	**TOTAL PLOTTED**	**DATABASE**	**TOTAL PLOTTED**	**DATABASE**	**TOTAL PLOTTED**
Federal Records					
ROD		ECHO			

Notes:
Sites may be listed in more than one database

A partial listing of environmental databases searched is provided below. A total of 39 sites with multiple records were found during the database search within one mile of the subject property:

- National Priority List (NPL),
- Proposed NPL Proposed National Priority List Sites,
- Delisted NPL National Priority List Deletions,
- NPL LIENS Federal Superfund Liens,
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS),
- CERC-NFRAP CERCLIS No Further Remedial Action Planned,
- LIENS 2 CERCLA Lien Information,
- Corrective Action Report (CORRACTS),
- Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal Facility (TSDF) - Treatment, Storage and Disposal,
- RCRA-Large Quantity Generators (LQGs),
- RCRA-Small Quantity Generators (SQGs),
- RCRA- Conditionally Exempt Small Quantity Generator (CESQG),
- RCRA NonGen / NLR RCRA - Non Generators,
- US ENG CONTROLS Engineering Controls Sites List,
- US INST CONTROL Sites with Institutional Controls,
- Emergency Response Notification System (ERNS),
- Department of Transportation (DOT) OPS Incident and Accident Data,
- US Clandestine Drug Labs (CDLs),
- US BROWNFIELDS A Listing of Brownfields Sites,
- Department of Defense (DOD) Sites,
- Formerly Used Defense Sites (FUDS),
- CONSENT Superfund (CERCLA) Consent Decrees,
- Polychlorinated Biphenyl (PCB) Activity Database System (PADS),
- Radiation Information Database (RADINFO),
- Facility Index System (FINDS)/Facility Registry System,
- RCRA Administrative Action Tracking System (RAATS),
- Risk Management Plans (RMPs),
- PCB TRANSFORMER PCB Transformer Registration Database,
- FEDERAL FACILITY Site Information listing,
- EPA WATCH LIST EPA WATCH LIST,
- Federal Emergency Management Agency (FEMA) Underground Storage Tank (UST) Listing,
- Aboveground Storage Tanks (AST),
- BROWNFIELDS Brownfields Sites Listing,
- MINES Mine Locations Listing,

- INDIAN RESERV Indian Reservations,

It should be noted that the computerized geo-coding technology used in the database search is based on available census data and is only accurate to approximately plus or minus 300 feet.

Maps showing retrieved data are included in Appendix B and meet the government records search requirements of ASTM standards. Sites identified within the study radius were evaluated to determine if they were likely to have had an adverse impact on the subject property. The criteria used to evaluate sites located within the study radius include:

- Distance from the subject property,
- Expected direction of groundwater flow,
- Presence/absence of large, constructed features that may influence groundwater flow direction,
- Likely stormwater flow direction, and
- Presence/absence of documented contaminant releases at the identified sites.

The sites which were identified within the search radius are included in Table 3.

Table 3. Sites identified in the radius search.

Site Name	Address	Database Acronyms	Relative Elevation	Distance Direction (ft & mi)
Gravel Pit	Bonneville County, ID	MINES MRDS	On Site	0/NA
Kingston Aviation	2115 Foote Dr	UST (Active), ALLSITES: ID Financial Assurance 2:	Higher	57 ft., SW
Pacific Fighters	2013 Foote Dr	RCRA VSQC, FINDS, ECHO, ALLSITES,	Higher	59 ft., SSW
NOAA Idaho Falls Laboratory	1750 Foote Dr	RCRA NonGen/NLR, ALLSITES	Higher	404 ft., S
Southland Produce Co	1705 N Lindsay Blvd	UST (Closed), ALLSITE	Higher	437 ft., SE
Idaho Falls Maintenance Yard	1540 Foote Dr	LUST (Clean up 1994), UST (Closed), ALLSITES, Spills	Higher	912 ft., S
Delta Industries	1490 Lindsay Blvd	ALLSITES	Higher	1045 ft., SSE
Hertz Used Car Sales	1520 Skyline Dr	UST (closed), ALLSITES, Financial Assurance	Higher	1142 ft., SW
Fedex Express IDAA	2087 Federal Way	RCRA NonGen/NLR, FINDS, ECHO, ALLSITES	Higher	1204 ft., W
Southfork Electronics Inc	1405 Foote Dr	ALLSITES	Higher	1225 ft., S
Triangle Recreational Sales & Service	1470 N Skyline Dr	UST (Closed) ALLSITES	Higher	1242 ft., SW
Fire Dept Training Tower	Foote Drive	UST (Closed), ALLSITES	Lower	1269 ft., S
City Of Idaho Falls Fire Department 3	2125 Federal Way	UST (Closed), ALLSITES	Higher	1287 ft., WNW

Site Name	Address	Database Acronyms	Relative Elevation	Distance Direction (ft & mi)
Western Transmission	1410 N Skyline Dr	ALLSITES	Higher	1391 ft., SW
US DOE BPA Idaho Falls Maint. HDQS Linds	1350 Lindsay Blvd	ALLSITES	Lower	1479 ft., SSE
Teton Stage Lines	1425 Lindsay Blvd	ALLSITES	Lower	1546 ft., SSE
ID ISU Ctr For Higher Ed	1776 Science Ctr Dr	ALLSITES	Higher	1584 ft., NE
Sierra Properties, LLC	2835 Foote Dr	UST (Active), ALLSITES, Financial Assurance	Higher	1760 ft., N
Western States Equipment	1200 Foote Dr	UST (Active), ALLSITES, Financial Assurance	Higher	1791 ft., S
Budget Rent A Car	2120 N Skyline	UST (Closed), ALLSITES	Higher	1973 ft., WSW
ID ISU Center For Advanced Energy Studies	995 Mk Simpson Blvd	ALLSITES	Higher	2316 ft., NNE
Cargill Inc	1155 Lindsay Blvd	ALLSITES	Lower	2383 ft., SSE
Shaka’s	1520 Grandview Dr	UST (Active), ALLSITES, Financial Assurance	Higher	2607 ft., S
ID Trans Dept IF Area Hwy 20 Bridge Key 12478	Rigby Hwy 20 0.3 Mi E Of I-15 Veterans Memorial Hwy	ALLSITES	Lower	2626 ft., SE
USDOE Idaho Nat’l Engineering Lab	INEL Reservation	NPL, SEMS, CORRACTS, RCRA-TSDF, RCRA-LQG, US ENG CONTROLS, US INST CONTROLS, EPA WATCH LIST, ROD, RAATS	Lower	3842 ft., ENE
Waste-Tech Services Inc	1 Energy Dr	CORRATS, RCRA-TSDF, RCRA NonGen/NLR, FINDS, ECHO	Higher	4814 ft., ENE

4.2 Additional Environmental Record Sources

In addition to the Standard Record Sources, the following additional sources were reviewed:

- Superfund (CERCLA) Consent Decrees (CONSENT)
- Records of Decision (RODs)
- National Priority List Deletions (DELISTED NPL)
- Hazardous Materials Information Reporting System (HMIRS)
- Material Licensing Tracking System (MLTS)
- Mines Master Index File (MINES)

- PCB Activity Database Systems (PADS)
- Department of Defense Sites (DOD)
- RCRA Administrative Action Tracking System (RAATS)
- Facility Index System/Facility Registry System (FINDS).

None of these sources yielded any sites known to be associated with the subject property.

4.3 Physical Setting Sources

4.3.1 U.S. Geological Survey Topographic Maps

The USGS topographic map of the subject property and the surrounding area is included in Appendix A and B. The subject property is located on the Idaho Falls North, ID USGS 7.5 min Quadrangle Map published in 2020 and Idaho Falls South, ID USGS 7.5 min Quadrangle Map published in 2020. The map indicates that the subject property is at an elevation of approximately 4,720 ft above mean sea level. The land surrounding the subject property is generally flat, slightly sloping to the east.

4.3.2 Geologic Setting and Soils

Dominant soils within the subject property are identified as Map Unit 20-Packham gravely loam. These soils are derived from a parent material of mixed alluvium and occur on floodplains. Packham soils are classified as deep and moderately deep with moderate infiltration rates.

4.3.3 Groundwater and Surface Water

Groundwater table is located at a depth of approximately 168.06 feet below the ground surface and flows to the east. The nearest natural surface water is Snake River which is located approximately 0.25 miles to the east of the subject property. The Federal Insurance Rate Map (FIRM) included in Appendix A shows the parcel location within a Zone C area which is defined as an area of minimal flooding.

4.4 Historical Use Information on the Subject Property

To determine past uses of the subject property and surrounding properties, NWECS staff reviewed historical sources of information as outlined in Table 4. Historical information was obtained from a variety of sources, including topographical maps, interviews with people knowledgeable about the recent and past use of the property, and historic aerial photographs (see Appendices).

Table 4. Summary of historical records reviewed.

	YEARS REVIEWED	
SOURCE OF INFORMATION	**SUBJECT PROPERTY**	**ADJACENT PROPERTIES**
USGS Topographic Map(s)(Appendix B)	1948, 1949, 1950, 1979, 2013, 2017, 2020	1948, 1949, 1950, 1979, 2013, 2017, 2020
Title Search (Appendix B)	1970-current	Not requested or provided
Aerial Photograph(s) (Appendix B)	2019, 2015, 2011, 2006, 1998, 1992, 1987, 1980, 1976, 1974, 1954, 1946	2019, 2015, 2011, 2006, 1998, 1992, 1987, 1980, 1976, 1974, 1954, 1946
Sanborn Fire Insurance Company Map(s)	Unavailable	Unavailable

4.4.1 Subject Property

Section 8.3.2 of the ASTM standard specifies that all uses of the subject property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. A review of available aerial photographs back to 1946 for the subject property was conducted to determine use. On the 1946 aerial photographs, it shows the site had limited development associated with airport operations which include minor roadways. Other development of the subject property was determined to begin between 1954 and 1974 and is anticipated to have occurred in 1970. Prior to the 1970 disturbance it appears that the subject property is relatively undeveloped minus roads which are present in the 1946 aerial photograph. Sanborn maps were requested but were not available.

5. SITE RECONNAISSANCE

5.1 Methodology and Limiting Condition

A site reconnaissance was conducted on June 28, 2023 to observe potential hazardous materials, staining, distressed vegetation, and any other conditions that might indicate concern. During the site visit, NWECS staff inspected the subject property by physically walking the subject property and looking throughout the structures located on the subject property. During the field survey, photographs of the subject property were taken. Photographs of the site and surrounding areas can be found in Appendix A. The following sections describe any observed hazardous substances, evidence of storage tanks, PCB-containing equipment, water/wastewater management practices, potential land disposal areas, and other information.

5.2 General Site Setting and Observations

Several maps and photographs of the subject property are included in Appendix A. The subject property appears to be mostly undeveloped except for the northern third of the property which has been developed as a community garden, tree farm, and RV storage area. The subject property was historically used as a gravel pit where material was extracted for development of the airport. The subject property is connected to the City of Idaho Falls water system, and electricity is supplied by Idaho Falls Power. City sewer and natural gas are available on site; however, the location is not currently connected to either. There are above ground electrical wires present along the west and north boundaries of the property. The vegetation within the subject property was dominated by weedy species such as kochia, cheat grass, tumble mustard, and pepper weed. There are two areas containing wetland characteristics on the southern end of the subject property.

6. FINDINGS

This ESA was prepared to meet the standards for ESAs for real estate transactions promulgated by EPA's 40 CFR 312 and ASTM Standard E 1527-21. This Phase I ESA included a review of readily available public records and documents, observations of adjacent land uses, a site reconnaissance, interviews, and a review of publicly available and readily reviewable environmental databases.

6.1 Evidence of Hazardous Substances

During the initial review of database information there was no evidence of hazardous substance present. During the field survey, there were multiple *de minims* hazardous substances observed on site which include an AST, small area of stained soil, and small quantity containers of petroleum products. The small area of stained soil is located adjacent to the AST adjacent to the structure within the RV storage area. There were also multiple bags of herbicide and carbon-based fertilizer present at this location that are not considered as a hazardous material concern at the quantity observed. There were no stormwater control systems present on site.

6.2 Indication of Polychlorinated Biphenyls (PCBs)

NWECS inspected the property for types of equipment that have been historically associated with the use of PCBs as a dielectric fluid coolant and stabilizer. There was one pole mounted electrical transformer present adjacent to the western boundary of the subject property along Foote Drive. This transformer was labeled as No PCBs.

6.3 Indication of On-Site Land Disposal and Other Information

There was no sign of on-site land disposal present on the subject property.

6.4 Water and Wastewater Management

NWECS surveyed the entire area and found no wastewater discharges, pits, or lagoons, or on-site disposal wells. There are two locations on the southern portion of the subject property which show evidence of ponding and have wetland characteristics. There is a drainage ditch which is located along the eastern boundary of the subject property. There is one small area of stained soil, but no stressed vegetation was observed on the subject property. There is no large-scale stormwater control system in place on the subject property.

6.5 Evidence of Storage Tanks, Drums, and Other Containers

There is one AST located on the subject property that is a 500-gallon tank used for off-road diesel storage. There is one empty storage tote located on site which does not contain any hazardous materials. There are also four 2.5-gallon containers of Declo 15W-40 motor oil. There are also multiple other small containers of grease, power steering fluid, window cleaner, brake fluid, and lubricants present within the structure managed by Holley Tree Farm; all are less than one half gallon.

7. CONCLUSIONS AND RECOMMENDATIONS

NWECS performed a Phase I ESA in conformance with the scope and limitations ASTM E 1527-21 for the subject property. This assessment has determined that even though the petroleum products present and small soil staining on the subject property have the potential to be become a recognized environmental condition, there is currently no recognized environmental conditions within the subject property. No further sampling is recommended for the subject property.

8. REFERENCES

ASTM, 2021, *Test Method E1527-21,* Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, American Society for Testing and Materials, Conshohocken, Pennsylvania, November 2021.

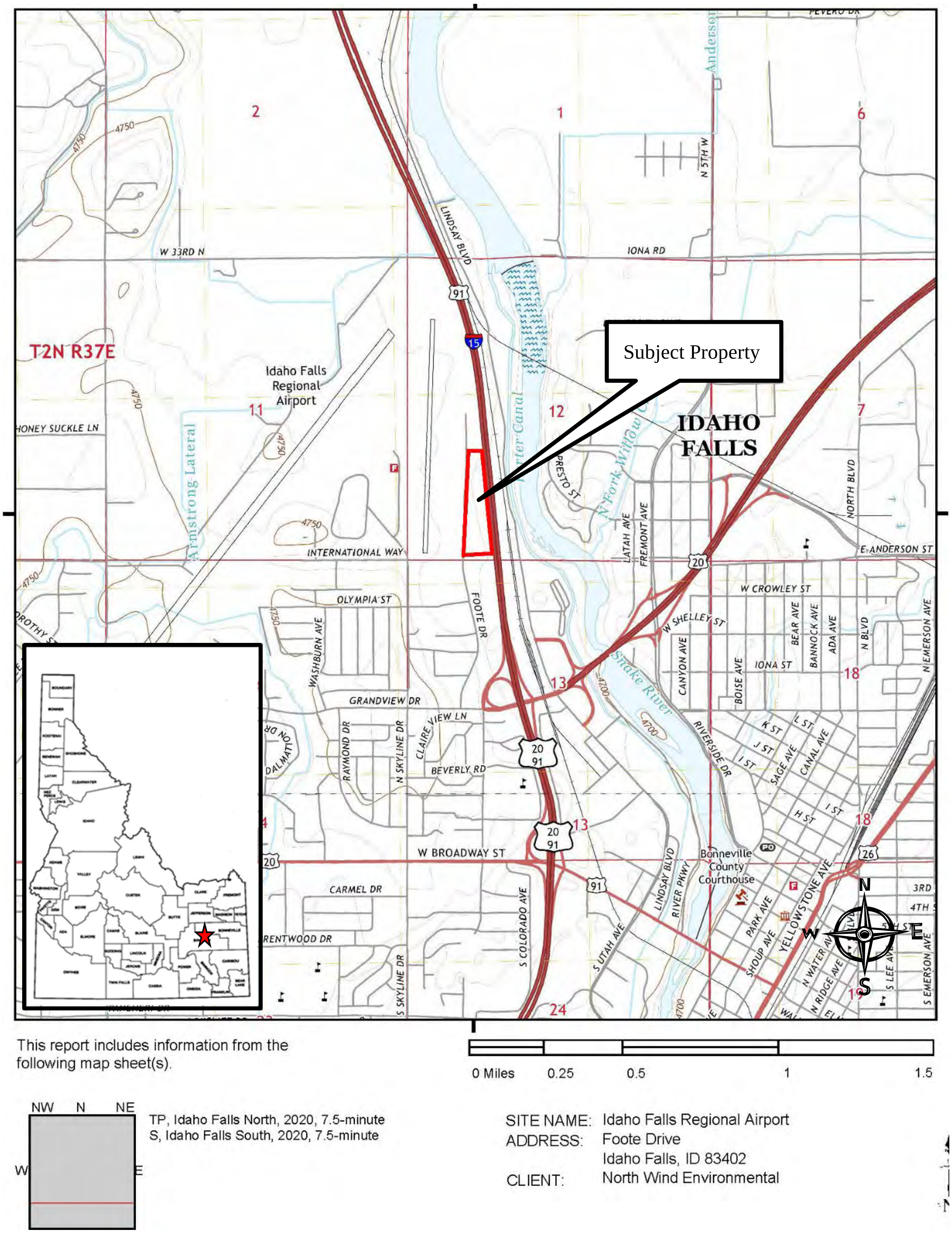
40 CFR 312, Title 40, “Protection of Environment,” Part 312, “Standards and Practices for All Appropriate Inquiries; Final Rule,” Code of Federal Regulations, Office of the Federal Register, November 1, 2005.

42 USC § 9601 et seq., 1980, "Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA/Superfund)," United States Code, December 11, 1980.

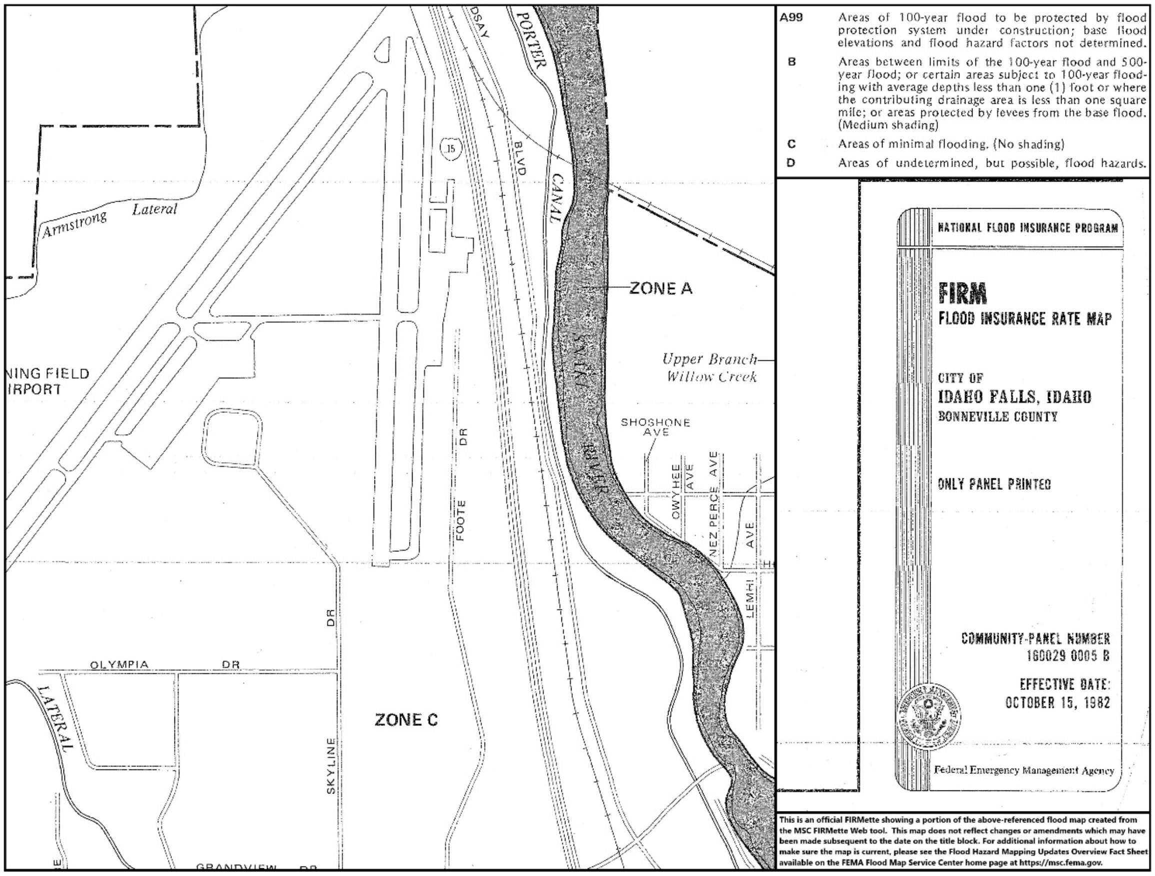
Appendix A

Site Maps and Photographs

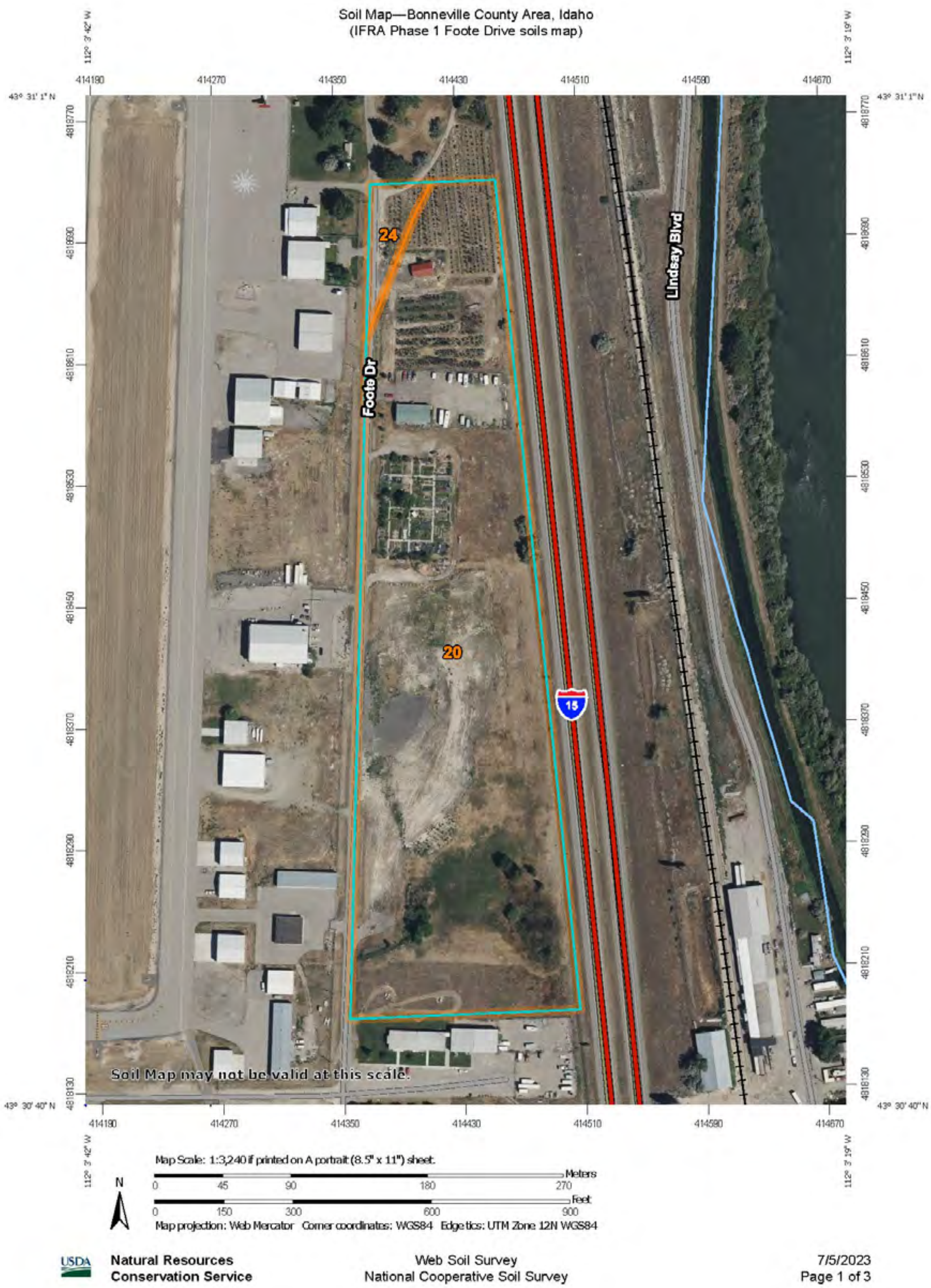
Subject Property Location Map



USGS Topographic map and site location of subject parcel.



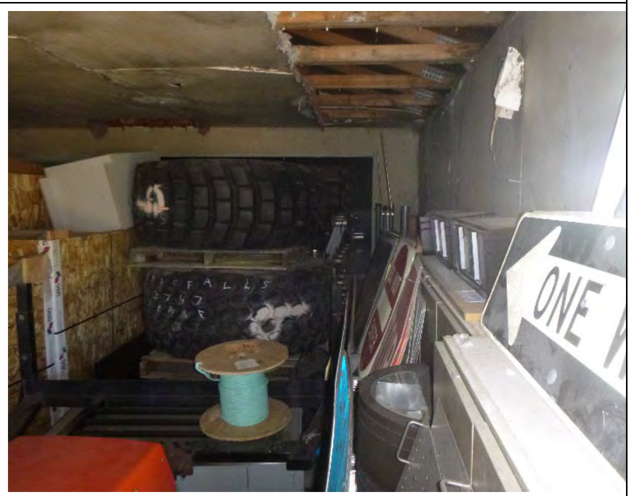
FIRM of subject property.


Soil Map—Bonneville County Area, Idaho
(IFRA Phase 1 Foote Drive soils map)
Foote Dr
Lindsay Blvd
24
20
15
Soil Map may not be valid at this scale.
Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.
Meters
Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84
Natural Resources
Conservation Service
Web Soil Survey
National Cooperative Soil Survey
7/5/2023
Page 1 of 3

Soils Map

	
Overview of subject property, facing south along Foote Drive.	Overview of subject property, facing north along Foote Drive.
	
Overview of community gardens located in the center of the subject property.	Overview of the subject property, facing north from the center of the parcel.

	
Overview of wetland habitat located on the west side of the southern portion of the subject property.	Overview of wetland habitat located on the east side of the southern portion of the subject property.
	
Overview of the southern boundary of the subject property, facing west from SE corner.	Overview of the eastern boundary of the subject property, facing north from SE corner. Wetland habitat present on the left of photo and drainage ditch on the right of photo.

	
Overview of northern boundary of the project area, facing east from NW corner. Holley Tree Farm on both sides of the boundary.	Overview of structure on the northern portion of the subject property owned by the airport.
	
Overview of structure on the northern portion of the subject property owned by the airport.	Overview of the interior of the structure owned by the airport. Shows storage of tires, signs, and maintenance materials for the airport.

	
Overview of the interior of the structure owned by the airport. Shows storage of tires, signs, and maintenance materials for the airport.	Overview of the interior of the structure owned by the airport. Shows storage of tires, signs, office furniture, and maintenance materials for the airport.
	
Overview of structure within the area used for RV storage and by Holley Tree Farm facing South.	Overview of structure within the area used for RV storage and by Holley Tree Farm, facing Northwest.

Automotive maintenance chemicals located within the Holley Tree Farm structure.	Granular herbicide located within the Holley Tree Farm structure.

500 Gallon Diesel AST within the area leased by Holley Tree Farm.	Small area of stained soil below the AST.

	
Empty chemical tote within the RV storage area.	Pole mounted transformer adjacent to the subject property to the west.
	
Overview of storage area within the structure leased by Holley Tree Farm.	Carbon based fertilizer within the area leased by Holley Tree Farm.

