

Table of Contents

2.	Existing Conditions	2-1
2.1	Background	2-1
2.1.1	Airport Location	2-1
2.1.1	Airport History	2-4
2.1.2	Airport Administration and Certification.....	2-4
2.1.3	Airport Role.....	2-5
2.1.4	Meteorological conditions.....	2-8
2.2	Inventory of Existing Airport Facilities	2-11
2.2.1	Airfield Facilities	2-11
2.2.2	Passenger Terminal Facilities	2-20
2.2.3	Tenant Facilities.....	2-25
2.2.4	Support Facilities	2-29
2.2.5	Airport Ground Access	2-31
2.2.6	Utilities and Stormwater	2-38
2.3	Airspace and Air Traffic Control	2-38
2.3.1	Airspace Structure	2-39
2.3.2	Air Traffic Control	2-41
2.4	Regional Setting and Land Use.....	2-44
2.4.1	Airport Service Area.....	2-44
2.4.2	Socioeconomic Data and Analysis.....	2-46
2.4.3	Regional Planning and Development.....	2-54
2.5	Environmental Overview	2-61
2.5.1	Air Quality.....	2-61
2.5.2	Noise	2-62
2.5.1	Aquatic Features	2-64
2.5.2	Terrestrial Features	2-67
2.5.3	Cultural Features.....	2-70
2.5.4	Summary of Principal Environmental Concerns.....	2-72

List of Tables

Table 2-1	Comparison of Commercial Service Airports in Idaho	2-6
Table 2-2	Economic Impact of Commercial Airports	2-7
Table 2-3	Summary of Twin Falls Vicinity Meteorological Conditions (1971-2000).....	2-9
Table 2-4	Summary of Area Visibility and Cloud Ceiling Heights (2000-2009)	2-9
Table 2-5	Runway Characteristics	2-14
Table 2-6	Taxiway Characteristics	2-15
Table 2-7	Runway Markings Inventory	2-16
Table 2-8	Breakdown of Terminal Facility Space	2-22
Table 2-9	Inventory of Snow Removal Equipment at the Airport.....	2-31
Table 2-10	Roadway Level of Service Description	2-35
Table 2-11	Summary of Published Instrument Approach Procedures for the Airport.....	2-43
Table 2-12	Comparison of TWF with Other Commercial Service Airports.....	2-45
Table 2-13	Comparison of TWF and General Aviation Airports.....	2-47
Table 2-14	Historical and Projected Resident Population.....	2-49
Table 2-15	Historical and Projected Personal Income per Capita	2-50
Table 2-16	Historical and Projected Total Employment.....	2-52
Table 2-17	Average Annual Unemployment Rates	2-53
Table 2-18	Airport Service Area Employment by Sector.....	2-54
Table 2-19	Federally Listed and Candidate Fish and Wildlife Species in Twin Falls County	2-70
Table 2-20	Previously Recorded Historic Sites in the Vicinity of TWF	2-71

List of Exhibits

Exhibit 2-1	Airport Location Map	2-2
Exhibit 2-2	Airport Vicinity Map.....	2-3
Exhibit 2-3	TWF Wind Conditions (2000-2009).....	2-10
Exhibit 2-4	Airport Layout.....	2-12
Exhibit 2-5	Airfield Facilities.....	2-13
Exhibit 2-6	Passenger Terminal Facilities.....	2-21
Exhibit 2-7	Passenger Terminal Building Layout	2-23
Exhibit 2-8	Tenant Facilities	2-26
Exhibit 2-9	Support Facilities.....	2-30
Exhibit 2-10	Regional Roadway Access	2-32
Exhibit 2-11	Local Roadway Access.....	2-34
Exhibit 2-12	On-Airport Roadway Access.....	2-36
Exhibit 2-13	Terminal Circulation and Parking.....	2-37
Exhibit 2-14	Airspace Structure.....	2-40
Exhibit 2-15	Twin Falls City Limits and Area of Impact.....	2-56
Exhibit 2-16	Existing Land Use	2-58
Exhibit 2-17	Future Land Use Plan.....	2-59
Exhibit 2-18	Existing Zoning.....	2-60
Exhibit 2-19	Noise Exposure Contour	2-63
Exhibit 2-20	Aquatic Features.....	2-65
Exhibit 2-21	Terrestrial Features	2-68

2. Existing Conditions

An initial step in preparing an airport master plan is the collection and identification of the physical, operational, and functional characteristics of the airport and its immediate environs. This section presents pertinent background information about the Airport, as well as an inventory of existing facilities and conditions at the Airport and its environs to provide a foundation for subsequent planning analyses. Certain historical or existing conditions associated with the Airport are presented in other sections of this Master Plan Update report. Historical aviation activity at the Airport is discussed in Section 3, "Aviation Activity Forecasts." An overview of the existing financial condition of the Airport is provided in Section 8, "Financial Plan."

