

Shoshone County Airport Master Plan

Working Paper #1

June 16, 2014

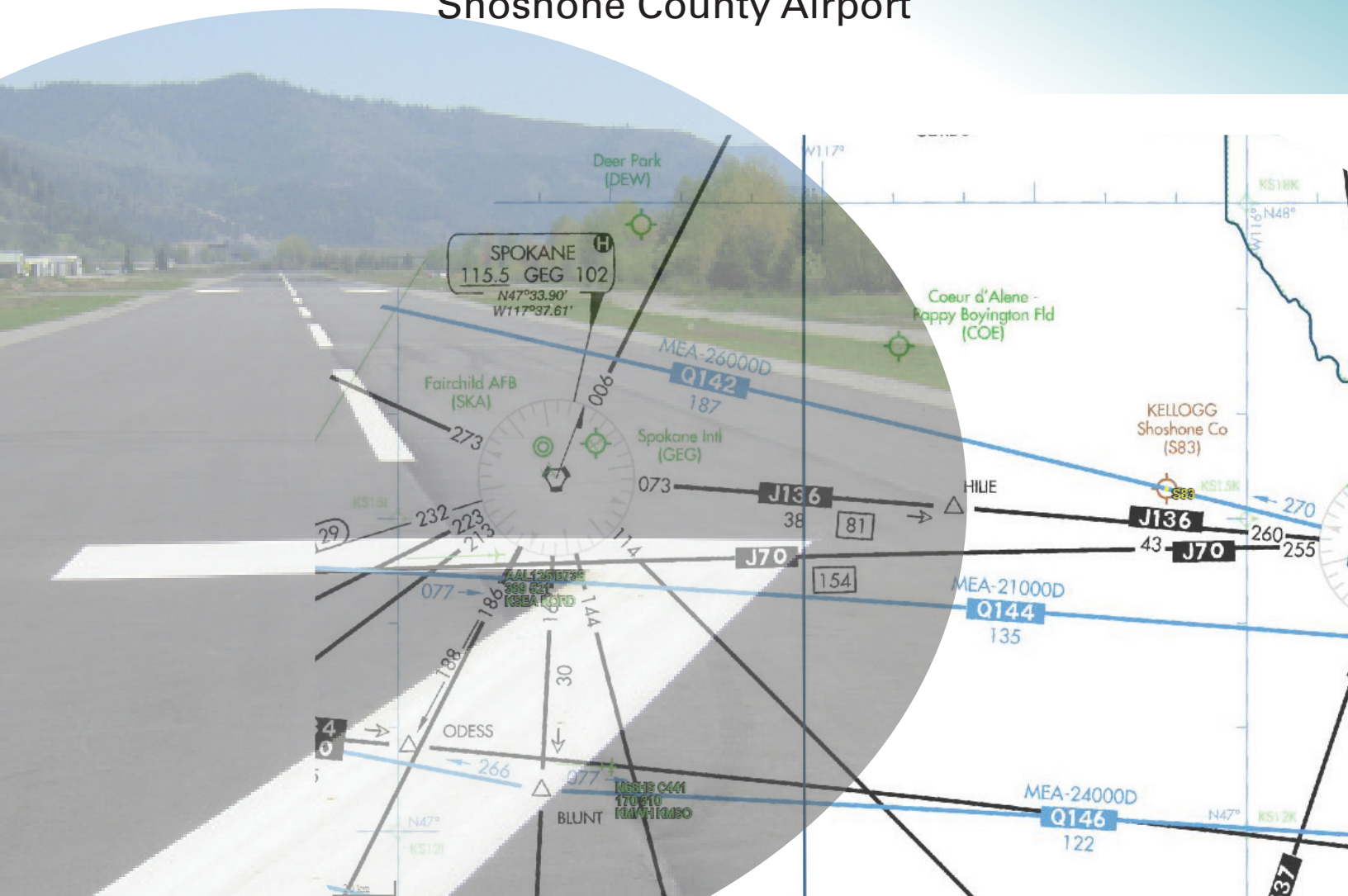
Chapters

- 1.0 Existing Conditions (Inventory)
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Appendices

Environmental Overview

Technical Memorandum – Existing Floodplain Conditions at Shoshone County Airport



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Existing Conditions (Inventory)
Appendices

Environmental Overview

Technical Memorandum – Existing Floodplain
Conditions

2.0 INVENTORY OF EXISTING CONDITIONS

2.1 GENERAL

The purpose of the inventory is to summarize existing conditions of all the facilities at the Shoshone County Airport (S83) as well as summarize other pertinent information relating to the community and the airport background, airport role, surrounding environment and various operational and other significant characteristics.

The information in this chapter describes the current status of the Shoshone County Airport and provides the baseline for determining future facility needs. Information was obtained through various sources including: consultant research, review of existing documents, interviews and conversations with airport stakeholders including the airport sponsor (Shoshone County), City of Kellogg, City of Smelterville, airport tenants, Idaho Transportation Department - Division of Aeronautics (ITD) and other knowledgeable sources.

2.2 AIRPORT AND COMMUNITY BACKGROUND

2.2.1 GENERAL

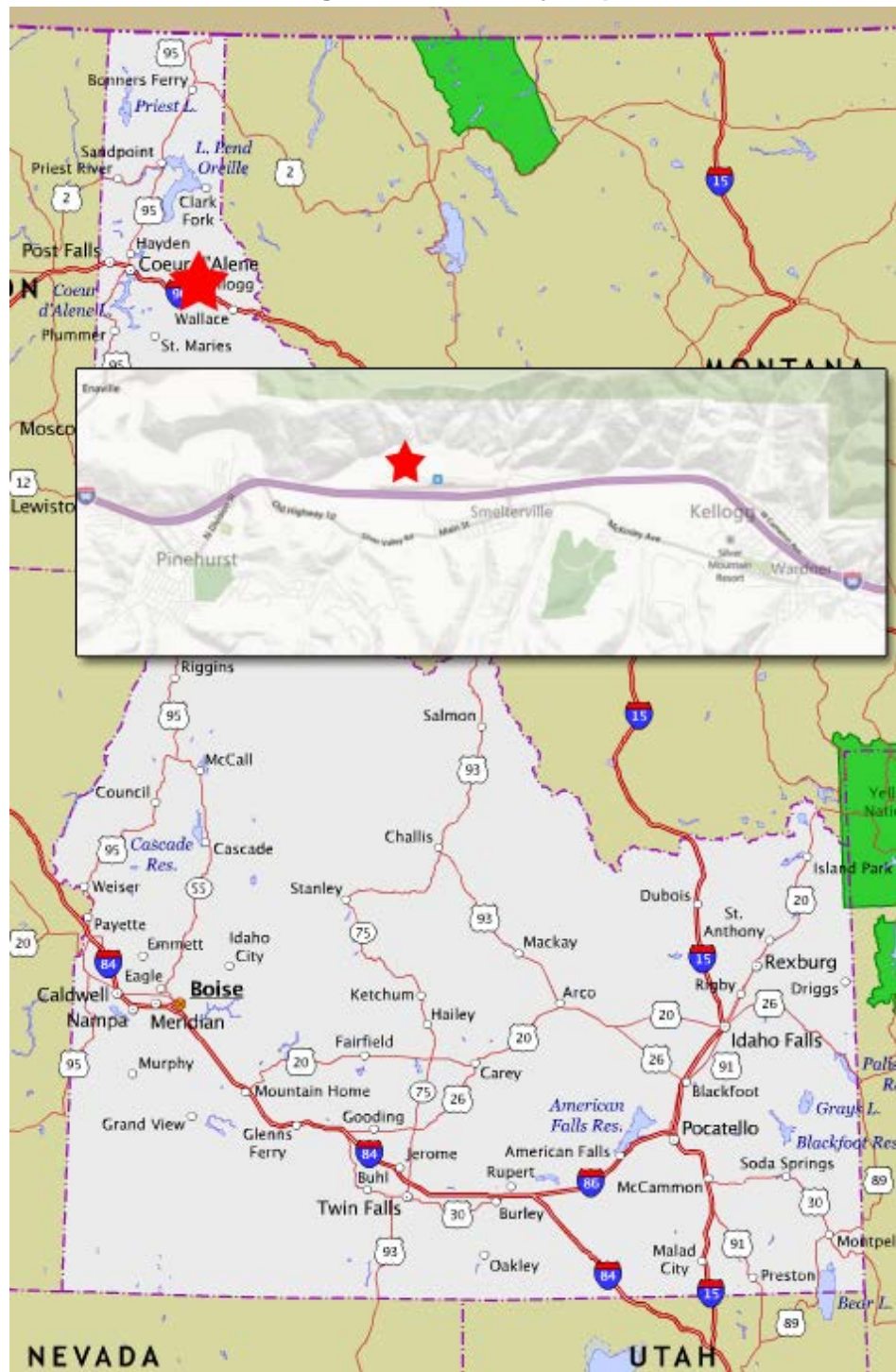
Shoshone County Airport is located on approximately 75 acres one quarter mile north of the City of Smelterville and three miles west of the City of Kellogg and serves the Shoshone County region. The airport became operational in April 1961 consisting of a paved runway. The airport has been developed over time to the present single paved runway and development configuration.

The project site is located in the Bunker Hill Superfund Site (BHSS), which requires additional care in all earthmoving activities as well as coordination through the Panhandle Health District for all construction activity. Additional discussion of the BHSS is included in the Environmental Overview included as **Appendix A**. At the Shoshone County Airport, the control plan for the Bunker Hill Super fund Site includes a barrier management program requiring clean soil, gravel and asphalt to be used during construction. Multiple projects have been completed successfully at the Shoshone County Airport in recent years, including the Runway Reconstruction and Rehabilitation in 2008, the Reconstruction of partial parallel ramp edge taxiway A in 2009 and the reconstruction of aircraft apron in 2011 and 2012.

2.2.2 AIRPORT LOCATION

The airport is located in Northern Idaho at 47° 32' 50.14" north latitude and 116° 11' 20.63" west longitude. The runway is oriented on heading(s) 70°/250° degrees (Runway 7/25), and field elevation is 2,227 feet. The airport is surrounded by mountainous terrain with the urbanized area of Smelterville to the south, Kellogg to the southeast, Wardner to the southeast, and Pinehurst to the southwest. **Figure 2-1** depicts a vicinity map for reference. The airport is situated in a bend of the Coeur d'Alene River with Interstate 90 located south of the airport.

Figure 2-1 – Vicinity Map



Source: Site Atlas, Bing Maps

2.2.3 AIRPORT OWNERSHIP AND MANAGEMENT

The airport is currently owned, operated, and managed by Shoshone County. A full-time airport manager oversees day-to-day operations at the airport. The Shoshone County Board of County Commissioners is responsible for airport policy and direction.

2.2.4 SOCIOECONOMIC CONDITIONS

According to sources including the U.S. Census and the Idaho Department of Commerce, total county population in 2010 was approximately 12,765 with 7,061 households. Median household income is reported to be approximately \$37,354.00. The City of Smelterville contains approximately 627 people (4.9% total County population) in 305 households with a reported median household income of \$22,999.00. The City of Kellogg contains approximately 1,994 people (15.6% total County population) in 903 households with a reported median household income of \$35,194.00. The City of Pinehurst contains approximately 1,619 people (12.7% total County population) in 721 households with a reported median household income of \$29,483.00. The City of Wardner contains approximately 188 people (1.5% total County population) in 75 households with a reported median household income of \$29,483.00. Shoshone County currently ranks 24th among Idaho counties in population and 8th in land. The federal government owns about 75 percent of the county.

Educational, health, social services, and mining provide the foundation for the local economy. Additional economic contributors include arts, entertainment, recreation, accommodation and food services, agriculture, forestry, fishing and hunting, and mining. Much of the County's economic base is tied to seasonal industry and, therefore, unemployment rates vary seasonally. Major employers in the region include Dave Smith Motors, US Silver, Lookout Pass Ski Area, Hecla Mining Corp., Shoshone Medical Center, Silver Mountain Resort, United Mine Services, and Wal-Mart.

2.2.5 WEATHER AND CLIMATE

Weather and Climate information for Smelterville was not available. Therefore, Kellogg weather and climate information was used. According to the National Weather Service (NWS), the airport resides in a temperate climate characterized by a variety of weather. Between 1981 and 2010, the average temperature was 46.9° F with the highest average monthly temperature of 83.2° F occurring in July and the lowest average monthly temperature of 22.4° F occurring in December. The airport typically receives majority of the yearly precipitation during the winter months (specifically, November – March), but still receives moderate precipitation throughout the year. The average annual precipitation for Kellogg is 33.75 inches. The month of November typically accumulates the most precipitation (4.69 inches) and the month of August typically accumulates the least (1.16 inches). Snowfall is most likely to occur between November and March, with the heaviest snows usually recorded in December, however, accumulated snow or snow depth is highest in January.

2.3 AIRPORT ROLE

The Shoshone County Airport is a part of the FAA's National Plan of Integrated Airport Systems (NPIAS) and is recognized as a General Aviation airport. In addition Phase 2 of the FAA Asset Study recognizes the airport as a Basic airport. The ITD State Aviation System Plan identifies the role for the airport to be "Community Business" because this airport is an economic driver for the County and Cities of Smelterville and Kellogg. (Idaho Airport System Plan, 2010).

2.4 EXISTING AIRPORT ACTIVITIES AND USERS

The Shoshone County Airport provides for a variety of aviation uses and activities. The airport predominantly serves single-engine aircraft with frequent use by small multi-engine aircraft and some small jet traffic as well. Principal aviation activities occurring at this airport include corporate/business, recreational, medical related transport, search and rescue, and government firefighting (Idaho Department of Lands and/or U.S. Forest Service).

2.5 EXISITING ACTIVITY LEVELS

Airport activity levels include the number of aircraft operations and based aircraft. The FAA's 5010-1 Airport Master Record is the official record kept by the FAA for public-use airport activities and facility conditions. The 5010 data are populated by the reporting actions taken by the airport management and ITD. A single aircraft operation is defined as either an aircraft take-off or landing; therefore, a "touch-and-go" counts as two operations.

The airport's most recent FAA 5010 (12/12/2013) identifies 6 total aircraft (single-engine) based at the Shoshone County Airport. The FAA's National Based Aircraft Inventory Program was also reviewed and it too reports 6 based aircraft and is likely the basis of the 5010 based aircraft number. It should be noted that the Based Aircraft Inventory has not been updated since May, 2010. As part of this inventory effort, a questionnaire was completed by the airport manager (January 2014). Current airport management records indicate 10 based now reside at the airport (nine (9) single engine and one (1) multiengine). An estimated 7,500 operations occur annually at the airport: approximately 10% of all operations are Air Taxi, 16% are Local, 73% are itinerant and 1% are Military. With the absence of a Traffic Control Tower, or other regular means of counting operations, it is important to recognize that current usage is an estimate. More detailed analysis of airport based aircraft and activity is included in Chapter 3, Aviation Activity Forecasts.

2.6 AIRPORT PAVEMENT CONDITION

The Pavement Condition Index (PCI) and Pavement Condition Rating (PCR) are based on a visual inspection of pavement condition only. ITD completes a full PCI inspection of airport pavements on a statewide basis every three years. The last PCI inspection conducted at the Shoshone County Airport by ITD was in 2012. PCI values for various airport pavements are identified in the following sections and attached **Exhibit 2-1**.

2.7 EXISTING AIRSIDE FACILITIES

2.7.1 RUNWAY

The airport has been developed and improved over time to the present single asphalt runway configuration. The physical dimensions of the pavement based on available survey data are 5,316 feet in length and 75 feet in width. Runway 25 has a displaced threshold of 335 feet. Based on the displaced threshold, declared distances are in use at the airport. Usable pavement for Runway 25 length is 4,981 feet. Runway 7 does not have any restrictions and therefore has a usable pavement length of 5,316 feet. Verifications of runway length will be analyzed in later chapters of this report.

Runway 7/25 is a visual only runway with visual runway markings. The markings are considered to be in good condition. Per the 2012 PCI report, the runway had an average PCI of 100, which is a good rating. The published asphalt pavement strength is 14,000 lbs or less, single wheel loading. Runway 25 is the primary runway end accommodating approximately 75% of the aircraft operations. Runway 7 is the secondary runway end accommodating the remaining 25% of aircraft operations.

2.7.2 TAXIWAY SYSTEM

The airport has an asphalt partial parallel ramp edge taxiway that is 25 feet wide with a PCI value of 100 which is a good rating. The taxiway and associated taxiway connectors are not lit but are equipped with reflective markers. Both are marked with basic taxiway markings. Per the 2012 PCI report, the existing taxiway connectors have an average PCI of 100, which is a good rating.

Figure 2-2 below provides an aerial view of existing airport airside facilities.

Figure 2-2 – Aerial of Airport Facilities

Source: T-O Engineers

2.7.3 AIRFIELD LIGHTING, VISUAL AIDS AND NAVAIDS

A NAVAID is defined by the FAA as any facility used in the aid of air navigation, including landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio direction-finding, or for radio or other electronic communication, and any other structure or mechanism having similar purpose and controlling flight in the air or the landing or takeoff of aircraft.

Runway 7/25 is equipped with a Medium Intensity Runway Lighting (MIRL) system with Pilot Controlled Lighting (PCL). PCL is activated via Common Traffic Advisory Frequency (CTAF) – 122.8. Runway 7/25 is not equipped with a Precision Approach Path Indicator (PAPI), or Runway End Identifier Light (REIL) system. A segmented circle with a lighted wind cone exists on the south side of the airport.

2.7.4 AUTOMATED WEATHER

Shoshone County Airport is currently not equipped with an automated weather reporting system. Weather data in the general vicinity is available 24 hours a day from an automated system at the Coeur d'Alene Airport located 29 nautical miles (NM) northwest and also from Felts Field, WA located 47 NM northwest of Smelterville.

Table 2-1 summarizes the existing visual aids and NAVAIDs available at Shoshone County Airport.

Table 2-1 – Shoshone County Airport Visual and Navigation AIDS (NAVAIDS)

GENERAL
UNICOM - 122.8
Rotating Beacon
Lighted Wind Cone and Segmented Circle
RUNWAY 7/25
Medium Intensity Runway Lighting (MIRL)

Source: T-O Engineers, 5010

2.8 INSTRUMENT APPROACH CAPABILITIES

The Shoshone County Airport is currently a VFR only airport with no instrument approach capabilities.

2.9 SUMMARY OF AIRSIDE FACILITIES

Table 2-2 summarizes the existing airside facilities at the Shoshone County Airport.