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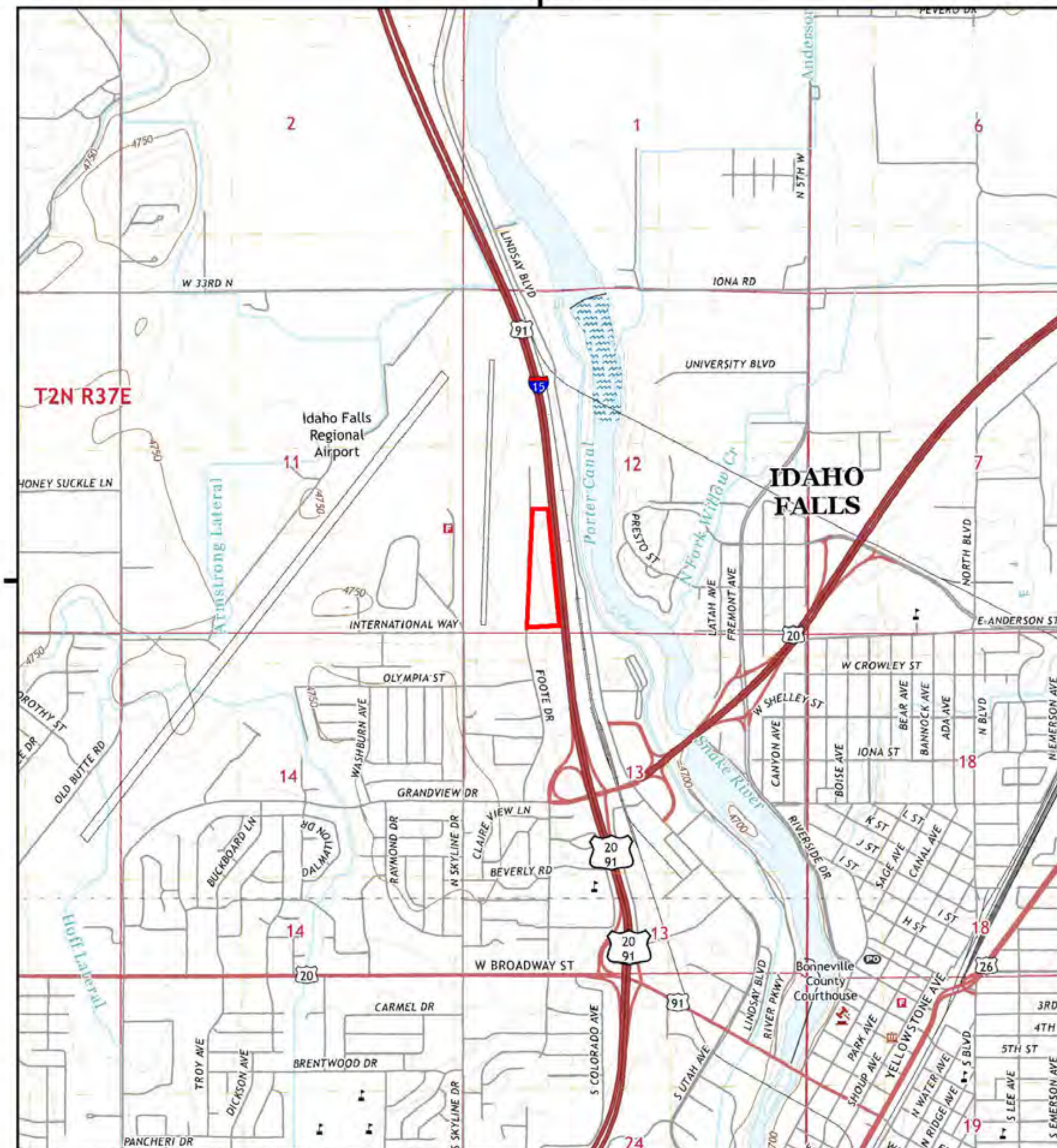
Appendix B

Historic Topo Maps and Aerial Photographs

EDR

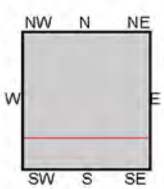
Historical Topo Map

2020



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Idaho Falls North, 2020, 7.5-minute
S, Idaho Falls South, 2020, 7.5-minute

SITE NAME: Idaho Falls Regional Airport
ADDRESS: Foote Drive
Idaho Falls, ID 83402
CLIENT: North Wind Environmental

N

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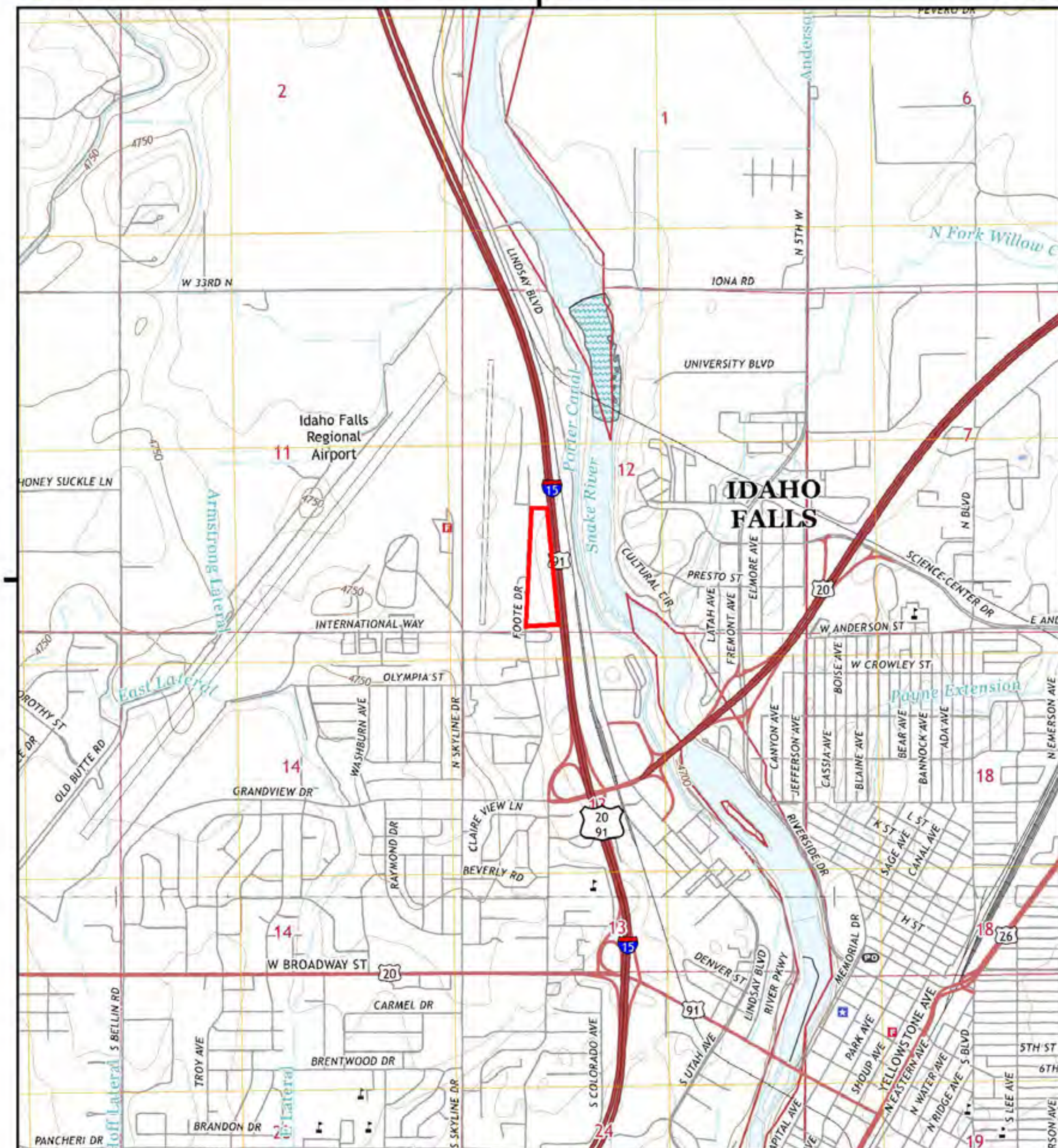
EDR

Historical Topo Map

2017



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

TP, Idaho Falls North, 2017, 7.5-minute
S, Idaho Falls South, 2017, 7.5-minute

SITE NAME: Idaho Falls Regional Airport
ADDRESS: Foote Drive
Idaho Falls, ID 83402
CLIENT: North Wind Environmental

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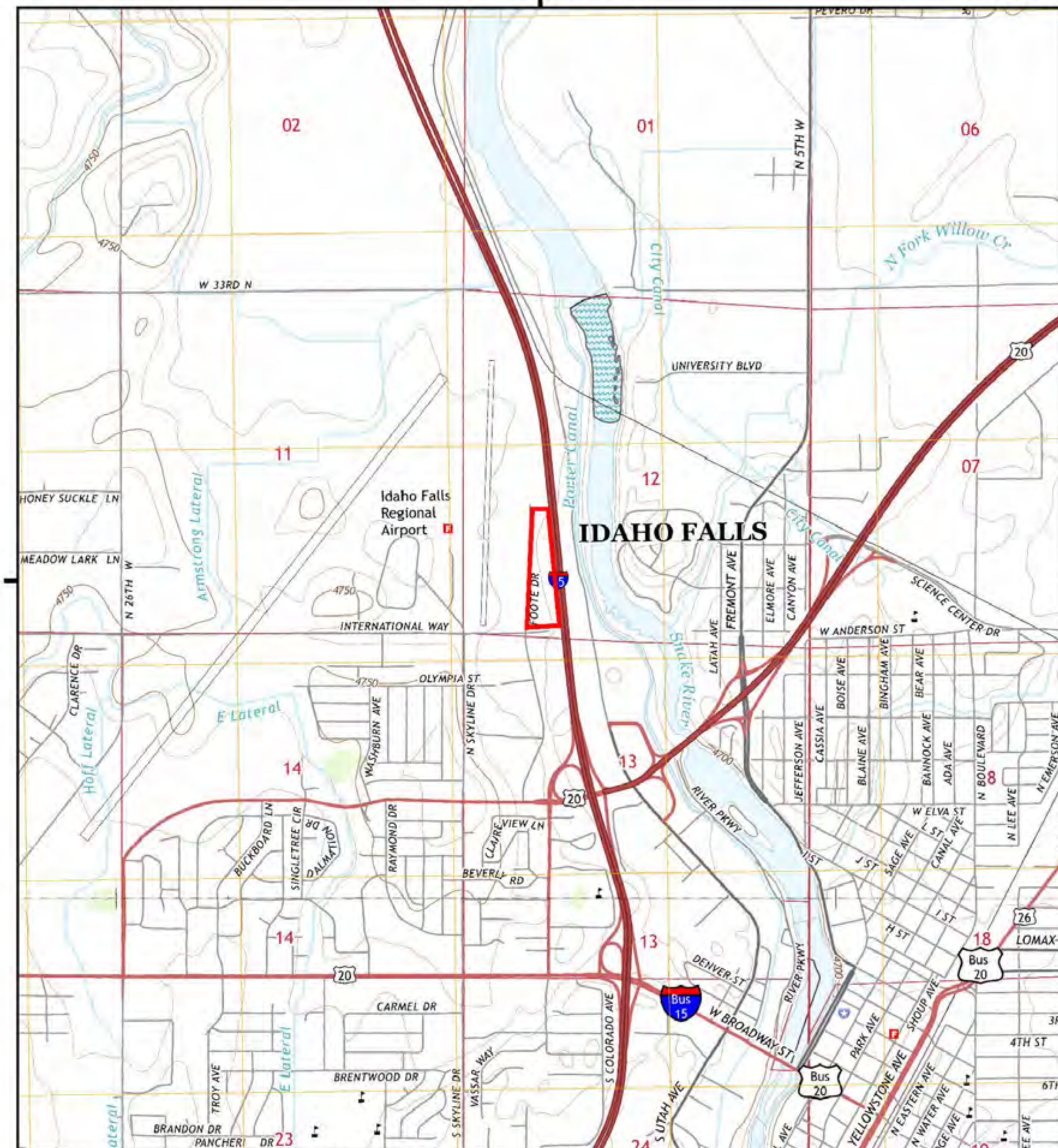
EDR

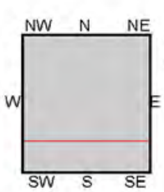
Historical Topo Map

2013



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5



TP, Idaho Falls North, 2013, 7.5-minute
S, Idaho Falls South, 2013, 7.5-minute

SITE NAME: Idaho Falls Regional Airport
ADDRESS: Foote Drive
Idaho Falls, ID 83402
CLIENT: North Wind Environmental

N

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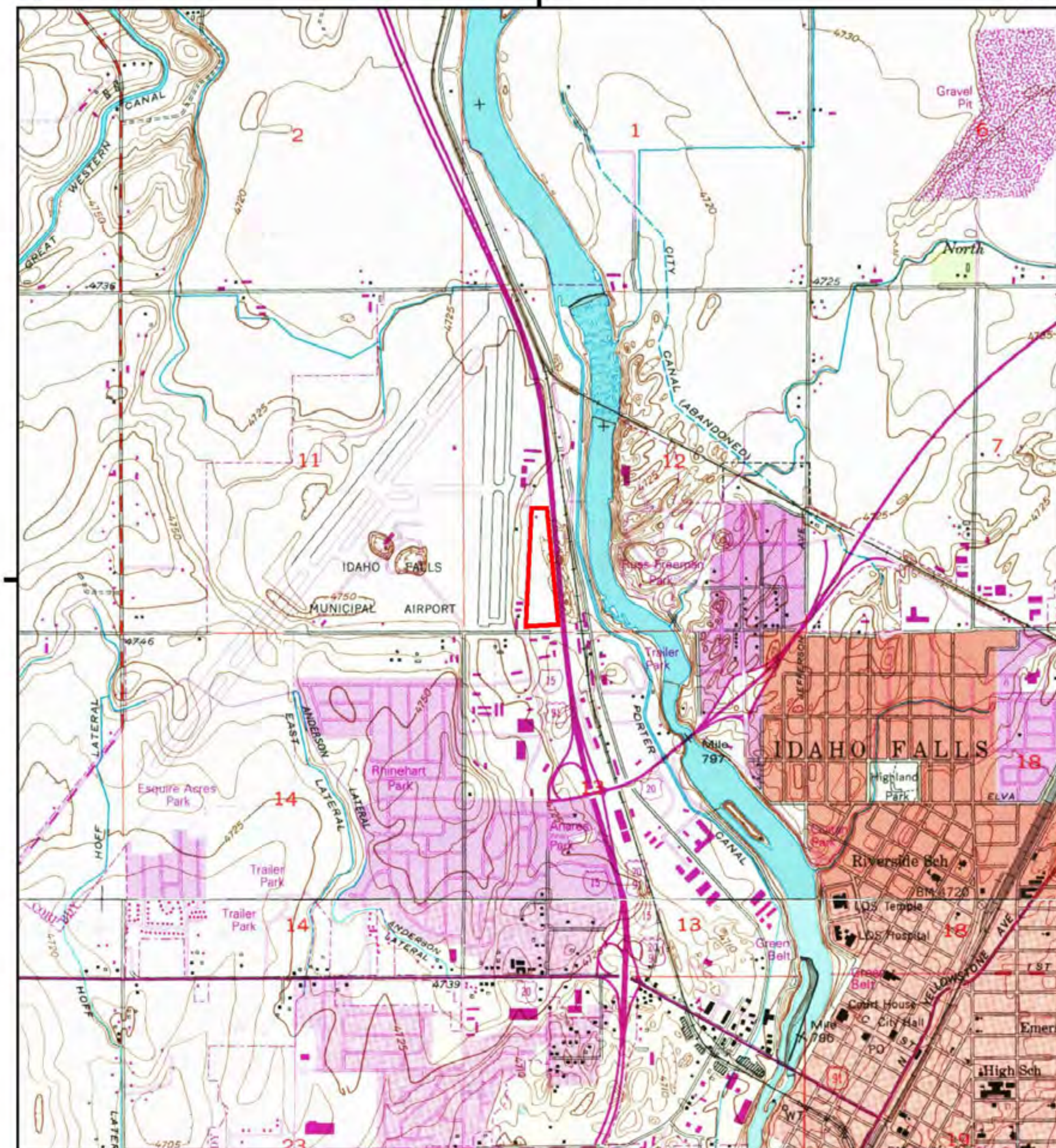
Historical Topo Map

1979



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE W E SW S SE

TP, Idaho Falls North, 1979, 7.5-minute
S, Idaho Falls South, 1979, 7.5-minute

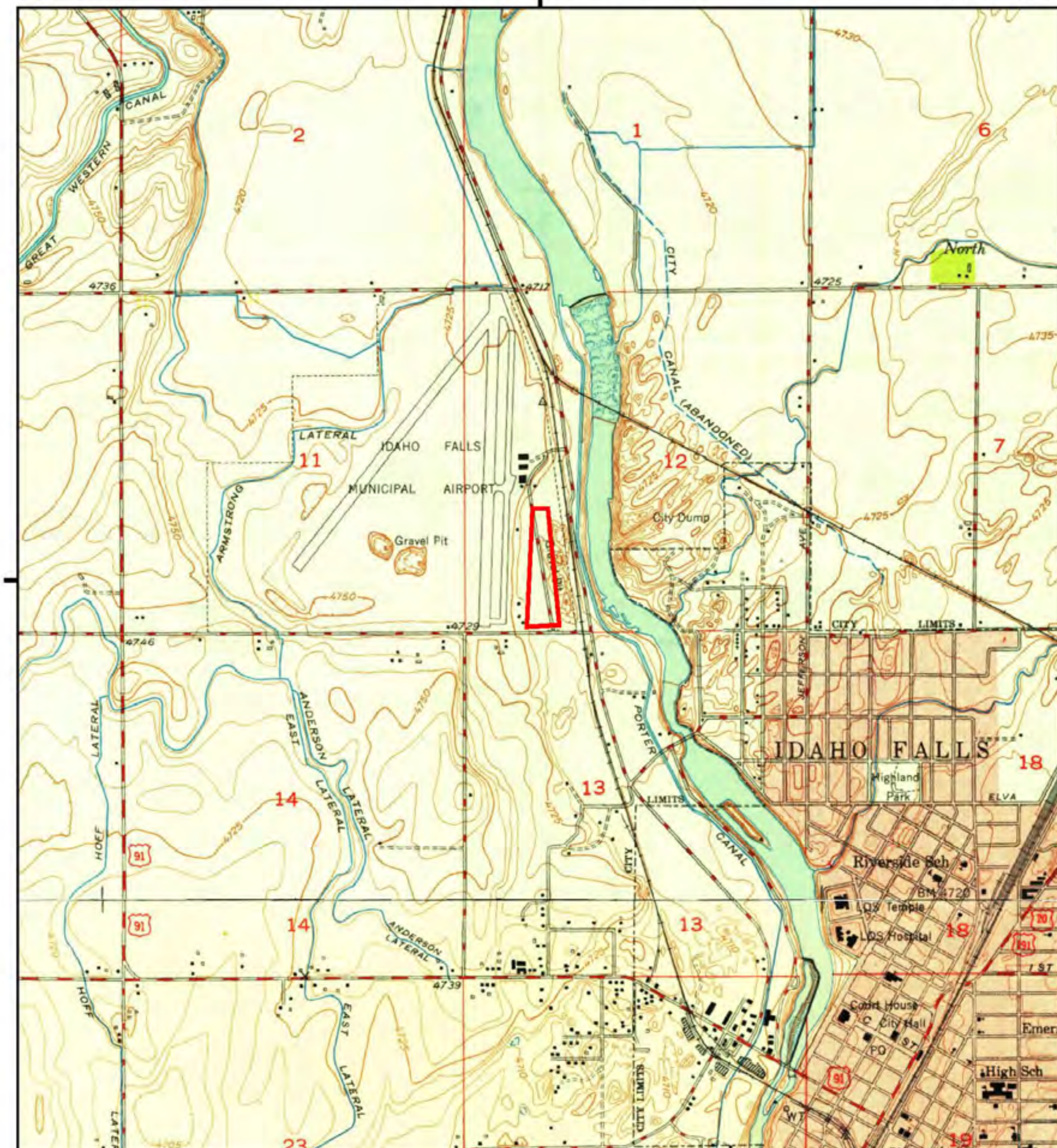
SITE NAME: Idaho Falls Regional Airport
ADDRESS: Foote Drive
Idaho Falls, ID 83402
CLIENT: North Wind Environmental

N

7376242 - 4 page 8

Historical Topo Map

1949, 1950



This report includes information from the following map sheet(s).

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NW N NE W E SW S SE

TP, Idaho Falls North, 1949, 7.5-minute
S, Idaho Falls South, 1950, 7.5-minute

SITE NAME: Idaho Falls Regional Airport
ADDRESS: Foote Drive
Idaho Falls, ID 83402
CLIENT: North Wind Environmental

N

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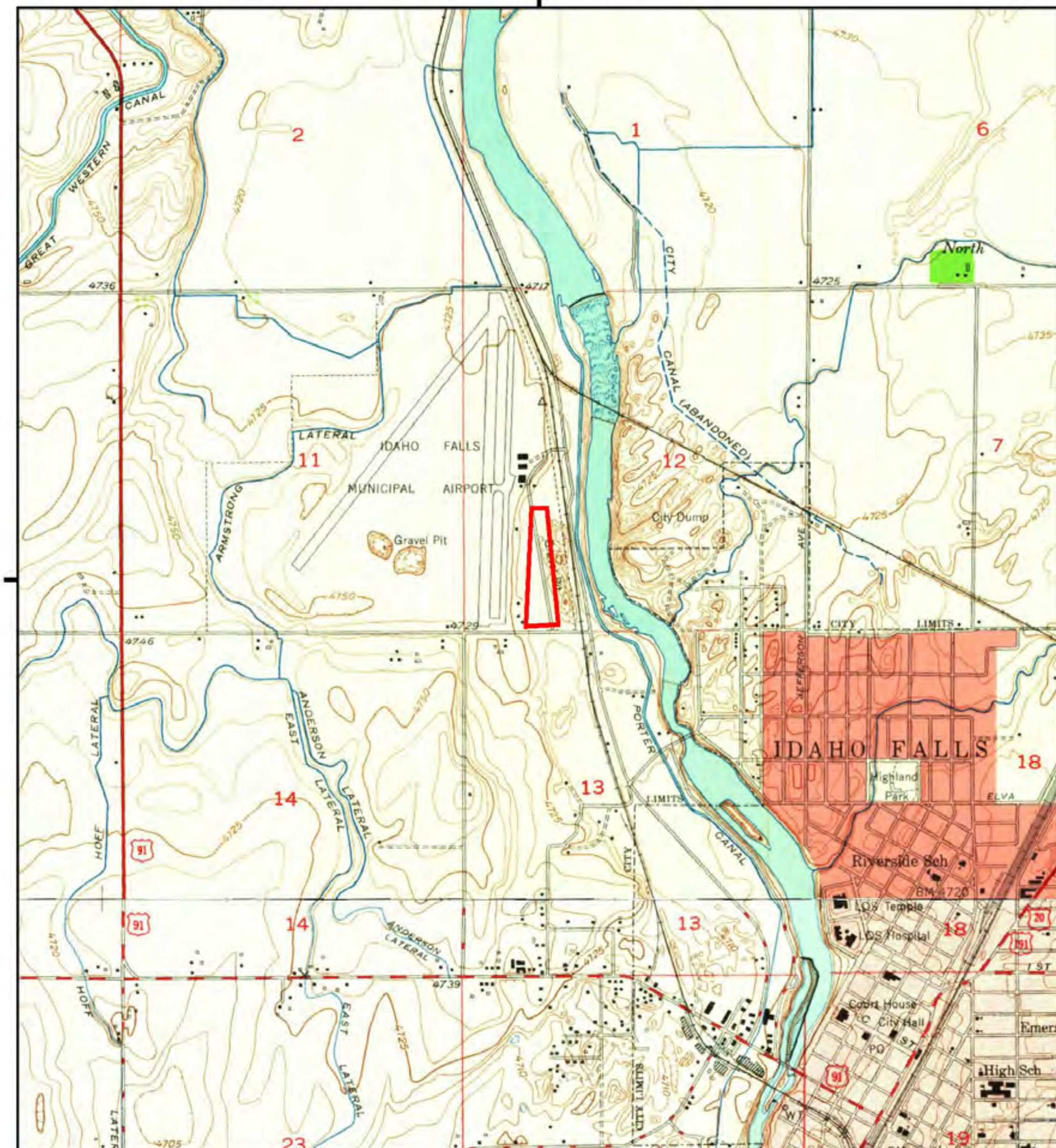
EDR

Historical Topo Map

1948



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Idaho Falls North, 1948, 7.5-minute
S, Idaho Falls South, 1948, 7.5-minute

SITE NAME: Idaho Falls Regional Airport
ADDRESS: Foote Drive
Idaho Falls, ID 83402
CLIENT: North Wind Environmental

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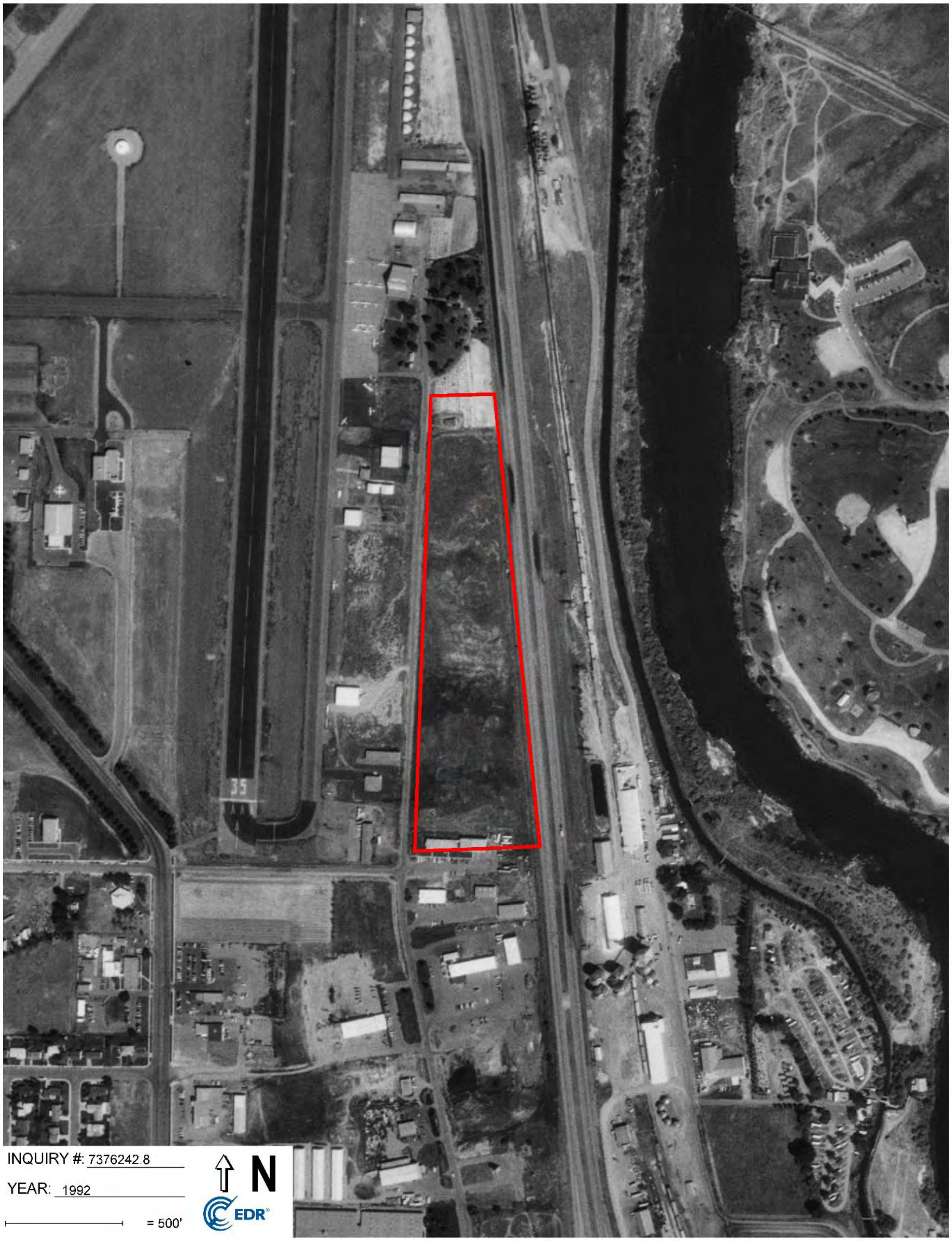
35
INQUIRY #: 7376242.8
YEAR: 2019
N
EDR
= 500'


35
INQUIRY #: 7376242.8
YEAR: 2015
= 500'
N
EDR


INQUIRY #: 7376242.8
YEAR: 2011
= 500'
N
EDR

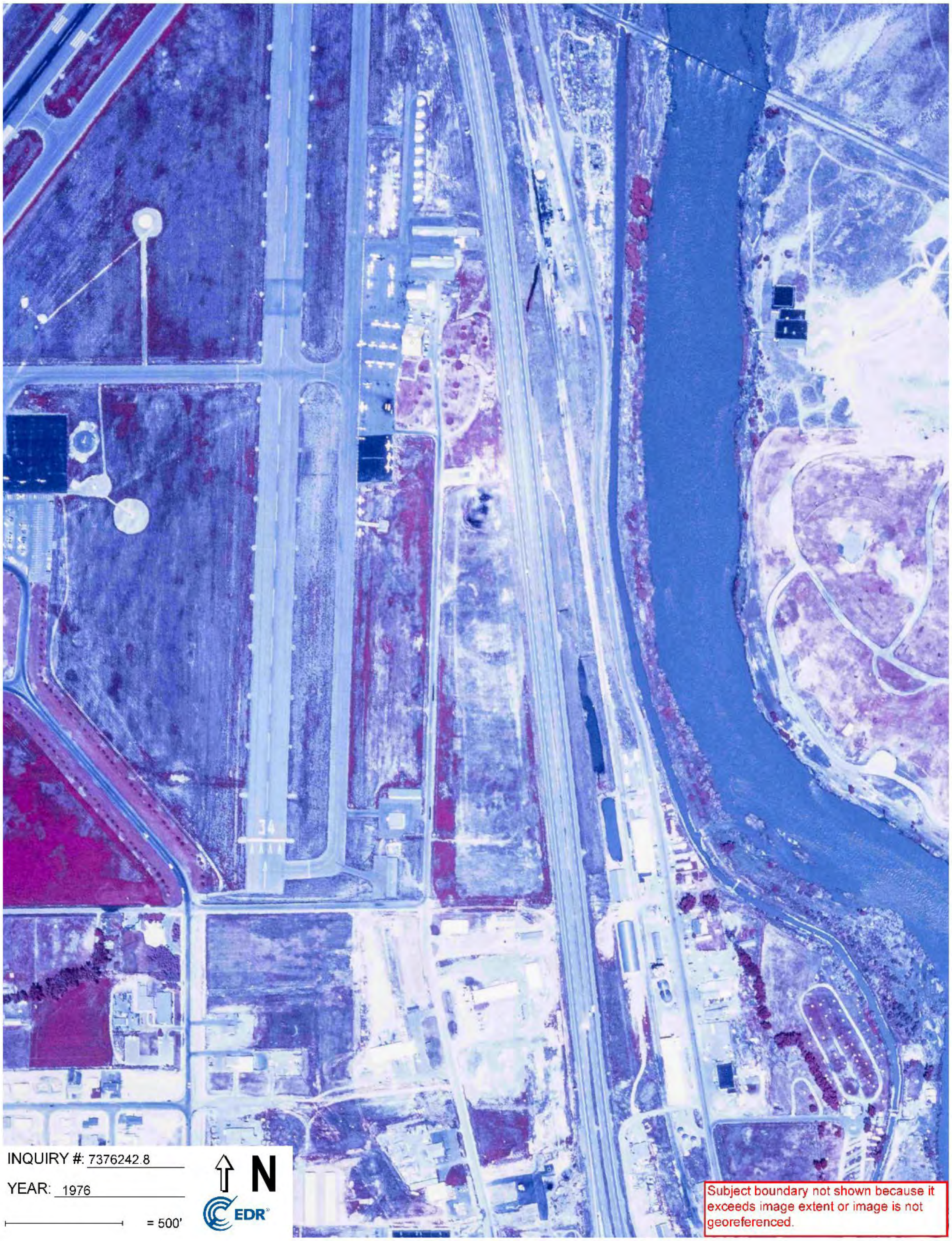

INQUIRY #: 7376242.8
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 7376242.8
YEAR: 1998
= 500'
N
EDR
Subject boundary not shown because it exceeds image extent or image is not georeferenced.