2.1 Background

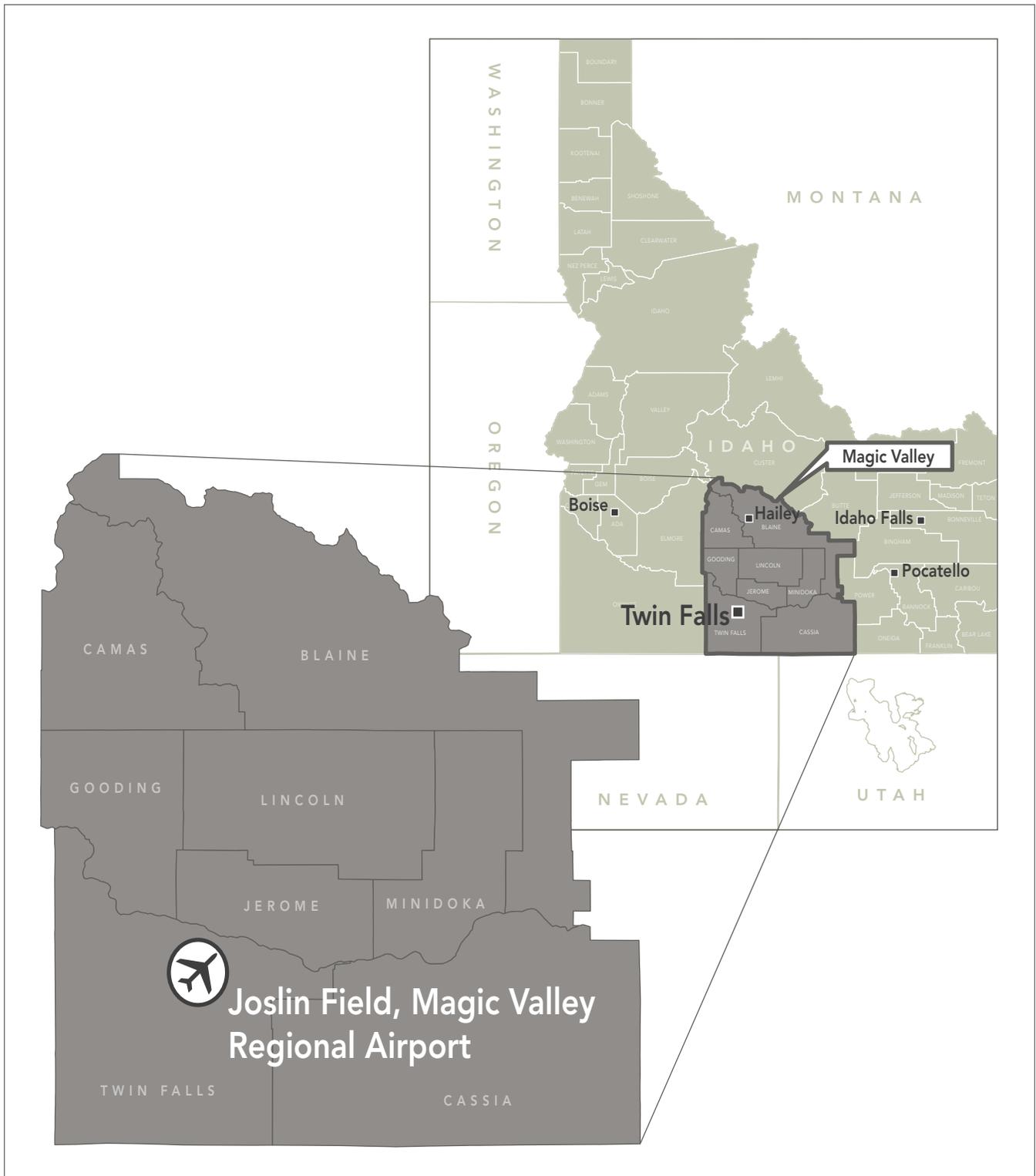
2.1.1 AIRPORT LOCATION

The Airport is located in southcentral Idaho within Twin Falls County, approximately 4 miles south of the central business district (CBD) of the City of Twin Falls. The Airport is located on the southern edge of the City and within the City's Area of Impact with regard to comprehensive planning.

The City is located on the edge of the Snake River Canyon along Interstate 84 (I-84), approximately halfway between the cities of Boise to the west (130 miles) and Pocatello to the east (120 miles). According to the U.S. Department of Commerce, Bureau of the Census, Twin Falls is the largest city in the region, and the ninth largest in the State, with a 2009 population estimated at 42,741. As the largest city within a 100-mile radius, Twin Falls serves as a regional commercial center for both southcentral Idaho and northeastern Nevada. The City serves as the County seat; the County also encompasses the cities of Buhl, Castleford, Clover, Filer, Hansen, Hollister, Kimberly, Murtaugh, Rogerson, and Roseworth.

From a regional perspective, the Airport is located in an area known as the Magic Valley—so named because of the construction of nearby Milner Dam and a series of irrigation canal systems on the Snake River in 1904, which "magically" transformed thousands of acres of once-barren land into one of the nation's most productive farming regions. The Magic Valley is generally associated with the agricultural region of the Snake River Plain, and includes Camas, Cassia, Blaine, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls Counties. The northern Magic Valley region, particularly Blaine and Camas Counties, is also known as the Wood River Valley after the Big Wood River.

Exhibit 2-1 depicts the regional location of the Airport within Idaho and **Exhibit 2-2** shows the location of the Airport within the County and in relation to surrounding communities and airports.