Table 2-2 – Summary of Existing Airside Facilities

ITEM	CURRENT DATA
Airport Role (FAA)	GA/Basic (FAA)/Community Service (ITD)
Airport Elevation	2,227' MSL
Mean/Maximum Temperature	85.1°F
Runway Design Code (RDC)	B/I(Small(S))/VIS
Approach and Departure Reference Codes	Approach B/I(S)/VIS/Departure B/I(S)
Critical Aircraft	C-421
Airport Reference Point Latitude	47° 32' 50.14"N
Coordinates (NAD 83) Longitude	116° 11' 20.63"W
Magnetic Declination (Year 2013)	14° 39.25' East
Annual Magnetic Variation (Year 2013)	0° 10.6' West/yr
Runway Length	5,316' (published)
Runway Width	75'
Runway Pavement Type	Asphalt
Runway Pavement Strength - SW	14,000 lbs.
Runway Pavement Strength - DW	---
% Effective Runway Gradient	0.4%
Runway Lighting Type	MIRL
Runway Marking Type	Visual
Taxiway Pavement Type	Asphalt
Taxiway Pavement Strength - SW	14,000 lbs.
Taxiway Width	25'
Taxiway Lighting Type	Reflector
Taxiway Marking Type	Basic
Instrument Approaches	None
Airport Property (acres)	75

Source: Existing ALP and Narrative, T-O Engineers, NOAA, FAA Form 5010

2.10 DESIGN STANDARDS

Airport design criteria and dimensional standards for airport facilities are determined by the Runway Design Code (RDC). The RDC is a coding system used to relate airport design criteria to the operational and physical characteristics of the airplane intended to operate the airport and also the approach visibility minimums. Typically, the FAA determination of a critical aircraft is based on 500 operations per year or more of the most demanding aircraft. For airport design standard purposes, the critical aircraft for the airport is a Cessna C-421.

Design standards associated with the RDC provide for proper ground based “set-backs” or safety related areas around the runway environment. The RDC has three components relating to the airport design aircraft; (a) approach speed, (b) wingspan, and (c) designated or planned approach visibility minimums. The Category is depicted by a letter and is based on aircraft approach speed. This applies to runways and runway length-related features. The second component, depicted by a Roman numeral, is the airplane “Design Group” and is based on aircraft wingspan. This primarily relates to separation-of-aircraft criteria and width-related features. The third component, depicted by a numeric value or “VIS” (visual approach only), is the visibility minimums expressed by “RVR” values in feet.

A summary of the FAA approach categories, design groups, and visibility minimums that result in the RDC is included below:

Aircraft approach category: Grouping of aircraft is based on 1.3 times their stall speed in their landing configuration at their maximum certificated landing weight. The categories are as follows:

- ✈ Category A: Speed less than 91 knots.
- ✈ **Category B: Speed 91 knots or more but less than 121 knots.**
- ✈ Category C: Speed 121 knots or more but less than 141 knots.
- ✈ Category D: Speed 141 knots or more but less than 166 knots.
- ✈ Category E: Speed 166 knots or more.

Airplane Design Group (ADG): A grouping of planes based on their wingspan. The groups are as follows:

- ✈ **Group I: Up to but not including 49 feet.**
- ✈ Group II: 49 feet up to but not including 79 feet.
- ✈ Group III: 79 feet up to but not including 118 feet.
- ✈ Group IV: 118 feet up to but not including 171 feet.
- ✈ Group V: 171 feet up to but not including 214 feet.
- ✈ Group VI: 214 feet up to but not including 262 feet.

Visibility Minimums: A grouping of RVR values based on flight visibility category (statute mile). The RVR's are as follows:

- ✈ 4000: Lower than 1 mile but not lower than $\frac{3}{4}$ mile (APV $\geq \frac{3}{4}$ but < 1 mile).
- ✈ 2400: Lower than $\frac{3}{4}$ mile but not lower than $\frac{1}{2}$ mile (CAT-I PA).
- ✈ 1600: Lower than $\frac{1}{2}$ mile but not lower than $\frac{1}{4}$ mile (CAT-II PA).
- ✈ 1200: Lower than $\frac{1}{4}$ mile (CAT-III PA).
- ✈ **VIS: Visual approach only**

The Shoshone County Airport is currently classified as RDC B/I (Small)/VIS General Aviation primarily serving small single-engine aircraft weighing 12,500 pounds or less. These aircraft have approach speeds of 91 knots or more but less than 121 knots and wingspans less than 49 feet. As previously mentioned, the airport is visual only with no instrument approach capabilities.

While the RDC relates to the design standards the runway is planning to meet, the Runway Reference Code (RDC) identifies the current standards met by the runway. In this case, RDC and RRC are the same.

TABLE 2-3
Airport Dimensional Criteria (Feet)

FAA DESIGN STANDARD – RDC B/IS/VIS	FAA STANDARD	EXISTING
Runway Width	60	75
Runway Safety Area Length beyond each runway end (RSA)	240	240
Runway Safety Area Width (RSA)	120	120
Runway Object Free Area (OFA) Length beyond each runway end	240	240
Runway Object Free Area (OFA) Width	250	250
Runway Centerline to Taxiway Centerline	150	150
Runway Centerline to Edge of Aircraft Parking	125	162.5
Taxiway Width	25	25
Taxiway Safety Area (TSA)	49	49
Taxiway Object Free Area (TOFA)	89	89

Source: Existing ALP and Narrative, T-O Engineers

2.10.1 RUNWAY WIND COVERAGE

The Shoshone County Airport does not have an on-site weather station. Available data from the National Climatic Data Center (NCDC) was reviewed, however no site available from the NCDC was in reasonable proximity to the airport. The MesoWest weather station summary website, made available from the University of Utah, was reviewed to determine if any other weather stations were located in a reasonable proximity to the airport. The MesoWest website showed two weather stations within ten miles of the airport; AN722 located 4 miles west of the airport and ITDA6 located 8 miles west of the airport. Data available from both stations was reviewed

for use in evaluating weather conditions at the airport. The ITDA6 station had less than one year of data available while the AN722 station had over 3 years of data available.

Weather station AN722 is located 4 miles west of the airport in the town of Pinehurst. The terrain near the weather station consists of a mountain valley running southwest to northeast. The terrain near the airport consists of a mountain valley running predominantly east to west. The data from the weather station may not accurately represent winds at the airport but it was deemed to be the best available data. Wind direction and speed observations were obtained from this station from July 2010 through December of 2013 from the MesoWest website with weather observations recorded every hour. This data was summarized in FAA format, counting the number of observations in 10-degree increments by standard wind speed increments. The observations from the 3-year period were then entered into the FAA's Airport Design Program to produce the windrose. The windrose utilizing this data indicates 99% wind coverage for Runway 7/25. Due to inability to validate the data, this is for information purposes only and no windrose will be included on the ALP set.

2.10.2 RUNWAY PROTECTION ZONES (RPZ)

RPZ's are defined areas on the ground beyond the end of the runway that are maintained clear of incompatible objects and activity in order to protect persons and property from collision hazards. The RPZ is trapezoidal in shape and begins 200 feet from the end of each runway. The RPZs associated with Runway 7/25 are sized to accommodate FAA design standards for "visual approach only visibility minimums". The existing RPZ inner dimension is 250 feet centered on the runway, the length is 1000 feet, and the width at the outer end of the trapezoid is 450 feet.

The RPZ's on both runway ends are encroached; Runway 7 by Interstate 90 and Runway 25 by Airport Road.

2.10.3 RUNWAY SAFETY AREA (RSA)

The RSA is a defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. The RSA should be cleared and graded and not have potentially hazardous ruts, humps, depressions, or other surface variations. The design standard for B/IS/VIS is 120 feet wide and 240 feet beyond each runway end.

The RSA for Runway 7/25 at Shoshone County Airport meets design standards.

2.10.4 RUNWAY OBJECT FREE AREA (ROFA)

The ROFA is a defined surface surrounding the runway that is required in order to keep above ground objects from protruding above the RSA edge area. Objects can be located in the OFA for air navigation or aircraft ground maneuvering purposes such as taxiing or holding aircraft. Parked aircraft cannot be allowed in the OFA. The design standard for B/IS/VIS is 250 feet wide and 240 feet beyond each runway end.

The OFA for Runway 7/25 at Shoshone County Airport meets design standards.

2.10.5 RUNWAY/TAXIWAY SEPARATION

The required separation distance between the runway and partial parallel ramp edge taxiway centerlines is 150 feet for Airplane Design Group I airports, small airplanes exclusively, for visual runways.

The current runway/taxiway centerline separation at the Shoshone County Airport meets design standards.

2.10.6 TAXIWAY SAFETY AREA (TSA)

A defined surface centered on the partial parallel ramp edge taxiway centerline. The surface should be cleared and graded, free of objects, capable under dry conditions of supporting aircraft, snow removal equipment and aircraft rescue and firefighting equipment to reduce the risk of damage to an airplane unintentionally departing the taxiway. The design standard for B/IS/VIS is 49 feet wide

The TSA for the partial parallel ramp edge taxiway at Shoshone County Airport meets design standards.

2.10.7 TAXIWAY OBJECT FREE AREA (TOFA)

A defined surface centered on the partial parallel ramp edge taxiway centerline. This area prohibits roads, parked aircrafts and above ground objects except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. The design standard for B/IS/VIS is 89 feet wide.

2.11 EXISTING LANDSIDE FACILITIES

Figure 2-3 – Airport Landside Facilities



Source: T-O Engineers

2.11.1 AIRCRAFT APRON AND TIE-DOWNS

The parking apron consists of asphalt pavement designed for small aircraft. Per the 2012 PCI report, the apron had an average PCI of 100 which is a good rating. There are currently 5 tie-down positions on the apron; 4 are reserved for transient aircraft and 1 used for based aircraft.

2.11.2 GENERAL AVIATION TERMINAL

The general aviation terminal is a 580 square foot office that includes restrooms, a pilot's lounge, and general meeting areas. The airport is open 24 hours a day and is attended full time.

2.11.3 FUEL FACILITIES

The airport currently provides Avgas (100LL) only. No Jet A fuel is currently available at the airport. Avgas fuel is stored in a 6,000 gallon aboveground tank. Fuel is available via the self-serve fuel facility with credit card reader.

2.11.4 HANGARS

There are 12 hangars located on the airport property, all box hangar styles. Currently there is a 100% utilization rate for hangar capacity with two interested parties on a waiting list. A discrepancy exists between current based aircraft (10) and current hangar utilization at capacity. Currently an additional two aircraft are based at Shoshone and occupy hangars. The owners of these aircraft chose to register their aircraft in Montana and, as a result, they cannot be counted as official based aircraft at Shoshone.

2.11.5 AIRPORT ROADSIDE ACCESS

There is one defined access point providing ingress/egress onto the airport property from Interstate 90, commonly known as Airport Road. The access road has a paved surface.

2.11.6 PERIMETER FENCING

The airport currently does not have a perimeter fence.

2.11.7 AUTOMOBILE PARKING AND GROUND TRANSPORTATION

A gravel surface automobile parking area is available near the airport office which can accommodate approximately 15 vehicles. Two courtesy vehicles are stored at the airport and are available for public use with a nominal use fee.

2.11.8 UTILITIES

The City of Kellogg provides many municipal utility services to the airport while Avista provides electricity. **Table 2-4** depicts the current utilities and service providers at Shoshone County Airport.

Table 2-4 – Airport Utilities and Service Providers

Utility	Source	Provider
Water	City Water System	City of Smelterville
Sewer	Septic System	Not Available
Fire Protection	Emergency Response	Shoshone County Fire District 2
Electric	Yes	Avista
Natural Gas	Not Available	Not Available
Refuse	Offsite dumpster Available	Waters Refuse

Source: T-O Engineers

2.12 AIRPORT OPERATIONS AND MAINTENANCE

The airport sponsor, Shoshone County, provides most maintenance activities for the airport, including snow removal, weed abatement, landscape maintenance and emergency response. Currently emergency response and security efforts are conducted by the Shoshone County Fire District 2 and the Shoshone County Sheriff Department. All pavement maintenance is completed on a contract basis.

2.12.1 SNOW REMOVAL AND AIRCRAFT RESCUE AND FIREFIGHTING (ARFF) EQUIPMENT

The County provides all maintenance and emergency response activities at the airport; therefore, the airport does not have any dedicated SRE or ARFF equipment at the airport. General aviation airports are not required to provide these services onsite.

2.13 CODE OF FEDERAL REGULATIONS PART 77 IMAGINARY SURFACES

Code of Federal Regulations (14 CFR) Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, provides airspace protection requirements at public-use airports. Airspace requirements are determined by the weight of the aircraft that predominantly operate at an airport and the type of instrument approach, if any, that exists or is planned.

Airport runways which predominantly accommodate aircraft of less than or equal to 12,500 pounds maximum gross takeoff weight (MGTOW) are known as “Utility” runways. Runways accommodating aircraft of greater than 12,500 pounds MGTOW are known as “Other Than Utility Runways”. Either “Utility” or “Other Than Utility” CFR Part 77 runway designations can include visual only runways or runways with a precision or non-precision instrument approach. Once a runway has been designated as either ‘Utility or “Other Than Utility” and the type of approach identified, specific airspace dimensions can be determined.

For public-use civilian airports, CFR Part 77 identifies the following “imaginary” airport airspace surfaces.

- ✈ Primary Surface
- ✈ Approach Surface
- ✈ Transitional Surface
- ✈ Horizontal Surface
- ✈ Conical Surface

For purposes of CFR Part 77, Runway 7/25 at Shoshone County Airport is considered a “Utility” runway. Runway 7/25 has a visual approach only. A description of each CFR Part 77 airspace surface and specific dimensions for Shoshone County Airport are included below. **Figure 2-5** depicts the CFR Part 77 Surfaces.

2.13.1 PRIMARY SURFACE

A rectangular surface longitudinally centered on the runway. For hard surfaced runways, the surface extends a distance of 200 feet beyond each runway end. Its elevation is the same as that of the runway at any given point perpendicular to the runway at that point. The width of the Primary Surface is set by the most demanding type of approach existing or planned for either end of the runway. Widths can be 250 feet, 500 feet or 1,000 feet if the existing or planned approach has approach visibility minimums as low as $\frac{3}{4}$ statute mile or a precision instrument approach.

The current width of the Primary Surface at the Airport is 250 feet, or 125 feet either side of centerline and extending 200 feet beyond each runway end.

2.13.2 APPROACH SURFACE

The Approach Surface begins at the ends of the Primary Surface and slopes upward and outward. An Approach Surface is applied to each runway end and is based upon the type of approach planned for that runway end. For visual and utility runways, the Approach Surface slope extends for a distance of 5,000 feet at a slope of 20:1. For all non-precision instrument runways other than utility the distance is 10,000 feet at a slope of 34:1. For all precision instrument runways the slope is 50:1 for 10,000 feet then 40:1 for additional 40,000 feet. The ultimate width of the Approach Surface is dependent upon the specific visibility of the approach minimum to that runway end.

As a utility runway, the current Approach Surfaces for both Runway 7 and 25 are 5,000 feet in length with a slope of 20:1. The ultimate width of the Approach Slope for Runway 7/25 is 1,250 feet.

2.13.3 TRANSITIONAL SURFACE

A sloping area that begins at the edge of the primary surface and slopes upward at a ratio of 7:1 until it intersects the horizontal surface.

2.13.4 HORIZONTAL SURFACE

An oval-shaped, level area situated 150 feet above the airport elevation, the perimeter of which 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. The radius of each arc is:

- ✧ 5,000 feet for all runways designated as utility or visual
- ✧ 10,000 feet for all other runways.

The elevation of the Horizontal Surface at Shoshone County Airport is 2,377 ft. MSL.

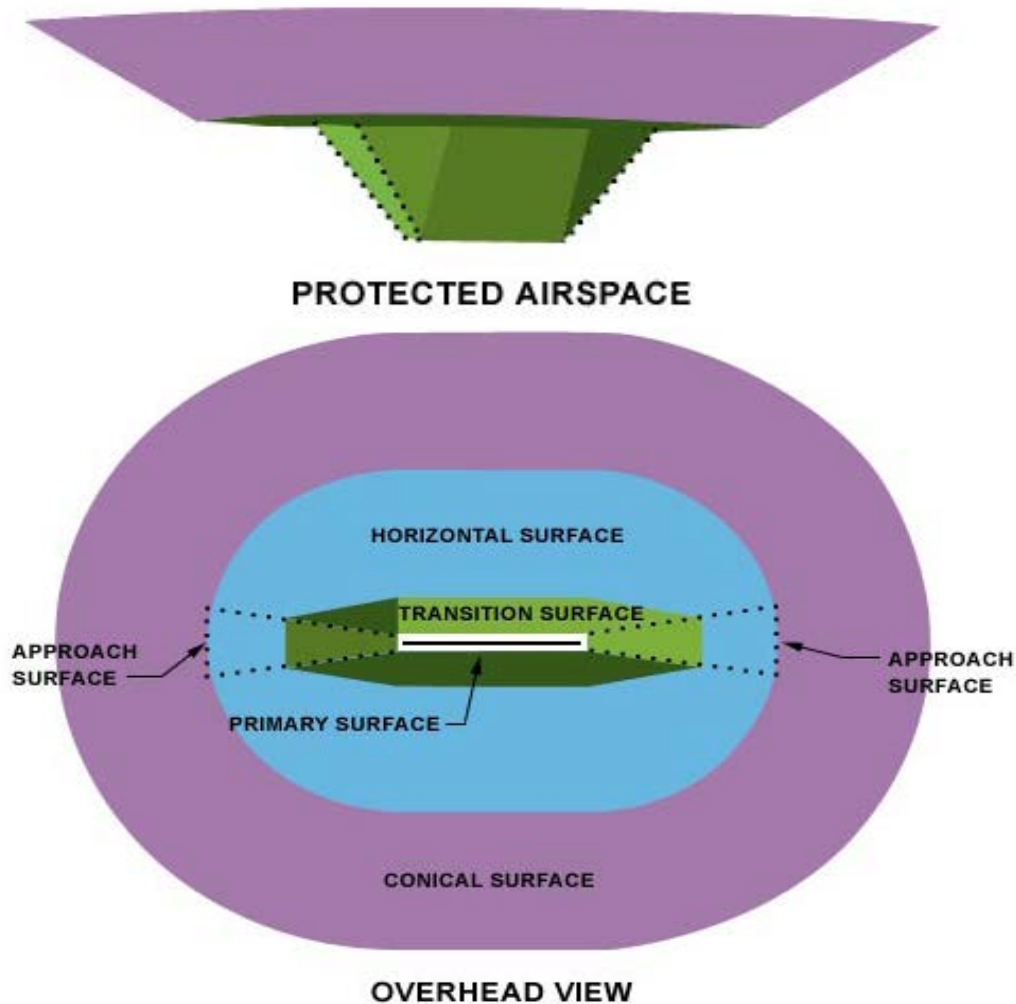
2.13.5 CONICAL SURFACE

A sloping area whose inner perimeter conforms to the shape of the horizontal surface. It extends outward for a distance of 4,000 feet measured horizontally, while sloping upward at a 20:1 ratio resulting in an additional 200 feet of height about the Horizontal Surface.