35
INQUIRY #: 7376242.8
YEAR: 1992
= 500'
N
EDR

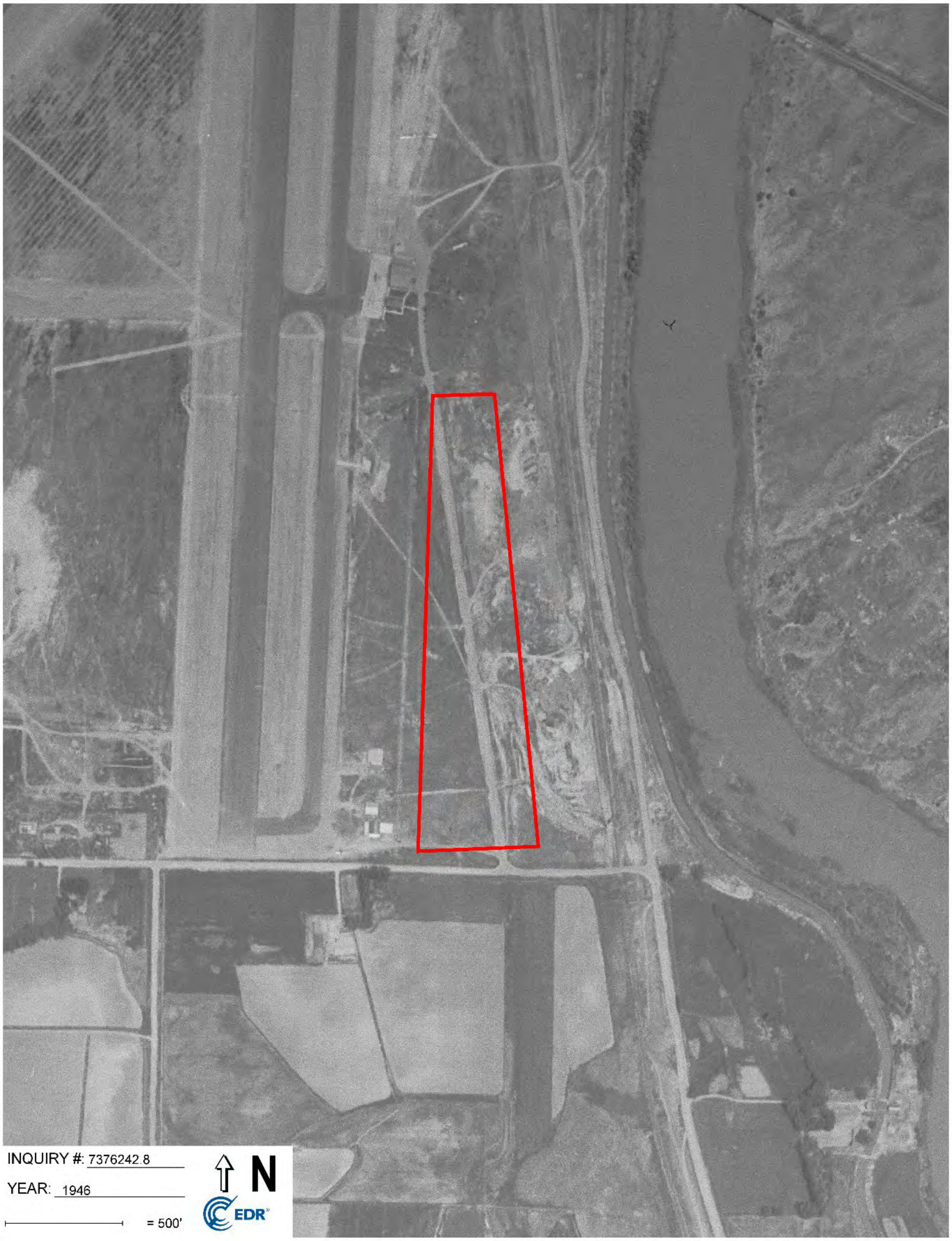

INQUIRY #: 7376242.8
YEAR: 1987
= 500'
N
EDR
Subject boundary not shown because it exceeds image extent or image is not georeferenced.


34
INQUIRY #: 7376242.8
YEAR: 1980
= 500'
N
EDR


INQUIRY #: 7376242.8
YEAR: 1976
= 500'
N
EDR
Subject boundary not shown because it exceeds image extent or image is not georeferenced.


INQUIRY #: 7376242.8
YEAR: 1974
= 500'
N
EDR


IDAHO FALLS
INQUIRY #: 7376242.8
YEAR: 1954
= 500'
N
EDR


INQUIRY #: 7376242.8
YEAR: 1946
= 500'
N
EDR

Appendix C

Qualifications of Environmental Professional and Reviewer

Environmental Professional

Scott Webster, Biologist

Mr. Webster has 21 years of experience with a diverse background in hazardous materials identification, vegetation and wildlife assessments, data collection and analysis, and environmental science. Experience includes biological assessments, wetland delineations, wetland delineation and determination, biological assessment development, environmental regulatory compliance, water quality sampling, NEPA compliance (environmental assessments/evaluations), Public Outreach, Regulatory Agency consultation/data compilation, geographical information system (GIS) mapping, mapping, hazardous materials assessments, comprehensive environmental documents preparation, potential roadway alignment alternatives development and analysis, ASTM Phase I and II environmental site assessments, cultural resource surveys, forestry inventories, and noxious and invasive seed survey. Mr. Webster is skilled in identifying information sources, gathering and verifying information and data, and applying quality assurance concepts. He has performed multiple Phase I Environmental Site Assessments for commercial real estate transactions including agriculture lands, gas stations, and numerous commercial retail offices in Idaho. He has also assisted with Environmental Site Assessment Phase II soil and groundwater sampling.

40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Training in accordance with 29 CFR 1910.120(e)(8).

Appendix D

EDR Report Findings

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APPENDIX E

Airport Layout Plan

Idaho Falls
Regional Airport
2025 Airport Master Plan

October 2024

2025 Airport Master Plan
Kick-Off Meeting

CONTENTS

Airport Layout Plan

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IDAHO FALLS REGIONAL AIRPORT (IDA)

IDAHO FALLS, IDAHO

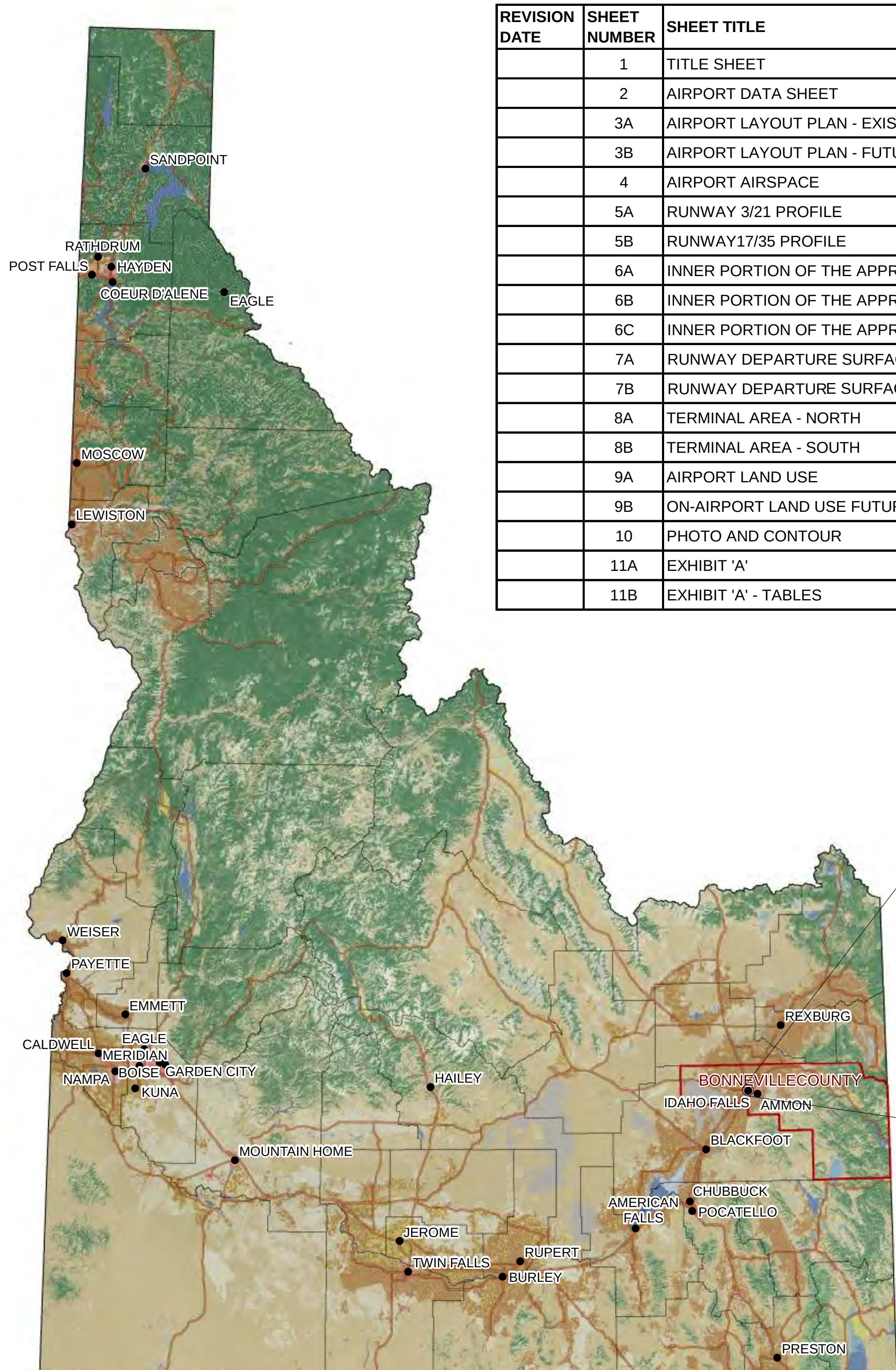
AIRPORT LAYOUT PLAN

A.I.P. NO: 3-16-0018-050-2021
ACCEPTED: MONTH/YEAR
AIRSPACE CASE NO: XXXX-XXX-X-XXX

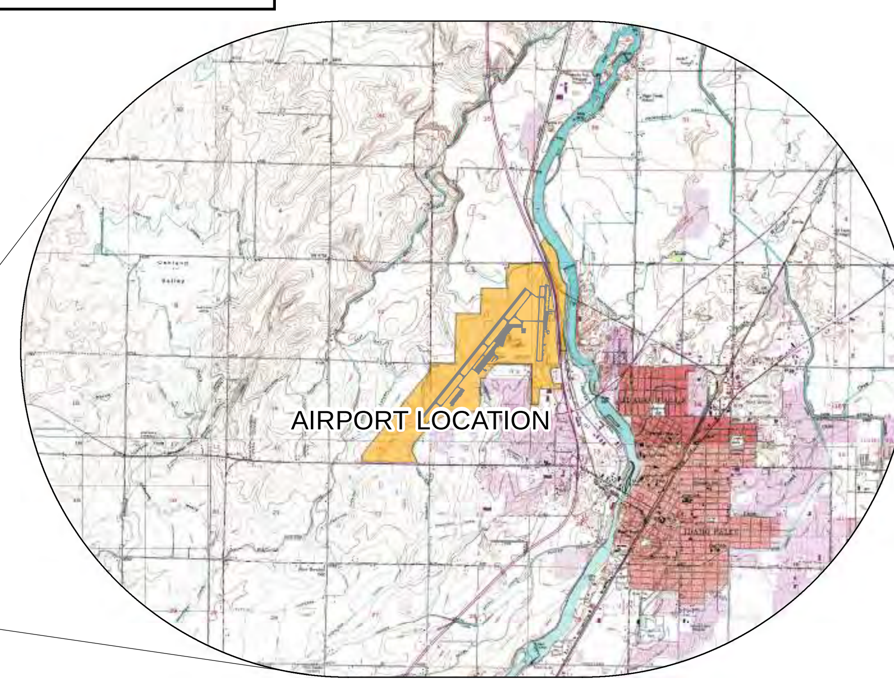
DRAWING INDEX:

REVISION DATE	SHEET NUMBER	SHEET TITLE
	1	TITLE SHEET
	2	AIRPORT DATA SHEET
	3A	AIRPORT LAYOUT PLAN - EXISTING
	3B	AIRPORT LAYOUT PLAN - FUTURE
	4	AIRPORT AIRSPACE
	5A	RUNWAY 3/21 PROFILE
	5B	RUNWAY17/35 PROFILE
	6A	INNER PORTION OF THE APPROACH SURFACE - RUNWAY 3
	6B	INNER PORTION OF THE APPROACH SURFACE - RUNWAY 21
	6C	INNER PORTION OF THE APPROACH SURFACE - RUNWAY 17/35
	7A	RUNWAY DEPARTURE SURFACE - RUNWAY 3/21
	7B	RUNWAY DEPARTURE SURFACE - RUNWAY 17
	8A	TERMINAL AREA - NORTH
	8B	TERMINAL AREA - SOUTH
	9A	AIRPORT LAND USE
	9B	ON-AIRPORT LAND USE FUTURE
	10	PHOTO AND CONTOUR
	11A	EXHIBIT 'A'
	11B	EXHIBIT 'A' - TABLES

Acceptance Letter



LOCATION MAP



VICINITY MAP

The preparation of this document was supported, in part, through the Airport Improvement Program that provides financial assistance from the Federal Aviation Administration (Project Number AIP 3-16-0018-050-2021) as provided under title 49 U.S.C., section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable or would have justification in accordance with appropriate public laws.

PLAN ACCEPTANCE:

CITY OF IDAHO FALLS MAYOR　　DATE

A.L.P. APPROVALS

FEDERAL AVIATION ADMINISTRATION

CONDITIONALLY APPROVED
PER LETTER DATE:________________
NAME:______________________

SIGNATURE:__________________
TITLE:______________________
DATE:______________
HELENA AIRPORTS DISTRICT OFFICE

AIRSPACE APPROVAL

A.L.P. AIRSPACE APPROVAL DATE : __________
CASE NO : ____________________

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

NO.	REVISIONS DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

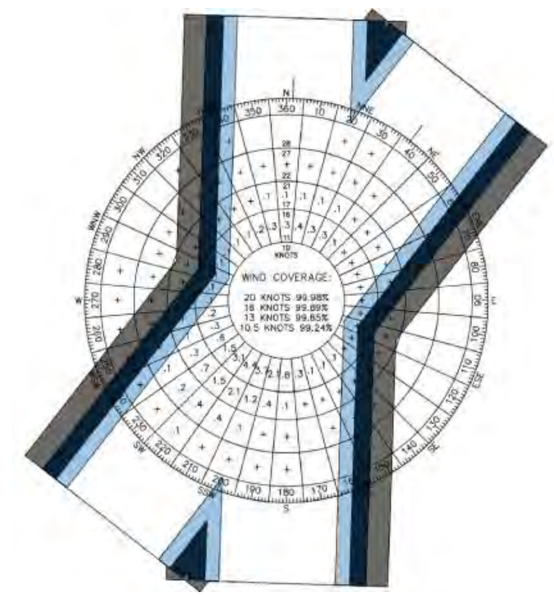
TITLE SHEET
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX XX, 20XX
PROJECT # 200419
SHEET: 1
1 OF 19

Document Path: K:\200419-CDY15_GIS\IDA_Sheet_1_Title_Sheet.mxd

ALL WEATHER WIND COVERAGE

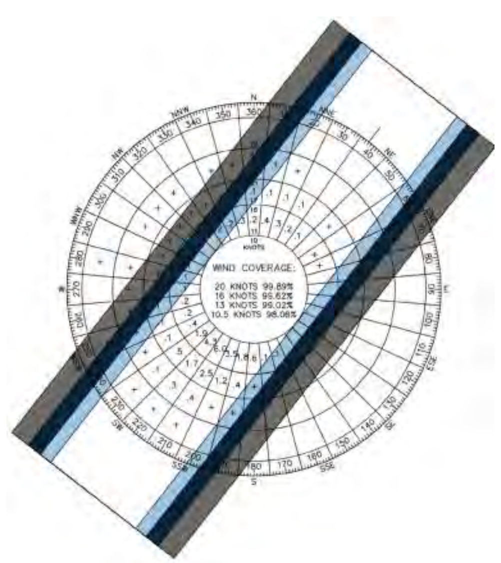
CROSSWIND COMPONENT	PERCENT COVERAGE		
	RUNWAY 3/21	RUNWAY17/35	COMBINED
10.5 KNOTS	97.94%	93.78%	99.24%
13 KNOTS	99.05%	97.03%	99.65%
16 KNOTS	99.70%	98.91%	99.89%
20 KNOTS	99.93%	99.72%	99.98%
OBSERVATION	92,858		
TIME PERIOD	2011-2020		
DATA SOURCE	ON-SITE ASOS		



ALL WEATHER COMBINED RWYS

IFR WIND COVERAGE

CROSSWIND COMPONENT	PERCENT COVERAGE
	RUNWAY 3/21
10.5 KNOTS	98.06%
13 KNOTS	99.02%
16 KNOTS	99.62%
20 KNOTS	99.89%
OBSERVATION	13,962
TIME PERIOD	2011-2020
DATA SOURCE	ON-SITE ASOS



RWY 3/21 IFR

Document Path: K:\200419-CDY15_GIS\IDA_Sheet_2_DATA.mxd

ABBREVIATIONS

AP	AIRPORT
ARP	AIRPORT REFERENCE POINT
BRL	BUILDING RESTRICTION LINE
CL	CENTER LINE
ELEV	ELEVATION
(E)	EXISTING
(F)	FUTURE (MID-PHASE)
FAA	FEDERAL AVIATION ADMINISTRATION
HP	HIGH POINT
LP	LOW POINT
NPI	NONPRECISION INSTRUMENT
ROFA	RUNWAY OBJECT FREE AREA
ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RUNWAY PROTECTION ZONE
RSA	RUNWAY SAFETY AREA
RVZ	RUNWAY VISIBILITY ZONE
RWY	RUNWAY
STA	STATION
TESM	TAXIWAY EDGE SAFETY MARGIN
TOFA	TAXIWAY OBJECT FREE AREA
TSA	TAXIWAY SAFETY AREA
TDZ	TOUCH DOWN ZONE
TYP	TYPICAL
(U)	ULTIMATE (LONG-TERM)
VIS	VISUAL

DECLARED DISTANCE

RUNWAY 3/21 (PRIMARY)	EXISTING	FUTURE
TAKE-OFF RUN AVAILABLE (TORA)	9,002'	9,002'
TAKE-OFF DISTANCE AVAILABLE (TODA)	9,002'	9,002'
ACCELERATED STOP DISTANCE (ASDA)	9,002'	9,002'
LANDING DISTANCE AVAILABLE (LDA)	9,002'	9,002'

DECLARED DISTANCE

RUNWAY 17/35	EXISTING	FUTURE
TAKE-OFF RUN AVAILABLE (TORA)	3,964'	3,964'
TAKE-OFF DISTANCE AVAILABLE (TODA)	3,964'	3,964'
ACCELERATED STOP DISTANCE (ASDA)	3,964'	3,964'
LANDING DISTANCE AVAILABLE (LDA)	3,964'	3,964'

RUNWAY DATA TABLE

RUNWAY CODIFICATION	RUNWAY 3/21				RUNWAY 17/35			
	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE
RUNWAY IDENTIFICATION	3	3	21	21	17	17	35	35
RUNWAY DESIGN CODE (RDC)	C-III-2400				A-I (SMALL AIRCRAFT)-5000			
APPROACH REFERENCE CODE (APRC)	D/IV/2400 / D/V/2400				B/I(S)/4000			
DEPARTURE REFERENCE CODE (DPRC)	D/IV AND D/V				B/I(S)			
CRITICAL AIRCRAFT	A320/321				C-182			
PAVEMENT								
PAVEMENT TYPE	ASPHALT				ASPHALT			
PAVEMENT STRENGTH BY WHEEL LOAD (LBS * 1,000)	140 (SW) / 175 (DW) / 270 (DT)				43 (SW) / 58 (DW)			
PAVEMENT CLASSIFICATION (PCR)	70/F/B/X/T				160/F/D/X/T			
EFFECTIVE RUNWAY GRADIENT (%)	0.12%				0.013%			
MAXIMUM GRADIENT WITHIN RUNWAY	1.5% - 3.0%				1.5% - 5.0%			
ALL WEATHER WIND COVERAGE (10.5/13/16) IN KTS	97.94% / 99.05% / 99.70% / 99.93%				93.78% / 97.03% / 98.91% / 99.72%			
RUNWAY DIMENSIONS	9,002' X 150'				3,964' X 75'	3,964' X 60'	3,964' X 75'	3,964' X 60'
RUNWAY DATA								
RUNWAY END COORDINATES LAT:	N 43° 30' 09.06"		N 43° 31' 19.08"		N 43° 31' 20.48"		N 43° 30' 41.36"	
LONG:	W 112°05' 06.77"		W 112° 03' 51.56"		W 112° 03' 41.77"		W 112° 03' 43.57"	
RUNWAY END ELEVATION	4742.0'		4731.3'		4731.1'		4731.2'	
RUNWAY TOUCHDOWN ZONE ELEVATION	3743.8'		4734.6'		4735.9'			
RUNWAY LIGHTING TYPE	HIRL				MIRL			
RUNWAY MARKING TYPE	PRECISION				VISUAL			
DISPLACED THRESHOLD	NONE				NONE			
RUNWAY AREAS / ZONES								
RUNWAY SAFETY AREA (RSA) WIDTH (ACTUAL / STANDARD)	500'				120'			
RUNWAY SAFETY AREA (RSA) LENGTH OFF ENDS (ACTUAL / STANDARD)	1,000'				240'			
RUNWAY OBJECT FREE AREA (ROFA) WIDTH (ACTUAL / STANDARD)	800'				250'			
RUNWAY OBJECT FREE AREA (ROFA) LENGTH BEYOND RUNWAY END	1,000'				240'			
RUNWAY OBSTACLE FREE ZONE (ROFZ) WIDTH (ACTUAL / STANDARD)	400'				250'			
RUNWAY OBSTACLE FREE ZONE (ROFZ) LENGTH BEYOND RUNWAY END	200'				200'			
RUNWAY PROTECTION ZONE DIMENSIONS (RPZ) (LENGTH/IN/OUT)	1,700' / 1,000' / 1,510'		2,500' / 1,000' / 1,750'		1,000' / 250' / 450'			
CRITICAL AIRSPACE SURFACES								
APPROACH TYPE	NON-PRECISION		PRECISION		VISUAL			
CFR PART 77 APPROACH CATEGORY	34:1		50:1 FOR 10,000' THEN 40:1		20:1			
CFR PART 77 APPROACH DIMENSION (IN/OUT/LENGTH)	1,000' / 4,000' /10,000'		1,000' / 16,000' / 10,000' + 40,000'		250' / 1,250' / 5,000'			
VISIBILITY MINIMUMS	3/4 STATUTE MILE	1/2 STATUTE MILE (ADDITIONAL MALSR)	1/2 STATUTE MILE		VISUAL			
APPROACH SURFACE (BEYOND RWY/IN/OUT/LENGTH/SLOPE)	SURFACE # 5 (200' / 400' / 3,500' / 10,000' / 20:1)		SURFACE # 5 (200' / 400' / 3,500' / 10,000' / 34:1)		SURFACE #2 (0' / 250' / 700' / 2,250 + 2,750 / 20:1)			
TYPE OF AERONAUTICAL SURVEY	VERTICALLY GUIDED				NON-VERTICALLY GUIDED			
RUNWAY DEPARTURE SURFACE SURFACE #7 (APPLIED?)	YES				NO		YES	
APPROACH SURFACE #6 (APPLIED?) (IN/OUT/LENGTH/SLOPE)	YES (350' / 1,520' / 10,200' / 30:1)				NO			
VISUAL AND INSTRUMENT NAVAIDS	BEACON, PAPI, REILS, LOC		BEACON, PAPI, MALSR, LOC, GS, ILS CAT I		BEACON, PAPI			
VERTICAL DATUM	NAVD 88 (US FEET)							
HORIZONTAL DATUM	NAD83(2011)(EPOCH:2010:0000)							

AIRPORT NON-STANDARDS CONDITION TABLE

	ITEM OR SURFACE NOT MEETING STANDARD	ACTUAL	STANDARD	FAA APPROVED DATE
1	TAXIWAY A AND CONNECTOR DOESN'T MEET AIRPORT DESIGN AC TDG-5	60'	75'	NONE

TAXIWAY/TAXILANE DATA TABLE - RUNWAY 17/35

TAXIWAY IDENTIFICATION	B	B1, B3	C
TAXIWAY DESIGN GROUP	3	3	3
AIRPLANE DESIGN GROUP	II	II	II
TAXIWAY AND TAXILANE WIDTH	50'	50'	60'
TAXIWAY EDGE SAFETY MARGIN (TESM)	10'	10'	10'
TAXIWAY AND TAXILANE SAFETY AREA (TSA) WIDTH	79'	79'	79'
TAXIWAY OBJECT FREE AREA (TOFA) WIDTH	124'	124'	124'
TAXILANE OBJECT FREE AREA (TLOFA) WIDTH	110'	110'	110'
TAXIWAY CENTERLINE TO RUNWAY CENTERLINE SEPARATION	240'	N/A	N/A
TAXIWAY LIGHTING	Reflectors	Reflectors	Reflectors

AIRPORT DATA TABLE

	EXISTING		FUTURE
AIRPORT REFERENCE CODE (ARC)		C-III	C-III
MEAN MAX TEMPERATURE HOTTEST MONTH		86° F (JULY)	86° F (JULY)
AIRPORT ELEVATION		4743.8'	4743.8'
AIRPORT NAVIGATIONAL AIDS		BEACON, PAPI, REILS, MALSR, LOCALIZER, GLIDE SLOPE, DME, VOR	BEACON, PAPI, REILS, MALSR, LOCALIZER, GLIDE SLOPE, DME, VOR
AIRPORT REFERENCE POINT	LAT:	43° 30' 49.22" N	43° 30' 49.22" N
	LONG:	112° 04' 14.95" W	112° 04' 14.95" W
MISCELLANEOUS FACILITIES		ASOS , LIGHTED WIND CONES	ASOS , LIGHTED WIND CONES
CRITICAL AIRCRAFT		A320/321	A320/321
AIRPORT MAGNETIC VARIATION		11°38' E 2021	11°38' E 2021
NPIAS SERVICE LEVEL		COMMERICAL SERVICE - PRIMARY NON-HUB	COMMERICAL SERVICE - PRIMARY NON-HUB
IDAHO STATE SERVICE ROLE		NPIAS - PRIMARY	NPIAS - PRIMARY

TAXIWAY/TAXILANE DATA TABLE - RUNWAY 3/21

TAXIWAY IDENTIFICATION	A	A1-A6	B2	C	D, E, F	G*	K**
TAXIWAY DESIGN GROUP	5	5	3	5	3	3	5
AIRPLANE DESIGN GROUP	III	III	II	III	II	II	IV
TAXIWAY AND TAXILANE WIDTH	60'	60'	60'	60'	50'	50'	75'
TAXIWAY EDGE SAFETY MARGIN (TESM)	14'	14'	5'	14'	5'	5'	14'
TAXIWAY AND TAXILANE SAFETY AREA (TSA) WIDTH	118'	118'	79'	118'	79'	79'	171'
TAXIWAY OBJECT FREE AREA (TOFA) WIDTH	171'	171'	124'	171'	124'	124'	243'
TAXILANE OBJECT FREE AREA (TLOFA) WIDTH	158'	158'	110'	158'	110'	110'	224'
TAXIWAY CENTERLINE TO RUNWAY CENTERLINE SEPARATION	400'	N/A	N/A	N/A	N/A	N/A	400'
TAXIWAY LIGHTING	MITL	MITL	MITL	MITL	MITL	MITL	MITL