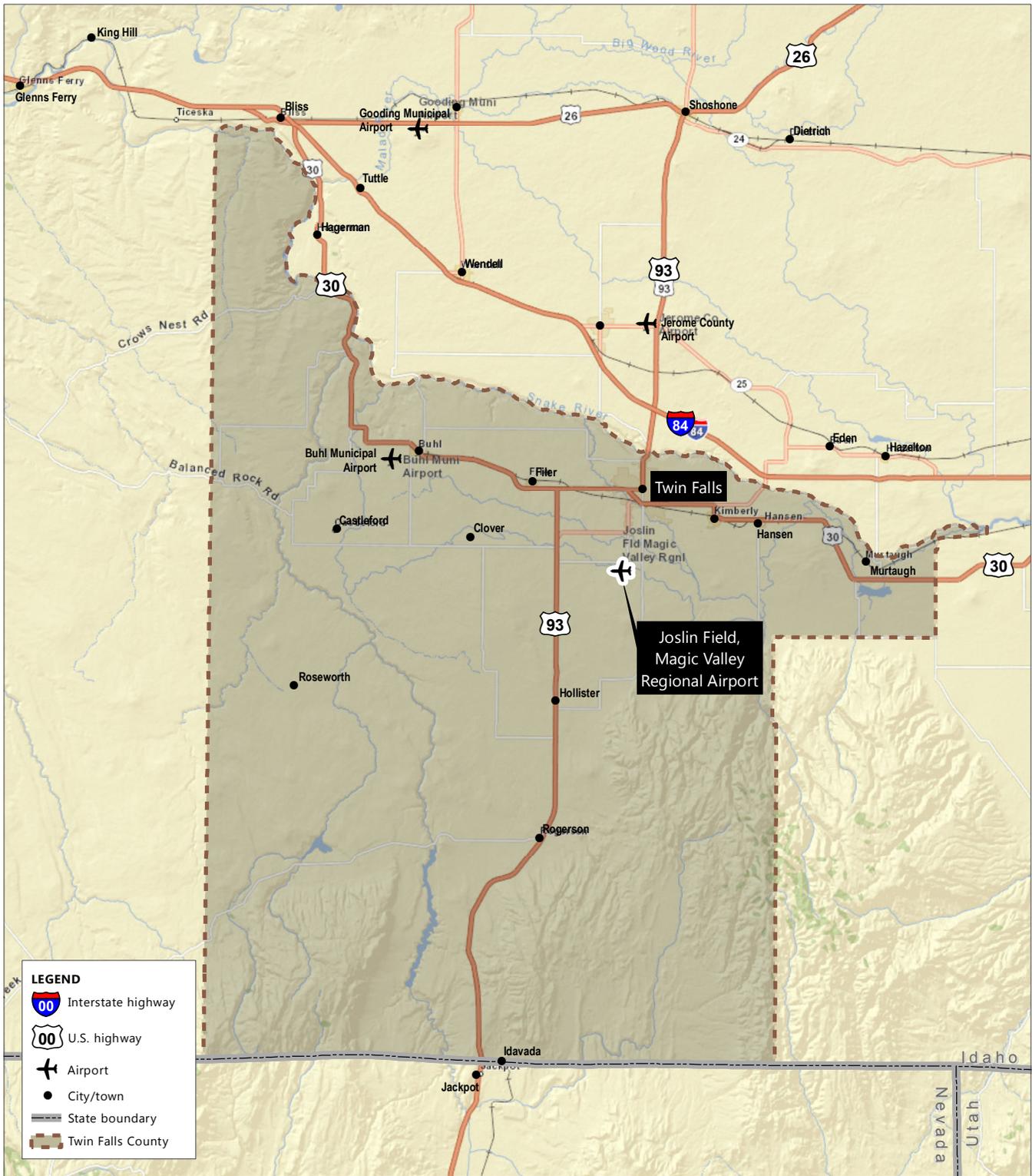
SOURCE: Map Resources, 2007.
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-1



Airport Location Map

Z:\TWF\Graphics\Air Trade Area Map\TWF-ATA_Segoe.indd



SOURCE: ESRI, December 2009 (World Street Map basemap).
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-2



Airport Vicinity Map

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-2_Airport Vicinity Map.mxd

2.1.1 AIRPORT HISTORY

The first airfield in Twin Falls was constructed in 1928 as a dirt strip of unused ground between U.S. Highway 30 and railroad tracks used by the Southern Idaho Railroad. Initial development of the Airport at its current site was completed in 1947 and the Airport was officially activated in February 1948. The Airport was named Joslin Field in honor of Sergeant Raymond R. Joslin, the first Magic Valley serviceman to lose his life in aerial combat while serving with the 98th Bombardment Squadron in the Solomon Islands during World War II. From 1947 through the present day, various airfield, terminal, and support facilities modernization and expansion projects have been completed.

Commercial passenger service began at TWF in 1948 with West Coast Airlines. United Airlines followed with service in 1953, but discontinued flights in 1959. In 1968, West Coast Airlines became Airwest and was later changed to Hughes Airwest in 1970. Deregulation of the airline industry in 1978 led to reduced airline service at TWF. Hughes Airwest, which later became Republic Airlines, discontinued flights with DC-9 aircraft. Subsequently, the Airport was served by smaller aircraft operated by regional/commuter airlines. In 1983, Horizon Air acquired Transwestern Airlines and served the Airport until 1997.

SkyWest Airlines initiated service at the Airport in 1983 and remains the longest-serving airline at TWF. SkyWest Airlines is a regional/commuter airline that serves as a feeder airline operating under contract with various major airlines. TWF has had a significant role in SkyWest Airlines' history as one of its 10 original destinations served. SkyWest Airlines currently operates at the Airport as Delta Connection in partnership with Delta Air Lines, and provides multiple daily nonstop flights between TWF and Salt Lake City International Airport on 30-seat EMB-120 Brasilia turboprop aircraft. From June 2010 until January 2012, Allegiant Air offered twice-weekly flights between TWF and Las Vegas McCarran International Airport on 150-seat MD-83 jet aircraft. Currently, SkyWest is the only airline serving the Airport.

2.1.2 AIRPORT ADMINISTRATION AND CERTIFICATION

2.1.2.1 Airport Sponsors

The City and County are co-sponsors (owners) of the Airport under a joint service agreement entered into on December 10, 1968. The Airport is operated, maintained, and managed by the City. The City has a council-manager form of government with a seven-member City Council selected via nonpartisan municipal elections to 4-year terms. The Mayor of Twin Falls is selected from among current City Council members by majority vote of the City Council and serves a 2-year term. The Mayor chairs City Council meetings and holds limited executive power. The City is organized into 16 departments, which include the Airport Department. The City Engineer provides oversight of the Airport Department, as well as the Engineering and Public Works Departments. The Airport Department currently has seven employees, including the Airport Manager, Crew Chief, four maintenance operators, and an administrative assistant.

2.1.2.2 Airport Advisory Board

Title 8, Chapter 7, Section 3 of the *Twin Falls City Code* establishes an Airport Advisory Board, consisting of six members: three from the City and three from the County. Board members are selected from the general populace residing within the respective jurisdictions and serve terms of 3 years. The Board elects a chairman for the conduct of business and the Airport Manager serves as the secretary and a nonvoting *ex officio*

member of the Board. The Airport Advisory Board plans the operation, construction, improvement, and development of the Airport; recommends the annual budget for the Airport; recommends employment of Airport personnel; considers and recommends contract and lease provisions for all operations conducted at the Airport; and advises the respective governing bodies as to all matters concerning the Airport.