The elevation at the outer edge of the conical surface at Shoshone County Airport is 2,577 ft. MSL.

Figure 2-4 generally depicts the airspace surfaces as defined in CFR Part 77.

Figure 2-4 - CFR PART 77 Imaginary Surfaces



Source: WSDOT

2.14 SURROUNDING AIRSPACE

The National Airspace System (NAS) is configured based on areas of controlled and uncontrolled airspace. There are established operating procedures and requirements in both controlled and uncontrolled airspace. Controlled airspace includes more stringent requirements in terms of Air Traffic Control (ATC) procedures, aircraft equipment and pilot certification. Typically, the busier the airport and airspace, the more restrictive the airspace and more stringent the operating requirements. **Figure 2-5** below depicts the current U.S. airspace classifications.

Figure 2-5 – Airspace Classes

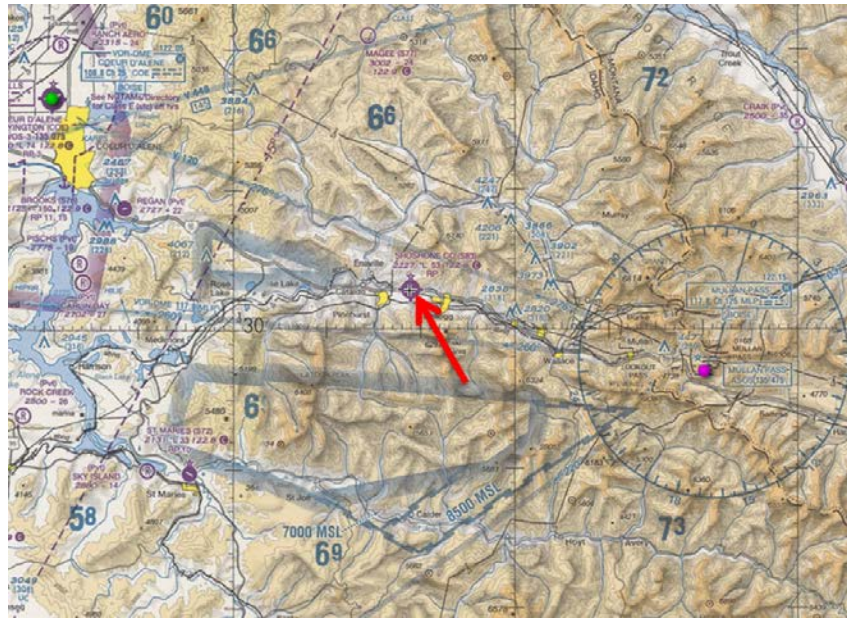


Source: AOPA

Shoshone County Airport is currently in Class G uncontrolled airspace. VFR minimums for Class G airspace are 1 mile flight visibility and clear of clouds. Pilots using Shoshone County Airport should be diligent and understand the airspace environment before operating in the vicinity of the airport.

Figure 2-6 depicts the airspace sectional in the immediate vicinity of the airport.

Figure 2-6 – Shoshone County Airport Surrounding Airspace



Source: Sky Vector.com

2.15 LAND USE COMPATIBILITY

Effective compatible land use planning serves to protect the public health of both aircraft operators and the surrounding community from safety related concerns as a result of airport operations. Such planning also serves to preserve the quality of life of surrounding neighborhoods from the by-products of airport/aircraft operations which include such things as aircraft noise, dust and fumes. Effective land use planning via mechanisms, such as zoning, protects airspace, defines use of land and considers aircraft noise impacts. Currently the FAA and the State of Idaho consider airport compatible land use planning, to be a top priority for airport sponsors to be aware of, concerned with, and prepared to address through local planning and the airport planning process.

Following is a summary of the land use planning related to the airport per-Shoshone County and surrounding jurisdictions in close proximity to the airport. Additional information and recommendations regarding land use and airport zoning around the airport can be found in Chapter X.

2.15.1 SHOSHONE COUNTY COMPREHENSIVE PLAN AND ZONING ORDINANCE

The Shoshone County Airport is located within the jurisdiction of Shoshone County. The County's current Comprehensive Plan was adopted January, 1996. Transportation (page 28), briefly discusses airports as a mode of transportation including the proximity to Spokane International airport. Only a brief mention of the Shoshone County airport is included. Under the County's transportation goals of the plan (page 30), it is stated that the County will, "maintain and expand the Shoshone County Airport Facilities by designating and arranging land uses which are appropriate to development adjacent to the airport, such as light industrial, provide a road to the airport that is such that it would be possible for trucks to deliver goods to light industrial uses, provide for adequate room so that related industrial uses will not constrict or

hamper in anyway the growth and development of the county airport, and enhance the aesthetic image of the county airport facility by encouraging landscaping and beautification projects.”

Zoning Ordinances

The Shoshone County Zoning Ordinance establishes a Landing Field District (LF). The purpose of the LF is to zone land surrounding an aircraft landing field. Additional Performance Standards in the Ordinance include height regulations and general development restrictions in the approach areas of the airport.

2.15.2 SURROUNDING JURISDICTIONS

Other communities in close proximity to the airport include Smelterville, Pinehurst, and Wardner. A review of the comprehensive plans from these communities was conducted. Of the three comprehensive plans reviewed, only Smelterville’s plan mentions the airport.

As previously discussed, the Shoshone County Airport is located in Smelterville. Shoshone County does not have jurisdiction to regulate the land use within the City of Smelterville. As a critical community within Shoshone County, understanding the City’s development goals that relate to the Shoshone County Airport is important.

The current comprehensive plan for the City of Smelterville was developed in 1997. The airport is described in general terms in the Transportation section on page 29. Under the Public Facilities discussion of the Land Use section on page 42, the airport is described per the following: “...Of concern is the location of the airport relative to the potential growth of commercial and industrial areas. The airport consumes large area. This area is further increased with height restrictions of take-off and landing approaches.”

Zoning Ordinance

The zoning ordinance for Kellogg generally establishes airports as an allowable use as a “miscellaneous and semi-public use facility within city boundaries but it does not specifically address the Shoshone County Airport. Zoning ordinances for Smelterville, Pinehurst, and Wardner do not include zoning restrictions related to the airport.

2.15.3 THROUGH-THE-FENCE (TTF)

Through-the-fence activities are those which reside on property outside of the airport property boundary that have an access directly on to airport property.

Currently no TTF activities exist at the airport.

2.16 FLOODWAY/FLOODPLAIN IMPACTS ON THE AIRPORT

The airport is adjacent to the South Fork Coeur d’Alene River (SFCDR). Parts of the airport property are within the currently effective Special Flood Hazard Area (SFHA), as designated by the Federal Emergency Management Agency (FEMA), and shown on the currently effective

Federal Insurance Rate Maps (FIRMs), effective September 26, 2008. All development within the SFHA is subject to regulation by Shoshone County in accordance with FEMA regulations.

As part of this inventory task, existing floodway/floodplain conditions were analyzed. Analysis was summarized in a Technical Memorandum included as **Appendix B**. The purpose of this memorandum is to delineate the areas impacted by the above designations and to describe the practical and administrative steps necessary for development to take place on the properties surrounding the airport. Future development at the airport is likely to be impacted by its location SFHA and understanding these impacts will be a significant consideration during the alternatives analysis phase of this project. Information and steps presented in the memorandum will be utilized in the analysis.

APPENDIX A
Environmental Overview
(Spacer Page for this Chapter Draft Only)

APPENDIX B
Floodway/Floodplain Technical Memo
(Spacer Page for this Chapter Draft Only)

APPENDIX A
Environmental Overview
(Spacer Page for this Chapter Draft Only)

Environmental Overview for the Shoshone County Airport

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March 13, 2014

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Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
AWQC	Ambient Water Quality Criteria
BEMP	Basin Environmental Monitoring Plan
BHSS	Bunker Hill Mining and Metallurgical Complex Superfund Site
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CGP	Construction General Permit
CO	Carbon Monoxide
COC	Contamination of Concern
CWA	Clean Water Act
BHSS	Bunker Hill Mining and Metallurgical Complex Superfund Site
BMP	Best Management Practice
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
I-90	Interstate 90
ICP	Institutional Controls Program
IDEQ	Idaho Department of Environmental Quality
IFWIS	Idaho Fish and Wildlife Information Systems
ITD	Idaho Transportation Department
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Services
O_3	Ozone
OU	Operable Unit
Pb	Lead
PM	Particulate Matter
RDC	Runway Design Code
ROD	Record of Decision

ROW	Rights-of-Way
SFCDR	South Fork of the Coeur d'Alene River
SFHA	Special Flood Hazard Area
SO ₂	Sulfur Dioxide
SWPPP	Storm Water Pollution Prevention Plan
TerraGraphics	TerraGraphics Environmental Engineering, Inc.
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Services

Section 1.0 Introduction

This Environmental Overview document describes the environmental setting of the Shoshone County Airport and the environmental resources that may be affected by future development at the site. Information described in this document will be used to identify environmental requirements that may need to be met for future development. Environmental impact categories outlined in Federal Aviation Administration (FAA) Order 1050.1E, Change 1 *Environmental Impacts: Policies and Procedures* (FAA 2006) are discussed for this site, using *The Environmental Desk Reference for Airport Actions* (FAA 2007) for further guidance, in addition to other pertinent environmental information specific to the location of the Shoshone County Airport.

1.1 Site Description and History

The Shoshone County Airport is located approximately three miles west of Kellogg, ID and one-quarter mile north of Smelterville, ID, in part of the Coeur d'Alene River basin which is locally referred to as the Silver Valley (**Figure 1**). The airport is adjacent to the South Fork Coeur d'Alene River (SFCDR) active floodplain and lies within the Bunker Hill Mining and Metallurgical Complex Superfund Site (BHSS). The BHSS was listed on the National Priorities List (NPL) in 1983 (Comprehensive Environmental Response, Compensation, and Liability Information System [CERCLIS] identification number IDD048340921) and includes mining-contaminated areas in the Coeur d'Alene River corridor, including floodplains, downstream water bodies, tributaries, and fill areas.

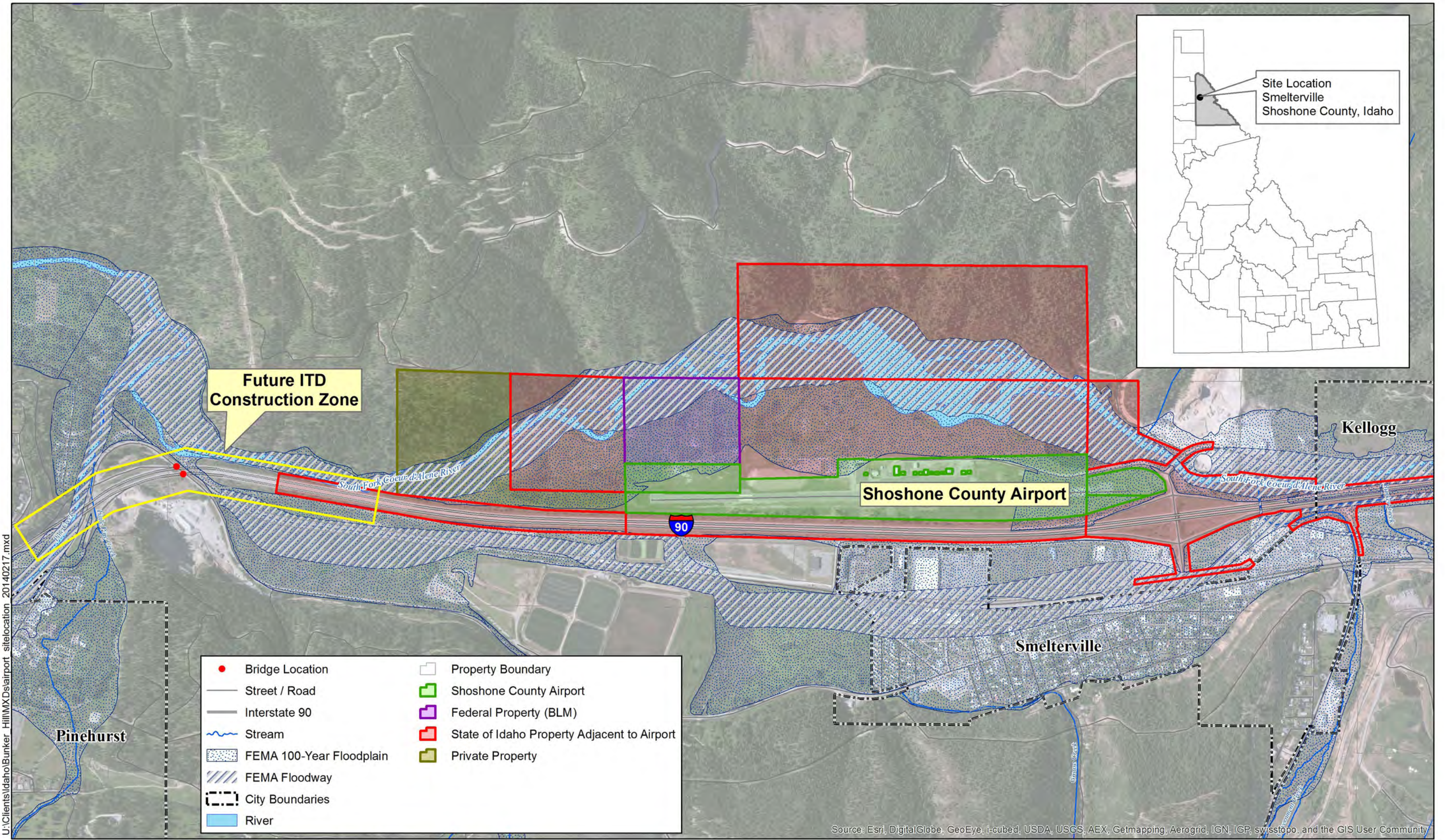
Historically, mine waste and tailings were discharged into Silver Valley waterways, including the SFCDR and its tributaries. The downstream transfer of this mine waste was impounded in part by a dam constructed in 1910 at the Pinehurst Narrows, west (downstream) from the Shoshone County Airport. This dam failed in 1933 due to flooding, and much of the impounded material was distributed downstream. Tailings material in the area directly upstream from the failed dam was used in mining material reprocessing efforts and resulted in a significant amount of tailings in the vicinity of the airport. Additional historical characterization is described in the *2010 Five-Year Review for the Bunker Hill Mining and Metallurgical Complex Superfund Site Operable Units 1, 2, and 3, Idaho and Washington* (USEPA 2010).

The BHSS includes three Operable Units (OUs) that were used to prioritize cleanup. Within the BHSS, OU1 and OU2 are contained inside the 21-square-mile area referred to as the “Box” that surrounds the historical smelting operations area at the Bunker Hill complex. The Shoshone County Airport is located in the Box and is part of the BHSS OU2. The remediation of Box residential yards, commercial properties, and rights-of-way (ROWs) was certified complete in 2008 as shown in the *Certification of Completion for the Reasonably Segregable Area, Kellogg North of Interstate 90* (USEPA 2008). Areas at the Shoshone County Airport were remediated during this effort and figures from the completion report are provided in Appendix A (IDEQ 2002).

The U.S. Environmental Protection Agency (USEPA) issued a Record of Decision (ROD) for OU2 in 1992 that discussed remedial needs and actions in the vicinity of the Shoshone County Airport in an area typically referred to as the Smelterville Flats (USEPA 1992). Characterization

and remedial actions accomplished at Smelterville Flats after the 1992 ROD are described in the 2010 BHSS Five-Year Review and are depicted in **Figure 2** (USEPA 2010). Data used to delineate the remediated areas at Smelterville Flats as shown in **Figure 2** are the same data presented in Section 4.3.5 of the 2010 Five-Year Review (USEPA 2010). These remedial actions are summarized as follows. Contaminated mine tailings were removed from the SFCDR floodplain in phases between 1996 and 2001. Contaminated tailings, waste rock, and sediments were excavated to the pre-existing floodplain elevations. Clean soil was imported to shape the floodplain into a system of main channels, secondary channels, wetlands, interconnecting overflow spillways, and upland zones. Topsoil was placed and seeded in the wetland and transition zones to provide surface stabilization. To minimize disruption of established airport facilities, the building areas and portions immediately adjacent to the runway received soil capping only (TerraGraphics 2008).

The effectiveness of these actions and monitoring activities that routinely occur near the Shoshone County Airport are also discussed in the 2010 Five-Year Review (USEPA 2010), including sediment and water quality sampling. Characterization of sediment at Smelterville Flats show metals contamination, including lead, that was likely caused from deposition of contaminated materials during flooding or peak runoff events. This sediment contamination is expected to occur during current and future flooding and high flow events until contamination source areas are successfully remediated.



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Section 2.0 Air Quality

In compliance with the Clean Air Act, USEPA established the National Ambient Air Quality Standards (NAAQS; 42 U.S.C. 7401 et seq; 40 CFR Part 50) for six air quality criteria pollutants: carbon monoxide (CO); lead (Pb); nitrogen dioxide (NO₂); ozone (O₃); sulfur dioxide (SO₂); and particulate matter (PM), which consists of both PM₁₀ (PM less than or equal to 10 microns in diameter) and PM_{2.5} (PM less than or equal to 2.5 microns in diameter). For each of the six pollutants, the NAAQS include a maximum concentration above which adverse effects on human health may occur. The State of Idaho has adopted these federal air quality standards (IDAPA 58.01.01.575-587) and has a network of air monitoring locations to evaluate select air pollutants (IDEQ 2012b). The Idaho Department of Environmental Quality (IDEQ) compiles and reports air quality monitoring data from these sites annually, and after review they are available to the public.

Clean Air Act compliance and analysis requirements with regard to air quality are determined by the area's current air quality conditions and attainment status, which is discussed in the section below. In addition, the Airborne Contaminants and Fugitive Dust requirements of the Clean Air Act apply to construction activities; therefore, dust control measures designed for each specific future action should be established prior to development and enforced during construction.