*Future **Existing G, Future K

BORDER SIZE 11"X17"
DESIGNED DRAFT
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS

NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

AIRPORT DATA SHEET

IDAHO FALLS REGIONAL AIRPORT

DATE: XXX XX, XXXX
PROJECT # 200419
SHEET: 2
2 OF 19

CITY OF IDAHO FALLS MAYOR   DATE

A.L.P. APPROVALS

FEDERAL AVIATION ADMINISTRATION

CONDITIONALLY APPROVED

PER LETTER DATE:_______________

NAME:_______________

SIGNATURE:_______________

TITLE:_______________

DATE:_______________

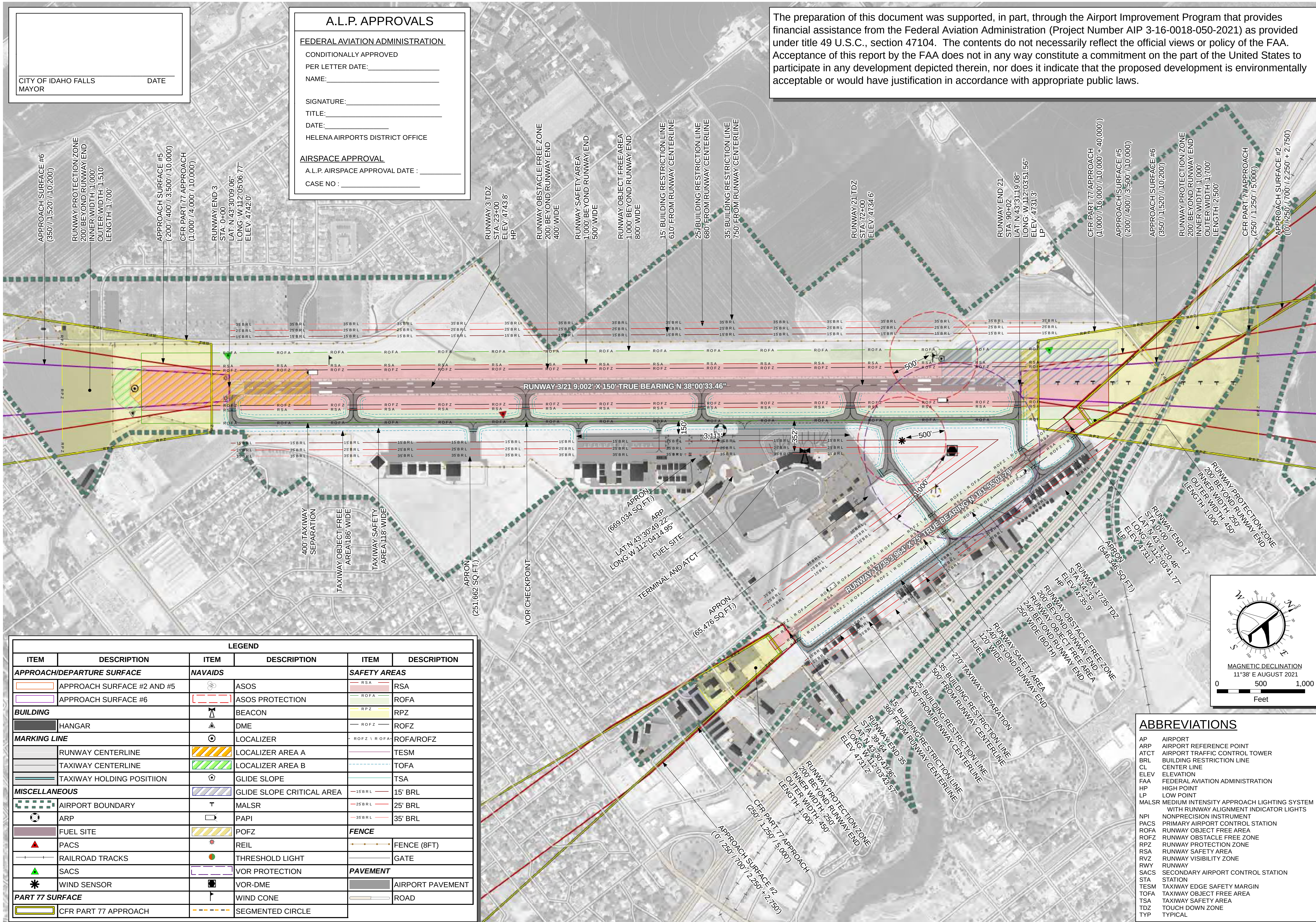
HELENA AIRPORTS DISTRICT OFFICE

AIRSPACE APPROVAL

A.L.P. AIRSPACE APPROVAL DATE : _______________

CASE NO : _______________

The preparation of this document was supported, in part, through the Airport Improvement Program that provides financial assistance from the Federal Aviation Administration (Project Number AIP 3-16-0018-050-2021) as provided under title 49 U.S.C., section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable or would have justification in accordance with appropriate public laws.



LEGEND

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
APPROACH/DEPARTURE SURFACE		***NAVAIDS***		***SAFETY AREAS***	
	APPROACH SURFACE #2 AND #5		ASOS		RSA
	APPROACH SURFACE #6		ASOS PROTECTION		ROFA
BUILDING			BEACON		RPZ
	HANGAR		DME		ROFZ
MARKING LINE			LOCALIZER		ROFA/ROFZ
	RUNWAY CENTERLINE		LOCALIZER AREA A		TESM
	TAXIWAY CENTERLINE		LOCALIZER AREA B		TOFA
	TAXIWAY HOLDING POSITIION		GLIDE SLOPE		TSA
MISCELLANEOUS			GLIDE SLOPE CRITICAL AREA		15' BRL
	AIRPORT BOUNDARY		MALSR		25' BRL
	ARP		PAPI		35' BRL
	FUEL SITE		POFZ	***FENCE***	
	PACS		REIL		FENCE (8FT)
	RAILROAD TRACKS		THRESHOLD LIGHT		GATE
	SACS		VOR PROTECTION	***PAVEMENT***	
	WIND SENSOR		VOR-DME		AIRPORT PAVEMENT
PART 77 SURFACE			WIND CONE		ROAD
	CFR PART 77 APPROACH		SEGMENTED CIRCLE		

ABBREVIATIONS

AP AIRPORT
ARP AIRPORT REFERENCE POINT
ATCT AIRPORT TRAFFIC CONTROL TOWER
BRL BUILDING RESTRICTION LINE
CL CENTER LINE
ELEV ELEVATION
FAA FEDERAL AVIATION ADMINISTRATION
HP HIGH POINT
LP LOW POINT
MALSR MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATOR LIGHTS
NPI NONPRECISION INSTRUMENT
PACS PRIMARY AIRPORT CONTROL STATION
ROFA RUNWAY OBJECT FREE AREA
ROFZ RUNWAY OBSTACLE FREE ZONE
RPZ RUNWAY PROTECTION ZONE
RSA RUNWAY SAFETY AREA
RVZ RUNWAY VISIBILITY ZONE
RWY RUNWAY
SACS SECONDARY AIRPORT CONTROL STATION
STA STATION
TESM TAXIWAY EDGE SAFETY MARGIN
TOFA TAXIWAY OBJECT FREE AREA
TSA TAXIWAY SAFETY AREA
TDZ TOUCH DOWN ZONE
TYP TYPICAL

BORDER SIZE	11"X17"
DESIGNED	DESIGN
DRAWN	BRC
CHECKED	BWC
APPROVED	WR

REVISIONS

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A.I.P. PROJECT # 3-16-0018-050-2021

AIRPORT LAYOUT PLAN EXISTING
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 3A
3 OF 19

LEGEND

ITEM EXISTING	ITEM FUTURE	DESCRIPTION
APPROACH/DEPARTURE SURFACE		
		APPROACH SURFACE #2 AND #5
		APPROACH SURFACE #6
		CFR PART 77 APPROACH
BUILDING		
		HANGAR
X		ARFF
X		ATCT
X		CARGO TRUCK DOCK
X		TRANSIT BUILDING
X		STRUCTURES
X		PARKING GARAGE
FENCE		
		FENCE (8FT)
		GATE

ITEM EXISTING	ITEM FUTURE	DESCRIPTION
NAVAIDS		
		ASOS
		ASOS PROTECTION
		BEACON
		DME
		LOCALIZER
		LOCALIZER AREA A
		LOCALIZER AREA B
		GLIDE SLOPE
		GLIDE SLOPE CRITICAL AREA
		MALSR
		PAPI
		POFZ
		REIL
		THRESHOLD LIGHT

ITEM EXISTING	ITEM FUTURE	DESCRIPTION
NAVAIDS (CONTINUED)		
		WIND CONE
		SEGMENTED CIRCLE
SAFETY AREAS		
RSA		RSA
ROFA		ROFA
RPZ		RPZ
ROFZ		ROFZ
ROFZ \ ROFA		ROFA/ROFZ
		TESM
		TOFA
		TSA
15'BRL		15' BRL
25'BRL		25' BRL
35'BRL		35' BRL

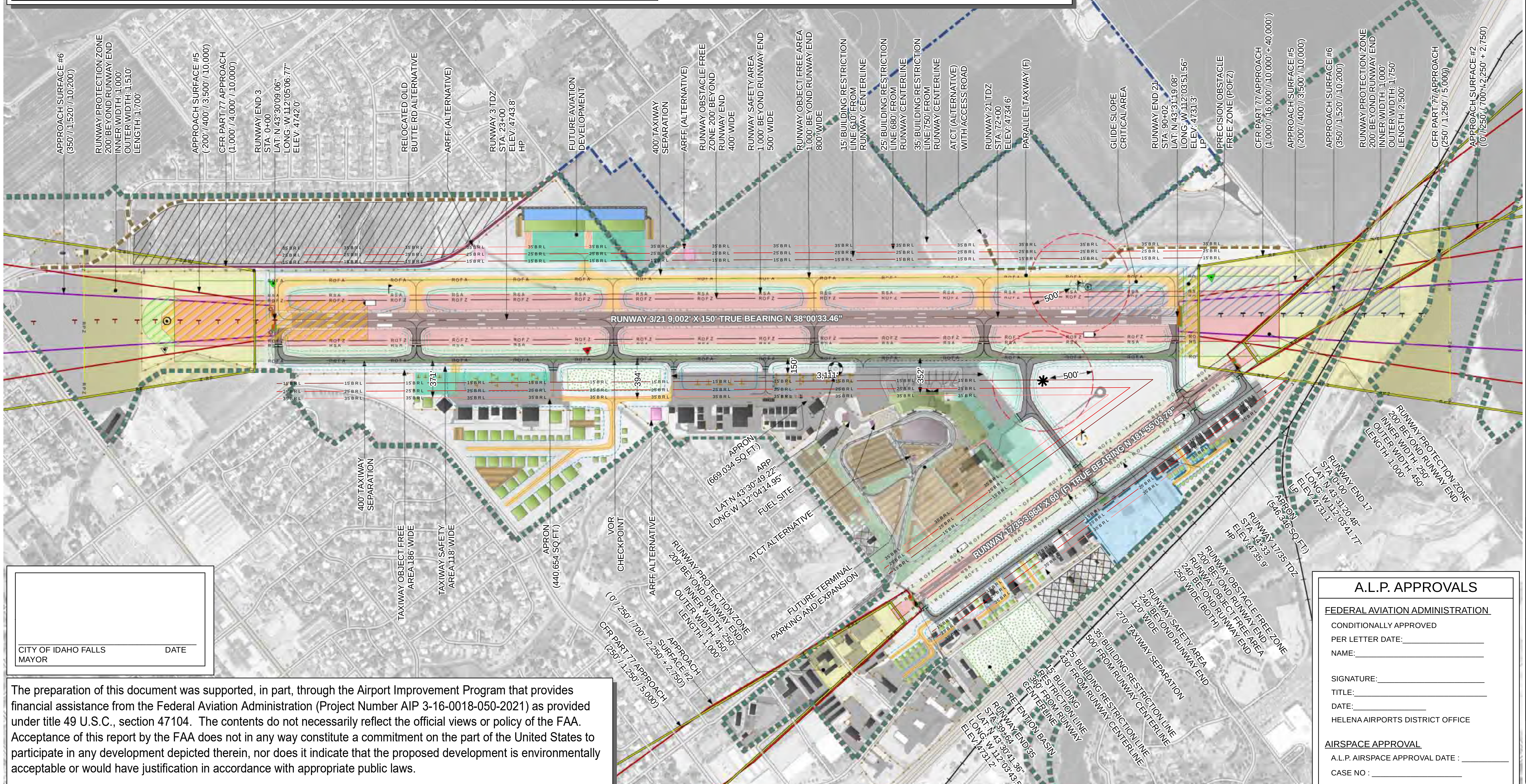
ITEM EXISTING	ITEM FUTURE	DESCRIPTION
PAVEMENT		
	X	AIRPORT PAVEMENT
		ROAD
X		ROAD TO BE RELOCATED
		APRON
X		EMP PARKING
X		NON-AERONAUTICAL USE
X		SIDEWALK
		TAXIWAY
MARKING LINE		
		RUNWAY CENTERLINE
		TAXIWAY CENTERLINE
		TAXIWAY HOLDING POSITIION
X		PARKING LOT LINE

ITEM EXISTING	ITEM FUTURE	DESCRIPTION
MISCELLANEOUS		
		AIRPORT BOUNDARY
		ARP
		FUEL SITE
		PACS
		RAILROAD TRACKS
		SACS
		WIND SENSOR
X		NO-TAXI ISLAND
X		HISTORIC DISTRICT
X		GROUND SUPPORT
X		FUTURE AVIATION
X		RETENTION BASIN
X		GRASS

ABBREVIATIONS

AP AIRPORT
ARP AIRPORT REFERENCE POINT
ATCT AIRPORT TRAFFIC CONTROL TOWER
BRL BUILDING RESTRICTION LINE
CL CENTER LINE
ELEV ELEVATION
(F) FUTURE (MID-PHASE)
FAA FEDERAL AVIATION ADMINISTRATION
HP HIGH POINT
LP LOW POINT
MALSR MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RUNWAY ALIGNMENT INDICATOR LIGHTS
NPI NONPRECISION INSTRUMENT
PACS PRIMARY AIRPORT CONTROL STATION
ROFA RUNWAY OBJECT FREE AREA
ROFZ RUNWAY OBSTACLE FREE ZONE
RPZ RUNWAY PROTECTION ZONE
RSA RUNWAY SAFETY AREA
RVZ RUNWAY VISIBILITY ZONE
RWY RUNWAY
SACS SECONDARY AIRPORT CONTROL STATION
STA STATION
TESM TAXIWAY EDGE SAFETY MARGIN
TOFA TAXIWAY OBJECT FREE AREA
TSA TAXIWAY SAFETY AREA
TDZ TOUCH DOWN ZONE
TYP TYPICAL

MAGNETIC DECLINATION
11°38' E AUGUST 2021
0 500 1,000
Feet



CITY OF IDAHO FALLS MAYOR DATE

The preparation of this document was supported, in part, through the Airport Improvement Program that provides financial assistance from the Federal Aviation Administration (Project Number AIP 3-16-0018-050-2021) as provided under title 49 U.S.C., section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein, nor does it indicate that the proposed development is environmentally acceptable or would have justification in accordance with appropriate public laws.

A.L.P. APPROVALS

FEDERAL AVIATION ADMINISTRATION

CONDITIONALLY APPROVED

PER LETTER DATE:____________

NAME:____________

SIGNATURE:____________

TITLE:____________

DATE:____________

HELENA AIRPORTS DISTRICT OFFICE

AIRSPACE APPROVAL

A.L.P. AIRSPACE APPROVAL DATE : ____________

CASE NO : ____________

Document Path: K:\200419-CDY15_GIS\IDA_Sheet_3B_ALP_Future.mxd

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS

NO.	DATE:	DESCRIPTION

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MERIDIAN, ID 83642
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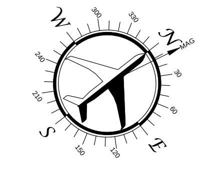
A.I.P. PROJECT # 3-16-0018-050-2021

AIRPORT LAYOUT PLAN FUTURE
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 3B
4 OF 19



MAGNETIC DECLINATION
11°38' E AUGUST 2021

0 2,500 5,000
Feet

14 CFR PART 77 VERTICAL BUFFERS

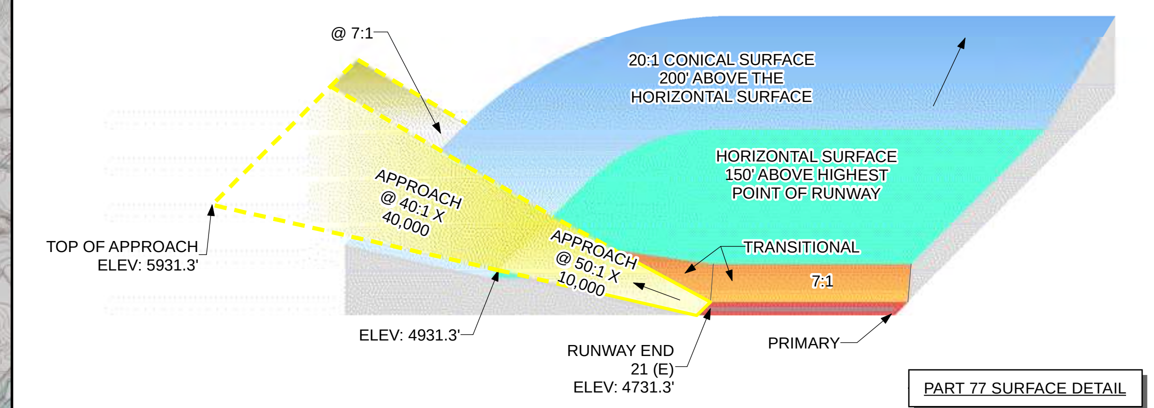
THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

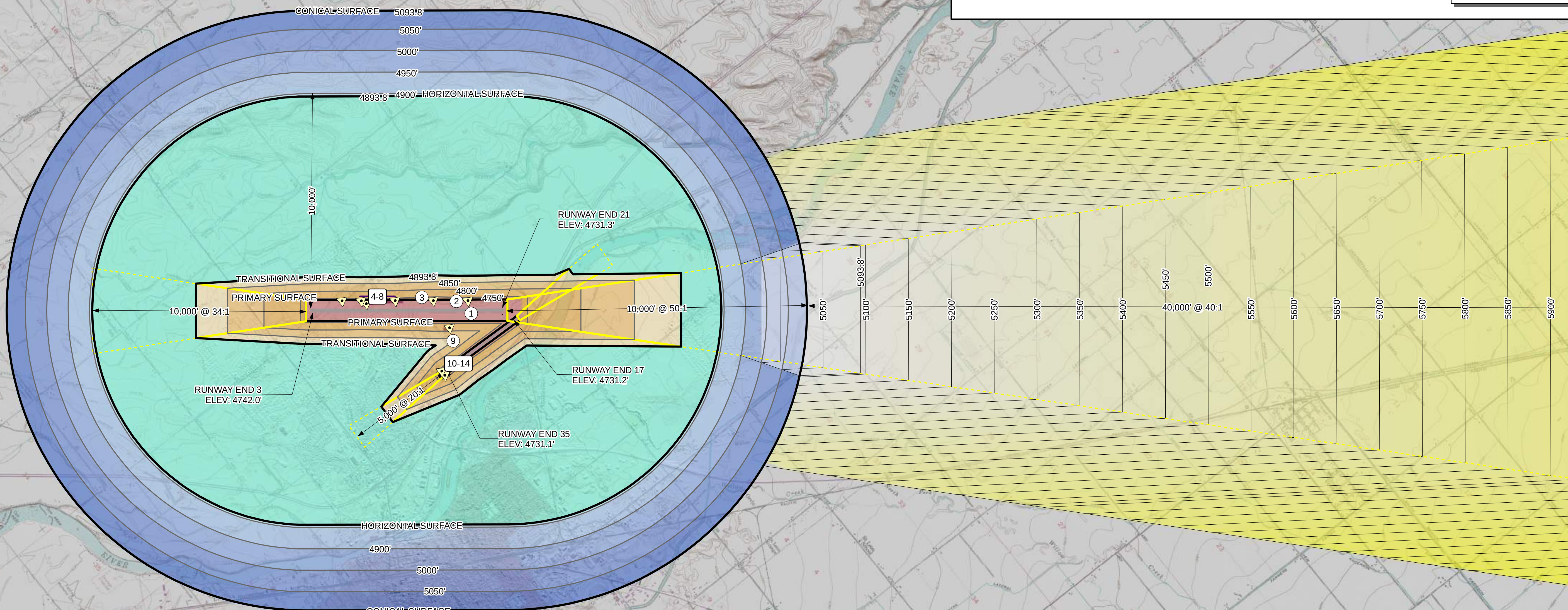
PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET



PART 77 SURFACE DETAIL



REF	OBJECT DESCRIPTION	SURFACE AFFECTED	MAX OBJECT ELEVATION (FT.)	AREA PENETRATION IN (SQ.FT.)	MAX PENETRATION HEIGHT (FT.)	DISPOSITION
1	TERRAIN	PRIMARY	4,746.8	25,700	12.2	TO BE REMOVED
2	ACCESS ROAD	TRANSITIONAL	4,746.9	7,000	9.9	TO BE REMOVED
3	ACCESS ROAD	TRANSITIONAL	4,736.8	1,500	4.0	TO BE REMOVED
4	TERRAIN	PRIMARY	4,758.5	131,025	18.2	TO BE REMOVED
5	TERRAIN	TRANSITIONAL	4,759.3	37,400	18.0	TO BE REMOVED
6	TERRAIN	PRIMARY	4,755.2	76,675	12.0	TO BE REMOVED
7	TERRAIN	TRANSITIONAL	4,750.0	1,650	5.8	TO BE REMOVED
8	ACCESS ROAD	TRANSITIONAL	4,745.9	375	3.1	TO BE REMOVED
9	ATCT TOWER	TRANSITIONAL	4,816.3	980	46.4	NO ACTION
10	ACCESS ROAD	TRANSITIONAL	4,744.5	1,625	7.8	TO BE REMOVED
11	ACCESS ROAD	PRIMARY	4,743.9	5,625	7.9	TO BE REMOVED
12	ACCESS ROAD	TRANSITIONAL	4,743.0	1,750	6.9	TO BE REMOVED
13	ACCESS ROAD	APPROACH	4,743.2	1,975	6.4	TO BE REMOVED
14	ACCESS ROAD	APPROACH	4,743.1	1,275	5.7	TO BE REMOVED

OBSTRUCTION TABLE

ELEVATION DATA BASED ON OLC SNAKE RIVER LIDAR SURVEY ACQUIRED 4/22/2015 - 6/2/2015, 10 METER NATIONAL ELEVATION DATASET AND UAV SURVEY COMPLETED OCT 2020

IDAHO FALLS AIRSPACE IS DEFINED BY 14 CFR PART 77 OBSTRUCTION SURFACE AND PROTECTED BY THE FOLLOWING ZONING REGULATIONS:

IDAHO FALLS CITY CODE TITLE 11 AND THE IDAHO FALLS COMPREHENSIVE PLAN.

PART 77 SURFACE ELEVATION (MSL)

PRIMARY | TRANSITIONAL | HORIZONTAL | CONICAL

4730.8' - 4742' | 4742.1' - 4750' | 4750.1' - 4800' | 4800.1' - 4850' | 4850.1' - 4893.7' | 4893.8' | 4893.9' - 4900' | 4900.1' - 4950' | 4950.1' - 5000' | 5000.1' - 5050' | 5050.1' - 5093.8'

MAXIMUM PART 77 PENETRATION | RUNWAY | PART 77 OBSTRUCTIONS

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NO.	DATE:	REVISIONS DESCRIPTION

BORDER SIZE 11"X17"
DESIGNED DESIGN
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APPROVED WR

ARDURRA
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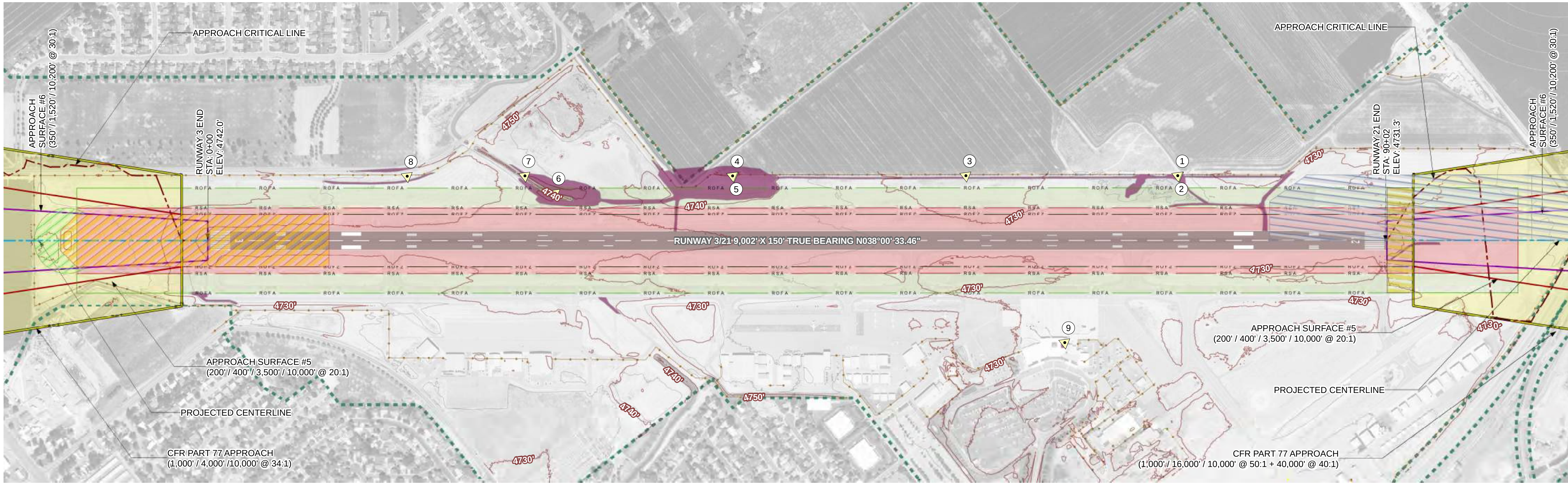
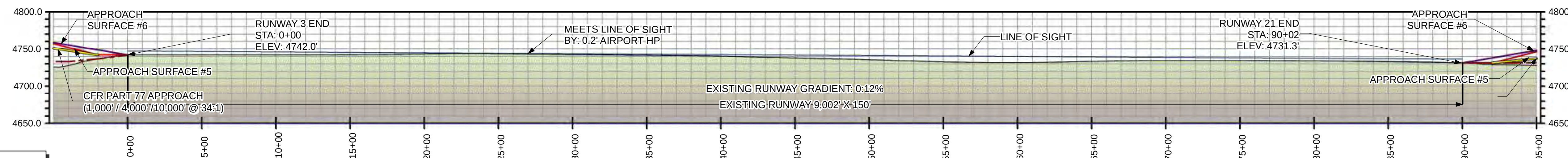
PHONE: 208.323.2288 WWW.ARDURRA.COM

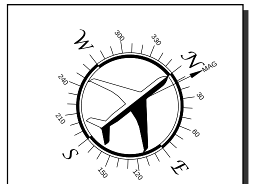
A.I.P. PROJECT # 3-16-0018-050-2021

AIRPORT AIRSPACE
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET:
4







MAGNETIC DECLINATION
11°38' E AUGUST 2021
0 400 800
Feet

LEGEND

ITEM	DESCRIPTION	ITEM	DESCRIPTION
APPROACH/DEPARTURE SURFACE		***MISCELLANEOUS***	
	APPROACH CRITICAL LINE		AIRPORT BOUNDARY
	PROJECTED RUNWAY CENTERLINE		GLIDE SLOPE CRITICAL AREA
	APPROACH SURFACE #5		LOCALIZER AREA A
	OBSTRUCTIONS		LOCALIZER AREA B
	OBSTRUCTIONS HIGH POINT		RAILROAD TRACKS
	APPROACH SURFACE #6		POFZ
PAVEMENT		***FENCE***	
	AIRPORT PAVEMENT		FENCE (8FT)
	ROAD	***SAFETY AREAS***	
PART 77 SURFACE		RSA	RSA
	CFR PART 77 APPROACH	ROFA	ROFA
5FT CONTOURS		RPZ	RPZ
	MAJOR CONTOUR	ROFZ	ROFZ
	MINOR CONTOUR		