2.1.2.3 Board of County Commissioners

Title 1, Chapter 5, Section 1 of the *Twin Falls County Code* establishes the Board of County Commissioners, which consists of three members, one from each district in the County. Two members serve 2-year terms and one member serves a 4-year term. The 4-year term is allotted in rotation to each district. With regard to the Airport, the Board of County Commissioners approves, in conjunction with the Twin Falls City Council, various aspects of planning and development of the Airport, such as development standards for on-Airport property.

2.1.2.4 Airport Certification

The Airport is certificated and maintained in accordance with Title 14 Code of Federal Regulations (14 CFR) Part 139, *Certification and Operations: Land Airports Serving Certain Air Carriers*, which establishes the standards for operating and maintaining air carrier airports. 14 CFR Part 139 requires the FAA to issue Airport Operating Certificates (AOCs) to operators of U.S. airports that serve air carrier aircraft operations covered by the regulation. AOCs are intended to ensure safety in air transportation. To obtain a certificate, an airport operator must agree to certain operational and safety standards and provide for such things as fire-fighting and rescue equipment. These requirements vary depending on the size of the airport and the type of operations served. TWF is a Class I airport under Part 139 and is required to be inspected annually by the FAA to retain its 14 CFR Part 139 AOC. Class I airports serve all types of scheduled operations of air carrier aircraft designed for at least 31 passenger seats (large air carrier aircraft) and any other type of scheduled or unscheduled air carrier aircraft operations.

2.1.3 AIRPORT ROLE

The Airport has an important role not only within the Twin Falls/Magic Valley area, but also within the nation and State. The role and importance of the Airport in these settings is discussed below.

2.1.3.1 Airport Role in the National Setting

The FAA establishes a role for each airport included in the NPIAS. These roles are defined by one of four basic service levels and describe the type of service that the airport is expected to provide to the community by the end of the 5-year NPIAS planning period. TWF is categorized in the NPIAS as a Primary Commercial Service Airport. Commercial Service airports are public airports that accommodate scheduled passenger service and have 2,500 or more annual enplaned passengers. Of these airports, those having more than 10,000 annual enplaned passengers are classified as primary airports.

The FAA further classifies Primary Commercial Service Airports as large hub, medium hub, small hub, or nonhub airports based on the share of total annual enplaned passengers in the United States that are

accommodated at the airport.¹ The FAA uses the term “hub” to describe different service levels, as opposed to the airline use of the word in the context of a “hub-and-spoke” system. With less than 0.05 percent of total national enplaned passengers, but more than 10,000 annual enplaned passengers, TWF is classified as a nonhub airport. The NPIAS identifies 244 nonhub primary airports that together account for approximately 3.0 percent of all enplaned passengers in the United States. Within Idaho, TWF is one of six commercial service airports and one of five nonhub primary airports.² **Table 2-1** presents a comparison of these airports based on various measures of aviation activity in 2009.

Table 2-1 Comparison of Commercial Service Airports in Idaho

AIRPORT NAME	CLASSIFICATION	2009 AVIATION ACTIVITY		
		ENPLANED PASSENGERS	AIRCRAFT OPERATIONS	BASED AIRCRAFT
Boise Airport	Small hub	1,400,890	129,004	291
Idaho Falls Regional Airport	Nonhub	140,390	41,216	150
Lewiston-Nez Perce County Airport	Nonhub	62,316	30,580	144
Friedman Memorial Airport	Nonhub	50,540	40,165	150
Joslin Field, Magic Valley Regional Airport	Nonhub	25,337	33,424	108
Pocatello Regional Airport	Nonhub	21,212	29,966	70

SOURCES: Federal Aviation Administration, *Terminal Area Forecast, Fiscals Years 2010-2030* (enplaned passengers and based aircraft); FAA Air Traffic Activity System (aircraft operations); City of Twin Falls, Airport Department, September 2010 (Joslin Field, Magic Valley Regional Airport activity data).
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

2.1.3.2 Airport Role in the State Setting

The purpose of Statewide airport system planning is to identify the general location and characteristics of new airports and the general expansion needs of existing facilities to meet Statewide air transportation goals. In the 2010 *Idaho Airport System Plan*, TWF is identified as one of seven Commercial Service airports in Idaho.³ The system plan defines Commercial Service airports as those that accommodate scheduled major/national or regional/commuter commercial airline service in addition to air cargo, business aviation, and all types of general aviation.

¹ Large hubs are those airports that each account for at least 1.0 percent of total U.S. enplaned passengers. Medium hubs are airports that each account for between 0.25 percent and 1.0 percent of total U.S. enplaned passengers. Small hubs are defined as airports that enplane between 0.05 percent and 0.25 percent of total U.S. enplaned passengers. Nonhub airports enplane fewer than 0.05 percent of all U.S. enplaned passengers, but have more than 10,000 annual enplaned passengers.

² Along with TWF, other nonhub airports in Idaho include Idaho Falls Regional Airport, Lewiston-Nez Perce County Airport, Friedman Memorial Airport, and Pocatello Regional Airport. Boise Airport is classified as a small hub commercial service airport.

³ Commercial service airports identified in the 2010 *Idaho Airport System Plan* are the same as those included in the NPIAS for Idaho. However, the *Idaho Airport System Plan* also includes Pullman-Moscow Regional Airport, located in Pullman, Washington, which has a service area that includes Moscow and several surrounding communities in Idaho.