2.1 Local Attainment Status

Shoshone County has an air quality monitoring station in Pinehurst, ID (Site Identification Number 160790017), which monitors PM_{2.5} and PM₁₀ (IDEQ 2012b) and is near the airport. Currently, the Shoshone County Airport is outside the non-attainment and area of concern boundaries for PM₁₀ and PM_{2.5} that are discussed below.

For PM₁₀, a status of non-attainment is reached when the 24-hour average exceeds the federal standard of 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) more than once per year on average over three years. The Pinehurst monitoring station was designated non-attainment in 1992 and as a result, the area generally encompassing the city of Pinehurst is in non-attainment. The primary emissions contributing to non-attainment at the time were unpaved roads, open burning, and woodstoves (Boyle 2014). Development within that designated area may require a conformity analysis; however, the Shoshone County Airport and parcels immediately surrounding it are to the east of the non-attainment area and will not require a conformity analysis if the current boundary is maintained (Boyle 2014).

For PM_{2.5}, a status of non-attainment is reached when the 3-year 98th percentile average exceeds the federal standard. The federal standard for PM_{2.5} was reduced from $65\mu\text{g}/\text{m}^3$ to $35\mu\text{g}/\text{m}^3$ in 2006. Between 2001 and 2010, the approximate lowest 3-year 98th percentile average was $32\mu\text{g}/\text{m}^3$ in 2001 and the approximate highest 3-year 98th percentile average was $40\mu\text{g}/\text{m}^3$ in 2003 (IDEQ 2012a). Currently, the Pinehurst monitoring station is listed as an area of concern, but is still in attainment of the federal standard (Boyle 2014). In the future, if the Pinehurst monitoring station is designated non-attainment, a non-attainment boundary would be delineated, and if the Shoshone airport or areas to be developed fell within that boundary, a conformity analysis may be required (Boyle 2014). Currently, no conformity analysis is required for PM_{2.5}.

Section 3.0 Climate Change

The FAA Order 1050.1E, Change 1, Guidance Memo #3 (FAA 2012) states that climate change should be included as an impact category in FAA environmental documents, including both Environmental Assessments and Environmental Impact Statements. There are currently no significance thresholds or federal standards for greenhouse gases that apply to aviation. Depending on future Shoshone County Airport development plans, potential incremental changes in greenhouse gases will need to be discussed in either qualitative or quantitative terms.

Section 4.0 Coastal Resources

The Shoshone County Airport is located in Idaho and does not border a coastline. This impact category is not applicable.

Section 5.0 Compatible Land Use

The Shoshone County Airport and land immediately adjacent to it, north of Interstate 90 (I-90), is zoned as ‘landing field’. I-90, which is directly south of the airport, is currently zoned ‘general commercial’. These zoning categories were confirmed with the Shoshone County Planning and Zoning Department in February, 2014 (Martinsen 2014).

Section 6.0 Construction Impacts

Future construction activities must comply with FAA Advisory Circular 150/5370-10A, *Standards for Specifying Construction of Airports*. If future development impacts more than one acre of land, a Notice of Intent (NOI) must be filed by the Construction Contractor under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) guidelines. In addition, because the Shoshone County Airport is within the BHSS, additional construction requirements apply and are described in the subsection below.

6.1 Institutional Controls Program

Within the BHSS, land development is facilitated through the Institutional Controls Program (ICP) and subject to ICP regulations. The ICP is designed to protect the public residing and working within the superfund site and is in place to safeguard uncontaminated soil, track existing remedial actions, and eliminate the disruption or removal of barriers already in place. The coordination and facilitation required by ICP varies with each specific development activity and depends on existing remedial actions already in place and the extent of contamination.

Section 7.0 Department of Transportation – Section 4f Compliance

Section 4(f) of the Department of Transportation Act (section 303 (c) of 49 U.S.C.) indicates that if a project requires the use of a publicly owned park, recreation area, wildlife or waterfowl

refuge, or historic site of national, state, or local significance, the project will not be approved unless:

- It has a *de minimis* impact exception, or
- There is no prudent and feasible alternative, or
- The project includes all possible planning to minimize harm.

There are no parks, recreation areas, refuges, or historic sites in the immediate vicinity of the Shoshone County Airport. The nearest park is located south of I-90, approximately 0.25 miles from the edge of the airport in the City of Smelterville. The closest recreation access point is a trailhead for the Trail of the Coeur d'Alenes, approximately 1.1 miles to the west of the airport. Future actions may require a cultural resources survey; however, the remediation of land immediately surrounding the Shoshone airport (described in Section 1.1) included soil removal and replacement using an off-site source so discovery of a culturally significant site is unlikely in the immediate vicinity.

7.1 State and County Transportation Plans

The existing road network and current ownership of roads within proximity to the project site are shown in **Figure 3**. To aid in coordinating potential FAA-authorized development plans with local transportation networks and projects, state and county jurisdictions were contacted to identify known road construction plans that may take place between 2014 and 2019.

During the upcoming five years, Shoshone County does not have any road construction plans in the vicinity of the airport, and the Idaho Transportation Department (ITD) does not have any road construction plans for Exit 48 of I-90, which is the direct access to the airport.

The only ITD construction project planned in the vicinity of the Shoshone County Airport is west of the airport near the Pinehurst exits. The proposed construction zone encompasses approximately 4,915 feet of I-90 that begins approximately 0.60 miles west of the Shoshone County Airport property line and continues to the west (**Figure 1**). This construction project is not being conducted under the authority or regulations of the FAA. Construction for this project is scheduled from April 2014 to October 2015. Construction elements include the following:

- Bridge replacement for both eastbound and westbound traffic
- On/off ramp realignment and extension
- Bridge approach reconstruction

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Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Section 8.0 Farmlands

Soils at the Shoshone County Airport and parcels immediately adjacent to it, between I-90 and the SFCDR, are not identified by the USDA Natural Resources Conservation Services (NRCS) as prime farmland. Soils in the vicinity of the airport are listed in **Table 1**, based on the NRCS Web Soil Survey (NRCS 2014).

Table 1. Soil types documented by NRCS (2014) in the vicinity of Shoshone County Airport.

Soil Type Symbol and Name	Approximate Acreage	Farmland Classification
90: Udarents- Aquic Udifluvents-Slickens complex, 0-4% slopes	169	Not Prime Farmland
85: Slickens	69	Not Prime Farmland
16: Boulder creek, high precipitation-Marble creek association, 25-65% slopes	0.7	Not Prime Farmland

Soils and floodplain geology in the vicinity of the Shoshone County Airport are also affected by land development and historical mining activities, as well as remedial actions that are part of the BHSS cleanup. The soils are low in organic matter and largely comprise river deposits of tailings materials (TerraGraphics 2008).

Section 9.0 Fish, Wildlife, and Plants

Future projects will need to address any potential effects on species that are federally protected or have a State of Idaho sensitive species ranking. Preliminary research conducted on these species is discussed in the following sections. Additional research, including field surveys to determine the presence of these species, will be needed prior to future development activities.

9.1 Federally Listed Threatened and Endangered Species

In accordance with Section 7(a)(2) of the Endangered Species Act (ESA), as amended, future actions must consider impacts to federally listed or proposed threatened or endangered species for all federally funded, permitted, or licensed projects. The U.S. Fish and Wildlife Service (USFWS) lists four species that have a Threatened species designation and may be found in Shoshone County, Idaho. They include Canada lynx (*Lynx canadensis*), bull trout (*Salvelinus confluentus*), water howellia (*Howellia aquatilis*), and Spaldings catchfly (*Silene spaldingii*) (USFWS 2012).

For each species that USFWS documents as possibly occurring in Shoshone County, research has been conducted to determine if further analysis for future projects will be required. Based on this research, neither water howellia nor Spaldings catchfly are expected to occur near the Shoshone County Airport. Water howellia is an aquatic plant that is only known to occur in

Idaho in the Palouse watershed (Lichthardt and Gray 2002) and Spaldings catchfly requires drier conditions that are only found in the Palouse region and in canyon lands. The USFWS concurs with this information (Holt 2013) and no further discussion or analysis will be needed.

Canada lynx and bull trout requirements are briefly discussed in the following sections. In addition, the North American wolverine (*Gulo gulo*; hereafter wolverine) is a Candidate species and USFWS is scheduled to make a determination on a proposal to list it as Threatened by August 2014. This species is also briefly discussed because if it is listed as Threatened, an analysis of impacts may also be required prior to development at the airport.

9.1.1 Canada Lynx

Canada lynx are listed as Threatened by the USFWS (65 FR 16053; March 24, 2000) under authority of the ESA. In Northern Idaho, the Canada lynx generally requires an elevation greater than 4,000 feet (Holt 2013) along with other habitat and food requirements. This elevation requirement is substantially higher than the Shoshone County Airport elevation of approximately 2,220 feet, and Canada lynx are not likely to be found within the vicinity of the project site. However, prior to development at the Shoshone County Airport, the USFWS should be contacted to determine the depth of analysis required to assess potential impacts on Canada lynx.

9.1.2 Bull Trout

Bull trout are listed as Threatened by the USFWS (63 FR 31647; June 10, 1998) under authority of the ESA. Designated critical habitat for bull trout includes the mainstem and North Fork of the Coeur d'Alene River. The Coeur d'Alene Lake drainage is also listed as a key watershed for bull trout in the *State of Idaho's Bull Trout Conservation Plan* (State of Idaho 1996). Prior to development at the Shoshone County Airport, the USFWS should be contacted to determine the depth of analysis required to assess potential impacts on bull trout, and a biological assessment will likely be required.

9.1.3 North American Wolverine

Wolverines are proposed for listing as a Threatened species by the USFWS (78 FR 7863 7890; February 1, 2013). Currently, the USFWS is scheduled to make a final decision by August 4, 2014. Wolverine habitat is associated with heavy snowpack including boreal forests and tundra in the Western US and Canada, and wolverines are generally thought to avoid areas with heavy human use or infrastructure (Copeland et al. 2010, May et. al. 2006, Banci 1994). Because of these preferences, it is unlikely that the North American wolverine would be within proximity of the project site. However, if wolverines are listed as Threatened prior to any development at the site, the USFWS should be contacted to determine the depth of analysis required to assess potential impacts.

9.2 State of Idaho Sensitive Species

Data provided by the Idaho Fish and Wildlife Information System (IFWIS) indicate there are State of Idaho sensitive flora and fauna species observed within a five-mile buffer of the Shoshone County Airport (IFWIS 2014). These species are listed in **Table 2**.

Table 2. State of Idaho sensitive species that have been documented near the Shoshone County Airport.

Scientific Name	Common Name	Location Reliability*	State Ranking
<i>Cascadoplerla trictura</i>	A Spring Stonefly	Fair	Critically Imperiled (S1)
<i>Rana luteiventris</i>	Columbia Spotted Frog	Very Good	Rare (S3)
<i>Martes pennanti</i>	Fisher	Very Good	Critically Imperiled (S1)
<i>Histrionicus histrionicus</i>	Harlequin Duck	Very Good	Critically Imperiled (S1)B
<i>Cryptomastix sanburni</i>	Kingston Oregonian	General Area, Vague	Historic Occurrence (SH)
<i>Myotis evotis</i>	Long-eared Myotis	Very Good	Rare (S3)
<i>Falco columbarius</i>	Merlin	General Area, Vague	Imperiled, Breeding and Non-Breeding Populations (S2B,S2N)
<i>Gulo gulo luscus</i>	North American Wolverine	Very Good	Imperiled (S2)
<i>Neotamias ruficaudus</i>	Red-tailed Chipmunk	General Area, Vague	Rare (S3)
<i>Bufo boreas</i>	Western Toad	Fair	Rare (S3)
<i>Cardamine constancei</i>	Constance's Bittercress	N/A [†]	Rare (S3)

Notes:

*Location reliability is determined by the Idaho Fish and Wildlife Information System (IFWIS) and is based on the accuracy of method used to report the observation.

[†] Location reliability is not determined by the Idaho Fish and Wildlife Information System (IFWIS) for plant species.

Prior to airport development, a field assessment should be conducted to evaluate the presence of these species, and further coordination with the Idaho Department of Fish and Game may be necessary.

Section 10.0 Floodplains

Airport development within a floodplain should minimize the potential risks for flood-related property loss and impacts on human safety, health, and welfare, as well as minimize adverse impact to the floodplain's natural and beneficial values (FAA 2007). Existing floodplain boundaries near the Shoshone County Airport along with practical and administrative steps necessary for development within those boundaries are described in the *Existing Floodplain Conditions at the Shoshone County Airport* Memorandum (TerraGraphics 2014). Portions of the Shoshone County Airport lie within the current Special Flood Hazard Area (SFHA) and all development within the SFHA-designated floodplain boundary is subject to Federal Emergency

Management Agency (FEMA) regulations. Actions that must be taken before development in the floodplain are further described in the Floodplain Conditions memorandum (TerraGraphics 2014) and depend on the location of proposed development in relation to the floodplain and/or floodway boundaries.

Section 11.0 Hazardous Materials

Previously, the Shoshone County Airport property with facility identification number 1-400023 contained three underground storage tanks (IDEQ 2014). These tanks and associated pipes are no longer used and may have been extracted from the ground; currently an aboveground storage tank system is used. The site was last inspected in 2012 and records indicate that no leaking events have occurred (IDEQ 2014). Additional hazardous materials research may be needed in the future depending on planned development activities at the Shoshone County Airport.

Section 12.0 Historic, Archeological, and Cultural Resources

The National Registry of Historic Places lists two sites within a five-mile buffer of the Shoshone County Airport (Idaho State Historical Society 2014). They are the Pine Creek Baptist Church, located approximately 1.8 miles to the southwest in the city of Pinehurst, and the Kellogg Main US Post Office, located approximately 2.7 miles to the southeast in the city of Kellogg. In addition, the Trail of the Coeur d'Alenes is routed parallel to the Shoshone County Airport, approximately 0.2 miles to the south. This trail holds cultural significance to the region and notably the Coeur d'Alene Tribe. The trail is managed by the Trail Commission, which is a joint partnership between the Coeur d'Alene Tribe and the Idaho Department of Parks and Recreation. Any airport improvement actions that take place in or near the trail ROW will require the cooperation of the Trail Commission.

Before implementation of any improvements to the airport facilities, an intensive review, as per Section 106 of the National Historic Preservation Act of 1966, will be required. Historic sites recorded by the Idaho State Historic Preservation Office but not currently included in the National Register of Historic Places may be identified during this review process.

Section 13.0 Light Emissions and Visual Effects

Impacts due to light emissions and visual effects may include the following (FAA 2006):

- An annoyance to people in the vicinity,
- Interference with normal activities, or
- Proposed development that contrasts with the existing environment to an objectionable level.

Typically, the level of light intensity at an airport compared to existing levels of background lighting is not great enough to have the adverse impacts listed above. However, a description of potential impacts specific to future development plans must be included during the environmental analysis phase, and mitigation may be needed if the future projects have significant light emissions or visual effects.

Section 14.0 Natural Resources, Energy Supply, and Sustainability Design

Potential impacts on energy supply and natural resources must be evaluated with regard to actions needed to build and maintain airports. Future analysis may be necessary if development projects include any of the following elements (FAA 2006):

- Airside/landside expansion
- Land acquisition
- New or moved access roadways
- Remote parking facilities
- Significant changes in air traffic and airfield operations
- Significant construction activity

Section 15.0 Noise

The FAA guidelines for noise may require an analysis to address how the cumulative impact of noise exposure could affect the surrounding resources (FAA 2007). The Shoshone County Airport's Runway Design Code (RDC) is B/I/VIS, which is described in *Section 2.10* of the *Draft 2014 Master Plan Update* (T-O Engineers 2014) meets the criteria described in Section 14.6a, Appendix A of FAA Order 1050.1E, Change 1 (FAA 2006) and is therefore exempt from the noise analysis requirement.

Section 16.0 Secondary (Induced) Impacts

Future analysis may be necessary if airport development projects significantly influence the following community shifts (FAA 2006):

- Population movement patterns or growth,
- Public service demands, or
- Business or economic activity.

Section 17.0 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

The Shoshone County Airport is within census tract 9603, block group 001 (U.S. Census Bureau 2010). Census data from 2010 for tract 9603 indicate the poverty rate is 23.15%, which is higher than the overall State of Idaho poverty rate of 15.07%. The minority population in tract 9603 is 6.1%, which is lower than the median minority population percentage for the State of Idaho.

FAA Order 1050.1E lists impact thresholds for environmental justice, children's environmental health and safety risks, and socioeconomic impacts, which should be considered in conjunction with the nature and magnitude of future developments. Additional demographic data and detail will be obtained as needed after a future development project is identified.

Section 18.0 Water Quality

The project site does not overlie a sole source aquifer (USEPA 2014) but is directly adjacent to the SFCDR floodplain and stream channel. There are numerous water quality monitoring stations within a one-mile radius of the Shoshone County Airport that are sampled between one and four times per year for surface water or groundwater, depending on location and station objectives. The purpose for monitoring and a discussion of collected data are summarized in the 2010 Five-Year Review (USEPA 2010), the *Draft Quality Assurance Project Plan Basin Environmental Monitoring, Bunker Hill Mining and Metallurgical Complex Superfund Site, Operable Units 2 and 3* (USEPA 2012), the *Phase I Remedial Action Assessment Report, Operable Unit 2* (CH2M Hill 2007), and the *Focused Feasibility Study Report, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site* (CH2M Hill 2010). Both surface water and groundwater quality in the vicinity of the Shoshone County Airport is impaired with respect to both human consumption and ecological receptors.

18.1 Surface Water and Groundwater

The Basin Environmental Monitoring Plan (BEMP) maintains seven groundwater wells in Smelterville Flats, north of I-90 between the Pinehurst Narrows and Exit 48 which provides access to the Shoshone County Airport (USEPA 2012). These monitoring wells are depicted in **Figure 2** along with the remedial action footprint of Smelterville Flats. Potential disturbance at these well locations should be avoided in future development plans. Metals concentrations in water samples collected from these and other groundwater monitoring wells in the area are used in evaluating effectiveness of the remedial actions described in Section 1.0, and generally show groundwater quality improvement (USEPA 2010).

Metals concentrations in surface water samples collected from the SFCDR indicate that water quality has improved when compared to Ambient Water Quality Criteria (AWQC) ratios, metals loading data, and historical dissolved concentrations. This suggests that remedial actions described in Section 1.0 and other remedial actions that have taken place in the BHSS are effective at reducing dissolved zinc migration into the SFCDR (USEPA 2010).