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OBSTRUCTION TABLE

REF	OBJECT DESCRIPTION	SURFACE AFFECTED	MAX OBJECT ELEVATION (FT.)	AREA PENETRATION IN (SQ.FT.)	MAX PENETRATION HEIGHT (FT.)	DISPOSITION
1	TERRAIN	PRIMARY	4,746.8	25,700	12.2	TO BE REMOVED
2	ACCESS ROAD	TRANSITIONAL	4,746.9	7,000	9.9	TO BE REMOVED
3	ACCESS ROAD	TRANSITIONAL	4,736.8	1,500	4.0	TO BE REMOVED
4	TERRAIN	PRIMARY	4,758.5	131,025	18.2	TO BE REMOVED
5	TERRAIN	TRANSITIONAL	4,759.3	37,400	18.0	TO BE REMOVED
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8	ACCESS ROAD	TRANSITIONAL	4,745.9	375	3.1	TO BE REMOVED
9	ATCT TOWER	TRANSITIONAL	4,816.3	980	46.4	NO ACTION

14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

ELEVATION DATA BASED ON OLC SNAKE RIVER LIDAR SURVEY ACQUIRED 4/22/2015 - 6/2/2015, 10 METER NATIONAL ELEVATION DATASET AND UAV SURVEY COMPLETED OCT 2020

BORDER SIZE 11"X17"
DESIGNED DESIGN
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REVISIONS

NO.	DESCRIPTION	DATE:

ARDURRA
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MERIDIAN, ID 83642
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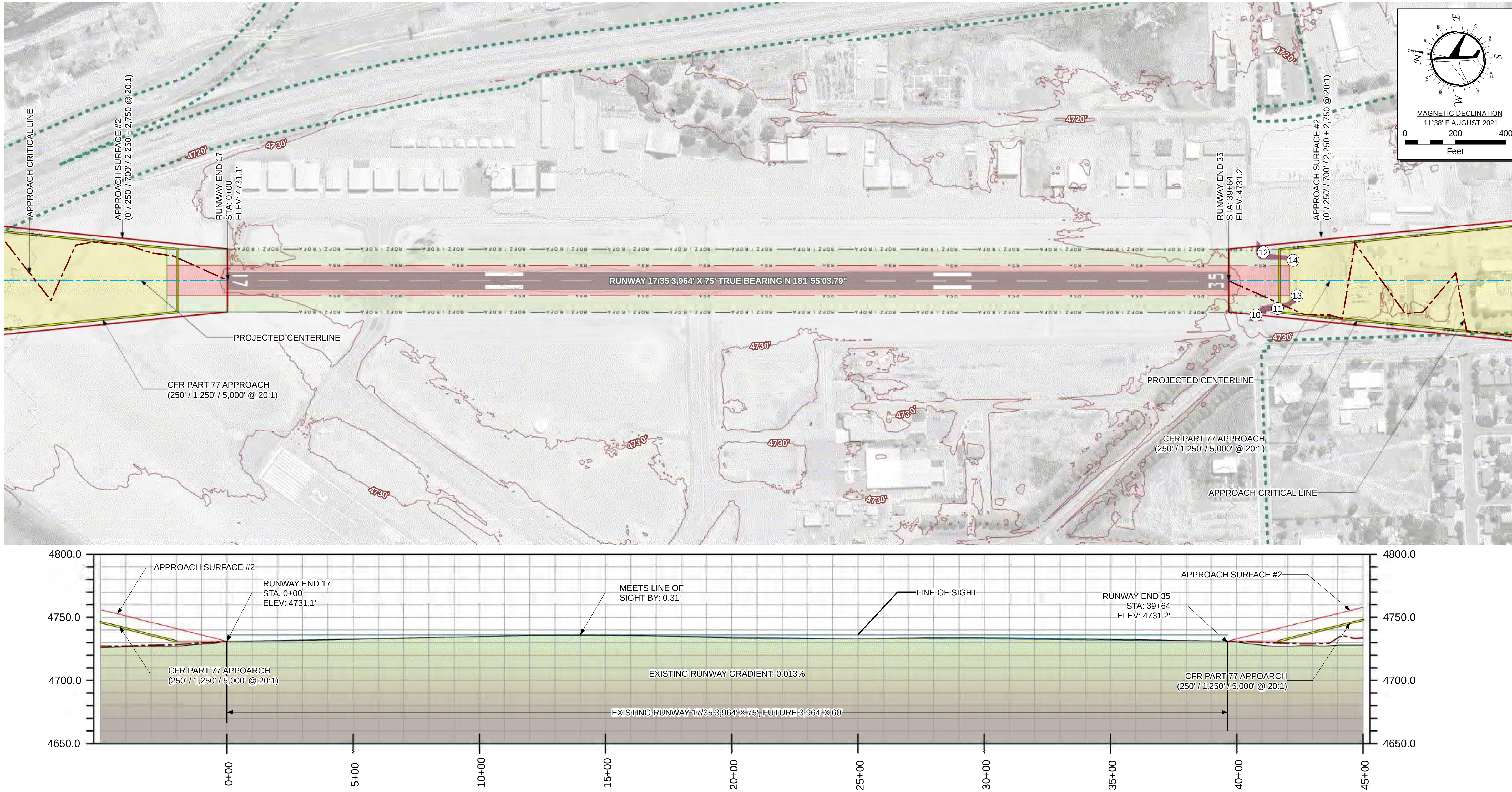
A.I.P. PROJECT # 3-16-0018-050-2021

RUNWAY 3/21 PROFILE
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 5A
6 OF 19



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LEGEND			
ITEM	DESCRIPTION	ITEM	DESCRIPTION
APPROACH/DEPARTURE SURFACE		***MISCELLANEOUS***	
	APPROACH CRITICAL LINE		AIRPORT BOUNDARY
	PROJECTED RUNWAY CENTERLINE	***PART 77 SURFACE***	
	APPROACH SURFACE #2		CFR PART 77 APPROACH
	OBSTRUCTIONS	***5FT CONTOURS***	
	OBSTRUCTIONS HIGH POINT		MAJOR CONTOUR
FENCE			MINOR CONTOUR
	FENCE (8FT)	***SAFETY AREAS***	
PAVEMENT		RSA	RSA
	AIRPORT PAVEMENT	ROFZ \ ROFA	ROFA/ROFZ
	ROAD	RPZ	RPZ

OBSTRUCTION TABLE

REF	OBJECT DESCRIPTION	SURFACE AFFECTED	MAX OBJECT ELEVATION (FT.)	AREA PENETRATION IN (SQ.FT.)	MAX PENETRATION HEIGHT (FT.)	DISPOSITION
10	ACCESS ROAD	TRANSITIONAL	4,744.5	1,625	7.8	TO BE REMOVED
11	ACCESS ROAD	PRIMARY	4,743.9	5,625	7.9	TO BE REMOVED
12	ACCESS ROAD	TRANSITIONAL	4,743.0	1,750	6.9	TO BE REMOVED
13	ACCESS ROAD	APPROACH	4,743.2	1,975	6.4	TO BE REMOVED
14	ACCESS ROAD	APPROACH	4,743.1	1,275	5.7	TO BE REMOVED

14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

ELEVATION DATA BASED ON OLC SNAKE RIVER LIDAR SURVEY ACQUIRED 4/22/2015 - 6/2/2015, 10 METER NATIONAL ELEVATION DATASET AND UAV SURVEY COMPLETED OCT 2020

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

NO.	REVISIONS DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

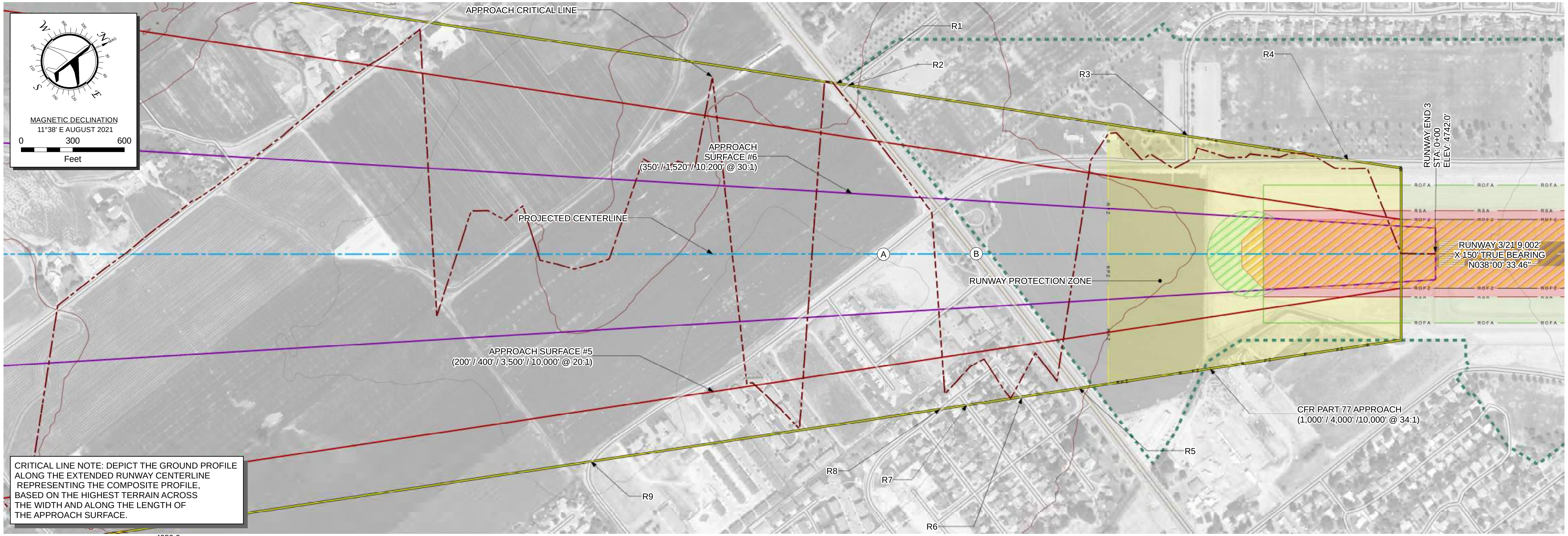
RUNWAY 17/35 PROFILE

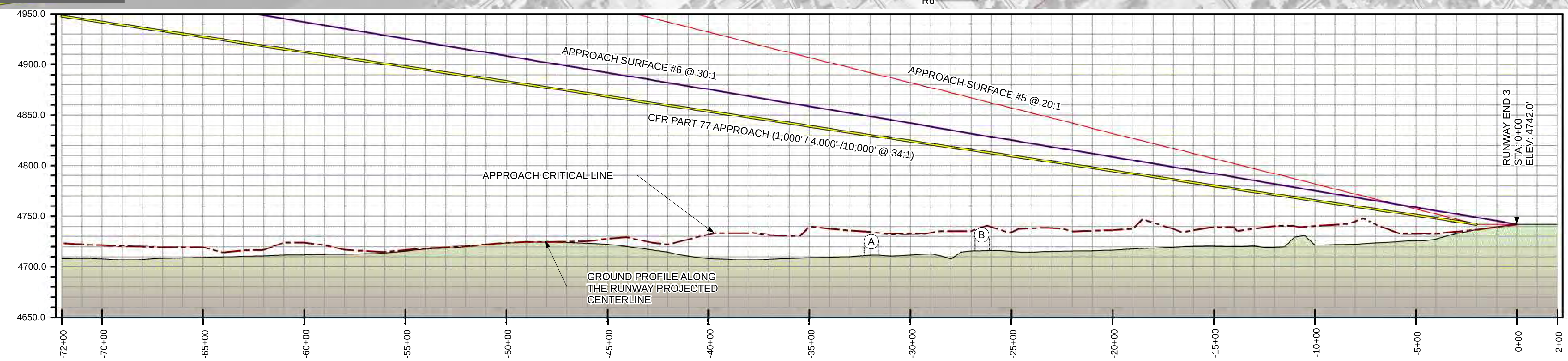
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX

PROJECT # 200419

SHEET: 5B





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ROAD CROSSING

REF	DESCRIPTION	ELEVATION	CLEARS/PENETRATION
R1	HWY CROSSING	4740.4	CLEARS: 99.3'
R2	ROAD CROSSING	4736.7	CLEARS: 100.3'
R3	ROAD CROSSING	4741.5	CLEARS: 35.3'
R4	ROAD CROSSING	4744.6	CLEARS: 11.2'
R5	HWY CROSSING	4738.0	CLEARS: 60.7'
R6	ROAD CROSSING	4724.5	CLEARS: 80.4'
R7	ROAD CROSSING	4723.9	CLEARS: 92.1'
R8	ROAD CROSSING	4723.4	CLEARS: 96.8'
R9	ROAD CROSSING	4727.2	CLEARS: 152.8'

SIGNIFICANT OBJECTS

REF	DESCRIPTIONS	BUFFER	APPROACH SURFACE IMPACT	DISPOSITION
A	S OLD BUTTE RD	15'	CLEARS: 110.1'	NO ACTION
B	W BROADWAY ST	17'	CLEARS: 86.0'	NO ACTION

LEGEND

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
APPROACH/DEPARTURE SURFACE		*FENCE*		*MISCELLANEOUS*	
	APPROACH CRITICAL LINE		WIRE FENCE (8FT)		AIRPORT BOUNDARY
	PROJECTED RUNWAY CENTERLINE	*PART 77 SURFACE*			LOCALIZER AREA A
	APPROACH SURFACE #5		CFR PART 77 APPROACH		LOCALIZER AREA B
	APPROACH SURFACE #6	*SAFETY AREAS*		*PAVEMENT*	
10FT CONTOURS		RSA	RSA		AIRPORT PAVEMENT
	MAJOR CONTOUR	ROFA	ROFA		ROAD
	MINOR CONTOUR	RPZ	RPZ		
		ROFZ	ROFZ		

ELEVATION DATA BASED ON OLC SNAKE RIVER LIDAR SURVEY ACQUIRED 4/22/2015 - 6/2/2015, 10 METER NATIONAL ELEVATION DATASET AND UAV SURVEY COMPLETED OCT 2020

14 CFR PART 77 VERTICAL BUFFERS

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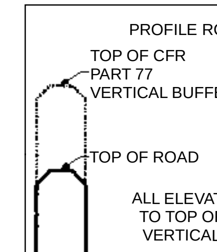
HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

PROFILE ROAD



NOT TO SCALE

BORDER SIZE	DESIGNED	DRAWN	CHECKED	APPROVED
11"X17"	DESIGN	BRC	BWC	WR

REVISIONS

NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

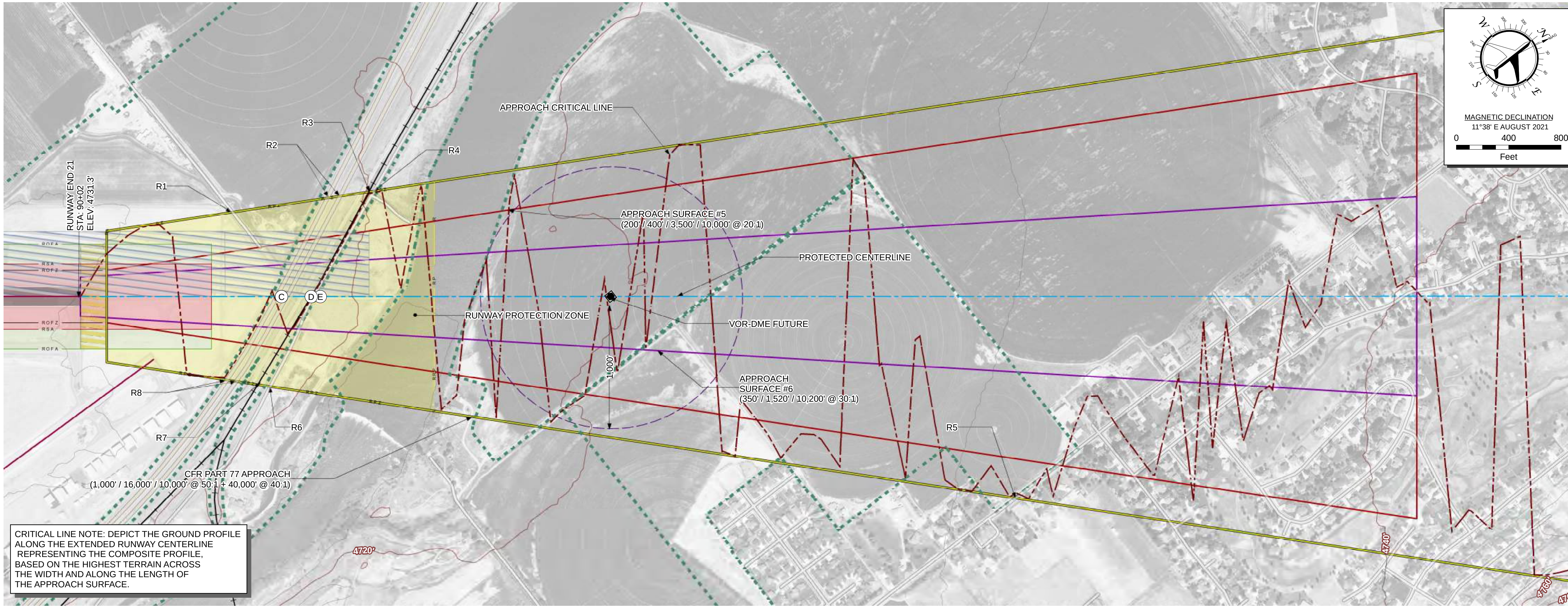
INNER PORTION OF THE RUNWAY APPROACH RUNWAY END 3

IDAHO FALLS REGIONAL AIRPORT

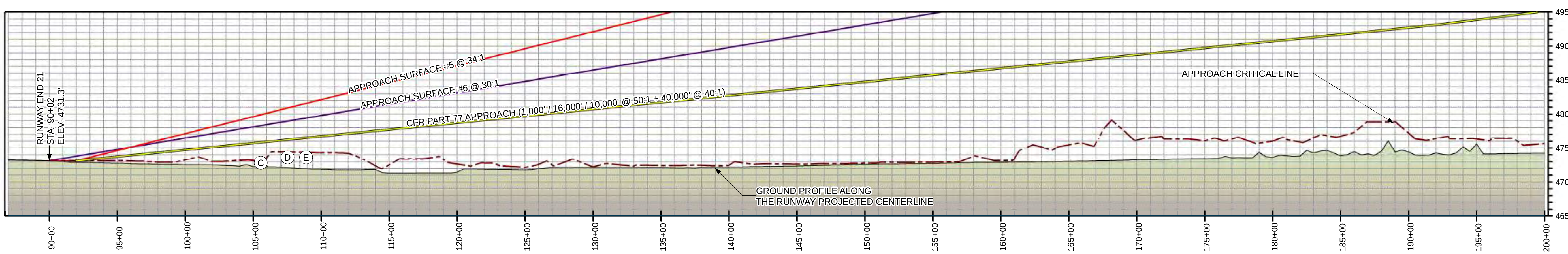
DATE: XXX X, XXXX

PROJECT # 200419

SHEET: 6A



CRITICAL LINE NOTE: DEPICT THE GROUND PROFILE ALONG THE EXTENDED RUNWAY CENTERLINE REPRESENTING THE COMPOSITE PROFILE, BASED ON THE HIGHEST TERRAIN ACROSS THE WIDTH AND ALONG THE LENGTH OF THE APPROACH SURFACE.



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LEGEND

ITEM	DESCRIPTION	ITEM	DESCRIPTION
10FT CONTOURS		*SAFETY AREAS*	
	MAJOR CONTOUR	RSA	RSA
	MINOR CONTOUR	ROFA	ROFA
MISCELLANEOUS		RPZ	RPZ
	AIRPORT BOUNDARY	ROFZ	ROFZ
	GLIDE SLOPE CRITICAL AREA	*APPROACH/DEPARTURE SURFACE*	
	RAILROAD TRACKS		APPROACH CRITICAL LINE
	POFZ		PROJECTED RUNWAY CENTERLINE
FENCE			APPROACH SURFACE #5
	WIRE FENCE (8FT)		APPROACH SURFACE #6
PART 77 SURFACE		*PAVEMENT*	
	CFR PART 77 APPROACH		AIRPORT PAVEMENT
	PRIMARY		ROAD

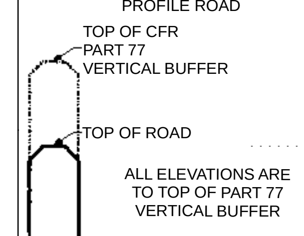
ROAD CROSSING

REF	DESCRIPTION	ELEVATION	CLEAR/PENETRATION
R1	ROAD CROSSING	4738.8	CLEARS: 11.6'
R2	HWY CROSSING	4739.8	CLEARS: 24.7'
R3	RAILROAD	4733.4	CLEARS: 38.2'
R4	ROAD CROSSING	4734.4	CLEARS: 38.8'
R5	ROAD CROSSING	4747.8	CLEARS: 121.1'
R6	ROAD CROSSING	4734.5	CLEARS: 21.7'
R7	RAILROAD	4741.0	CLEARS: 13.4'
R8	HWY CROSSING	4738.7	CLEARS: 10.7'

SIGNIFICANT OBJECTS

REF	DESCRIPTIONS	BUFFER	APPROACH SURFACE IMPACT	DISPOSITION
C	INTERSTATE 15	17'	CLEARS: 16.9'	NO ACTION
D	RAILROAD	23'	CLEARS: 18.3'	NO ACTION
E	LINDSAY	15'	CLEARS: 28.9'	NO ACTION

PROFILE ROAD



ALL ELEVATIONS ARE TO TOP OF PART 77 VERTICAL BUFFER

NOT TO SCALE

ELEVATION DATA BASED ON OLC SNAKE RIVER LIDAR SURVEY ACQUIRED 4/22/2015 - 6/2/2015, 10 METER NATIONAL ELEVATION DATASET AND UAV SURVEY COMPLETED OCT 2020

14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

NO.	DESCRIPTION	DATE:

REVISIONS

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642,
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

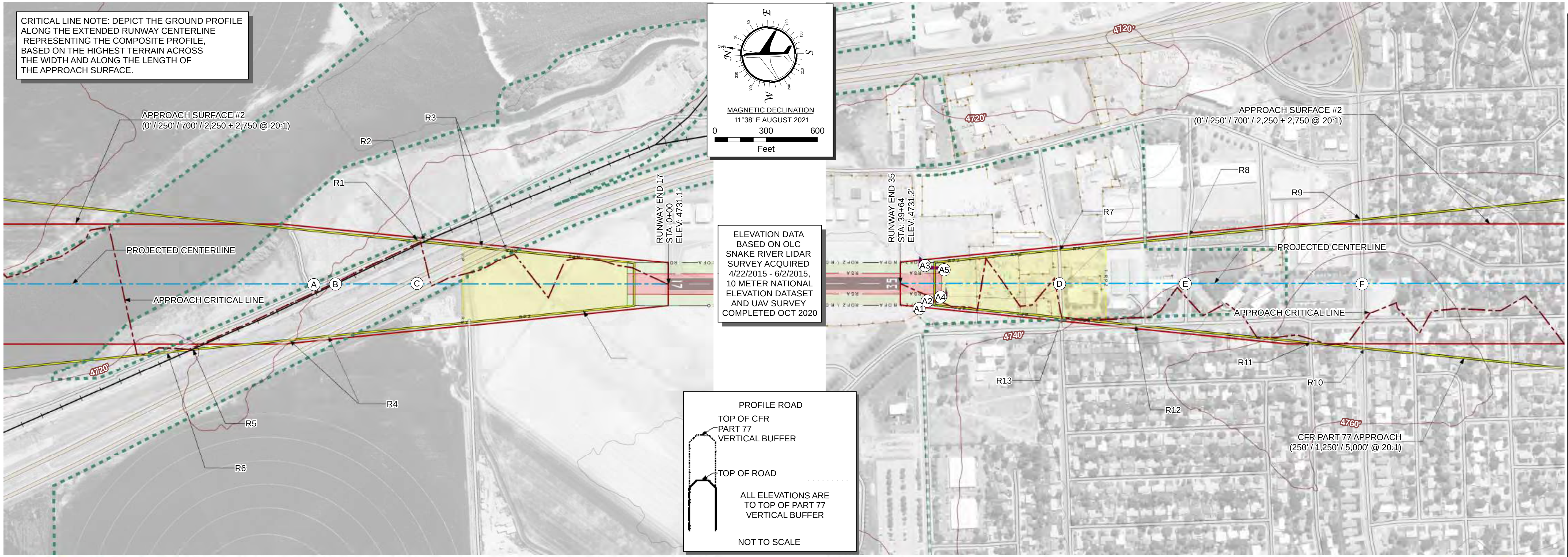
INNER PORTION OF THE RUNWAY APPROACH RUNWAY END 21

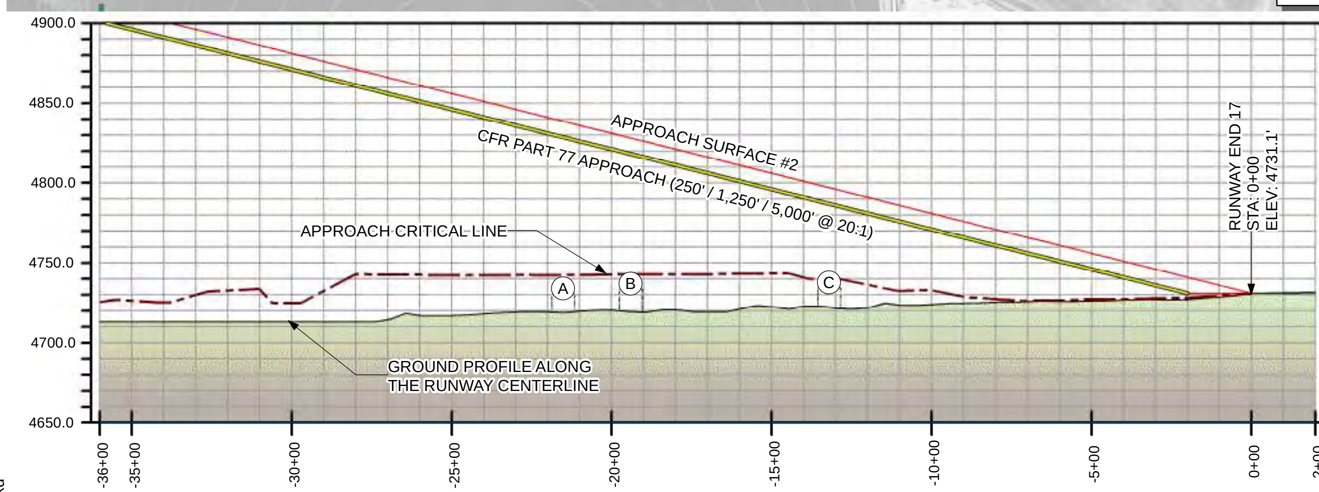
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX

PROJECT # 200419

SHEET: 6B





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LEGEND

ITEM	DESCRIPTION	ITEM	DESCRIPTION
MISCELLANEOUS		***APPROACH/DEPARTURE SURFACE***	
	AIRPORT BOUNDARY		APPROACH CRITICAL LINE
	RAILROAD TRACKS		PROJECTED RUNWAY CENTERLINE
PAVEMENT			THRESHOLD SITING SURFACE
	AIRPORT PAVEMENT		OBSTRUCTIONS
	ROAD		OBSTRUCTIONS HIGH POINT
PART 77 SURFACE		***SAFETY AREAS***	
	CFR PART 77 APPROACH	RSA	RSA
	PRIMARY	ROFZ \ ROFA	ROFA/ROFZ
10FT CONTOURS		RPZ	RPZ
	MAJOR CONTOUR	***FENCE***	
	MINOR CONTOUR		WIRE FENCE (8FT)

SIGNIFICANT OBJECTS

REF	DESCRIPTIONS	BUFFER	APPROACH SURFACE IMPACT	DISPOSITION
A	LINDSAY RD	15'	CLEARS: 93.6'	NO ACTION
B	RAILROAD	23'	CLEARS: 75.6'	NO ACTION
C	INTERSTATE 15	17'	CLEARS: 47.4'	NO ACTION
D	OLYMPIA RD	15'	CLEARS: 22.5'	NO ACTION
E	SAWTELLE RD	15'	CLEARS: 52.0'	NO ACTION
F	GRANDVIEW RD	15'	CLEARS: 76.4'	NO ACTION

ROAD CROSSING

REF	DESCRIPTION	ELEVATION	CLEARS/PENETRATION
R1	ROAD CROSSING	4733.6	CLEARS: 65.7'
R2	RAILROAD	4743.5	CLEARS: 48.7'
R3	HWY CROSSING	4739.7	CLEARS: 28.5'
R4	HWY CROSSING	4739.6	CLEARS: 76.8'
R5	RAILROAD	4742.5	CLEARS: 116.8'
R6	ROAD CROSSING	4733.6	CLEARS: 141.8'
R7	ROAD CROSSING	4742.5	CLEARS: 23.7'
R8	ROAD CROSSING	4748.3	CLEARS: 57.6'
R9	ROAD CROSSING	4762.8	CLEARS: 93.2'
R10	ROAD CROSSING	4781.7	CLEARS: 74.5'
R11	ROAD CROSSING	4785.9	CLEARS: 54.8'
R12	ROAD CROSSING	4762.3	CLEARS: 24.7'
R13	ROAD CROSSING	4753.4	CLEARS: 14.7'