2.1.3.3 Airport Role in the Local/Regional Setting

TWF accommodates all facets of aviation: general aviation, commercial airline service, military, and air cargo for southcentral Idaho. Through multiple commercial airline flights to Salt Lake City, TWF allows travelers in the area to connect with over 80 domestic and international destinations on nonstop flights from Salt Lake City International Airport. The addition of Allegiant Air service offered travelers affordable vacation packages and flights to Las Vegas. Surveys conducted at the Airport indicate that travelers came from as far away as Boise to take advantage of Allegiant Air service at TWF. In addition to commercial air service, the Airport also supports many necessary services in the region, such as agricultural spraying, medical evacuations, and air cargo. The Airport is also a major U.S. Department of the Interior, Bureau of Land Management (BLM) aviation fire-fighting base. In addition, the Airport supports a significant number of private aircraft and pilots.

As a result of, and in addition to, the aircraft operations/services accommodated at the Airport, TWF also contributes significant economic benefits to the region. As part of the 2010 *Idaho Airport System Plan*, an economic impact study was conducted for each airport in the Airport System. **Table 2-2** summarizes the results of the study for TWF and the other commercial service airports that serve Idaho.

Table 2-2 Economic Impact of Commercial Airports

AIRPORT NAME	ASSOCIATED CITY	TOTAL EMPLOYMENT	TOTAL PAYROLL	TOTAL ECONOMIC BENEFIT
Boise Airport	Boise	14,021	\$451,677,900	\$1,255,728,400
Friedman Memorial Airport	Hailey	1,550	39,077,300	119,663,500
Idaho Falls Regional Airport	Idaho Falls	1,269	31,521,300	103,102,500
Joslin Field, Magic Valley Regional Airport	Twin Falls	719	22,034,900	71,087,100
Lewiston-Nez Perce County Airport	Lewiston	519	14,986,000	54,725,000
Pocatello Regional Airport	Pocatello	477	15,087,900	39,117,300
Pullman-Moscow Regional Airport	Moscow	349	10,673,800	27,152,200
Total		18,904	\$585,049,100	\$1,670,576,000

SOURCE: Idaho Transportation Department, Division of Aeronautics, *Idaho Airport System Plan*, 2010. (Note: Technical reports for the 2010 *Idaho Airport System Plan* were completed in 2008).

PREPARED BY: Ricondo & Associates, August 2011.

As shown, of the seven commercial airports that serve Idaho, TWF ranks fourth in terms of economic activity. It was determined that 719 people are employed at or as a result of the Airport, resulting in payroll that exceeds \$22 million annually. The total economic activity resulting from the Airport, which takes into account the dollars generated directly on-Airport and indirectly through off-Airport visitor activity, such as lodging, shopping, and dining, plus the associated multiplier effect, was determined to be \$71.1 million for the local economy annually.

2.1.4 METEOROLOGICAL CONDITIONS

Twin Falls (as well as the Airport) is located on an arid plateau and experiences a four-season, high-desert climate. Summer days are hot and dry, cooling to pleasant warm nights. In the winter, daytime temperatures generally remain above freezing, with occasional snowfalls. On average, the prevailing winds at the Airport are from the west/southwest. Sunny skies are the norm, with infrequent precipitation and low humidity. Specific meteorological conditions that have an important role in aircraft performance and airport planning include temperature, visibility and cloud ceiling height, and wind. These data were used in determining various facility requirements at the Airport, as presented in Section 4, "Facility Requirements."

2.1.4.1 Temperature and Precipitation

Temperature affects aircraft performance and, therefore, is a critical consideration in determining the runway length required for takeoff. The type and amount of precipitation at the Airport are also important considerations. A wet pavement surface affects aircraft braking action and, therefore, affects the runway length required for landing. The amount of snow and ice on the airfield also affects aircraft braking and helps determine requirements for snow removal equipment and storage facilities at the Airport. **Table 2-3** presents a summary of temperature and precipitation data for two National Weather Service (NWS) stations in the vicinity of the Airport, based on National Climatic Data Center average monthly data for 1971 through 2000.

2.1.4.2 Visibility and Cloud Ceiling Height

The prevalence of various combinations of visibility and cloud ceiling heights affects Airport capacity, the rules and procedures under which pilots are required to operate aircraft at and in the vicinity of the Airport, as well as required instrumentation and signs/markings on the Airport's runways. Conditions related to visibility and cloud ceiling height are grouped into two categories: visual meteorological conditions (VMC) and instrument meteorological conditions (IMC). FAA AC 150/5060-5, *Airport Capacity and Delay*, defines VMC as a cloud ceiling height of at least 1,000 feet above ground level (AGL) and visibility greater than 3.0 statute miles. IMC is defined as a cloud ceiling height lower than 1,000 feet AGL and/or visibility less than 3.0 statute miles.

To assess the frequency of VMC and IMC at the Airport, 10 years of hourly observations from the Airport's automated surface observing system (ASOS) were analyzed. The data were obtained from the National Climatic Data Center and consisted of approximately 87,000 records from January 1, 2000, through December 31, 2009. Elimination of incomplete records reduced the usable data to 82,478 observations. Based on these data, VMC occur at the Airport approximately 97 percent of the time, while IMC occur approximately 3 percent of the time. IMC are most prevalent in December and January, but only account for approximately 10 percent and 14 percent of total observations in those months, respectively (see **Table 2-4**).

2.1.4.3 Wind

Wind intensity and direction help determine which runway(s) should be used and may restrict certain aircraft from using the Airport altogether if runways are not appropriately oriented. Using the same 10-year sample of weather data collected for determining visibility and cloud ceiling heights, **Exhibit 2-3** depicts the direction, speed, and frequency of wind at the Airport under all weather conditions (VMC + IMC) and IMC. As shown, wind at the Airport is predominantly from the west and southwest, most frequently at speeds of 0 to 10 nautical miles per hour (knots). During IMC, the stronger winds are typically from the west, while lighter winds are from the east. Winds greater than 22 knots predominantly occur during IMC and are from the west.