In addition to water quality issues that stem from the airport being in a superfund site, the Smelterville wastewater treatment facility (NPDES Permit Number ID0020117) and the Page wastewater treatment facility (NPDES Permit Number ID0021300) both discharge effluent into the SFCDR to the west (downstream) of the Shoshone County Airport. Under conditions of the NPDES permit, the facilities are required to monitor the effluent. Fact sheets for both facilities, which include permit information and monitoring data, can be accessed online (USEPA 2013a and USEPA 2013b). Permits for both facilities were re-issued in 2013, demonstrating that they are both in compliance with the terms and conditions imposed by the NPDES permit.

18.2 Stormwater

If future development at the Shoshone County Airport impacts more than one acre of land, the Construction Contractor must file a NOI under the NPDES CGP guidelines. A Storm Water Pollution Prevention Plan (SWPPP) that describes the site controls and the final barrier plan will also be required by the Idaho Panhandle Health Department.

Section 19.0 Wetlands

Section 404 of the Clean Water Act (CWA) regulates the discharge and/or dredging of material in waters of the U.S., including wetlands. The USFWS provides an online wetland mapper tool through its National Wetland Inventory that is intended to be used as a guiding resource in wetland locations (USFWS 2014a). Although it should not be used as the sole determinant for wetlands requiring compliance with the CWA, it is a resource commonly referenced. Typically, if the National Wetlands Inventory indicates the presence of wetlands, a wetland assessment should be conducted to provide clarity to the existence, extent, and type of wetlands present. The National Wetland Inventory does indicate wetlands are present near the Shoshone County Airport and the data are represented in **Figure 4** (based on USFWS 2014a).

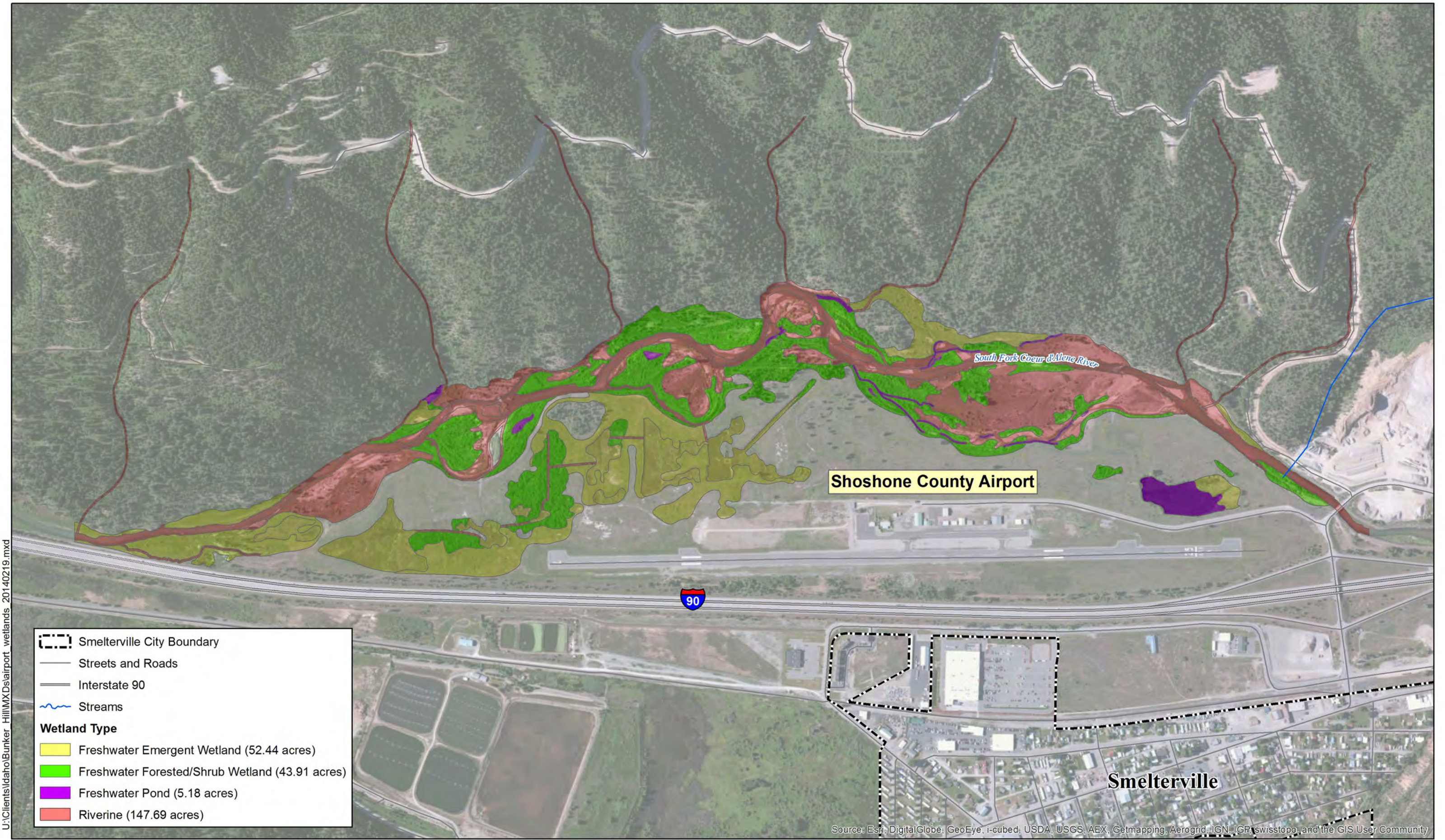
In accordance with the U.S. Army Corps of Engineers (USACE) wetland delineation manuals (USACE 1987 and 2010), three conditions must be met for an area to be considered a wetland: (1) it must have a dominance of hydrophytic vegetation, (2) it must have evidence of wetland hydrology, and (3) it must have hydric soils. Wetland areas depicted in **Figure 4** as wetland are not necessarily confirmed to meet all three wetland conditions, and each area should be assessed individually for wetland characteristics. If future development activities will result in the dredging or filling of a wetland, a Section 404 permit should be obtained through USACE and mitigation may be required.

Section 20.0 Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers in the vicinity of the Shoshone County Airport (USFWS 2014b). This impact category is not applicable.

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Smelterville City Boundary

Streets and Roads

Interstate 90

Streams

Wetland Type

Freshwater Emergent Wetland (52.44 acres)

Freshwater Forested/Shrub Wetland (43.91 acres)

Freshwater Pond (5.18 acres)

Riverine (147.69 acres)

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Section 21.0 Summary

Future development plans for the Shoshone County Airport will need to consider several environmental components, as described in this document. Elements of primary concern include the following:

- The airport is located within the BHSS, and it is important for airport management to maintain existing remedial actions and coordinate with the ICP while planning future development.
- Prior to future development, the air quality attainment status (and non-attainment boundaries if they exist) for both PM₁₀ and PM_{2.5} should be assessed to determine if a conformity analysis will be required. Dust control measures will likely be required during future construction to control fugitive dust.
- A biological assessment may be required to evaluate impacts to species listed as Threatened or Endangered under the ESA, especially bull trout.
- The airport is adjacent to an active floodplain, and the permitting restrictions and requirements depend on the location of specific future developments in relation to floodplain and floodway boundaries.
- The location of existing groundwater monitoring wells should be considered in association with future development to avoid well disturbance or displacement.
- A SWPPP will be required prior to construction activities, and if the area of impact is greater than one acre, additional requirements must be met.
- Existing data provided by the USFWS indicate jurisdictional wetlands are likely present in the vicinity of the Shoshone County Airport. Prior to future development, an assessment to identify the presence, size, and value of existing wetlands should be conducted to determine if mitigation will be required.

Each of these environmental elements were considered in the planning level decision-making process(es) used in selecting development alternatives at the Shoshone County Airport as part of this master plan. Additional, more detailed environmental analysis (i.e. Categorical Exclusion Checklist or Environmental Assessment) will be required prior to implementation of development projects.

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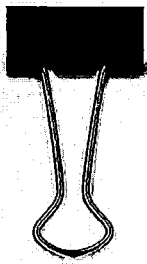
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Appendix A

Shoshone County Airport Residential Remediation Construction Completion Report.

(IDEQ, January 2002)

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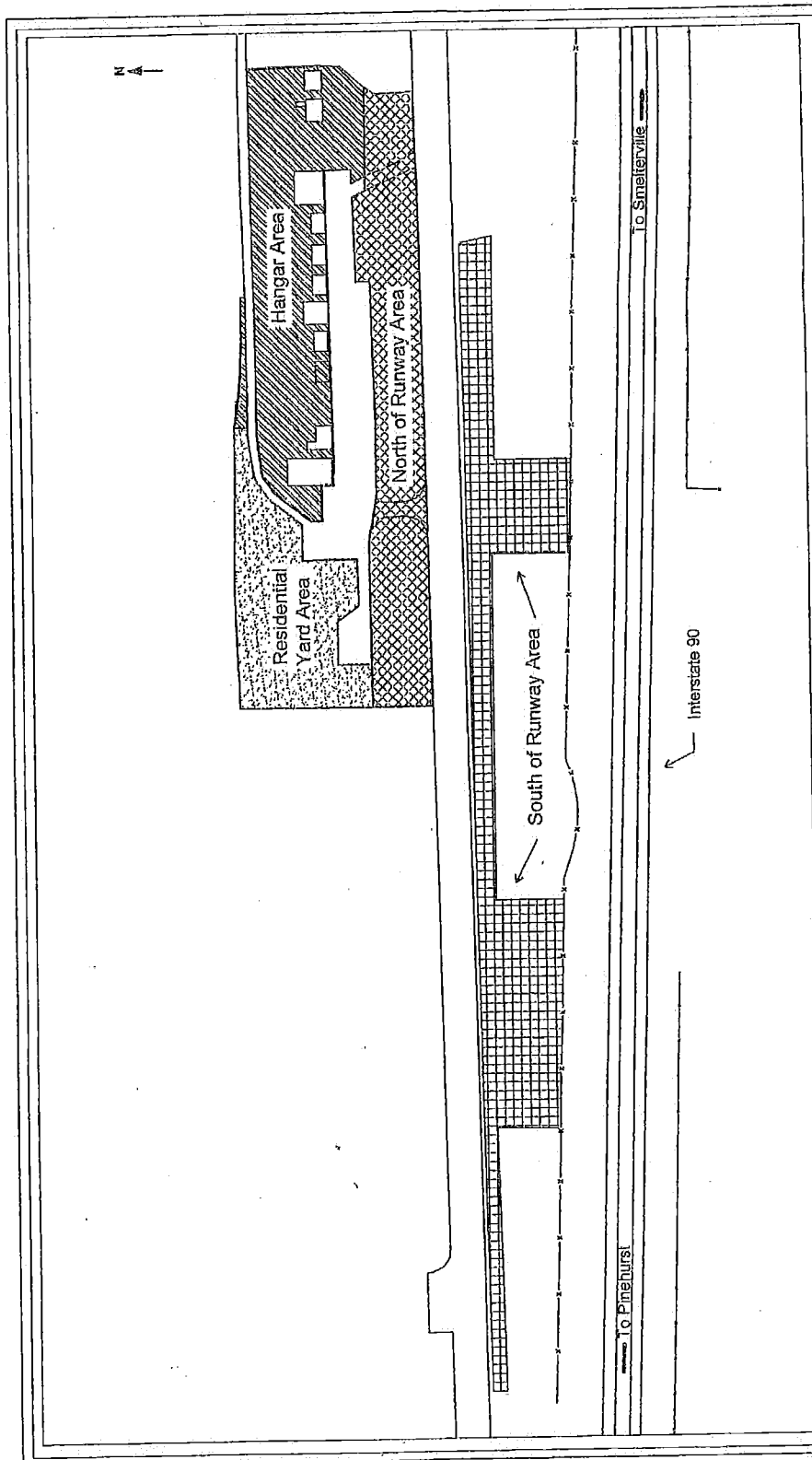
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Shoshone County Airport Residential Remediation Construction Completion Report