<u>14 CFR PART 77 VERTICAL BUFFERS</u>

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

OBSTRUCTION TABLE

REF	OBJECT DESCRIPTION	SURFACE AFFECTED	MAX OBJECT ELEVATION (FT.)	AREA PENETRATION IN (SQ.FT.)	MAX PENETRATION HEIGHT (FT.)	DISPOSITION
A1	ACCESS ROAD	TRANSITIONAL	4,744.5	1,625	11.3	TO BE REMOVED
A2	ACCESS ROAD	PRIMARY	4,743.9	5,625	12.7	TO BE REMOVED
A3	ACCESS ROAD	TRANSITIONAL	4,743.0	1,750	11.8	TO BE REMOVED
A4	ACCESS ROAD	APPROACH	4,743.2	1,975	6.4	TO BE REMOVED
A5	ACCESS ROAD	APPROACH	4,743.1	1,275	5.7	TO BE REMOVED

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS

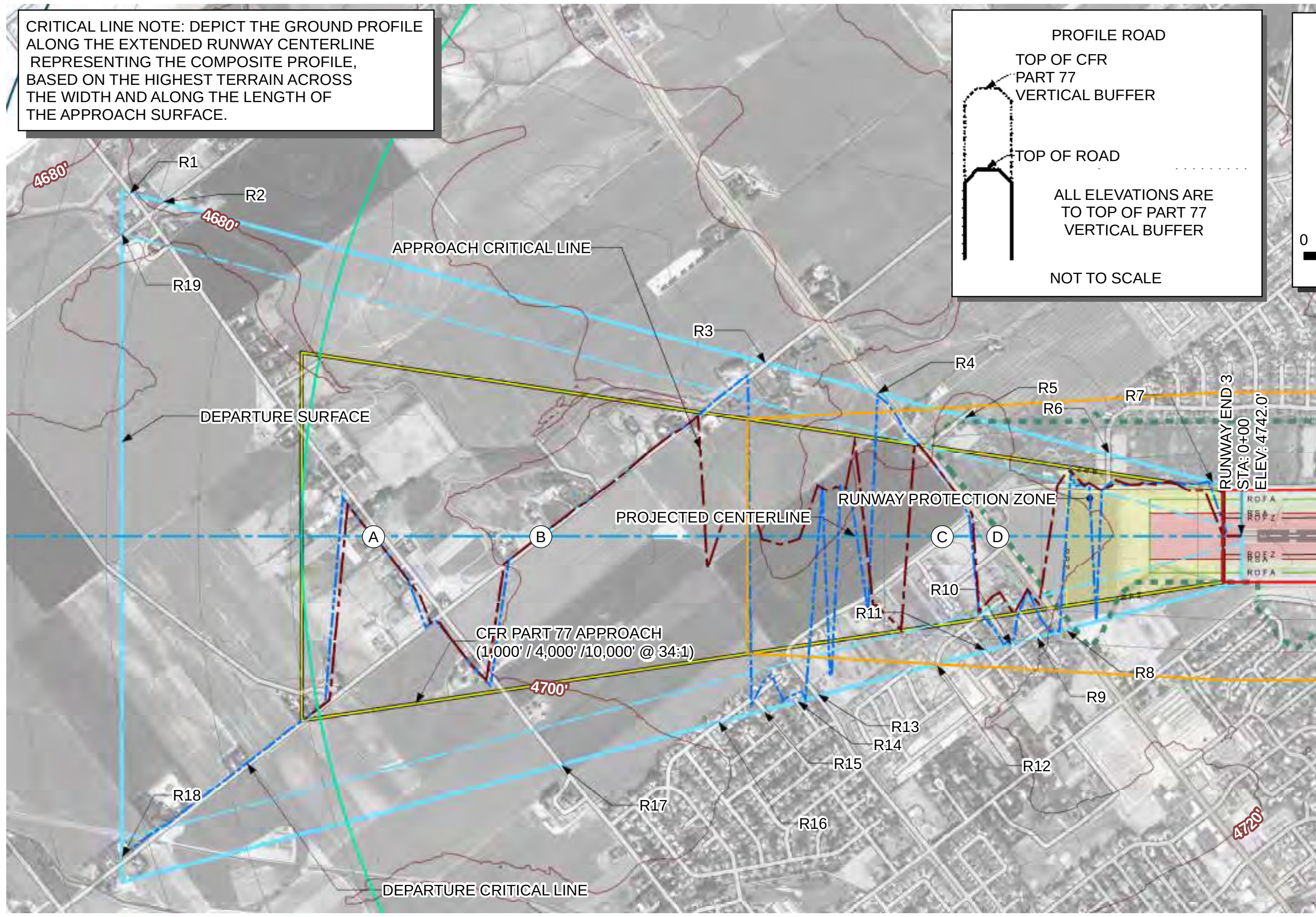
NO.	DESCRIPTION	DATE:

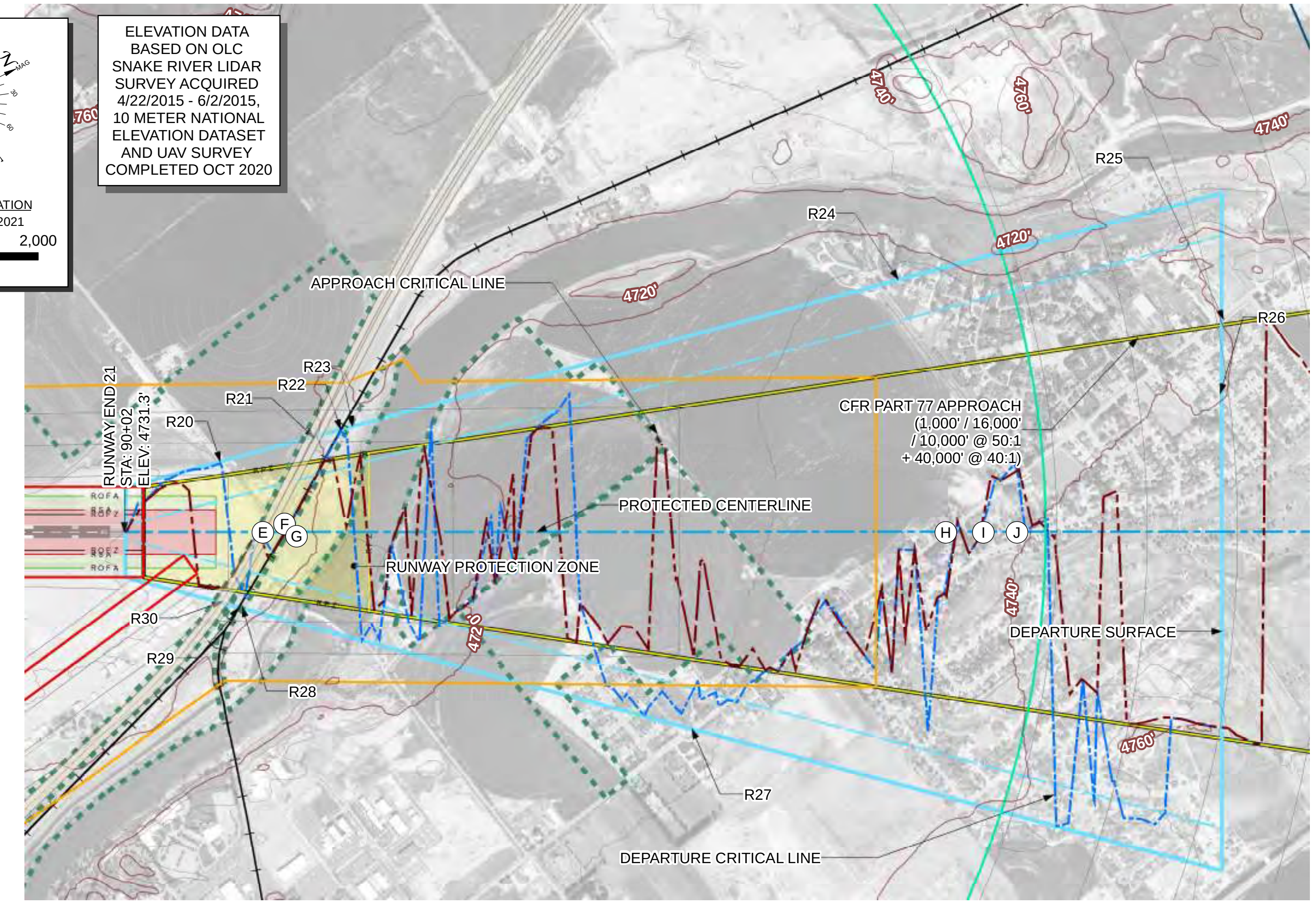
ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

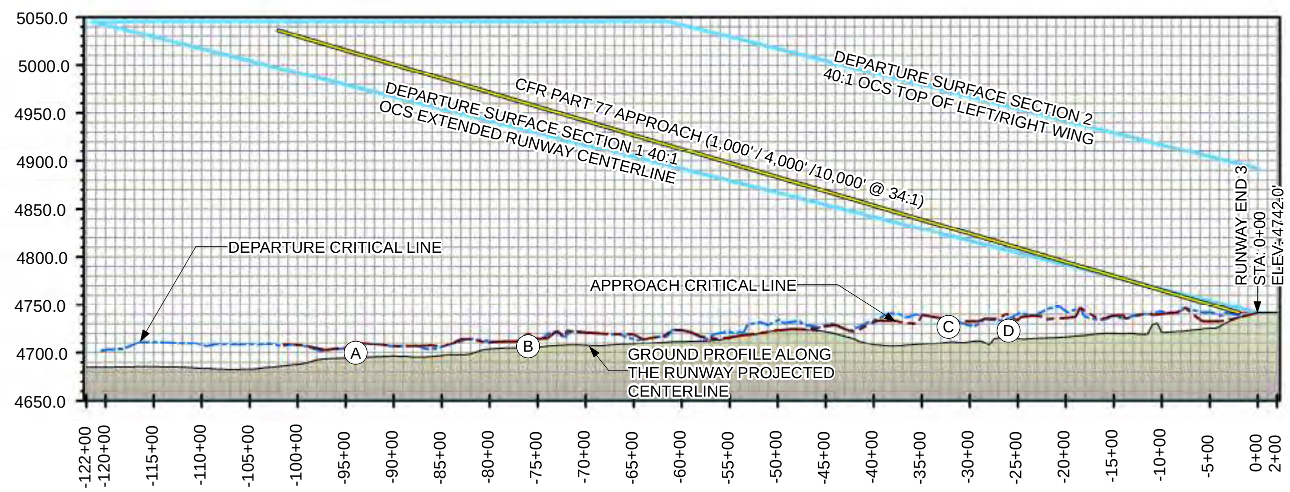
A.I.P. PROJECT # 3-16-0018-050-2021

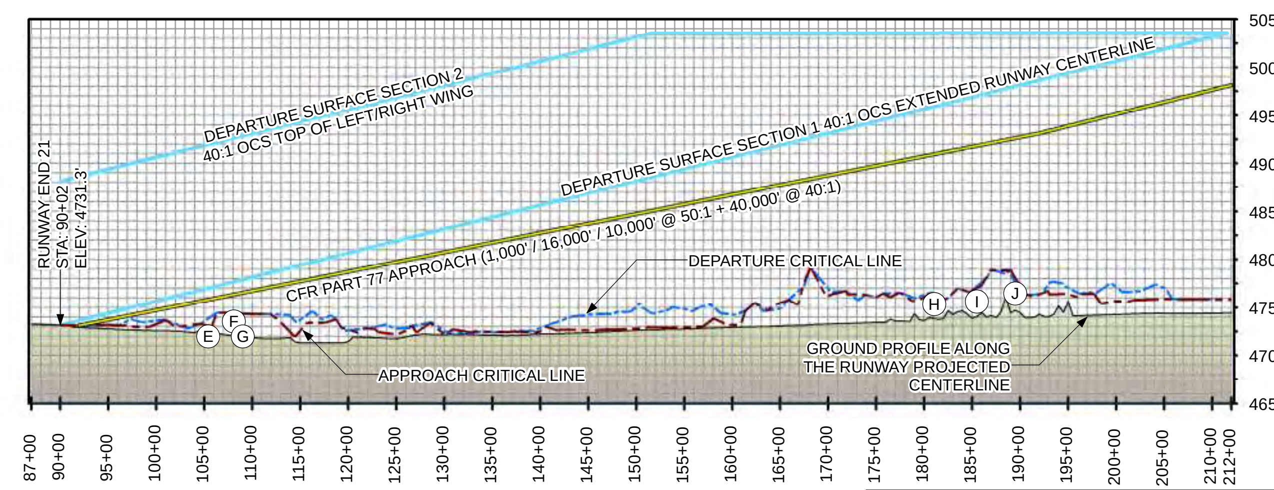
INNER PORTION OF THE RUNWAY APPROACH RUNWAY17/35
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 6C
10 OF 19









DEPARTURE SURFACE DIMENSION

INSTRUMENT DEPARTURE SURFACE TYPE		DIMENSION STANDARDS FEET					SLOPE
		A	B	C	D	E	
7	RUNWAY PROVIDING INSTRUMENT DEPARTURE OPERATIONS	RUNWAY WIDTH (RW) 150'	500' -1/2 RW 425'	7,512'	12,152'	6,160'	40:1

14 CFR PART 77 VERTICAL BUFFERS

THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET

ROAD CROSSING

REF	DESCRIPTION	GROUND ELEVATION	CLEARS/ PENETRATION	REF	DESCRIPTION	GROUND ELEVATION	CLEARS/ PENETRATION
R1	ROAD CROSSING	4691.9	CLEARS: 354.1'	R16	ROAD CROSSING	4708.3	CLEARS: 337.6'
R2	ROAD CROSSING	4696.6	CLEARS: 349.4'	R17	ROAD CROSSING	4689.2	CLEARS: 356.6'
R3	ROAD CROSSING	4728.0	CLEARS: 292.9'	R18	ROAD CROSSING	4708.3	CLEARS: 337.6'
R4	HWY CROSSING	4740.5	CLEARS: 248.9'	R19	ROAD CROSSING	4689.2	CLEARS: 356.6'
R5	ROAD CROSSING	4734.2	CLEARS: 237.0'	R20	ROAD CROSSING	4739.5	CLEARS: 166.9'
R6	ROAD CROSSING	4742.4	CLEARS: 183.7'	R21	HWY CROSSING	4738.1	CLEARS: 192.5'
R7	ROAD CROSSING	4741.4	CLEARS: 157.7'	R22	RAILROAD	4741.2	CLEARS: 198.4'
R8	HWY CROSSING	4738.3	CLEARS: 201.8'	R23	ROAD CROSSING	4734.0	CLEARS: 209.9'
R9	ROAD CROSSING	4729.8	CLEARS: 217.2'	R24	ROAD CROSSING	4755.2	CLEARS: 279.7'
R10	ROAD CROSSING	4727.1	CLEARS: 226.9'	R25	ROAD CROSSING	4746.0	CLEARS: 289.3'
R11	ROAD CROSSING	4729.2	CLEARS: 227.3'	R26	ROAD CROSSING	4742.4	CLEARS: 203.5'
R12	ROAD CROSSING	4723.8	CLEARS: 290.9'	R27	ROAD CROSSING	4734.7	CLEARS: 179.1'
R13	ROAD CROSSING	4720.9	CLEARS: 300.7'	R28	RAILROAD	4739.9	CLEARS: 172.1'
R14	ROAD CROSSING	4717.2	CLEARS: 317.5'	R29	HWY CROSSING	4738.4	CLEARS: 167.4'
R15	ROAD CROSSING	4709.0	CLEARS: 337.0'	R30	ROAD CROSSING	4757.0	CLEARS: 221.6'

LEGEND

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
APPROACH/DEPARTURE SURFACE		*MISCELLANEOUS*		*PAVEMENT*	
	APPROACH CRITICAL LINE		AIRPORT BOUNDARY		AIRPORT PAVEMENT
	DEPARTURE CRITICAL LINE		RAILROAD TRACKS		ROAD
	DEPARTURE SURFACE	*PART 77 SURFACE*		*SAFETY AREAS*	
	PROJECTED RUNWAY CENTERLINE		CFR PART 77 APPROACH	RSA	RSA
10FT CONTOURS			PRIMARY	ROFA	ROFA
	MAJOR CONTOUR		TRANSITIONAL	RPZ	RPZ
	MINOR CONTOUR		HORIZONTAL	ROFZ	ROFZ
			50' CONTOURS		

SIGNIFICANT OBJECTS

REF	DESCRIPTION	BUFFER	DEPARTURE SURFACE IMPACT	DISPOSITION
A	W 17TH ST	15'	CLEARS: 267.9'	NO ACTION
B	S 35TH W	15'	CLEARS: 211.9'	NO ACTION
C	S OLD BUTTE RD	15'	CLEARS: 101.2'	NO ACTION
D	BROADWAY	17'	CLEARS: 79.7'	NO ACTION
E	INTERSTATE 15	17'	CLEARS: 28.2'	NO ACTION
F	RAILROAD	23'	CLEARS: 31.1'	NO ACTION
G	LINDSAY	15'	CLEARS: 42.1'	NO ACTION
H	N 5TH W	15'	CLEARS: 213.7'	NO ACTION
I	FAIRWAY BLVD	15'	CLEARS: 205.3'	NO ACTION
J	GLENEAGLE DR	15'	CLEARS: 215.1'	NO ACTION

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BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS

NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

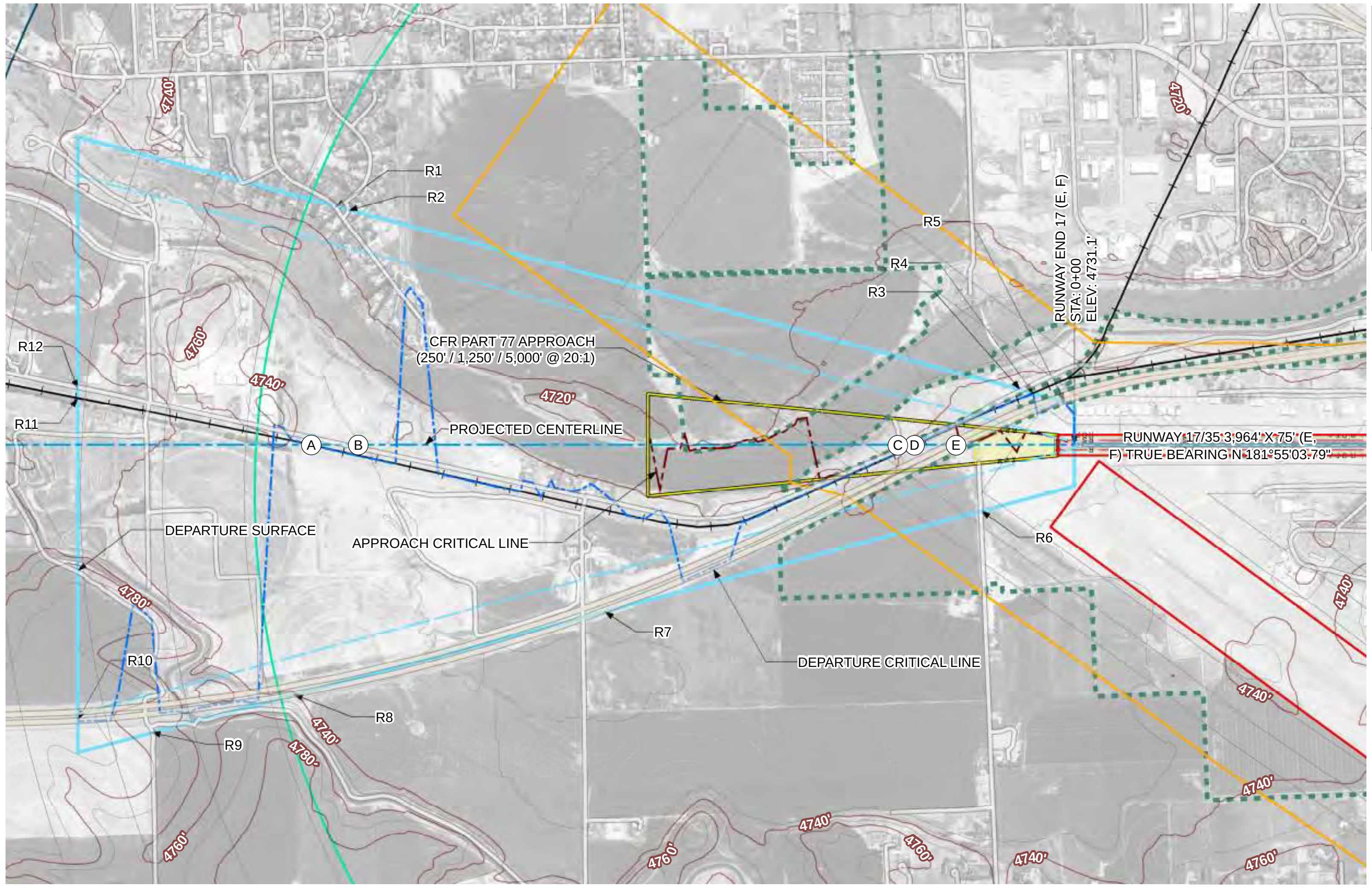
DEPARTURE SURFACE RUNWAY 3/21

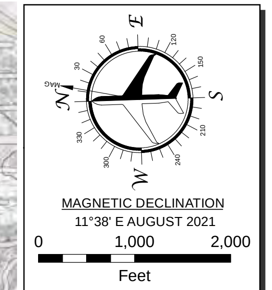
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX

PROJECT # 200419

SHEET: 7A





ELEVATION DATA BASED ON OLC SNAKE RIVER LIDAR SURVEY ACQUIRED 4/22/2015 - 6/2/2015, 10 METER NATIONAL ELEVATION DATASET AND UAV SURVEY COMPLETED OCT 2020

CRITICAL LINE NOTE: DEPICT THE GROUND PROFILE ALONG THE EXTENDED RUNWAY CENTERLINE REPRESENTING THE COMPOSITE PROFILE, BASED ON THE HIGHEST TERRAIN ACROSS THE WIDTH AND ALONG THE LENGTH OF THE APPROACH SURFACE.

14 CFR PART 77 VERTICAL BUFFERS

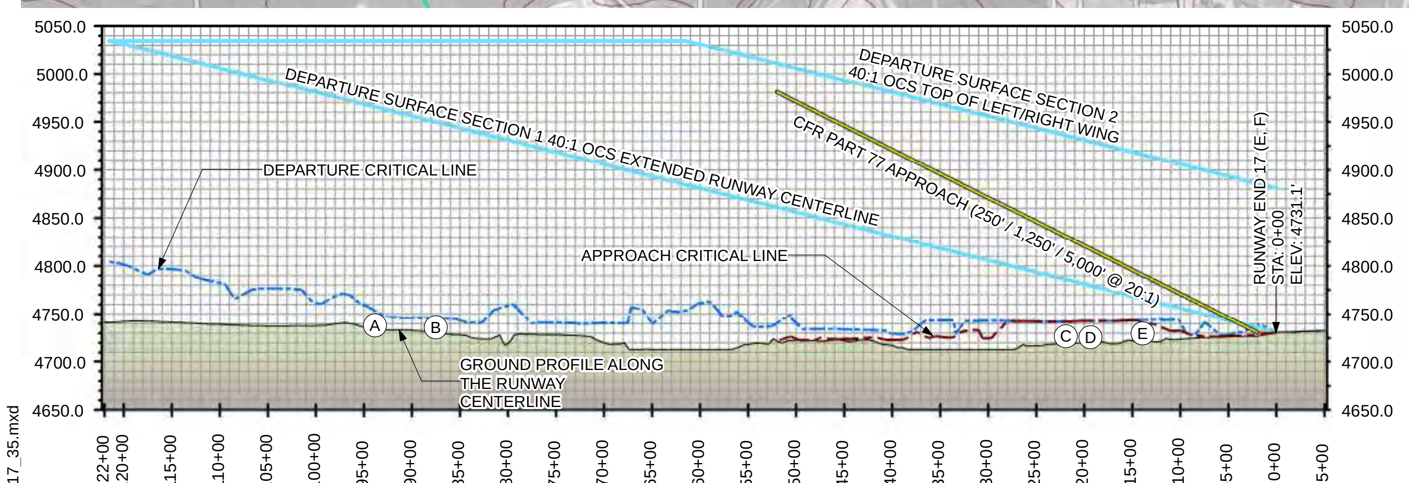
THE VERTICAL HEIGHT OF TRAVERSE WAYS HAS BEEN INCREASED BY THE FOLLOWING:

HIGHWAY - 17 FEET

PUBLIC ROADWAY - 15 FEET

RAILROAD - 23 FEET

ACCESS CONTROLLED ROADS - 10 FEET



ROAD CROSSING

REF	DESCRIPTION	GROUND ELEVATION	CLEARS/ PENETRATION
R1	ROAD CROSSING	4728.3	CLEARS: 291.8'
R2	ROAD CROSSING	4734.6	CLEARS: 285.5'
R3	ROAD CROSSING	4719.8	CLEARS: 161.4'
R4	RAILROAD	4718.0	CLEARS: 151.5'
R5	HWY CROSSING	4721.9	CLEARS: 144.1'
R6	ROAD CROSSING	4723.4	CLEARS: 169.7'
R7	HWY CROSSING	4727.8	CLEARS: 279.1'
R8	HWY CROSSING	4741.6	CLEARS: 276.5'
R9	ROAD CROSSING	4773.1	CLEARS: 247.0'
R10	HWY CROSSING	4795.4	CLEARS: 222.6'
R11	RAILROAD	4744.4	CLEARS: 267.4'
R12	ROAD CROSSING	4742.6	CLEARS: 277.2'

SIGNIFICANT OBJECTS

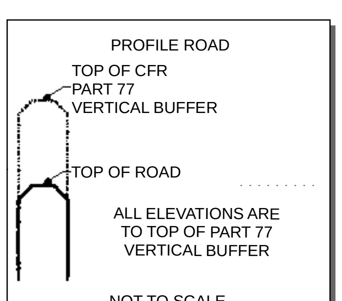
REF	DESCRIPTION	BUFFER	DEPARTURE SURFACE IMPACT	DISPOSITION
A	RAILROAD	23'	CLEARS: 207.1'	NO ACTION
B	LINDSAY	15'	CLEARS: 203.3'	NO ACTION
C	LINDSAY	15'	CLEARS: 50.0'	NO ACTION
D	RAILROAD	23'	CLEARS: 37.1'	NO ACTION
E	INTERSTATE 15	17'	CLEARS: 24.6'	NO ACTION

DEPARTURE SURFACE DIMENSION

INSTRUMENT DEPARTURE SURFACE TYPE		DIMENSION STANDARDS FEET					SLOPE
		A	B	C	D	E	
7	RUNWAY PROVIDING INSTRUMENT DEPARTURE OPERATIONS	RUNWAY WIDTH (RW)	500' -1/2 RW	7,512'	12,152'	6,160'	40:1
		75' (E) 60' (F)	462.5'				

LEGEND

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
APPROACH/DEPARTURE SURFACE		***MISCELLANEOUS***		***PAVEMENT***	
	APPROACH CRITICAL LINE		AIRPORT BOUNDARY		AIRPORT PAVEMENT
	DEPARTURE CRITICAL LINE		RAILROAD TRACKS		ROAD
	DEPARTURE SURFACE	***PART 77 SURFACE***		***SAFETY AREAS***	
	PROJECTED RUNWAY CENTERLINE		CFR PART 77 APPROACH	RSA	RSA
10FT CONTOURS			PRIMARY	ROFZ \ ROFA	ROFA/ROFZ
	MAJOR CONTOUR		TRANSITIONAL	RPZ	RPZ
	MINOR CONTOUR		HORIZONTAL		
			50' CONTOURS		



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BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

NO.	DESCRIPTION	DATE:

REVISIONS

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

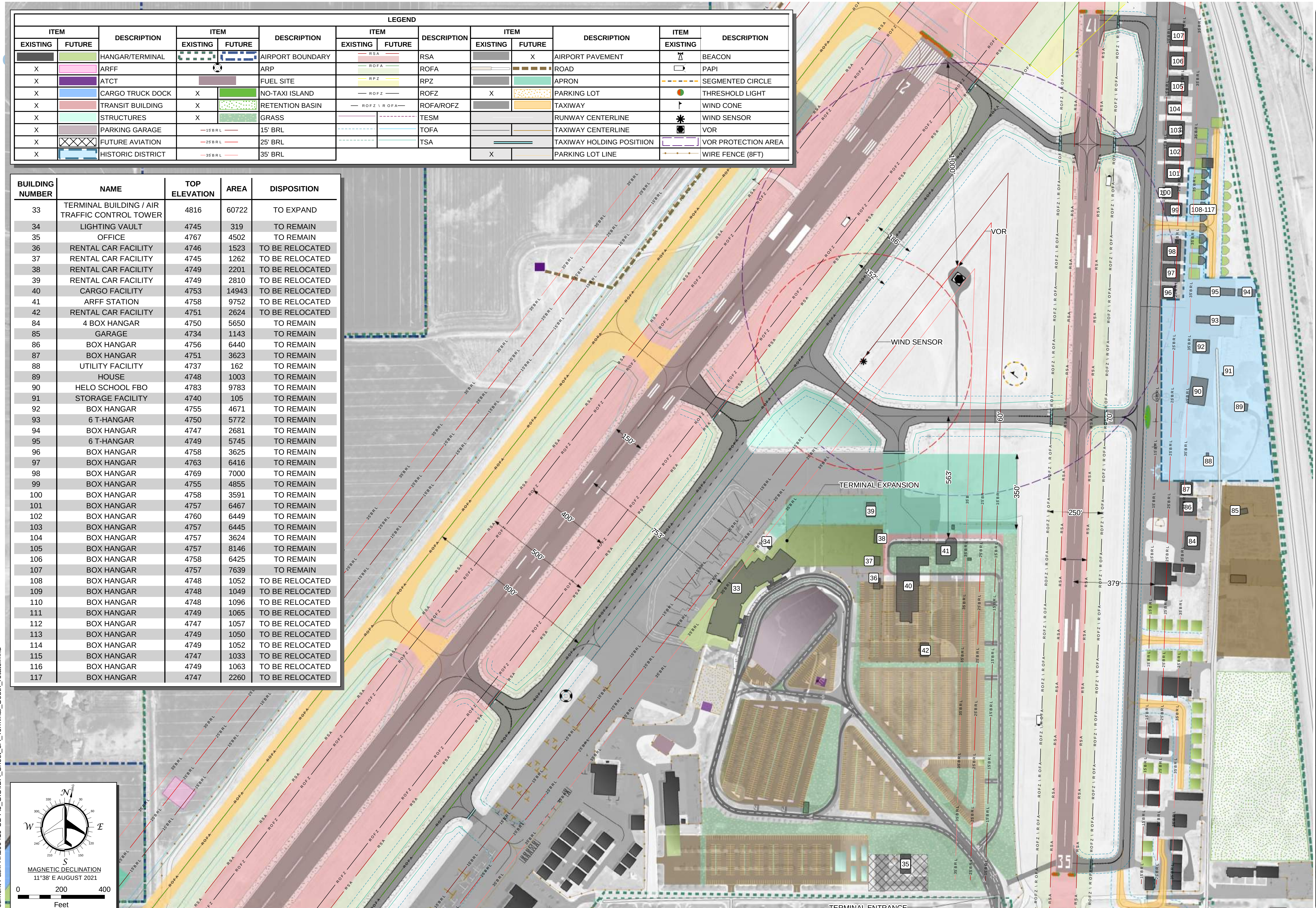
DEPARTURE SURFACE
RUNWAY 35
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 7B