Table 2-3 Summary of Twin Falls Vicinity Meteorological Conditions (1971-2000)

MONTH	TWIN FALLS KMVT STATION			TWIN FALLS 6E STATION		
	MEAN DAILY MAXIMUM TEMP. °F	MEAN DAILY MINIMUM TEMP. °F	MEAN PRECIPITATION (INCHES)	MEAN DAILY MAXIMUM TEMP. °F	MEAN DAILY MINIMUM TEMP. °F	MEAN PRECIPITATION (INCHES)
January	36.6	19.7	1.07	34.9	19.2	1.29
February	43.3	23.1	0.75	41.4	23.4	0.93
March	52.3	29.1	1.03	50.7	28.8	1.21
April	61.0	34.7	0.83	59.5	33.7	0.95
May	69.8	42.7	1.04	67.7	41.2	1.40
June	79.1	50.6	0.77	77.0	48.0	0.84
July	87.9	56.5	0.22	85.0	52.8	0.27
August	86.7	54.1	0.33	84.1	51.1	0.38
September	76.6	44.8	0.45	74.2	42.8	0.65
October	64.7	35.5	0.75	62.5	34.2	0.78
November	48.2	27.2	1.12	46.2	26.4	1.17
December	37.9	20.0	1.06	36.4	19.3	1.12
Annual	62.0	36.5	9.42	60.0	35.1	10.99

Notes: The Twin Falls KMVT station is located at the KMVT television station in Twin Falls, approximately 7 miles north of the Airport. The Twin Falls 6E station is located approximately 8.5 miles northeast of the Airport, near the City of Kimberly.

SOURCE: National Oceanic and Atmospheric Administration, National Climatic Data Center, *Climatology of the United States* No. 81 (1971-2000), February 2002.

PREPARED BY: Ricondo & Associates, Inc., August 2011.

Table 2-4 Summary of Area Visibility and Cloud Ceiling Heights (2000-2009)

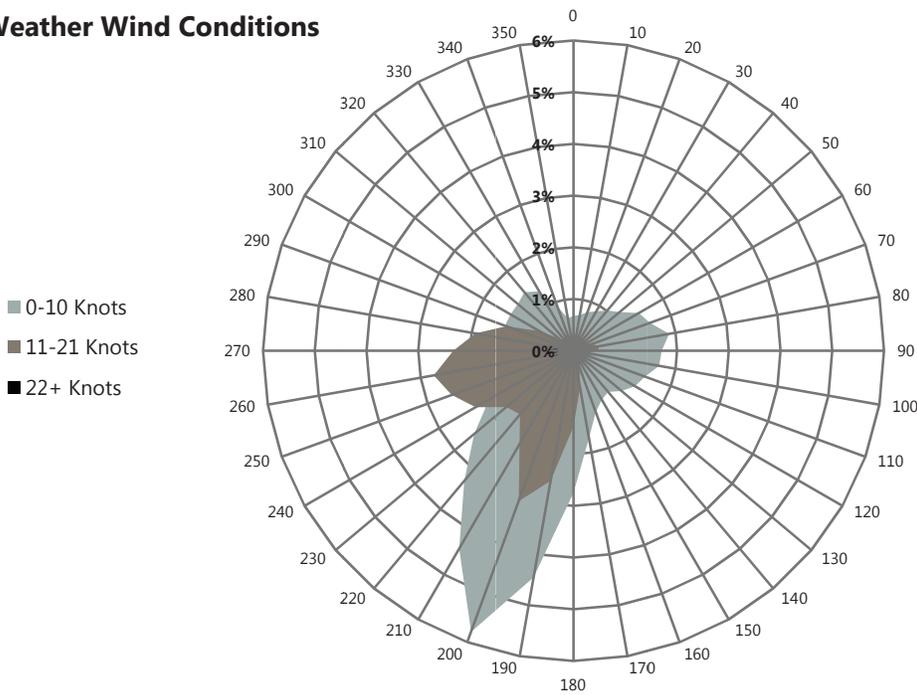
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
VMC													
No. of Records	6,040	6,123	6,899	6,661	6,833	6,573	6,925	6,947	6,719	6,908	6,590	6,434	79,652
Percent	86.3%	94.7%	97.3%	97.8%	99.5%	99.8%	99.9%	99.9%	99.8%	97.9%	96.6%	89.8%	96.6%
IMC													
No. of Records	958	344	192	153	33	15	5	5	11	146	231	733	2,826
Percent	13.7%	5.3%	2.7%	2.2%	0.5%	0.2%	0.1%	0.1%	0.2%	2.1%	3.4%	10.2%	3.4%

Notes: VMC = visual meteorological conditions; IMC = instrument meteorological conditions.

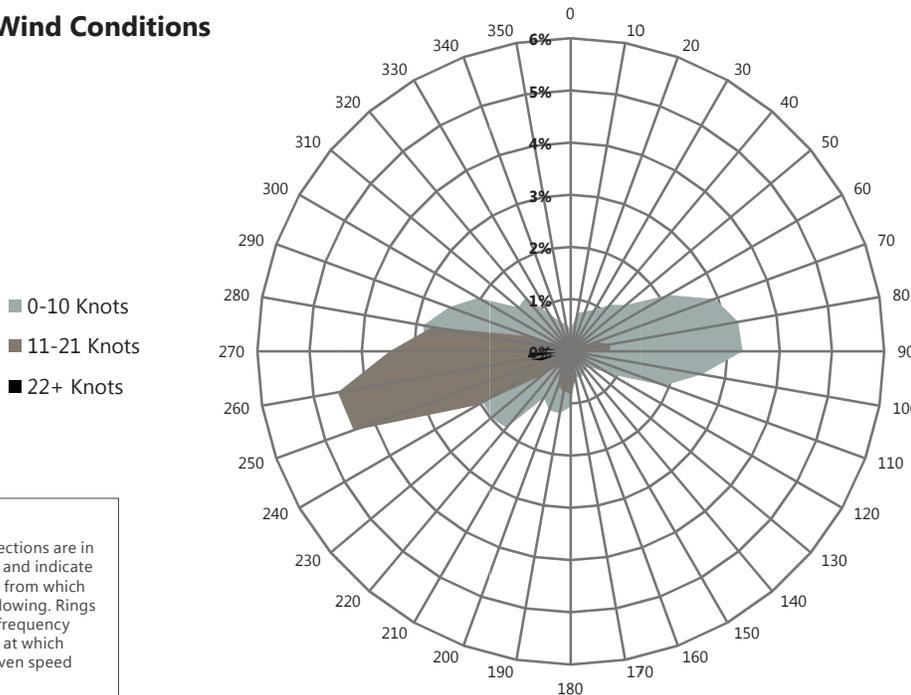
SOURCE: Ricondo & Associates, Inc., December 2010, based on hourly observation data obtained from the National Climatic Data Center for Station 72586 (located at the Airport). Data consist of 82,478 observations from January 1, 2000, through December 31, 2009.