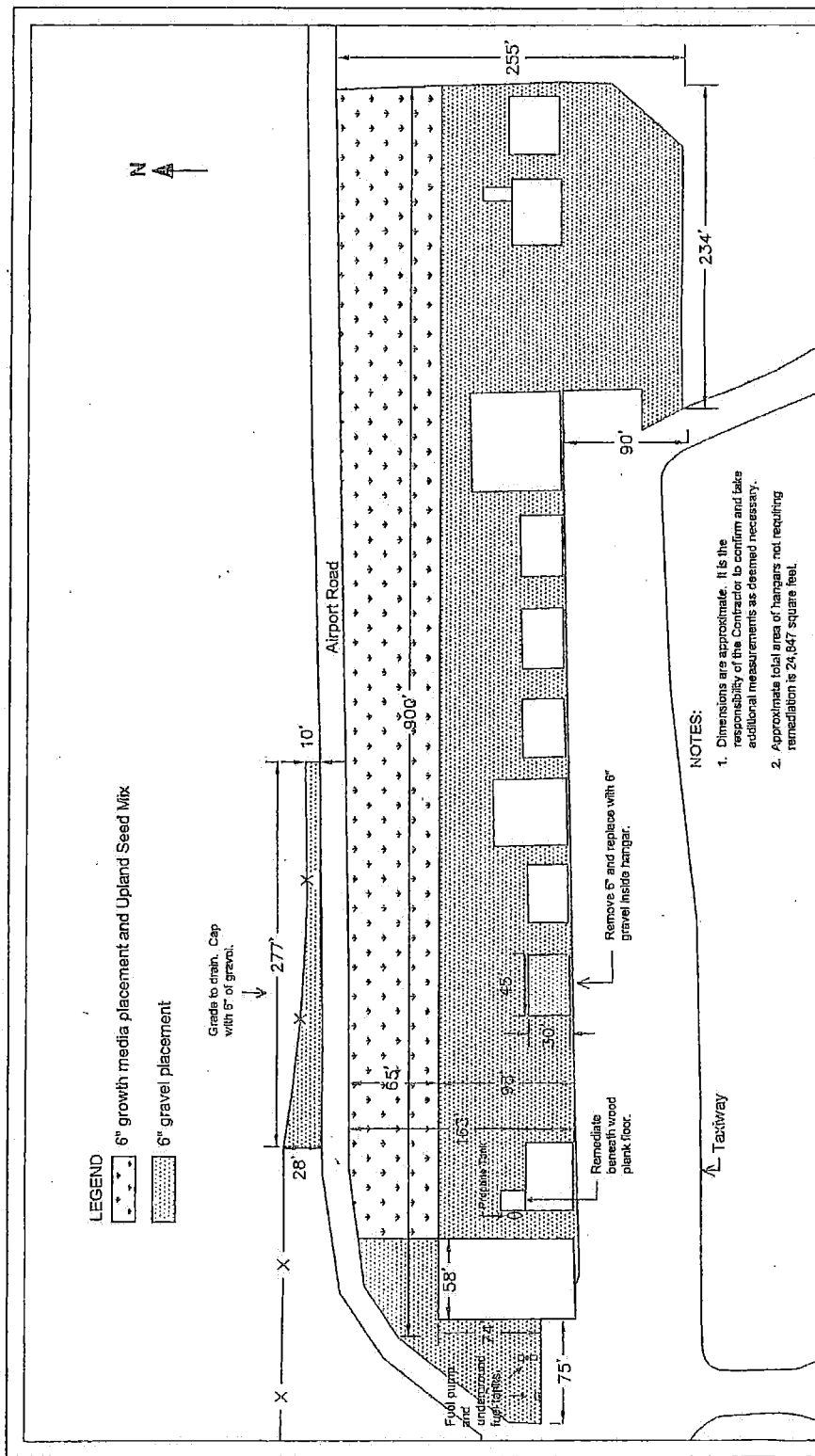
By

Scott M. Peterson
IDEQ Bunker Hill On Site Coordinator

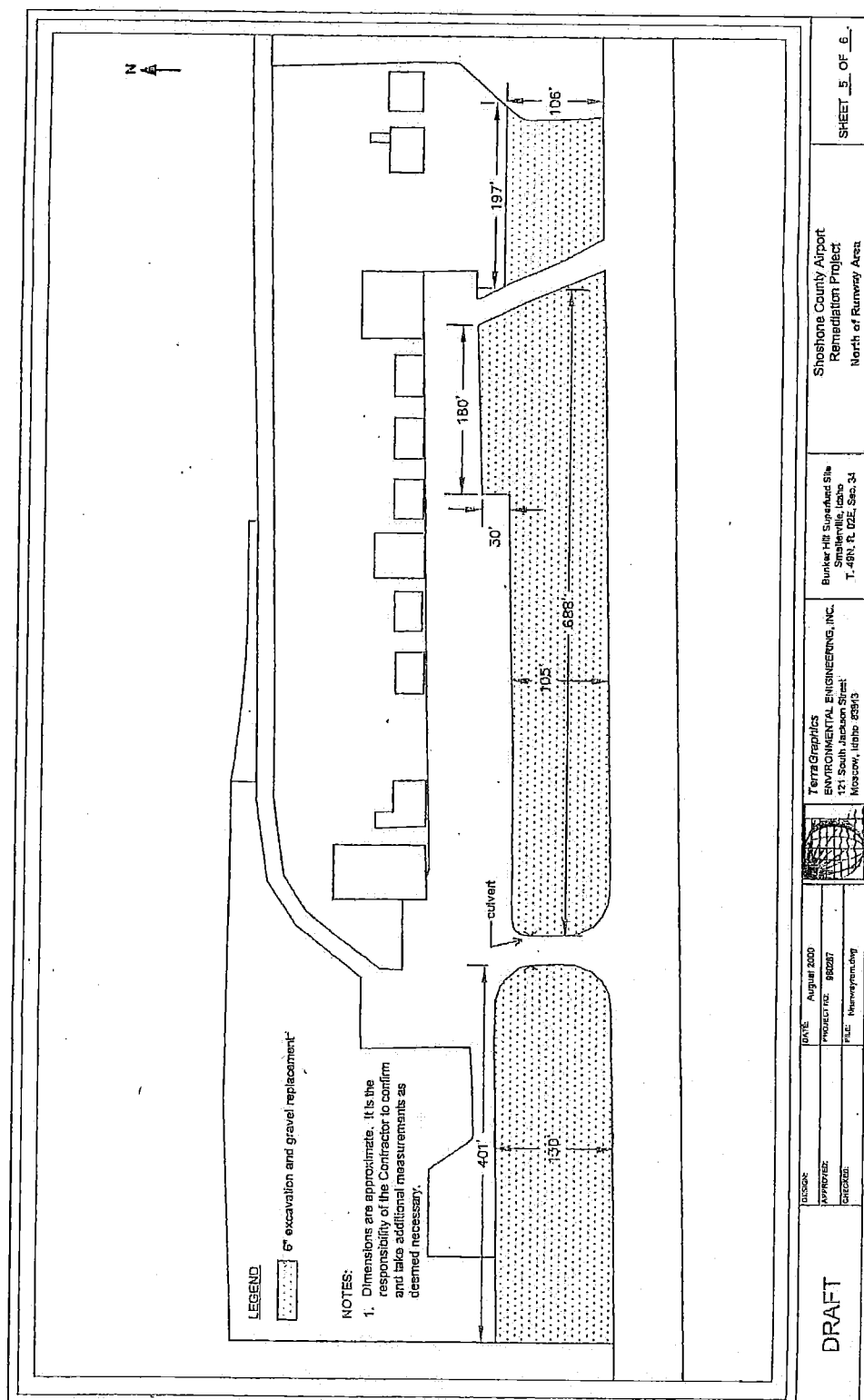
January 2002

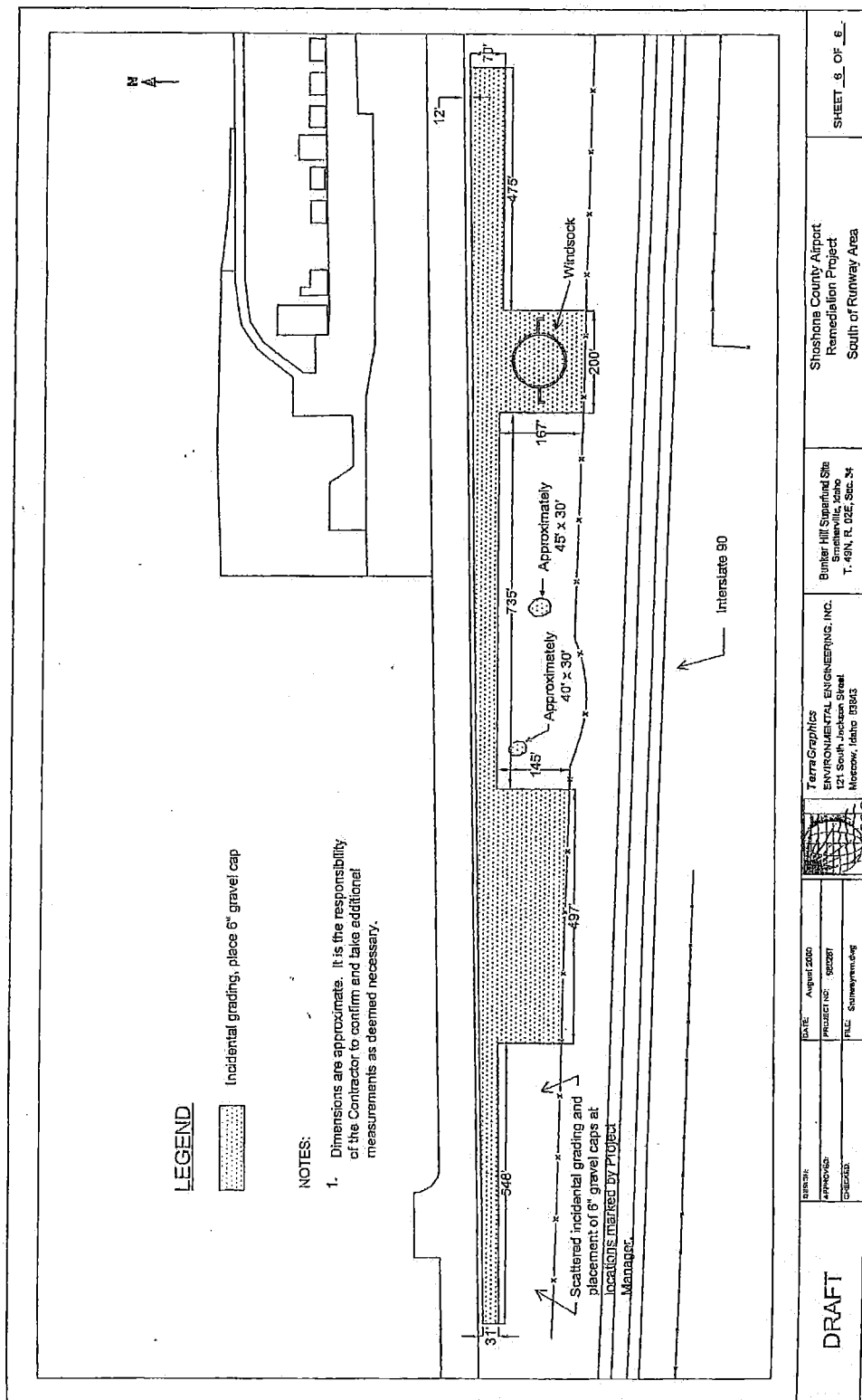


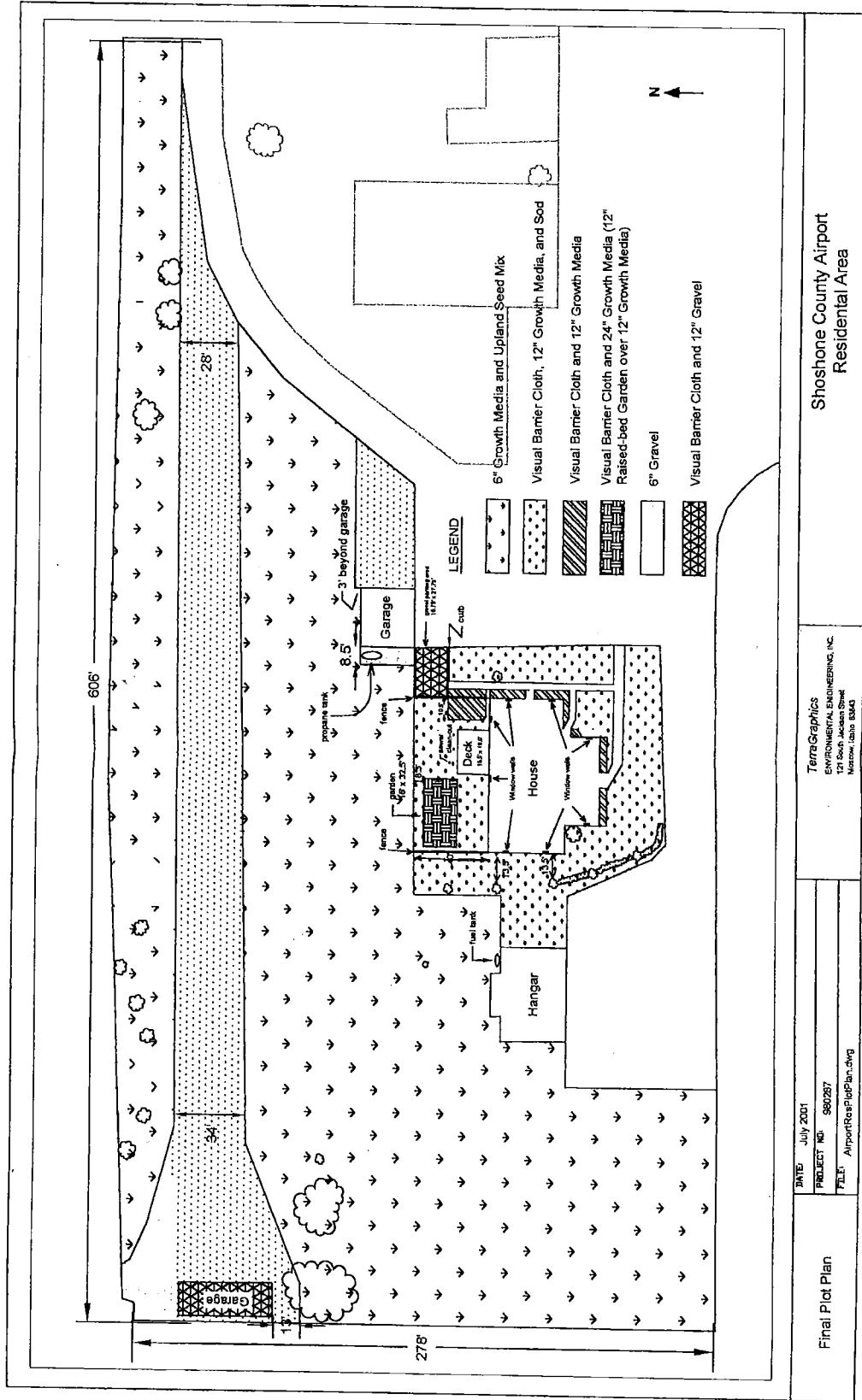
DRAFT	DESIGN: _____ APPROVED: _____ CHECKED: _____	DATE: August 2000 PROJECT NO.: 880287 FILE: shparrRemArea.dwg	 Farr Graphics ENVIRONMENTAL ENGINEERING, INC. 121 South Jackson Street Moscow, Idaho 83843	Bunker Hill Superfund Site Smelterville, Idaho T. 48N. R. 02E. Sec. 34	Shoshone County Airport Remediation Project Remediation Areas	SHEET 1 OF 6
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DRAFT		Stoshone County Airport Remediation Project Hangar Area		SHEET 4 OF 5
DESIGNER:	DATE:	PROJECT:	PROJECT NO.:	
APPROVED:	AUGUST 2000	PROJECT NO.:	PROJECT NO.:	
ENGINEER:		PROJECT NO.:	PROJECT NO.:	







APPENDIX B
Floodway/Floodplain Technical Memo
(Spacer Page for this Chapter Draft Only)

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TECHNICAL MEMORANDUM

To: Chris Pomeroy, T-O Engineers
From: Susan Firor, TerraGraphics, Moscow
Date: January 29, 2014
Project Code: 13104
Subject: Existing Floodplain Conditions at Shoshone County Airport

Shoshone County Airport is located near Smelterville, Idaho adjacent to the South Fork Coeur d'Alene River (SFCDR). Parts of the airport property are within the currently effective Special Flood Hazard Area (SFHA), as designated by the Federal Emergency Management Agency (FEMA), and shown on the currently effective Federal Insurance Rate Maps (FIRMs), effective September 26, 2008. All development within the SFHA is subject to regulation by Shoshone County in accordance with FEMA regulations. The purpose of this memorandum is to delineate the areas impacted by these designations and to describe the practical and administrative steps necessary for development to take place on the properties surrounding the airport.

1 Current Regulatory Status

In 2008, FEMA updated the FIRMs along the SFCDR. Prior to 2008, the map encompassing the airport property was effective in 1979 and had been modified with a Letter of Map Amendment in 2004. Between 1979 and 2008, FEMA and Shoshone County updated various regulations concerning development in the SFHA. The 1979 map indicated one 100-year flood zone (a floodplain Zone A3¹) in the region of the airport. In 2008, the 100-year flood zone was expanded into two regulatory areas: a floodplain now designated as Zone AE² and a Floodway³ within Zone AE. The historical floodplain designated in 1979 and the currently effective floodplain Zone AE and Floodway are shown on Figure 1.

Because FEMA and Shoshone County regulations have changed and the FIRMs have been updated, the impact of the 2008 map update on “developable land” on airport property is not completely straightforward. Regulations regarding development in Zone AE outside the Floodway provide some flexibility. Within this zone, buildings and other infrastructure can be

¹ Zones A1-A30 are designations that are no longer used. The definitions for these areas were: *Areas of 100-year flood; base flood elevations and flood hazard factors determined.*

² Zone AE is the current designation defined as: *Special flood hazard areas subject to inundation by the 1% annual chance flood event; base flood elevations determined.* The 1% annual chance flood event is the same as the former designation of 100-year flood event.

³ *The floodway is the channel of the stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.*

constructed provided building codes specific to the flood zone are met and appropriate permits are issued. Construction within the Floodway is much more constrained. Further details regarding these requirements are outlined below.

2 Development Restrictions and Regulatory Requirements

This section provides a summary of the constraints and administrative requirements for development in the designated SFHA surrounding the airport.

2.1 Development in a Floodway

Restrictions to development are most stringent in the Floodway. In order to develop in the Floodway, a licensed engineer must certify that the project does not cause a rise in the Base Flood Elevation (BFE). This is commonly referred to as a 'no rise' analysis. The project owner would be required to have an engineer complete a detailed hydraulic analysis of the SFCDR system comparing conditions before and after construction of a particular project and submit the results of the analysis to the County. If the no-rise constraint is met, the requirements for development are the same as in the rest of Zone AE. If the no-rise constraint is not met, the project would not be allowed to proceed.

2.2 Development in Zone AE outside the Floodway

Design for any construction or development in Zone AE must be certified by a licensed engineer and supporting documentation presented to the County, indicating that the project will cause no more than 1 foot of rise in BFE during the 100-year flood event.

2.3 Permitting Requirements for Development within the Special Flood Hazard Area

Typical construction permitting is required in SFHAs, along with Institutional Controls Program (ICP) permitting for properties in the Coeur d'Alene Basin (Superfund site). Additional permitting requirements outlined here result from flood hazard and proximity to the river.

2.3.1 Floodplain Development Permitting

In addition to the permits typically required for building and development, all developments within the SFHA require a Shoshone County Floodplain Development Permit. The requirements for this permit include certification of water surface elevation change as discussed in Sections 2.1 and 2.2, and other design requirements that depend on the type of structure or development planned. These regulations are delineated in Chapter 7 of the County Code, Floodplain Overlay District (FP) Regulations found at:

http://www.shoshonecounty.org/images/stories/planning/floodplain_overlay_district_regulations.pdf.

Generally, buildings are required to be protected from flooding impacts.

2.3.2 Clean Water Act Permitting

There are two potential needs for permitting under the Clean Water Act (CWA). The first is required if any work is to be done within the active channel of the SFCDR. In this case, a Joint Application for Stream Channel Alteration Permit must be completed and issued to the U.S. Army Corps of Engineers. In turn, the Corps will submit the application to other agencies as appropriate.

The second circumstance is if wetlands are to be impacted by the development or its construction. Wetlands may exist in the area surrounding the airport, and a Wetland Delineation should be performed during any development planning process to determine whether and where this issue exists. If wetlands are to be impacted, CWA Section 404 permitting and wetland mitigation may be required.

3 Changing the FEMA Maps

In the event that the community wishes to construct a project in Zone AE that will cause a BFE rise of greater than 1 foot (or 0.0 feet if the project intersects the floodway), the County can request a Conditional Letter of Map Revision (CLOMR).

FEMA develops the Zone AE and Floodway designations based on topography, river flood flow rates, and hydraulic modeling. Changes to any of these factors can result in map revisions through FEMA. Shoshone County can design projects that cause a change in the topography of the floodplain and Floodway; develop and submit to FEMA the associated hydraulic modeling, supporting calculations, and information; and apply for a map revision. FEMA will review the data and determine whether the project and associated map changes meet its regulations and requirements. If the application is approved, FEMA will issue a CLOMR, and the project can be constructed assuming all other permit requirements have been met. Upon completion of the project, Shoshone County can submit as-built drawings and request a map revision. Upon approval, FEMA will issue a revised FIRM.

In the event that the proposed development is a levee, a significant Levee Certification process is required in order for the levee to be Accredited and thereby included in the hydraulic model and revised floodplain maps.



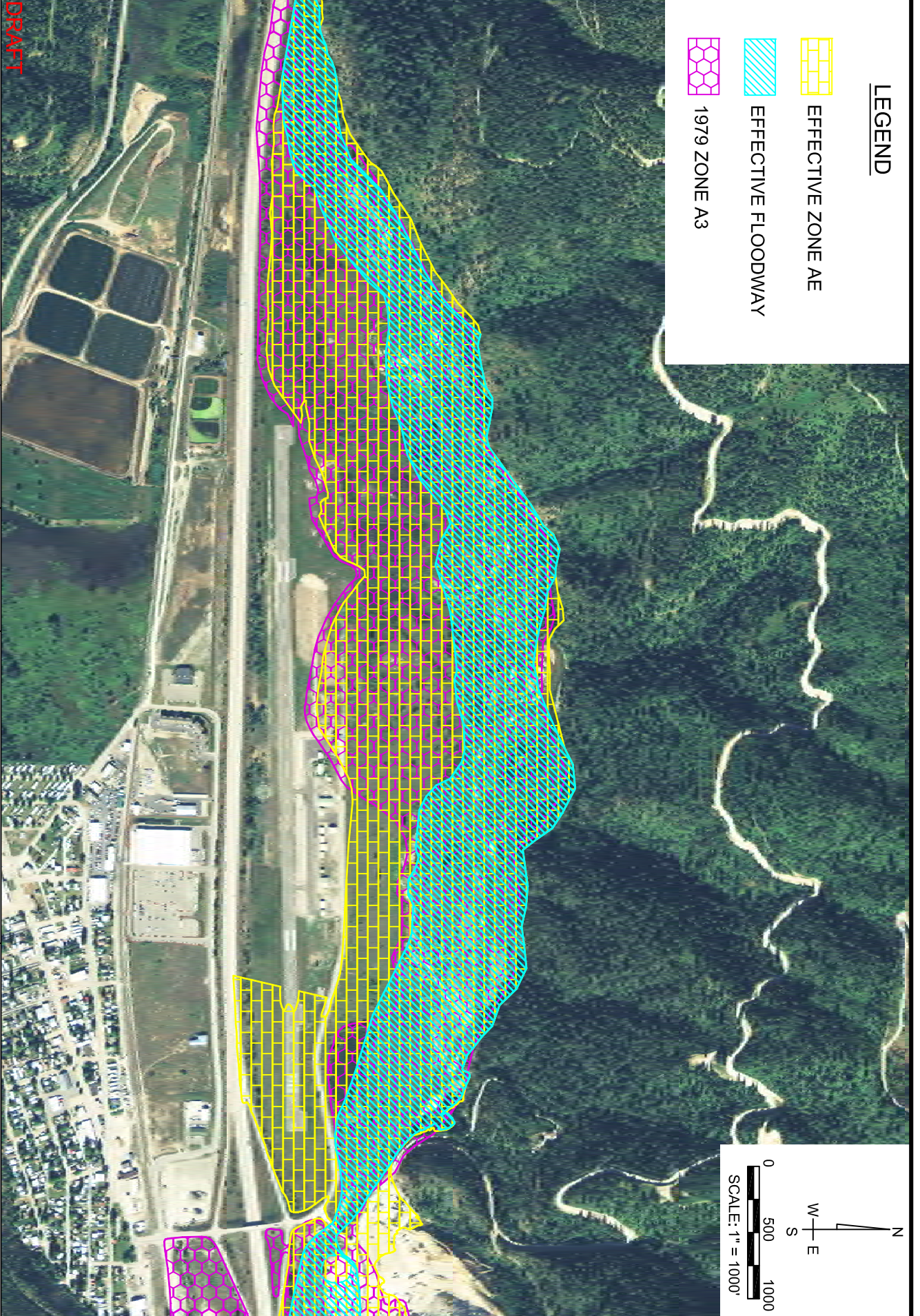
TerraGraphics
Environmental Engineering, Inc.