LEGEND

ITEM		DESCRIPTION	ITEM		DESCRIPTION	ITEM		DESCRIPTION	ITEM		DESCRIPTION	ITEM	DESCRIPTION
EXISTING	FUTURE		EXISTING	FUTURE		EXISTING	FUTURE		EXISTING	FUTURE		EXISTING	
		HANGAR/TERMINAL			AIRPORT BOUNDARY	RSA		RSA		X	AIRPORT PAVEMENT		BEACON
X		ARFF			ARP	ROFA		ROFA			ROAD		PAPI
X		ATCT			FUEL SITE	RPZ		RPZ			APRON		SEGMENTED CIRCLE
X		CARGO TRUCK DOCK	X		NO-TAXI ISLAND	ROFZ		ROFZ	X		PARKING LOT		THRESHOLD LIGHT
X		TRANSIT BUILDING	X		RETENTION BASIN	ROFZ \ R OFA		ROFA/ROFZ			TAXIWAY		WIND CONE
X		STRUCTURES	X		GRASS			TESM			RUNWAY CENTERLINE		WIND SENSOR
X		PARKING GARAGE	15'BRL		15' BRL			TOFA			TAXIWAY CENTERLINE		VOR
X		FUTURE AVIATION	25'BRL		25' BRL			TSA			TAXIWAY HOLDING POSITIION		VOR PROTECTION AREA
X		HISTORIC DISTRICT	35'BRL		35' BRL				X		PARKING LOT LINE		WIRE FENCE (8FT)

BUILDING NUMBER	NAME	TOP ELEVATION	AREA	DISPOSITION
33	TERMINAL BUILDING / AIR TRAFFIC CONTROL TOWER	4816	60722	TO EXPAND
34	LIGHTING VAULT	4745	319	TO REMAIN
35	OFFICE	4767	4502	TO REMAIN
36	RENTAL CAR FACILITY	4746	1523	TO BE RELOCATED
37	RENTAL CAR FACILITY	4745	1262	TO BE RELOCATED
38	RENTAL CAR FACILITY	4749	2201	TO BE RELOCATED
39	RENTAL CAR FACILITY	4749	2810	TO BE RELOCATED
40	CARGO FACILITY	4753	14943	TO BE RELOCATED
41	ARFF STATION	4758	9752	TO BE RELOCATED
42	RENTAL CAR FACILITY	4751	2624	TO BE RELOCATED
84	4 BOX HANGAR	4750	5650	TO REMAIN
85	GARAGE	4734	1143	TO REMAIN
86	BOX HANGAR	4756	6440	TO REMAIN
87	BOX HANGAR	4751	3623	TO REMAIN
88	UTILITY FACILITY	4737	162	TO REMAIN
89	HOUSE	4748	1003	TO REMAIN
90	HELO SCHOOL FBO	4783	9783	TO REMAIN
91	STORAGE FACILITY	4740	105	TO REMAIN
92	BOX HANGAR	4755	4671	TO REMAIN
93	6 T-HANGAR	4750	5772	TO REMAIN
94	BOX HANGAR	4747	2681	TO REMAIN
95	6 T-HANGAR	4749	5745	TO REMAIN
96	BOX HANGAR	4758	3625	TO REMAIN
97	BOX HANGAR	4763	6416	TO REMAIN
98	BOX HANGAR	4769	7000	TO REMAIN
99	BOX HANGAR	4755	4855	TO REMAIN
100	BOX HANGAR	4758	3591	TO REMAIN
101	BOX HANGAR	4757	6467	TO REMAIN
102	BOX HANGAR	4760	6449	TO REMAIN
103	BOX HANGAR	4757	6445	TO REMAIN
104	BOX HANGAR	4757	3624	TO REMAIN
105	BOX HANGAR	4757	8146	TO REMAIN
106	BOX HANGAR	4758	6425	TO REMAIN
107	BOX HANGAR	4757	7639	TO REMAIN
108	BOX HANGAR	4748	1052	TO BE RELOCATED
109	BOX HANGAR	4748	1049	TO BE RELOCATED
110	BOX HANGAR	4748	1096	TO BE RELOCATED
111	BOX HANGAR	4749	1065	TO BE RELOCATED
112	BOX HANGAR	4747	1057	TO BE RELOCATED
113	BOX HANGAR	4749	1050	TO BE RELOCATED
114	BOX HANGAR	4749	1052	TO BE RELOCATED
115	BOX HANGAR	4747	1033	TO BE RELOCATED
116	BOX HANGAR	4749	1063	TO BE RELOCATED
117	BOX HANGAR	4747	2260	TO BE RELOCATED



MAGNETIC DECLINATION
11°38' E AUGUST 2021

0 200 400
Feet

Document Path: K:\200419-CDY15_GIS\IDA_Sheet_8A_Terminal_South_rotate.mxd

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS

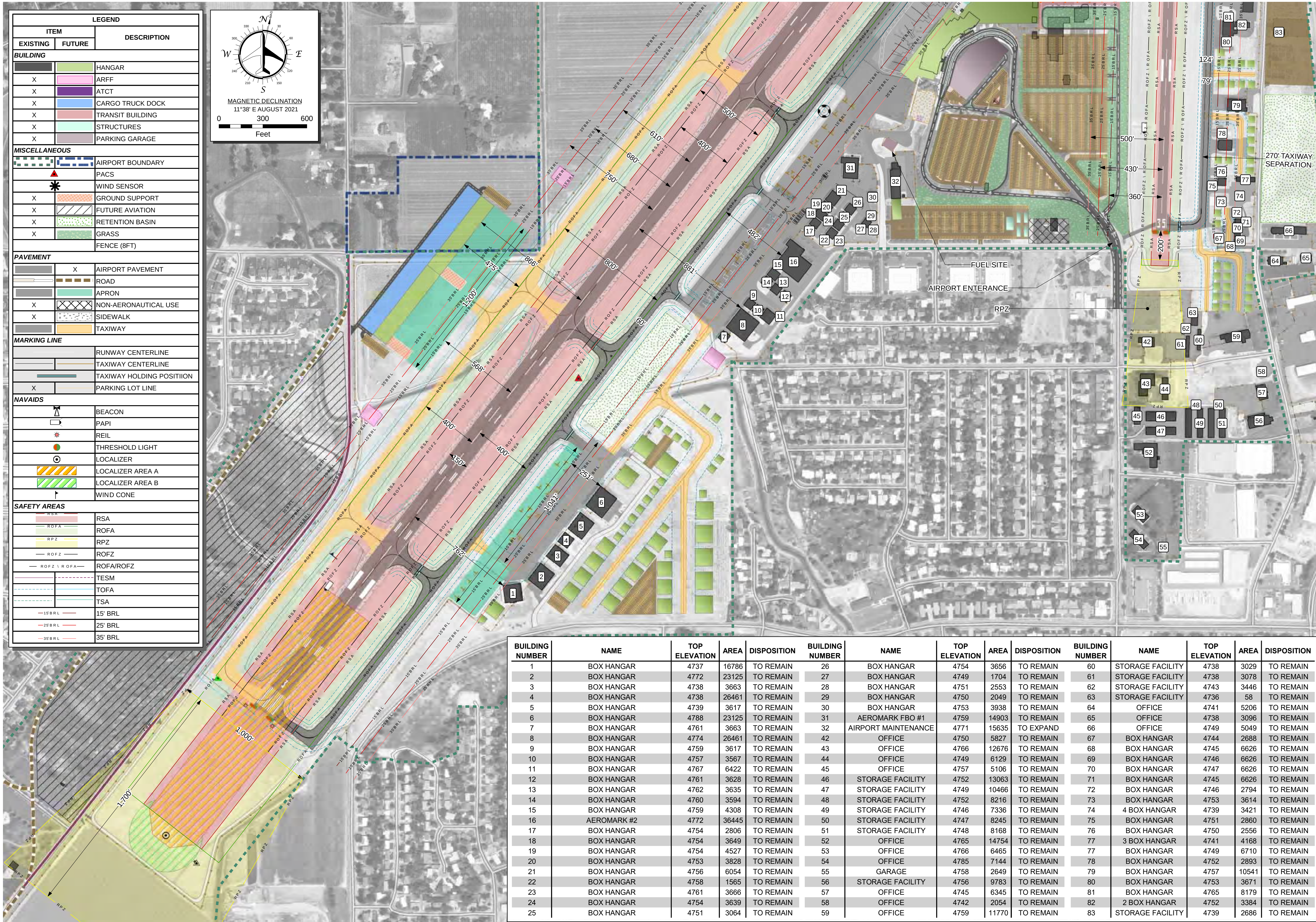
NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

TERMINAL AREA NORTH
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 8A
13 OF 19



LEGEND		
ITEM		DESCRIPTION
EXISTING	FUTURE	
BUILDING		
		HANGAR
X		ARFF
X		ATCT
X		CARGO TRUCK DOCK
X		TRANSIT BUILDING
X		STRUCTURES
X		PARKING GARAGE
MISCELLANEOUS		
		AIRPORT BOUNDARY
		PACS
		WIND SENSOR
X		GROUND SUPPORT
X		FUTURE AVIATION
X		RETENTION BASIN
X		GRASS
		FENCE (8FT)
PAVEMENT		
	X	AIRPORT PAVEMENT
		ROAD
		APRON
X		NON-AERONAUTICAL USE
X		SIDEWALK
		TAXIWAY
MARKING LINE		
		RUNWAY CENTERLINE
		TAXIWAY CENTERLINE
		TAXIWAY HOLDING POSITIION
X		PARKING LOT LINE
NAVAIDS		
		BEACON
		PAPI
		REIL
		THRESHOLD LIGHT
		LOCALIZER
		LOCALIZER AREA A
		LOCALIZER AREA B
		WIND CONE
SAFETY AREAS		
RSA		RSA
ROFA		ROFA
RPZ		RPZ
ROFZ		ROFZ
ROFZ \ ROFA		ROFA/ROFZ
		TESM
		TOFA
		TSA
15'BRL		15' BRL
25'BRL		25' BRL
35'BRL		35' BRL

BUILDING NUMBER	NAME	TOP ELEVATION	AREA	DISPOSITION	BUILDING NUMBER	NAME	TOP ELEVATION	AREA	DISPOSITION	BUILDING NUMBER	NAME	TOP ELEVATION	AREA	DISPOSITION
1	BOX HANGAR	4737	16786	TO REMAIN	26	BOX HANGAR	4754	3656	TO REMAIN	60	STORAGE FACILITY	4738	3029	TO REMAIN
2	BOX HANGAR	4772	23125	TO REMAIN	27	BOX HANGAR	4749	1704	TO REMAIN	61	STORAGE FACILITY	4738	3078	TO REMAIN
3	BOX HANGAR	4738	3663	TO REMAIN	28	BOX HANGAR	4751	2553	TO REMAIN	62	STORAGE FACILITY	4743	3446	TO REMAIN
4	BOX HANGAR	4738	26461	TO REMAIN	29	BOX HANGAR	4750	2049	TO REMAIN	63	STORAGE FACILITY	4736	58	TO REMAIN
5	BOX HANGAR	4739	3617	TO REMAIN	30	BOX HANGAR	4753	3938	TO REMAIN	64	OFFICE	4741	5206	TO REMAIN
6	BOX HANGAR	4788	23125	TO REMAIN	31	AEROMARK FBO #1	4759	14903	TO REMAIN	65	OFFICE	4738	3096	TO REMAIN
7	BOX HANGAR	4761	3663	TO REMAIN	32	AIRPORT MAINTENANCE	4771	15635	TO EXPAND	66	OFFICE	4749	5049	TO REMAIN
8	BOX HANGAR	4774	26461	TO REMAIN	42	OFFICE	4750	5827	TO REMAIN	67	BOX HANGAR	4744	2688	TO REMAIN
9	BOX HANGAR	4759	3617	TO REMAIN	43	OFFICE	4766	12676	TO REMAIN	68	BOX HANGAR	4745	6626	TO REMAIN
10	BOX HANGAR	4757	3567	TO REMAIN	44	OFFICE	4749	6129	TO REMAIN	69	BOX HANGAR	4746	6626	TO REMAIN
11	BOX HANGAR	4767	6422	TO REMAIN	45	OFFICE	4757	5106	TO REMAIN	70	BOX HANGAR	4747	6626	TO REMAIN
12	BOX HANGAR	4761	3628	TO REMAIN	46	STORAGE FACILITY	4752	13063	TO REMAIN	71	BOX HANGAR	4745	6626	TO REMAIN
13	BOX HANGAR	4762	3635	TO REMAIN	47	STORAGE FACILITY	4749	10466	TO REMAIN	72	BOX HANGAR	4746	2794	TO REMAIN
14	BOX HANGAR	4760	3594	TO REMAIN	48	STORAGE FACILITY	4752	8216	TO REMAIN	73	BOX HANGAR	4753	3614	TO REMAIN
15	BOX HANGAR	4759	4308	TO REMAIN	49	STORAGE FACILITY	4746	7336	TO REMAIN	74	4 BOX HANGAR	4739	3421	TO REMAIN
16	AEROMARK #2	4772	36445	TO REMAIN	50	STORAGE FACILITY	4747	8245	TO REMAIN	75	BOX HANGAR	4751	2860	TO REMAIN
17	BOX HANGAR	4754	2806	TO REMAIN	51	STORAGE FACILITY	4748	8168	TO REMAIN	76	BOX HANGAR	4750	2556	TO REMAIN
18	BOX HANGAR	4754	3649	TO REMAIN	52	OFFICE	4765	14754	TO REMAIN	77	3 BOX HANGAR	4741	4168	TO REMAIN
19	BOX HANGAR	4754	4527	TO REMAIN	53	OFFICE	4766	6465	TO REMAIN	77	BOX HANGAR	4749	6710	TO REMAIN
20	BOX HANGAR	4753	3828	TO REMAIN	54	OFFICE	4785	7144	TO REMAIN	78	BOX HANGAR	4752	2893	TO REMAIN
21	BOX HANGAR	4756	6054	TO REMAIN	55	GARAGE	4758	2649	TO REMAIN	79	BOX HANGAR	4757	10541	TO REMAIN
22	BOX HANGAR	4758	1565	TO REMAIN	56	STORAGE FACILITY	4756	9783	TO REMAIN	80	BOX HANGAR	4753	3671	TO REMAIN
23	BOX HANGAR	4761	3666	TO REMAIN	57	OFFICE	4745	6345	TO REMAIN	81	BOX HANGAR	4765	8179	TO REMAIN
24	BOX HANGAR	4754	3639	TO REMAIN	58	OFFICE	4742	2054	TO REMAIN	82	2 BOX HANGAR	4752	3384	TO REMAIN
25	BOX HANGAR	4751	3064	TO REMAIN	59	OFFICE	4759	11770	TO REMAIN	83	STORAGE FACILITY	4739	2686	TO REMAIN

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BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS
NO. DESCRIPTION DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

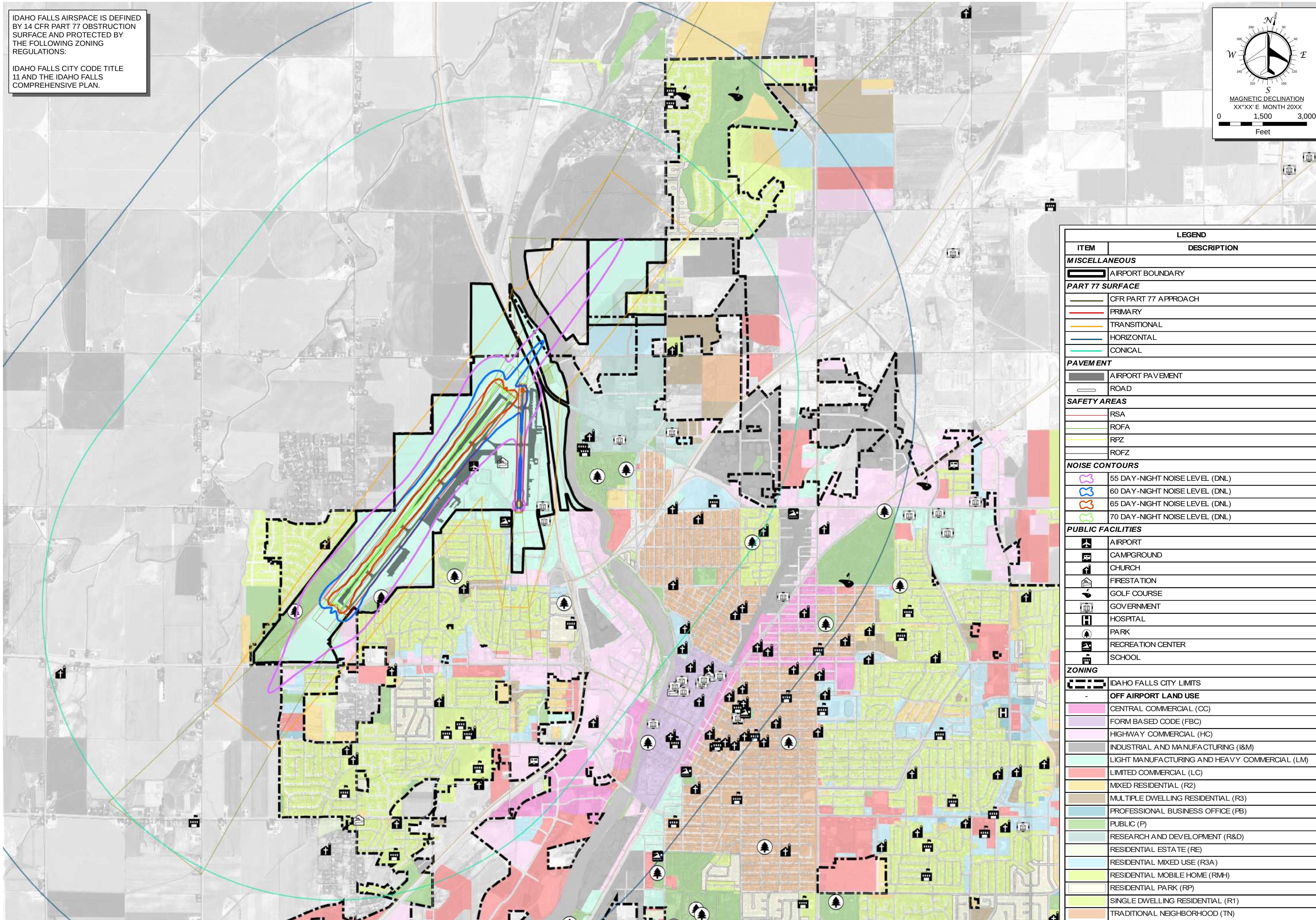
TERMINAL AREA SOUTH

IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX

PROJECT # 200419

SHEET: 8B



LEGEND	
ITEM	DESCRIPTION
MISCELLANEOUS	
	AIRPORT BOUNDARY
PART 77 SURFACE	
	CFR PART 77 APPROACH
	PRIMARY
	TRANSITIONAL
	HORIZONTAL
	CONICAL
PAVEMENT	
	AIRPORT PAVEMENT
	ROAD
SAFETY AREAS	
	RSA
	ROFA
	RPZ
	ROFZ
NOISE CONTOURS	
	55 DAY-NIGHT NOISE LEVEL (DNL)
	60 DAY-NIGHT NOISE LEVEL (DNL)
	65 DAY-NIGHT NOISE LEVEL (DNL)
	70 DAY-NIGHT NOISE LEVEL (DNL)
PUBLIC FACILITIES	
	AIRPORT
	CAMPGROUND
	CHURCH
	FIRESTATION
	GOLF COURSE
	GOVERNMENT
	HOSPITAL
	PARK
	RECREATION CENTER
	SCHOOL
ZONING	
	IDAHO FALLS CITY LIMITS
-	OFF AIRPORT LAND USE
	CENTRAL COMMERCIAL (CC)
	FORM BASED CODE (FBC)
	HIGHWAY COMMERCIAL (HC)
	INDUSTRIAL AND MANUFACTURING (I&M)
	LIGHT MANUFACTURING AND HEAVY COMMERCIAL (LM)
	LIMITED COMMERCIAL (LC)
	MIXED RESIDENTIAL (R2)
	MULTIPLE DWELLING RESIDENTIAL (R3)
	PROFESSIONAL BUSINESS OFFICE (PB)
	PUBLIC (P)
	RESEARCH AND DEVELOPMENT (R&D)
	RESIDENTIAL ESTATE (RE)
	RESIDENTIAL MIXED USE (R3A)
	RESIDENTIAL MOBILE HOME (RMH)
	RESIDENTIAL PARK (RP)
	SINGLE DWELLING RESIDENTIAL (R1)
	TRADITIONAL NEIGHBORHOOD (TN)

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

NO.	DESCRIPTION	DATE:
REVISIONS		

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

LAND USE
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 9A
15 OF 19

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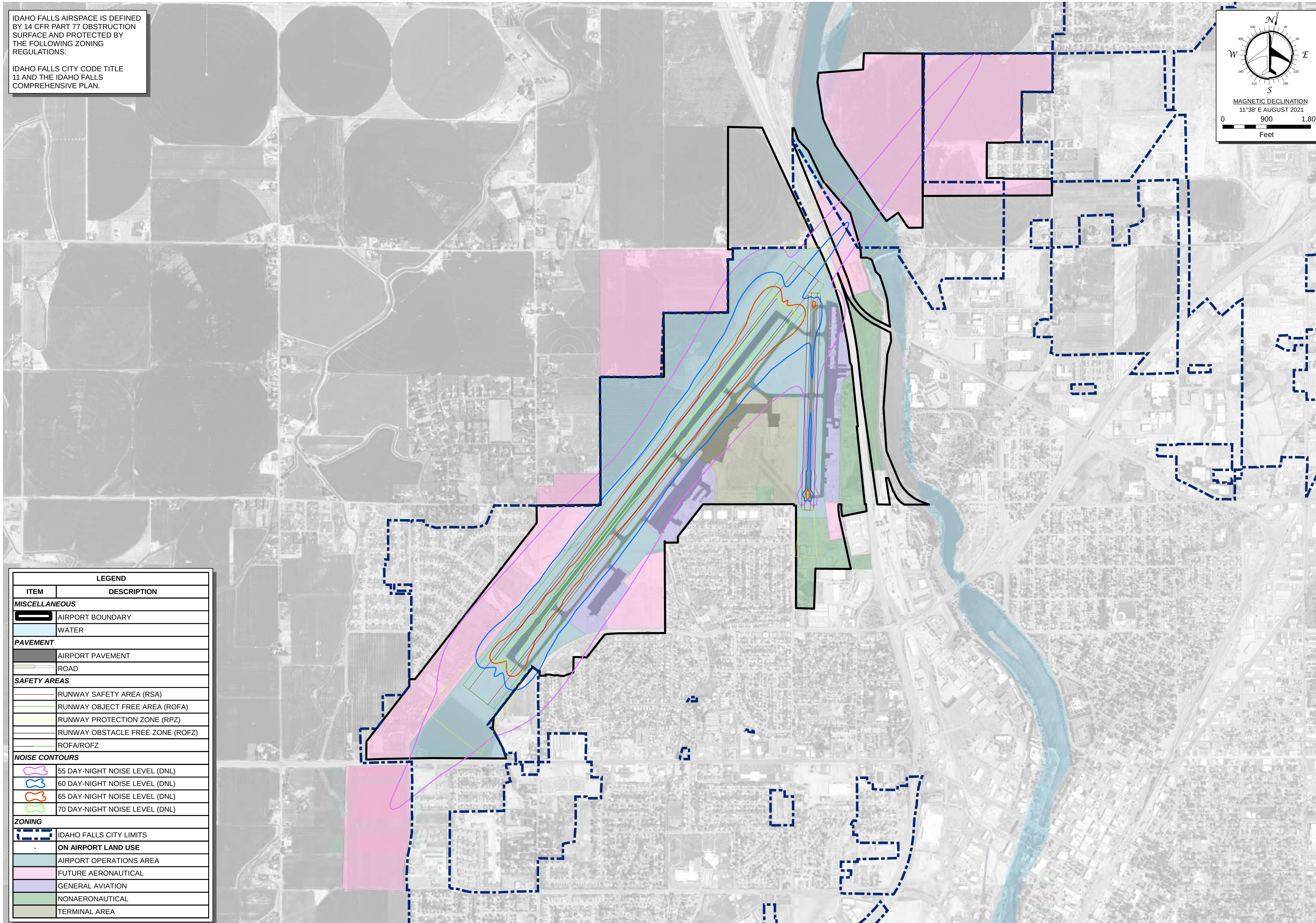

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BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS

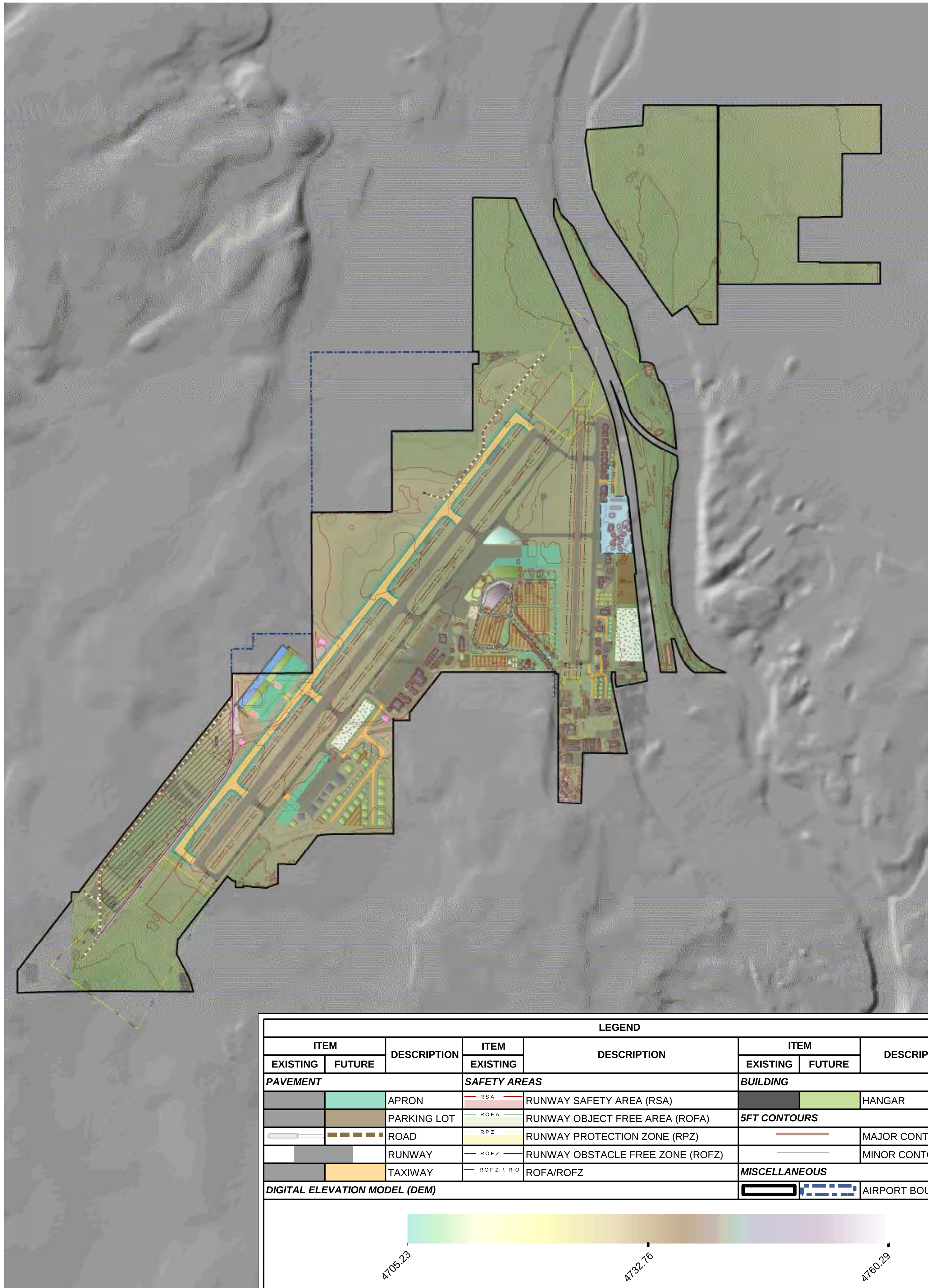
NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642,
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