PREPARED BY: Ricondo & Associates, Inc., August 2011.

All Weather Wind Conditions



IMC Wind Conditions



IMC: Cloud ceiling height less than 1,000 feet above ground level and/or visibility less than 3 statute miles.

NOTES

1/ Compass directions are in true degrees and indicate the direction from which the wind is blowing. Rings indicate the frequency (percentage) at which winds of a given speed blow.

2/ Knots = nautical miles per hour.

SOURCE: Ricondo & Associates, Inc., December 2010, based on hourly observation data obtained from the National Climatic Data Center for Station 72586 (located at the Airport). Data consist of 82,478 observations from January 1, 2000, through December 31, 2009.
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-3



TWF Wind Conditions (2000-2009)

Z:\TWF\Graphics\Wind Conditions Exhibit\TWF-WindConditions.indd

2.2 Inventory of Existing Airport Facilities

This section describes the existing Airport facilities, including airfield, passenger terminal, tenant, support, ground access, and utilities and stormwater facilities. **Exhibit 2-4** depicts the Airport layout and locations of major facilities. Physical facilities/buildings are generally located between the airfield and the northern edge of Airport property. The existing Airport property is bounded to the north by the High Line Canal, to the south by 3300 North Road, to the east by 3000 East Road, and to the west by 2700 East Road. Additional Airport property is located east of 3000 East Road to the High Line Canal. In total, the Airport encompasses approximately 1,400 acres of land.

2.2.1 AIRFIELD FACILITIES

The airfield includes those facilities necessary to support the movement and operation of aircraft, including runways, taxiways, and apron areas, along with associated markings, lighting systems, and instrumentation. The locations of airfield facilities at TWF are shown on **Exhibit 2-5**. The Airport Reference Point, which defines the midpoint of the airfield, is located at latitude 42° 28' 54.5" N and longitude 14° 29' 15.9 W and the Airport elevation (the highest point on any runway) is 4,154 feet above mean sea level (MSL).⁴

2.2.1.1 Runway System

The existing runways at the Airport consist of primary Runway 7-25 and crosswind Runway 12-30. The two runways are configured essentially as intersecting runways, with the Runway 30 threshold located just north of and at the approximate midpoint of Runway 7-25. The physical characteristics of the runways are described below, and summarized in **Table 2-5**.

Runway 7-25

Primary Runway 7-25 is the only runway at the Airport physically capable of and equipped to accommodate large aircraft, including commercial turboprops and jets, military aircraft, and larger general aviation aircraft (e.g., business jets). Runway 7-25 is used by all types of aircraft operating at the Airport and is generally favored because of prevailing wind conditions.

The initial section of Runway 7-25 (4,910 feet long and 150 feet wide) was constructed in 1947. The runway was extended 1,215 feet to the east in 1970. Extensions to the west followed in 1971 (1,025 feet) and 1982 (1,550 feet). Currently, the runway is 8,700 feet long and 150 feet wide and has 20-foot stabilized shoulders on both sides. Runway elevation slopes up from 4,144 feet above MSL at the Runway 7 threshold to 4,152 feet above MSL at the Runway 25 threshold, an effective gradient of 0.09 percent. Runway 7-25 consists of asphalt pavement over base and sub-base material, with a porous friction course overall to improve surface drainage and increase aircraft braking action. The pavement is reported to be in good condition. The load bearing capacity of the runway is 75,000 pounds for aircraft equipped with single wheel landing gear, 200,000 pounds for aircraft equipped with dual wheel landing gear, and 250,000 pounds for aircraft equipped with dual tandem wheel landing gear.

⁴ Federal Aviation Administration, Airport Master Record, Form 5010, effective October 22, 2009.



SOURCES: ESRI, May 2010 (Bing Maps aerial photograph); Riedesel Engineering, Inc., January 2011 (Airport property line).
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-4



E:\Ricondo GIS\TWF\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-4_Airport Layout.mxd



- NOTES**
- ASOS = Automated surface observing system
 - ILS = Instrument landing system
 - MALSR = Medium intensity approach lighting system with runway alignment indicator lights
 - PAPI = Precision approach path indicator
 - REIL = Runway end identifier lights
 - SAWS = Stand alone weather station
 - VASI = Visual approach slope indicator
 - VORTAC = Combined very high frequency omnidirectional radio range (VOR) and tactical air navigation system (TACAN)

SOURCES: ESRI, May 2010 (Bing Maps aerial photograph); Riedesel Engineering, Inc., January 2011 (Airport property line).
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-5



E:\Ricondo GIS\TWF\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-5_Airfield Facilities.mxd

Master Plan Update
 Existing Conditions

Airfield Facilities

Table 2-5 Runway Characteristics

CHARACTERISTIC	RUNWAY 7-25		RUNWAY 12-30	
Length (feet)	8,700		3,207	
Width (feet)	150		75	
Shoulders (feet)	20 (stabilized)		10 (stabilized)	
Runway end elevation (feet above MSL)	7 – 4,144	25 – 4,152	12 – 4,107	30 – 4,148
Effective runway gradient	0.09%		1.27%	
Pavement type	Asphalt – Porous friction course overlay		Asphalt	
Pavement strength (pounds)				
Single wheel landing gear	75,000		19,000	
Dual wheel landing gear	200,000		--	
Dual tandem wheel landing gear	250,000		--	

Notes: MSL = mean sea level.