DRAWN BY: S. FIROR
PROJECT MANAGER: T. HARJU
PROJECT NO: 13104
DATE: 1/24/2014

PROJECT NAME:
SHOSHONE
COUNTY AIRPORT

FIGURE 1. SPECIAL
FLOOD HAZARD AREAS

DRAFT



Shoshone County Airport Master Plan
Working Paper #1

Aviation Activity Forecasts

3.0 AVIATION ACTIVITY FORECAST

This chapter discusses the findings and methodologies used to project aviation demand at Shoshone County Airport. The forecasts developed in the master plan provide a framework to guide the analysis for future development needs and alternatives. It should be recognized that there are always short and long-term fluctuations in an airport's activity due to a variety of factors that cannot be anticipated.

Projections of aviation activity for the Airport were prepared for the near-term (2013-2018), mid-term (2019-2023), and long-term (2020-2033) timeframes. These projections are generally unconstrained and assume the Airport will be able to develop the various facilities necessary to accommodate based aircraft and future operations. The projections of aviation demand developed for the Airport are documented in the following sections:

- ✈ Historic Aviation Activity
- ✈ Trends/Issues Influencing Future Growth
- ✈ Projections of Aviation Demand
 - Based Aircraft Projections
 - Aircraft Operations Projections
- ✈ Peaking Characteristics
- ✈ Critical Aircraft
- ✈ Summary

3.1 HISTORIC AVIATION ACTIVITY

Historic activity data for the Airport provides the baseline from which future activity can be projected. While historic trends are not always reflective of future periods, historic data does provide insight into how local, regional, and national demographic and aviation-related trends may be tied to the Airport.

An operation is defined as either a takeoff or a landing. Historic aircraft operations data for Shoshone County Airport are summarized in **Table 3-1**. In 2013, an estimated 7,500 operations occurred at the Airport.

TABLE 3-1 HISTORIC AIRCRAFT OPERATIONS AND BASED AIRCRAFT

Year	Itinerant Operations				Local Operations			TOTAL ALL OPS	Based Aircraft
	Air Taxi	General Aviation	Military	Total	General Aviation	Military	Total		
2003	764	6,396	50	7,210	2,453	0	2,453	9,663	13
2004	767	6,501	50	7,318	2,535	0	2,535	9,853	11
2005	770	6,608	50	7,428	2,619	0	2,619	10,047	11
2006	773	6,703	50	7,526	2,688	0	2,688	10,214	12
2007	776	6,800	50	7,626	2,758	0	2,758	10,384	12
2008	779	7,569	50	8,398	3,082	0	3,082	11,480	7
2009	782	7,675	50	8,507	3,125	0	3,125	11,632	7
2010	785	7,782	50	8,617	3,169	0	3,169	11,786	7
2011	750	5,500	50	6,300	1,200	0	1,200	7,500	7
2012	750	5,500	50	6,300	1,200	0	1,200	7,500	6
2013	750	5,500	50	6,300	1,200	0	1,200	7,500	10

Source: 2003-2012 FAA TAF, 2013 Airport Records

- ✧ Total Operations. As shown, according the FAA Terminal Area Forecasts (FAA TAF) and airport records total annual operations have declined over the last 10 years, down 21% overall or a compound annual growth rate (CAGR) of -2.4% between 2003 and 2013. This decline in general aviation activity at Shoshone County Airport is similar to national trends.
- ✧ Air Taxi Operations. Air taxi operations have remained relatively unchanged over the last 10 years, with around 750 annual operations.
- ✧ General Aviation Operations. Total general aviation operations (both local and itinerant) have declined over the last 10 years. Operations peaked in 2010 at nearly 11,000 annual operations. In 2011, general aviation operations dropped to 6,700 per year and have remained unchanged since 2011. This decline is not a situation unique to Shoshone County Airport and is reflective of the decline in general aviation activity across the nation due to economic weakness during the recession coupled with high fuel prices.
- ✧ Military Operations. The airport has accommodated about 50 military operations a year since 2003.
- ✧ Based Aircraft. The number of aircraft based at Shoshone County Airport has declined over the last 20 years. In 2013, 10 aircraft were based at the Airport including 9 single engine, and 1 multi-engine.

3.2 TRENDS/ISSUES WITH THE POTENTIAL TO INFLUENCE FUTURE AIRPORT GROWTH

There are several factors that may influence aviation activity which are independent of airport activity. It is worthwhile to review outside influences to determine how they may impact future growth. These factors include regional demographics and outlook, national aviation trends, and local factors.

3.2.1 REGIONAL DEMOGRAPHICS

Socioeconomic characteristics are often collected during the airport planning process and examined to derive an understanding of the dynamics of historic and projected growth within the geographic area served by an airport. This information is then typically used as one tool to forecast aviation demand. The types of socioeconomic data that are presented include population, employment, and per capita personal income.

The Airport serves Shoshone County. The county is comprised of several towns including the Wallace, Kellogg, Pinehurst, Osborn, Smelterville, and Mullan. A summary of historic and projected socioeconomic trends for Shoshone County is presented below:

Population

Between 1980 and 1990, the population of Shoshone County declined 27% from 19,250 to 13,973 after the closure of several mines and smelters in the county. In the 1990s and 2000s, the population continued to decline slightly. In 2012, it was estimated that the county population was 12,702. (Source: U.S. Census Bureau, Idaho Regional Economic Analysis Project)

Employment

Employment in Shoshone County showed similar trends to population. Total employment in the county has been relatively unchanged since 1990 at 6,408. In 2011, 6,281 people were employed in the county. The unemployment rate for Shoshone County in 2012 was 11.6%, just slightly less than the 12.0% rate in 2002. The unemployment rate peaked in 2010 at 14.3% and has been slowly declining over the last three years. Comparatively, the unemployment rates for Idaho and the U.S. in 2012 were 7.1% and 8.1%, respectively. Employment in Northern Idaho (Bonner, Benewah, Boundary, Kootenai, and Shoshone counties) is projected to grow at a CAGR of 1.6% between 2010 and 2020. The largest growth is anticipated in the healthcare and service industries. (Source: Idaho Regional Economic Analysis Project, U.S. Bureau of Economic Analysis, Idaho Department of Labor)

Per Capita Income

In 2012, per capita personal income (PCPI) of Shoshone County was \$32,847 (in real dollars). PCPI has grown over the last 22 years (1990 - 2012) up 2.0% per year on average. PCPI growth for Shoshone County has outpaced Idaho (1.6% CAGR) and the U.S. (1.7% CAGR). (Source: Idaho Regional Economic Analysis Project, U.S. Bureau of Economic Analysis)

Industry Mix

In 2012, nearly a quarter of the jobs in the Shoshone County were in the trade, utilities, and transportation industries. The government sector accounted another 22% of the jobs in the county and mining jobs accounted for 14% of the county jobs. Higher silver prices in recent years have increased employment in the mining industry again. The Lucky Friday and Galena mines employ twice as many people as they did five years ago. The three richest silver mines in the U.S. are in Shoshone County. The tourism sector in Shoshone County has also experienced

growth in the last decade with the growth of Lookout Pass and Silver Mountain ski areas as well as the increasing usage (bicycle, hiking, and snowmobiling) of the county's hundreds of miles of trails. (Source: Idaho Department of Labor)

3.2.2 NATIONAL AVIATION TRENDS

Historic and anticipated trends related to general aviation will be important considerations in developing forecasts of demand for Shoshone County Airport. National trends can provide insight into the potential future of aviation activity and anticipated facility needs. The aviation industry has experienced significant changes over the last 30 years. This section will briefly discuss the trends and the factors that have influenced those trends in the U.S.

General Aviation Industry Trends

At the national level, fluctuating trends regarding general aviation usage and economic upturns/downturns resulting from the nation's business cycle have impacted general aviation demand. Slow economic recovery and economic uncertainties will impact demand for general aviation at many airports throughout the U.S. as well as Shoshone County Airport over the next several years.

- ✧ General Aviation Fleet Changes. While single-engine piston aircraft still account for the majority (61%) of the U.S. aircraft fleet in 2013, the national historic trends indicate that multi-engine turboprop and business jet fleets grew at a faster rate than the single-engine piston fleet. The most active growth in the fleet size has been in turbine aircraft and rotorcraft. According to the *FAA General Aviation and Air Taxi Activity Surveys*, as a result of the recent recession, the U.S. general aviation aircraft fleet has declined 4.7% from 231,606 aircraft in 2007 to an estimated 202,875 in 2013. General aviation industry began to show signs of recovery in 2012 and 2013, especially with strong growth in rotorcraft and the agricultural turboprop aircraft deliveries.
- ✧ Active Pilots. There were over 599,000 active pilots in the United States at the end of 2013. An active pilot is a person with a pilot certificate and a valid medical certificate. There was a -0.3% CAGR in pilot population from 2000. Recreational and private pilot certificates accounted for the largest declines.
- ✧ General Aviation Operations. According to FAA air traffic activity, between 2000 and 2013, general aviation operations experienced a -3.3% CAGR. In 2012, there were 25.8 million general aviation operations at 514 towered airports, 55% of which were itinerant operations. General aviation operations at combined FAA and contract towers were down 1.2% between 2012 and 2013.

National Projections of Demand

On an annual basis, the FAA publishes aerospace forecasts that summarize anticipated trends in all components of aviation activity. Each published forecast revisits previous aerospace forecasts and updates them after examining the previous year's trends in aviation and economic activity. Many factors are considered in the FAA's development of aerospace forecasts, some of

the most important of which are U.S. and international economic forecast and anticipated trends in fuel costs. The recent projections found in *FAA Aerospace Forecast Fiscal Years 2014-2034* are summarized below.

- ✧ During the five year period between 2013 and 2018, U.S. economic growth is projected to grow at a CAGR of 2.9%. For the remaining years of the forecast period, real Gross Domestic Product (GDP) growth is assumed to slow to around 2.5% annually.
- ✧ The FAA estimates that the U.S. general aviation aircraft fleet will grow from an estimated 203,000 aircraft in 2013 to 225,700 aircraft in 2034. This is equal to an CAGR of 0.5%.
- ✧ Strong growth is anticipated in turbine aircraft (turboprop and jets), estimated to grow at a CAGR of 2.4% between 2013 and 2034.
- ✧ General aviation hours flown will increase at a CAGR of 1.4% between 2013 and 2034.
- ✧ It is anticipated that general aviation aircraft operations will grow at a CAGR of 0.5% through 2034.

3.2.3 LOCAL FACTORS AFFECTING DEMAND

There are other factors unique to Shoshone County Airport and have the potential to impact the forecasts developed in this chapter.

Proximity to Competing Airports

The proximity to competing airports is one of the key determinants of the demand and size of an airport's service or catchment area. Due to the mountainous terrain there are few airports in northern Idaho and eastern Washington that are within close proximity of Shoshone County Airport. As noted in **Table 3-2**, several of the neighboring or competing airports have runway lengths that meet or exceed that presently available at Shoshone County Airport. In addition, when total based aircraft among all of the general aviation airports in the area are considered, there are presently 484 based general aviation aircraft in the area.

TABLE 3-2 AREA AIRPORT SUMMARY

Airport	Runway Length	Based Aircraft	Annual Operations	Distance from Shoshone County Airport
Shoshone County	5,316 feet	10	7,500	
Coeur D'Alene	7,400 feet	239	123,048	43 miles
St. Maries	3,354 feet	27	13,100	46 miles
Felts Field (WA)	4,500 feet	146	56,849	63 miles
Spokane International (WA)	11,002 feet	66	81,397	74 miles
	TOTAL	484	341,964	

Source: FAA 5010 Master Records and T-O Engineers Inc.

Local Business and Tourism Usage

There are several areas of economic growth in Shoshone County that also have the potential to increase the usage of Shoshone County Airport. There are four mines in the county that have increased operations over the last three years or have plans to increase operations in the next few years following the rising price of silver and other minerals. Although these mines currently rely on ground transportation for parts and equipment, and Spokane International for commercial air travel, the need for expedited deliveries and increased corporate travel may increase.

The tourism industry is also growing in Shoshone County and the interest in using general aviation to access the area is increasing as a result. Both Silver Mountain Resort and Lookout Pass ski area have plans for expansion in the next five years. Currently, the corporate office of Silver Mountain uses the Airport several times a year utilizing a small Gulfstream (G200 series) corporate jet. Second home-owners also utilize the airport using various single engine, multi-engine and small jet aircraft (Citation type traffic) to access their vacation homes near the ski areas. In the summer months, there have been inquiries regarding using the airport to access the Hiawatha Bike Trail. Construction companies have also utilized the Shoshone County Airport during major construction projects at both ski areas. The managers at both Silver Mountain and Lookout Pass noted that the Airport cannot currently be used in poor weather conditions due to a lack of instrument approaches and weather reporting equipment. These deficiencies combined with the lack of ground transportation from the airport to desired tourist areas, result in potential users flying into Coeur d'Alene Airport instead of Shoshone County Airport.

Additionally, several other businesses currently utilize the Shoshone County Airport. Dave Smith Motors, in Kellogg, occasionally has customers that fly into the airport to purchase a vehicle. A representative will pick customers up from the airport and bring them back to the dealership. Avista Utilities noted that their rotary aircraft utilizes the airport several times per year to conduct inspections and maintenance on nearby transmission lines. Avista Utilities also noted the airport would be heavily utilized if an emergency situation or fire were to arise along the power lines.

Aerial Firefighting & Life Flight/Medical Related Activity

Due to the access it provides to northern Idaho mountains, the Shoshone County Airport has supported aerial firefighting aircraft during the fire season. The magnitude of use is dictated by the severity of the fire season and the proximity of the fire to the airport. Current aerial firefighting activity at the airport is conducted by the Idaho Department of Lands and the United States Forest Service (USFS) using contract aerial firefighting aircraft. Both helicopter and fixed wing firefighting aircraft currently use the airport with a majority of the helicopter activity conducted under the direction of USFS. Airport management estimates 250 to 300 annual operations of fixed wing Air Tractor AT-802 designated as Single Engine Air Tankers (SEATs) and helicopter activity occur at Shoshone County Airport each year. The ability of the airport to

support aerial firefighting activity is viewed as critical to the overall health and well-being of the community.

Both Shoshone Medical Center and Mountain Health noted that although they currently utilize the airport infrequently (Shoshone Medical Center has its own helipad for emergencies), there is a need for fixed wing aircraft at Shoshone County Airport to transport passengers or doctors. Per information provided by Life Flight operators, the close proximity of the Shoshone County Airport to Spokane, Washington, means the airport is in range of Life Flight helicopters which can directly access the local hospital. Nonetheless, the isolated location of the Shoshone County area requires some fixed wing Life Flight activity throughout the year. Surrounding terrain, lack of instrument approach procedures and wind issues currently factor into Life Flight operations at the airport.

The use of the airport for business, tourism, aerial firefighting, and Life Flight operations is considered to be an important function of the airport over the planning horizon. While it is not anticipated that the various aircraft associated with these activities will approach the threshold to consider changes to the identified critical aircraft at the airport, these activities represent both opportunities and challenges. Future activity at the airport should be based on a *quality versus quantity* basis in terms of accommodating future demand and the development of new improvements. Recommended facilities and strategies to address potential impacts are considered in later chapters of this report.

3.2.4 SUMMARY

While the Shoshone County Airport has experienced a decline in its number of based aircraft and operations since the events of September 11, 2001 and the recent economic recession; it is considered to be unlikely that this pattern will continue over the forecast period. The airport will most likely experience moderate growth over the next 20-year forecast period, the rate of that growth will be somewhat comparable to others in the region but somewhat dependent on the future facilities and services provided at the airport.

3.3 PROJECTIONS OF DEMAND

Projections of aviation demand at Shoshone County Airport for the 20-year planning period are presented here using various methodologies. The results of these different methodologies are compared and a preferred projection of each is selected.

The following assumptions were made in developing the projections of aviation demand at Shoshone County Airport:

- ✦ The national and local economies will continue to grow through the overall forecast period.
- ✦ Economic disturbances may cause year-to-year traffic variations, but the long term projections will likely be realized.

- ✧ Aviation at Shoshone County Airport will generally reflect the national aviation industry. The FAA projects growth in all aspects of aviation.
- ✧ Airport facilities will keep pace with and meet the demand for aviation use and a lack of facilities will not limit the number of based aircraft to be accommodated in the future.
- ✧ The military will continue to occasionally use Shoshone County Airport for helicopter transport and training activity through the forecast period.

3.3.1 **BASED AIRCRAFT**

Based aircraft are those aircraft that are permanently stored at an airport. Estimating the number and type of aircraft expected to be based at the Airport over the next 20 years impacts the planning for future facility and infrastructure requirements.

As discussed in the inventory chapter, the airport's most recent FAA 5010 (12/12/2013) and FAA National Based Aircraft Inventory Program identify 6 total aircraft based at the Shoshone County Airport. The Based Aircraft Inventory has not been updated since May, 2010. As part of the inventory effort, a questionnaire was completed by the airport manager (January 2014). Current airport management records indicate 10 based now reside at the airport (nine (9) single engine and one (1) multiengine). 10 based aircraft will be used as the base year (2013) based aircraft number from which projections are developed.

Based aircraft at the Shoshone County Airport were projected using several methodologies. The results of these forecasting methodologies are compared and the Historic Per Capita Personal Income Growth methodology (Scenario 3) was chosen as the preferred based aircraft projection. The preferred based aircraft projection for Shoshone County Airport is carried forward in the master planning process and is used to examine future airport facility needs.

A summary of the methodologies used to develop based aircraft projections are below and shown in the **Table 3-3** and **Figure 3-1**.