ON AIRPORT LAND USE FUTURE
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX X, XXXX
PROJECT # 200419
SHEET: 9B
16 OF 19



LEGEND

ITEM		DESCRIPTION	ITEM	DESCRIPTION	ITEM		DESCRIPTION
EXISTING	FUTURE		EXISTING		EXISTING	FUTURE	
PAVEMENT			*SAFETY AREAS*		*BUILDING*		
		APRON	RSA	RUNWAY SAFETY AREA (RSA)			HANGAR
		PARKING LOT	ROFA	RUNWAY OBJECT FREE AREA (ROFA)	*5FT CONTOURS*		
		ROAD	RPZ	RUNWAY PROTECTION ZONE (RPZ)			MAJOR CONTOUR
		RUNWAY	ROFZ	RUNWAY OBSTACLE FREE ZONE (ROFZ)			MINOR CONTOUR
		TAXIWAY	ROFZ \ RO	ROFA/ROFZ	*MISCELLANEOUS*		
DIGITAL ELEVATION MODEL (DEM)							AIRPORT BOUNDARY

4705.23
4732.76
4760.29

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED WR

REVISIONS

NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642,
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

PHOTO AND CONTOUR

IDAHO FALLS REGIONAL AIRPORT

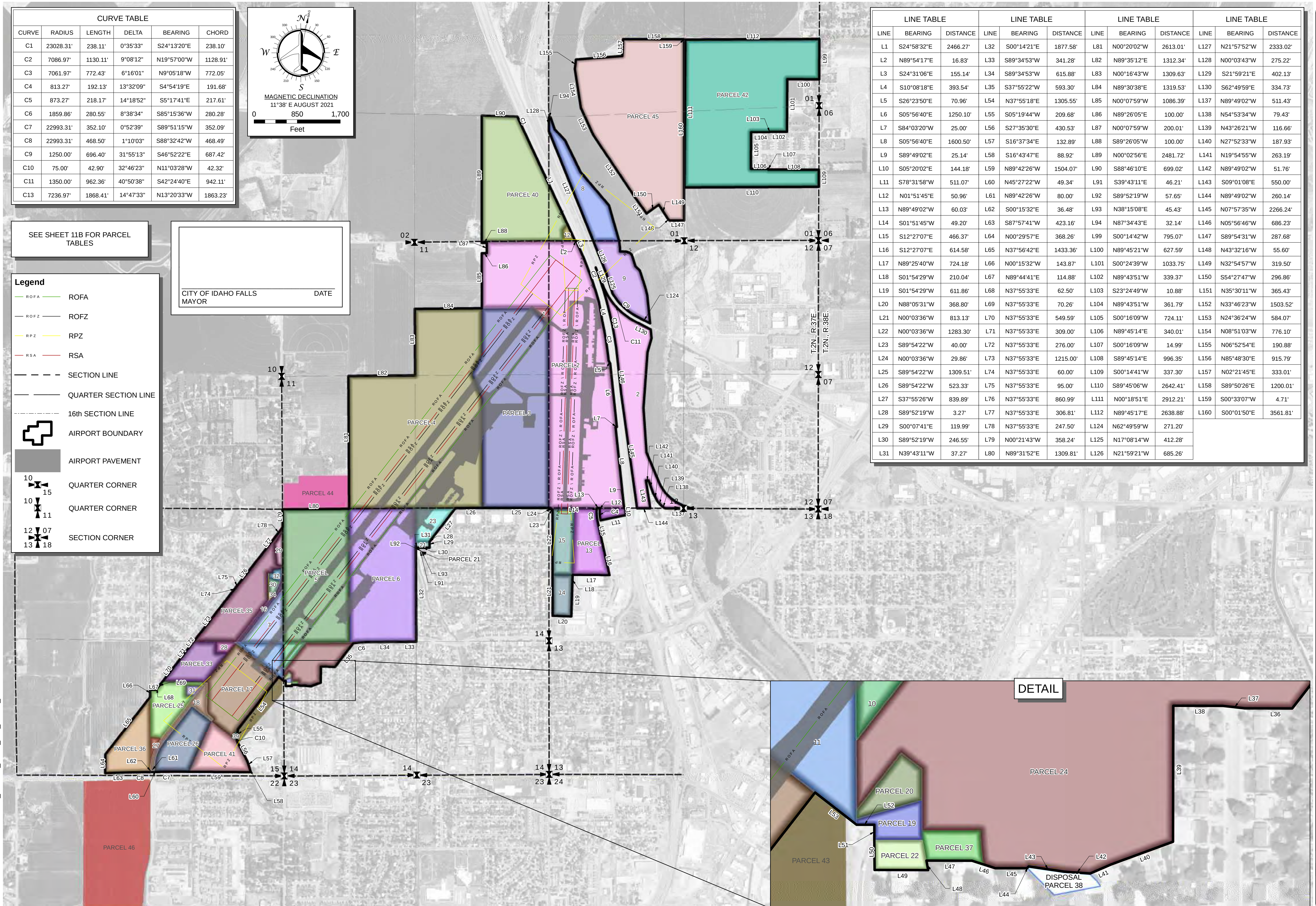
DATE: XXX X, XXXX

PROJECT # 200419

SHEET: 10

17 OF 19

Document Path: K:\200419-CDY\5_GIS\IDA_Sheet_10_Photo_Contours.mxd



CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	BEARING	CHORD
C1	23028.31'	238.11'	0°35'33"	S24°13'20"E	238.10'
C2	7086.97'	1130.11'	9°08'12"	N19°57'00"W	1128.91'
C3	7061.97'	772.43'	6°16'01"	N9°05'18"W	772.05'
C4	813.27'	192.13'	13°32'09"	S4°54'19"E	191.68'
C5	873.27'	218.17'	14°18'52"	S5°17'41"E	217.61'
C6	1859.86'	280.55'	8°38'34"	S85°15'36"W	280.28'
C7	22993.31'	352.10'	0°52'39"	S89°51'15"W	352.09'
C8	22993.31'	468.50'	1°10'03"	S88°32'42"W	468.49'
C9	1250.00'	696.40'	31°55'13"	S46°52'22"E	687.42'
C10	75.00'	42.90'	32°46'23"	N11°03'28"W	42.32'
C11	1350.00'	962.36'	40°50'38"	S42°24'40"E	942.11'
C13	7236.97'	1868.41'	14°47'33"	N13°20'33"W	1863.23'

SEE SHEET 11B FOR PARCEL TABLES

CITY OF IDAHO FALLS MAYOR

DATE

LINE TABLE

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L1	S24°58'32"E	2466.27'	L32	S00°14'21"E	1877.58'	L81	N00°20'02"W	2613.01'	L127	N21°57'52"W	2333.02'
L2	N89°54'17"E	16.83'	L33	S89°34'53"W	341.28'	L82	N89°35'12"E	1312.34'	L128	N00°03'43"W	275.22'
L3	S24°31'06"E	155.14'	L34	S89°34'53"W	615.88'	L83	N00°16'43"W	1309.63'	L129	S21°59'21"E	402.13'
L4	S10°08'18"E	393.54'	L35	S37°55'22"W	593.30'	L84	N89°30'38"E	1319.53'	L130	S62°49'59"E	334.73'
L5	S26°23'50"E	70.96'	L54	N37°55'18"E	1305.55'	L85	N00°07'59"W	1086.39'	L137	N89°49'02"W	511.43'
L6	S05°56'40"E	1250.10'	L55	S05°19'44"W	209.68'	L86	N89°26'05"E	100.00'	L138	N54°53'34"W	79.43'
L7	S84°03'20"W	25.00'	L56	S27°35'30"E	430.53'	L87	N00°07'59"W	200.01'	L139	N43°26'21"W	116.66'
L8	S05°56'40"E	1600.50'	L57	S16°37'34"E	132.89'	L88	S89°26'05"W	100.00'	L140	N27°52'33"W	187.93'
L9	S89°49'02"E	25.14'	L58	S16°43'47"E	88.92'	L89	N00°02'56"E	2481.72'	L141	N19°54'55"W	263.19'
L10	S05°20'02"E	144.18'	L59	N89°42'26"W	1504.07'	L90	S88°46'10"E	699.02'	L142	N89°49'02"W	51.76'
L11	S78°31'58"W	511.07'	L60	N45°27'22"W	49.34'	L91	S39°43'11"E	46.21'	L143	S09°01'08"E	550.00'
L12	N01°51'45"E	50.96'	L61	N89°42'26"W	80.00'	L92	S89°52'19"W	57.65'	L144	N89°49'02"W	260.14'
L13	N89°49'02"W	60.03'	L62	S00°15'32"E	36.48'	L93	N38°15'08"E	45.43'	L145	N07°57'35"W	2266.24'
L14	S01°51'45"W	49.20'	L63	S87°57'41"W	423.16'	L94	N87°34'43"E	32.14'	L146	N05°56'46"W	686.23'
L15	S12°27'07"E	466.37'	L64	N00°29'57"E	368.26'	L99	S00°14'42"W	795.07'	L147	S89°54'31"W	287.68'
L16	S12°27'07"E	614.58'	L65	N37°56'42"E	1433.36'	L100	N89°45'21"W	627.59'	L148	N43°32'16"W	55.60'
L17	N89°25'40"W	724.18'	L66	N00°15'32"W	143.87'	L101	S00°24'39"W	1033.75'	L149	N32°54'57"W	319.50'
L18	S01°54'29"W	210.04'	L67	N89°44'41"E	114.88'	L102	N89°43'51"W	339.37'	L150	S54°27'47"W	296.86'
L19	S01°54'29"W	611.86'	L68	N37°55'33"E	62.50'	L103	S23°24'49"W	10.88'	L151	N35°30'11"W	365.43'
L20	N88°05'31"W	368.80'	L69	N37°55'33"E	70.26'	L104	N89°43'51"W	361.79'	L152	N33°46'23"W	1503.52'
L21	N00°03'36"W	813.13'	L70	N37°55'33"E	549.59'	L105	S00°16'09"W	724.11'	L153	N24°36'24"W	584.07'
L22	N00°03'36"W	1283.30'	L71	N37°55'33"E	309.00'	L106	N89°45'14"E	340.01'	L154	N08°51'03"W	776.10'
L23	S89°54'22"W	40.00'	L72	N37°55'33"E	276.00'	L107	S00°16'09"W	14.99'	L155	N06°52'54"E	190.88'
L24	N00°03'36"W	29.86'	L73	N37°55'33"E	1215.00'	L108	S89°45'14"E	996.35'	L156	N85°48'30"E	915.79'
L25	S89°54'22"W	1309.51'	L74	N37°55'33"E	60.00'	L109	S00°14'41"W	337.30'	L157	N02°21'45"E	333.01'
L26	S89°54'22"W	523.33'	L75	N37°55'33"E	95.00'	L110	S89°45'06"W	2642.41'	L158	S89°50'26"E	1200.01'
L27	S37°55'26"W	839.89'	L76	N37°55'33"E	860.99'	L111	N00°18'51"E	2912.21'	L159	S00°33'07"W	4.71'
L28	S89°52'19"W	3.27'	L77	N37°55'33"E	306.81'	L112	N89°45'17"E	2638.88'	L160	S00°01'50"E	3561.81'
L29	S00°07'41"E	119.99'	L78	N37°55'33"E	247.50'	L124	N62°49'59"W	271.20'			
L30	S89°52'19"W	246.55'	L79	N00°21'43"W	358.24'	L125	N17°08'14"W	412.28'			
L31	N39°43'11"W	37.27'	L80	N89°31'52"E	1309.81'	L126	N21°59'21"W	685.26'			

PROFESSIONAL LAND SURVEYOR
LICENSED
STATE OF IDAHO
ANDREW M. POE
DRAFT

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED AMP

REVISIONS

NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

EXHIBIT 'A'

IDAHO FALLS REGIONAL AIRPORT

DATE: XXX XX, XXXX
PROJECT # 200419
SHEET: 11A
18 OF 19

Document Path: K:\200419-CDY5_GIS\IDA_Sheet_11A_Exhibit_A.mxd

PARCEL

	DESCRIPTION	GRANTOR	GRANTEE	DATE	RECORDING INFORMATION	INTEREST HELD	DEED ACRES	MEASURED ACRES	FEDERAL PROJECT INFROMATION	PURPOSE
1	P.O.B.: NE CRNR. SE1/4 NE1/4 SEC.11 T2N, R37 EBM	WALTER T. PETTINGER ET UX (WD-34 P.251)	CITY OF IDAHO FALLS	12/30/1933	108146	FEE SIMPLE	1.3 ± AC	1.3 ± AC	-	AERONAUTICAL USE
2	IN NE1/4 NE1/4 SEC.11 T2N, R37 EBM, + ALL OF SEC. 12 W OF SNAKE RIVER. SOME PORTIONS OF SEC.12 W OF RIVER WERE SOLD.	BONNEVILE CO. COUNTY DEED (BK.1 P.447)	CITY OF IDAHO FALLS	5/13/1937	124907	FEE SIMPLE	-	223.0 ± AC	-	AERONAUTICAL USE
3	E 1/2 SE1/4 & SE1/4 NE1/4(1.32 AC. +2 AC.)	FARREL L. & LILY W. HANSEN (WD-44 P.488)	CITY OF IDAHO FALLS	10/21/1941	147926	FEE SIMPLE	120.7 ± AC	119.4 ± AC	-	AERONAUTICAL USE
4	E1/2 SW1/4, W1/2 SE1/4, SW1/4 NE1/4, 2AC. NE1/4 NW1/4 SE1/4 SEC.11 T2N, R37 EBM	WALTER T. & ATHYL O. PETTINGER (WD-44 P.498)	CITY OF IDAHO FALLS	10/30/1941	148024	FEE SIMPLE	198.0 ± AC	195.1 ± AC	-	AERONAUTICAL USE
5	W1/2 NW1/4 SEC.14 T2N, R37 EBM	ANDREW & ANNA NEWMAN (WD-97 P.553)	CITY OF IDAHO FALLS	7/15/1955	238922	FEE SIMPLE	80.0 ± AC	79.0 ± AC	FAAP 9-10-060-504	AERONAUTICAL USE
6	E1/2 NW1/4 SEC.14 T2N, R37 EBM	CHARLES & HELEN REED (WD-97 P.551)	CITY OF IDAHO FALLS	7/18/1955	238921	FEE SIMPLE	80.0 ± AC	79.0 ± AC	FAAP 9-10-060-504	AERONAUTICAL USE
7	IN SE 1/4 NE 1/4 SEC.15 T2N, R37 EBM, P.O.B.: W25' FROM E1/4 CRNR.	EVERETT E. & MELVA HARRIELL (WD-119 P.109)	CITY OF IDAHO FALLS	10/16/1958	270921	FEE SIMPLE	9.5 ± AC	10.0 ± AC	FAAP 9-10-060-C611	AERONAUTICAL USE
8	PORT. OF LOT 6, SEC.1 T2N, R37 EBM	LLOYD & HELEN MORI (WD-119 P.213)	CITY OF IDAHO FALLS	2/17/1959	271185	FEE SIMPLE	20.9± AC	20.9± AC	-	AERONAUTICAL USE
9	PORT. LOT 8, SEC.12 T2N, R37 EBM, LYING N & E OF O.S.L.R.R.	HELEN ANDERSON & JUNE REMSBURG (WD-121 P.367)	CITY OF IDAHO FALLS	6/4/1959	274711	FEE SIMPLE	20.5 ± AC	20.5 ± AC	-	AERONAUTICAL USE
10	IN SW1/4 SEC.14 T2N, R37 EBM, P.O.B.: E41' FROM W1/4 CRNR. SEC.14	N.L.B.C. CORP. (WD-125 P.189)	CITY OF IDAHO FALLS	12/15/1959	Bk. 125 P. 189	FEE SIMPLE	2.3 ± AC	2.7 ± AC	FAAP 9-10-060-C611	AERONAUTICAL USE
11	IN NE 1/4 SE1/4 SEC.15 T2N, R37 EBM, P.O.B.: 25'W OF E1/4 CRNR.	CHARLES S. & HELEN REED & STELLA REED (WD-125 P.347)	CITY OF IDAHO FALLS	12/31/1959	281440	FEE SIMPLE	7.8 ± AC	8.2 ± AC	FAAP 9-10-060-C611	AERONAUTICAL USE
12	ALSO PERPETUAL FLIGHT EASEMENT 0.33 AC. ALL IN SW1/4 SEC.1 T2N, R37 EBM	HERBERT JOHN & BONNIE SWANSON (WD-126 P.435 REC.#283580)	CITY OF IDAHO FALLS	3/8/1960	283580	FEE SIMPLE	2.3 ± AC	1.0 ± AC	-	AERONAUTICAL USE
13	PORT. OF NW1/2 NW/14 SEC.13 T2N, R37 EBM, W OF I-15 R/W & E OF PROP. PURCHASED FROM SODERQUIST. NOTE: 9 AC. WAS DEEDED TO THE ST. OF IDAHO (WD-REC#394447), THIS PROPERTY WAS EXCHANGED FOR 6.01 AC. LOCATED I-15 & BROADWAY (WD-REC.@392078)	L.E. & GLADYS G. ERICKSON (WD-152 P.113 REC.#328180)	CITY OF IDAHO FALLS	10/23/1963	328180	FEE SIMPLE	17.2 ± AC	19.4 ± AC	-	AERONAUTICAL USE
14	IN NW1/4 SEC.13 T2N, R37 EBM, P.O.B.: S1312.29' & E30' FROM NW CRNR.	WM R. & BEULAH T. HATCH (WD-153 P.403)	CITY OF IDAHO FALLS	12/20/1963	330671	FEE SIMPLE	7.7 ± AC	7.1 ± AC	-	AERONAUTICAL USE
15	IN N1/2 NW1/4 SEC.13 T2N, R37 EBM	A.R. & VENLA SODERQUIST (WD-REC.#330237)	CITY OF IDAHO FALLS	12/30/1963	330237	FEE SIMPLE	13.6 ± AC	12.4 ± AC	-	AERONAUTICAL USE
16	IN NE 1/4 SEC.15 T2N, R37 EBM, RELOCATION OF OLD BUTTE RD.	PARLEY & MARGARET RIGBY, MF & MIRIAN RIGBY (WD-REC#365076)	CITY OF IDAHO FALLS	9/23/1966	365076	FEE SIMPLE	2.8 ± AC	2.9 ± AC	FAAP 9-10-060-C712	AERONAUTICAL USE
17	IN SE1/4 SEC.15 T2N, R37 EBM	CHARLES S. & HELEN REED, JUDGEMENT DEED (REC.#371001)	CITY OF IDAHO FALLS	4/6/1967	371001	FEE SIMPLE	33.8 ± AC	34.0 ± AC	FAAP 9-10-060-C611	AERONAUTICAL USE
18	IN SE1/4 SEC.15 T2N, R37 EBM, P.O.B.:W2628.24' FROM SE CRNR. SEC.15	DAVID P. & NANCY REED & WAYNE L. & HELEN I. REED, JUDGEMENT DEED (REC.#371001)	CITY OF IDAHO FALLS	4/6/1967	371001	FEE SIMPLE	6.3 ± AC	6.1 ± AC	FAAP 9-10-060-C611	AERONAUTICAL USE
19	LOT 32, BLK.1, ESQUIRE ACRES SUBDIV. DIV.#3	ROBERT & ELAINE LOLLEY (WD-REC.#475512)	CITY OF IDAHO FALLS	3/14/1975	475512	FEE SIMPLE	0.2 ± AC	0.2 ± AC	ADAP 8-16-0018-03	AERONAUTICAL USE
20	LOT 33, BLK.1, ESQUIRE ACRES SUBDIV. DIV.#3	JIMMY & VICKIE KING (WD-REC.#475683)	CITY OF IDAHO FALLS	3/14/1975	475683	FEE SIMPLE	0.3 ± AC	0.3 ± AC	ADAP 8-16-0018-03	AERONAUTICAL USE
21	W47.17' LOT 11, ALL LOTS 12,13,&14, BLK.14, JOHN HEIGHTS SUBDIV. DIV.#9; IN NW CRNR. LOT 21 BLK.6, JOHN HEIGHTS SUBDIV. DIV.#9	GRANDVIEW INV. CO. CORP. (WD-REC.#476049)	CITY OF IDAHO FALLS	3/18/1975	476049	FEE SIMPLE	-	0.8 ± AC	ADAP 8-16-0018-03	AERONAUTICAL USE
22	LOT 31, BLK.1, ESQUIRE ACRES SUBDIV. DIV.#3	MARVIN R. & D. JEAN HERNDON (WD-REC#477357)	CITY OF IDAHO FALLS	4/24/1975	477357	FEE SIMPLE	-	0.2 ± AC	ADAP 8-16-0018-03	AERONAUTICAL USE
23	IN NW1/4 NE1/4 SEC.14 T2N, R37 EBM	WM F. & JEANNE RIGBY & RICHARD I. CLAYTON (SP. WD-REC.#506669)	CITY OF IDAHO FALLS	11/12/1976	506669	FEE SIMPLE	7.5 ± AC	8.0 ± AC	ADAP 8-16-0018-03	AERONAUTICAL USE
24	IN NW1/4 SW1/4 SEC.14 T2N, R37 EBM, ALSO LOTS 18 & 19 BLK.1 ESQUIRE SUBDIV. DIV.#2, LOTS 46, 47 & 48 BLK.3 ESQUIRE SUBDIV. DIV.#2 & LOTS 7,8,9,10,11,12,&13 BLK.6 ESQUIRE AC. SUBDIV. DIV.#2	RICHARD I. CLAYTON (SP. WD-REC.#506670)	CITY OF IDAHO FALLS	11/26/1976	506670	FEE SIMPLE	12.1 ± AC	15.6 ± AC	ADAP 8-16-0018-03	AERONAUTICAL USE
25	IN SE1/4 SEC.15 T2N, R37 EBM	DAVID POWELL & NANCY REED (REC.#618037)	CITY OF IDAHO FALLS	1/6/1982	618037	FEE SIMPLE	15.5 ± AC	14.8 ± AC	ADAP 8-16-0018-04	AERONAUTICAL USE
26	IN SEC.15 T2N, R37 EBM	WAYNE LEROY & HELEN I. REED (WD-REC.#627375)	CITY OF IDAHO FALLS	12/7/1982	627375	FEE SIMPLE	18.0 ± AC	18.8 ± AC	ADAP 8-16-0018-05	AERONAUTICAL USE
27	IN SEC.15 T2N, R37 EBM	RON & KAREN CRYSTAL (WD-REC#686714)	CITY OF IDAHO FALLS	10/7/1985	686714	FEE SIMPLE	1.4 ± AC	1.0 ± AC	AIP 3-16-0018-01	AERONAUTICAL USE
28	IN SEC.15 T2N, R37 EBM	B. & N. FIELD (WD-REC.#715340)	CITY OF IDAHO FALLS	9/9/1986	715340	FEE SIMPLE	1.5 ± AC	1.5 ± AC	AIP 3-16-0018-03	AERONAUTICAL USE
29	IN SEC.15 T2N, R37 EBM	JAMES H. MCDANIEL (WD-REC.#733606)	CITY OF IDAHO FALLS	7/15/1987	733606	FEE SIMPLE	1.4 ± AC	1.6 ± AC	AIP 3-16-0018-05	AERONAUTICAL USE
30	IN SEC.15 T2N, R37 EBM	HARRY S. SCHULDT JR. (WD-REC.#755936)	CITY OF IDAHO FALLS	8/24/1987	735936	FEE SIMPLE	1.0 ± AC	1.0 ± AC	AIP 3-16-0018-05	AERONAUTICAL USE
31	IN SEC.15 T2N, R37 EBM	R. SMITH (WD-REC.#742388)	CITY OF IDAHO FALLS	12/29/1987	742388	FEE SIMPLE	1.1 ± AC	1.1 ± AC	AIP 3-16-0018-03	AERONAUTICAL USE
32	IN SEC.15 T2N, R37 EBM	GEORGE L. GRUVER (WD-REC.#754316)	CITY OF IDAHO FALLS	8/22/1988	754316	FEE SIMPLE	1.0 ± AC	1.0 ± AC	AIP 3-16-0018-06	AERONAUTICAL USE
33	IN SEC.15 T2N, R37 EBM	LEROY REED, ETAL (WD-REC.#824783)	CITY OF IDAHO FALLS	3/27/1992	824783	FEE SIMPLE	24.5 ± AC	13.8 ± AC	AIP 3-16-0018-09	AERONAUTICAL USE
34	IN SEC.15 T2N, R37 EBM	WM RIGBY, ETAL (WD-REC.#850700,850701)	CITY OF IDAHO FALLS	5/14/1993	850700, 850701	FEE SIMPLE	0.4 ± AC	0.4 ± AC	AIP 3-16-0018-09	AERONAUTICAL USE
35	IN SEC.15 T2N, R37 EBM	GRANDVIEW INVESTMENT CO., INC. (WD-REC.#850702)	CITY OF IDAHO FALLS	5/14/1993	850702	FEE SIMPLE	29.3 ± AC	28.9 ± AC	AIP 3-16-0018-09	AERONAUTICAL USE
36	IN SEC.15 T2N, R37 EBM	WALTER PETERSEN (WD-REC.#896007)	CITY OF IDAHO FALLS	3/22/1995	896007	FEE SIMPLE	18.7 ± AC	18.7 ± AC	AIP 3-16-0018-09	AERONAUTICAL USE
37	LOT 17, BLK. 1 ESQUIRE ACRES SUB-DIV. DIV.#2 IN SEC.14 T2N, R37 EBM	CARL & LETA CARLSON (WD-REC.#909085)	CITY OF IDAHO FALLS	11/2/1995	909085	FEE SIMPLE	0.2 ± AC	0.2 ± AC	AIP 3-16-0018-16	AERONAUTICAL USE
38	PORT OF LOTS 46 AND 47, BLOCK 3, ESQUIRE ACRES SUBDIVISION NO 2	CITY OF IDAHO FALLS	KELLOGG, JAMES A . & TERRIE	2/28/1997	937884	FEE SIMPLE	0.3 ± AC	0.3 ± AC	-	AERONAUTICAL USE
39	IN SEC.15 T2N, R37 EBM	REED, CHARLES LEROY, LARENE, DAVID SMITH, SHARON LARUE, LARRY L. AND CAROL M.	CITY OF IDAHO FALLS	5/1/2001	1046769	FEE SIMPLE	0.3 ± AC	0.3 ± AC	-	AERONAUTICAL USE
40	PART OF S 1&2, T 2 N R 37 E	BONNIE J. SWANSON	CITY OF IDAHO FALLS	6/26/2017	1556174	FEE SIMPLE	71.2 ± AC	70.8 ± AC	AIP 3-16-0018-16	AERONAUTICAL USE
41	IN SEC.15 T2N, R37 EBM	LEROY REED, ETAL (RPA00007158543)	CITY OF IDAHO FALLS	7/13/1999	1001686	FEE SIMPLE	19.5 ± AC	16.5 ± AC	AIP 3-16-0018-16	AERONAUTICAL USE
42	A PORTION OF S1 T2N R37E	LLKM PROPERTIES, LLC (WD-REC. #1669032)	CITY OF IDAHO FALLS	12/30/2020	1669032	FEE SIMPLE	138.9 ± AC	138.9 ± AC	AIP 3-16-0018-57	AERONAUTICAL USE
43	IN SEC.15 T2N, R37 EBM	LARRY & CAROL REED	TO BE AQUIRED	-	-	FEE SIMPLE	7.2 ± AC	7.1 ± AC	-	AERONAUTICAL USE
44	A SW1/4 SW1/4, SEC 11, T 2N, R 37	VIRGINIA TRACY	TO BE AQUIRED	-	-	FEE SIMPLE	17.7 ± AC	18.3 ± AC	-	AERONAUTICAL USE
45	A PORTION OF S1 T2N R37E	JOHNSON LEGACY, LLC	CITY OF IDAHO FALLS	7/18/2024	1771174	FEE SIMPLE	126.6 ± AC	126.6 ± AC	-	AERONAUTICAL USE
46	A PORTION OF S22 T2N R37E	PETERSON FAMILY, LLC	TO BE AQUIRED	-	-	FEE SIMPLE	73.9 ± AC	73.9 ± AC	-	AERONAUTICAL USE

DRAFT

BORDER SIZE 11"X17"
DESIGNED DESIGN
DRAWN BRC
CHECKED BWC
APPROVED AMP

REVISIONS

NO.	DESCRIPTION	DATE:

ARDURRA
1144 SOUTH SILVERSTONE WAY, SUITE 320
MERIDIAN, ID 83642
PHONE: 208.323.2288 WWW.ARDURRA.COM

A.I.P. PROJECT # 3-16-0018-050-2021

EXHIBIT 'A'
IDAHO FALLS REGIONAL AIRPORT

DATE: XXX XX, XXXX
PROJECT # 200419
SHEET: 11B
19 OF 19

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