- ✧ Scenario 1: FAA Projected Growth Rate. This scenario assumes that the growth of based aircraft at Shoshone County Airport will be equal to the rate forecast in the FAA Aerospace Forecasts, Fiscal Years 2013-2033 for active general aviation aircraft. The annual growth rate for this scenario is 1.5%.
- ✧ Scenario 2: Constant Market Share of Statewide Based Aircraft. In 2013, Shoshone County Airport's share of Idaho's based aircraft fleet as reported in the FAA's Terminal Area Forecasts was 0.34%. This scenario assumes that the Airport will maintain this share and will grow at an average annual rate of growth developed as part of the Idaho Airport System Plan (IASP), developed in 2010.
- ✧ Scenario 3: Historic Per Capita Personal Income Growth. This scenario projects based aircraft to increase at an average annual rate of growth of 1.6%, equal to the historic CAGR in PCPI in Shoshone County between 1990 and 2012.

- ✈ Scenario 4: Projected Employment Growth. This scenario projects operations to increase at an average annual rate of growth of 1.6%, equal to the projected employment growth developed for Northern Idaho, as part of the Idaho Regional Economic Analysis Project.

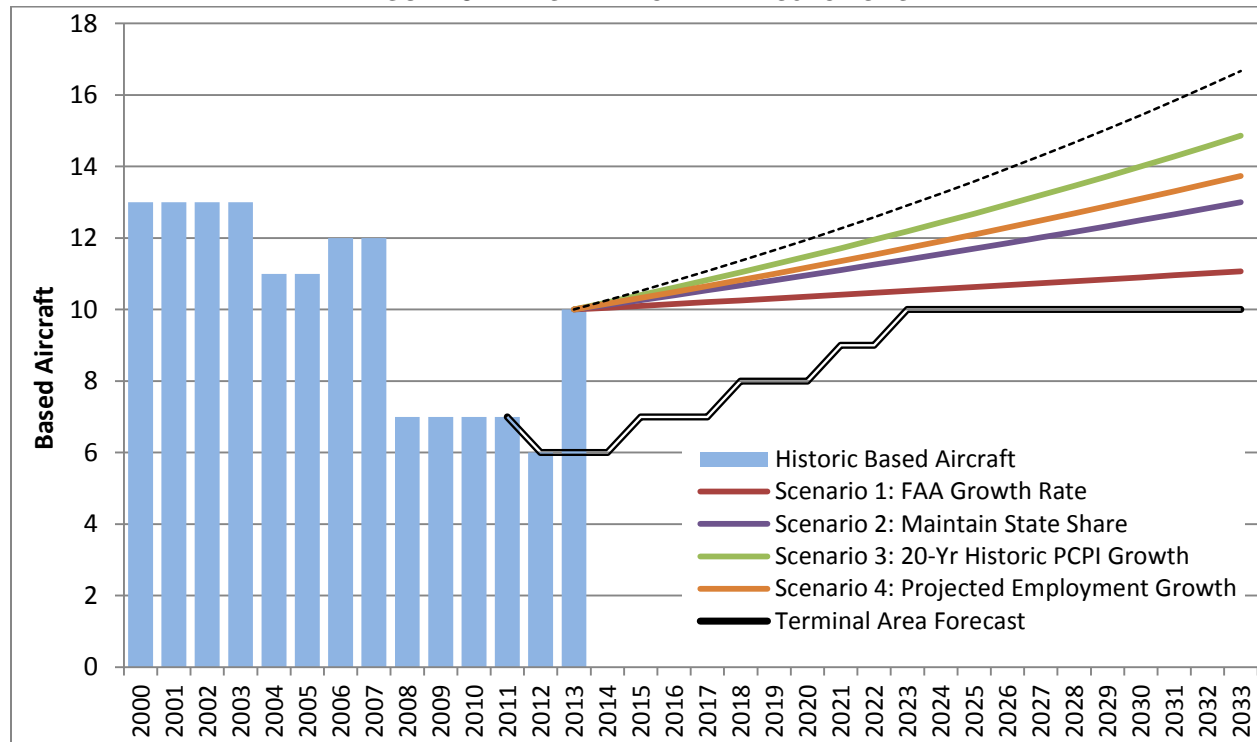
TABLE 3-3 BASED AIRCRAFT PROJECTIONS

Year	Scenario 1 FAA Aerospace Growth	Scenario 2 Maintain State Share	Scenario 3 Real PCPI Growth	Scenario 4 Projected Employ Growth	FAA Terminal Area Forecast (TAF)	FAA TAF Adjusted Forecast
2013	10	10	10	10	6	10
2018	10	11	11	11	8	11
2023	11	11	12	12	10	13
2033	11	13	15	14	10	17
CAGR	0.51%	1.32%	2.00%	1.60%	2.59%	2.59%
2033 Variation from Adjusted TAF	-50.57%	-28.23%	-12.16%	-21.33%	-66.67%	0.00%

Source: T-O Engineers Inc.

The results of the four scenarios examined in this analysis were compared to the FAA's Terminal Area Forecast (TAF) published in January 2014 for Shoshone County Airport. The FAA TAF notes that six aircraft were based at the airport. However, 10 aircraft are currently based at Shoshone County. The TAF was adjusted to 10 based aircraft, utilizing the same growth rates as published in the TAF.

FIGURE 3-1 BASED AIRCRAFT PROJECTIONS



Source: T-O Engineers Inc.

Note: TAF Adjusted figures reflect adjusting the base year figure from the TAF to match actual data figures. TAF growth rates are then applied to the actual data figure for the duration of the planning period.

All scenarios are lower than the adjusted TAF projections. Scenario 3, which is based on the historic real PCPI growth in the Shoshone County, is the preferred forecast, with a CAGR of 2.0%. Based on this methodology, by the end of the forecast period, 15 aircraft are projected to be based at Shoshone County Airport. This is 12% less than the adjusted TAF projections of based aircraft.

Fleet Mix

Total based aircraft projected for the Airport over the planning period using the preferred based aircraft projection were allocated to five aircraft categories – single-engine, multi-engine, jet, helicopter, and other – to develop a projection of the Airport's based aircraft fleet mix through the planning period. The fleet mix projections developed for Shoshone County Airport were developed based on the fleet mix percentages exhibited at the Airport in March 2014 and the *FAA Aerospace Forecast, Fiscal Years 2014-2034* projection of active general aviation aircraft. The preferred based aircraft fleet mix projects are shown in **Table 3-4**. With the anticipated national growth in turbine aircraft through the forecast period, two additional turboprop aircraft are estimated to be based at Shoshone County Airport by 2033.

TABLE 3-4 PROJECTED BASED AIRCRAFT FLEET MIX

Aircraft Type	2013	2018	2023	2033	CAGR 2013-33
Single-Engine	9	10	10	12	1.5%
Multi-Engine	1	1	2	3	5.7%
Jet	0	0	0	0	0.0%
Helicopter	0	0	0	0	0.0%
Other	0	0	0	0	0.0%
Total	10	11	12	15	2.0%

Source: T-O Engineers Inc.

3.3.2 AIRCRAFT OPERATIONS

Different factors impact the number of operations at an airport including but not limited to, the total based aircraft, area demographics, activity and policies of neighboring airports, and national trends. These factors were examined and four methodologies were used to develop the general aviation operation projections. The results of these forecasting methodologies are compared and the Projected Employment Growth methodology (Scenario 4) was chosen as the preferred operations projection. It is important to note that military operations (50 itinerant operations in 2013) are included in these projections. This level of annual military operations is expected to continue through the forecast period.

A summary of the methodologies used to develop the aircraft operations are below and shown in the **Table 3-5** and **Figure 3-2**.

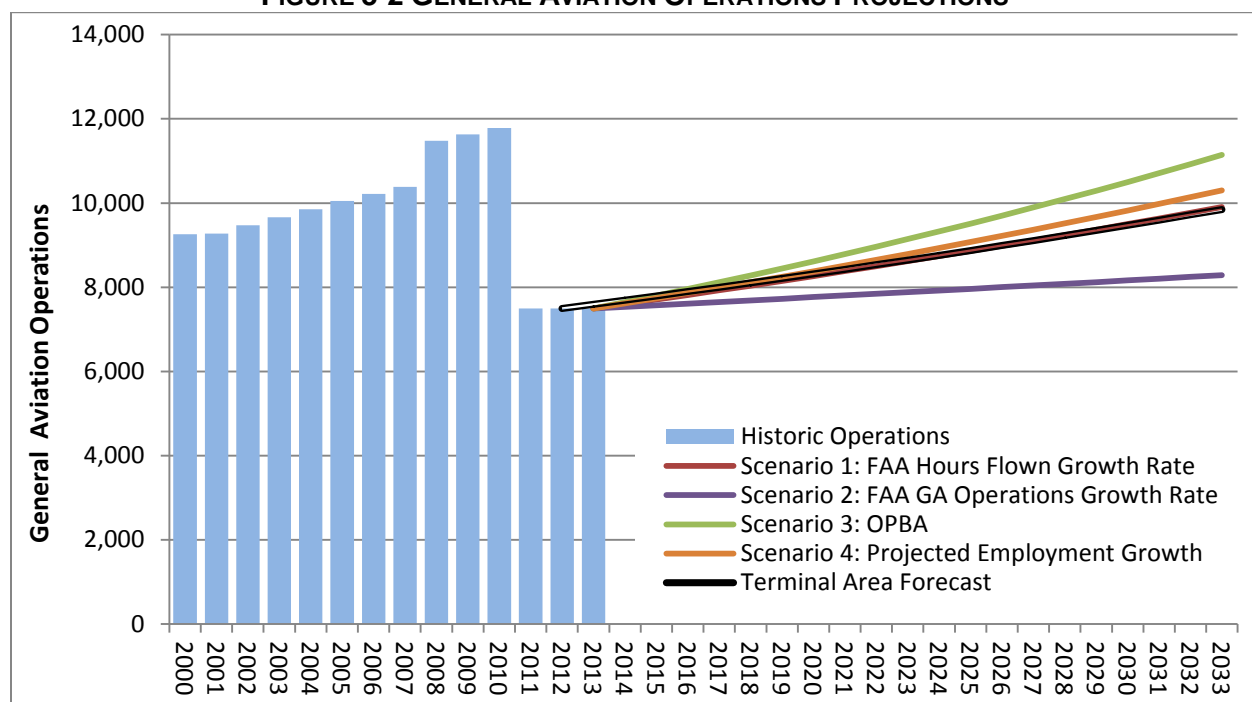
- ✦ Scenario 1: FAA Hours Flown Growth Rate. This scenario assumes that the growth of general aviation aircraft operations at Shoshone County Airport will be equal to the growth in hours flown forecasted in the FAA Aerospace Forecasts, Fiscal Years 2013-2034 for total general aviation hours. The CAGR for this scenario is 1.4%.
- ✦ Scenario 2: FAA Projected General Aviation Operations Growth Rate. As part of the FAA Aerospace Forecasts, Fiscal Years 2013-2034, the FAA is forecasting general aviation operations at airports with an air traffic control tower to grow at a 0.5% CAGR. Even though Shoshone County airport does not have a tower, this national rate of growth is applied to its operations to develop the projection of total operations.
- ✦ Scenario 3: Operations Per Based Aircraft (OPBA). OPBA is calculated by dividing the number of total general aviation operations that occur at an airport by the number of aircraft based at the Airport. Total operations at Shoshone County Airport are projected by applying the Airport's average OPBA ratio (750) in 2013 to the preferred projection of based aircraft.
- ✦ Scenario 4: Projected Employment Growth. This scenario projects operations to increase at a CAGR of 1.6%, equal to the projected employment growth developed for Northern Idaho, as part of the Idaho Regional Economic Analysis Project.

TABLE 3-5 GENERAL AVIATION OPERATIONS PROJECTIONS

Year	Scenario 1 FAA Aerospace Hours Flown Growth	Scenario 2 FAA Aerospace GA Operations Growth	Scenario 3 Operations Per Based Aircraft	Scenario 4 Projected Employment Growth	FAA Terminal Area Forecast (TAF)
2013	7,500	7,500	7,500	7,500	7,597
2018	8,040	7,689	8,281	8,120	8,105
2023	8,619	7,884	9,142	8,790	8,648
2033	9,904	8,287	11,145	10,302	9,846
CAGR	1.40%	0.50%	2.00%	1.60%	1.31%
2033 Variation from TAF	0.59%	-18.82%	11.65%	4.43%	0.00%

Source: T-O Engineers Inc.

FIGURE 3-2 GENERAL AVIATION OPERATIONS PROJECTIONS



Source: T-O Engineers Inc.

The results of the four scenarios examined in this analysis were compared to the FAA's TAF for Shoshone County Airport. None of the scenarios are significantly different than the FAA's TAF projections. The Projected Employment Growth rate methodology results in an annual growth rate of 1.6%, which is slightly higher than the TAF's annual growth rate. Aviation demand is considered to be a derived demand- one that depends upon the level of business and leisure activity in the economy. The projected employment growth as noted by the State of Idaho points to new jobs and business growth around Shoshone County which can correlate to anticipated increased future usage of the airport for business, tourism, aerial firefighting, and Life Flight operations as discussed above. Based on this correlation as well as the consultant's professional opinion, the Projected Employment Growth rate methodology (Scenario 4) is the preferred forecast for operations.

Local and Itinerant Operations

Aircraft operations are divided into two types: local and itinerant. Local operations are classified as arrivals and departures of aircraft that operate in the local traffic pattern or within sight of the airport. Local operators are known to be departing for or arriving from flights in local practice areas within a 20-mile radius of the airport, or they have simulated approaches or low passes at the airport. Itinerant operations are defined as all other operations other than local. The current ratio of local to itinerant general aviation is 16 percent local and 84 percent itinerant. This ratio is expected to remain constant throughout the study period as shown in **Table 3-6**.

TABLE 3-6 GENERAL AVIATION OPERATIONS FORECASTS BY TYPE

Year	Local	Itinerant	Total
2013	1,200	6,300	7,500
2018	1,299	6,820	8,120
2023	1,406	7,384	8,790
2033	1,648	8,654	10,302

Source: T-O Engineers Inc.

Peaking Analysis

Another primary consideration for facility planning at airports relates to peak hour, also referred to as design level activity. This operational characteristic is important to understand because some facilities should be sized to accommodate the peaks in activity, for example, the aircraft apron or terminal areas.

In calculating the number general aviation operations occurring during the peak hour, it was assumed that the peak day was 20 percent higher than the average day and that the peak hour was 20 percent of the peak day operations. **Table 3-7** presents peak factors for the 20-year planning period.

TABLE 3-7 OPERATIONS FORECASTS – PEAKING FACTORS

Year	Total Annual Operations	Average Daily Total	Peak Day	Peak Hour
2013	7,500	21	25	5
2018	8,120	22	27	5
2023	8,790	24	29	6
2033	10,302	28	34	7

Source: T-O Engineers Inc.

3.3.3 ANNUAL INSTRUMENT APPROACH OPERATIONS

Forecasts of annual instrument approaches are used by the FAA in evaluating an airport's requirements for navigational aid facilities. The FAA defines an instrument approach as an approach to an airport with the intent to land by an aircraft in accordance with an instrument flight rule (IFR) flight plan, when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude. Currently, Shoshone County Airport does not have an instrument approach. Analysis on the ability of the airport to obtain approach capabilities

over the 20 year planning horizon is included in later chapters. Because no instrument approaches currently exist, no forecast has been developed for annual instrument approaches.

3.3.4 CRITICAL AIRCRAFT

The development of airport facilities is impacted by both the demand for those facilities and the type of aircraft that are expected to make use of those facilities. Generally, airport infrastructure components are designed to accommodate the most demanding aircraft, referred to as the critical aircraft, which will utilize the facilities on a regular basis. The factors used to determine an airport's critical aircraft are the approach speed and wing span of the most demanding class of aircraft anticipated to perform at least 500 annual operations at the airport during the 20 year planning period.

The existing ARC for Shoshone County Airport is B-I (small). Common aircraft using the airport today include piston-driven single and twin engine aircraft as well as small turbo-prop and jet aircraft including the Beech/Raytheon King Air, Cessna Citation and small Gulfstream (200 series) aircraft. Based on available operating data at the airport and discussions with airport management, it appears small aircraft are the primary aircraft type operating at the airport.

As described in section 3.2.3, larger corporate aircraft do utilize the airport multiple times throughout the year; discussions with both aircraft operators and airport management indicate this activity is not occurring on a “regular basis” (more than 500 annual operations) as defined by the FAA. Liberal estimates of this type of activity is likely around 150-200 annual operations. Based on the analysis completed as part of this forecasting effort, no solid data exists that would indicate increased demand of larger aircraft over the 500 annual operations threshold during the forecast period.

Based on information obtained by the consultant and conversations with users and airport management, the Cessna C421 was selected to remain the critical aircraft. **Table 3-8** summarizes the characteristics of the selected critical aircraft.

TABLE 3-8 CHARACTERISTICS OF DESIGN AIRCRAFT

Approach Speed	96 knots
Wing Span	41.7 feet
Length	36.1 feet
Tail Height	11.6 feet
Maximum Take Off Weight	7,450 lbs



Source: FAA and montanamedicaltransport.com

As the master planning process moves forward, it is recommended that the Airport plan based on small aircraft as the primary driver of demand. That said, the current “small aircraft only” designation that drives FAA design standards requirements/recommendations will be evaluated for its applicability at the airport in the future. Several existing constraints and precedent of previous planning and development (to small aircraft standards) will be a major factor in realistic and feasible alternatives to meet new standards. However, prudent and proactive planning dictates that the county protects areas for potential improvements to accommodate larger aircraft where practical. A proactive approach to planning is vital in today’s environment to protect areas for future expansion or development before it is too late and facilities are constrained.

3.3.5 SUMMARY

It is anticipated that Shoshone County Airport will see some growth in all activity areas during the 20-year planning period. By 2033, approximately 10,300 general aviation operations are projected to occur and 15 aircraft are projected to be based at Shoshone County Airport. **Table 3-9** summarizes the projections in this chapter.

TABLE 3-9 SUMMARY OF AVIATION ACTIVITY FORECASTS 2013-2033

	2013 Actual	2018	2023	2033	2033 Difference from FAA TAF
Operations	7,500	8,120	8,790	10,302	4.4%
<i>Local</i>	1,200	1,299	1,406	1,648	
<i>Itinerant</i>	6,300	6,820	7,384	8,654	
Based Aircraft	10	11	12	15	-12.2%*

Source: T-O Engineers Inc. and FAA Terminal Area Forecasts

Note: *The 2013 FAA TAF based aircraft were adjusted to match actual data figures reported by the airport manager. The actual TAF growth rate between 2013 and 2033 was then applied to 2013 actual based aircraft for the duration of the planning period. The preferred based aircraft projection is 12.2% less than the adjusted TAF projection.