SOURCE: Federal Aviation Administration, Airport Master Record, Form 5010, effective October 22, 2009.

PREPARED BY: Ricondo & Associates, Inc., August 2011.

Runway 12-30

Runway 12-30 serves as the Airport's crosswind runway, accommodating small general aviation aircraft in calm wind conditions, or when wind conditions make it potentially unsafe for such aircraft to land on or take off from Runway 7-25. The runway was constructed in 1988 at its current length of 3,207 feet and width of 75 feet, with 10-foot stabilized shoulders on both sides. Runway elevation slopes up from 4,107 feet above MSL at the Runway 12 end to 4,148 feet above MSL at the Runway 30 end, an effective gradient of 1.27 percent.

Runway 12-30 consists of asphalt pavement that is reported to be in fair condition, with a load bearing capacity of 19,000 pounds for aircraft equipped with single wheel landing gear.

2.2.1.2 Taxiway System

As shown on Exhibit 2-5, the taxiway system at the Airport consists primarily of one parallel taxiway and several other taxiways that provide access between the runways and various aircraft parking aprons throughout the airfield. A series of taxilanes are designated within and adjacent to the apron areas to facilitate the movement of aircraft between parking positions and taxiways. All taxiways and taxilanes at TWF are constructed of asphalt. **Table 2-6** presents various information about the taxiway system.

A full-length parallel taxiway (Taxiway A) is located to the north of Runway 7-25. The separation distance from the centerline of Taxiway A to the centerline of Runway 7-25 is 525 feet between Taxiways A2 and A4, tapering to a separation of 405 feet between Taxiways A4 and A5 to the west and Taxiways A2 and A1 to the east.

Table 2-6 Taxiway Characteristics

TAXIWAY	TYPE	ASSOCIATED RUNWAY	WIDTH	CONSTRUCTION YEAR(S)
A	Parallel	7-25	75 feet	1947, 1970, 2005
A1	Connector	7-25	90 feet	1970
A2	Connector	7-25	50 feet	1947, 2007
A3	Connector	7-25	90 feet	1982
A4	Connector	7-25	75 feet	2005
A5	Connector	7-25	90 feet	2005
G	Connector	12-30	35 feet	2001
H	Connector	12-30	35 feet	2007
J	Connector	12-30	35 feet	2001
K	Connector	12-30	35 feet	2007
L	Connector	Not applicable	35 feet	1999

SOURCE: Ricondo & Associates, Inc., October 2010, based on information provided by Riedesel Engineering, Inc.
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

Runway 12-30 does not currently have a full-length parallel taxiway. A series of taxiways connect the runway to an adjacent apron area. The centerline-to-centerline separation between the runway and taxilanes that run through the adjacent apron area ranges from 240 feet to 368.5 feet.

2.2.1.3 Airfield Lighting

Airfield lighting is necessary at all airports that accommodate aircraft operations during nighttime hours or during inclement weather conditions. Such lighting allows pilots to identify the airport from the air and also helps them maneuver safely on the ground during reduced visibility conditions. The various airfield lighting components at the Airport are discussed below.

Identification Lighting

An airport's beacon universally indicates the location and presence of the airport at night or during low visibility conditions. The rotating beacon at TWF is located on top of the Airport traffic control tower (ATCT). This lighting aid consists of an optical rotating beacon system that projects two beams of sequenced flashing lights, one green and one white, 180 degrees apart. The beacon is continuously operated during nighttime hours (between dusk and dawn) and during daytime hours when ground visibility is less than 3.0 miles or the cloud ceiling is less than 1,000 feet AGL.

Runway Lighting

Runway lights allow pilots to identify the edges of the runway and assist pilots in determining the runway length remaining during periods of darkness and reduced visibility. The Airport runway lighting systems identified below are available only on Runway 7-25. No lighting is available on Runway 12-30, making the runway usable only during the daytime under visual flight rule (VFR) conditions.

- **Threshold lighting** – Each threshold of Runway 7-25 is equipped with a colored split lens lighting system. The lens indicating the end of the runway for the pilot of a departing aircraft is red while the other lens, which indicates the start of the runway for the pilot landing an aircraft, is green.
- **Edge lighting** – Runway 7-25 is equipped with high intensity runway lights (HIRL), which are white lights that allow pilots to identify the edges of the runway and assist pilots in determining the runway length remaining during periods of darkness and restricted visibility. Amber edge lights replace the white ones in the direction of landing for the last 2,000 feet of the runway, providing visual safety information as the pilot approaches the end of the runway.
- **Approach lighting** – Each end of Runway 7-25 is equipped with an approach lighting system that serves as a lead-in to the runway for a pilot on approach. Runway end identifier lights (REIL) provide positive identification of the approach end of Runway 7 to pilots and consist of a pair of synchronized flashing lights located on each side of the runway threshold. Runway 25 has a medium intensity approach lighting system with runway alignment indicator lights (MALSR). This approach lighting system is an arrangement of white and red lights, essentially extended centerline lighting, with crossbars sited at specific intervals along the approach path from the runway threshold out to a distance of 2,800 feet.

Taxiway and Taxilane Lighting

All of the major taxiways at the Airport are equipped with blue medium intensity taxiway lights (MITL). Although none of the existing taxilanes has a lighting system, overhead lighting fixtures in the primary ramp areas assist in visual guidance during nighttime operations.

2.2.1.4 Airfield Markings and Signage

Airfield markings and signage provide useful information to both pilots and ground vehicle operators. Existing markings painted on the Airport’s runways are identified in **Table 2-7** and described below. All markings on both runways are reported to be in good condition.

Table 2-7 Runway Markings Inventory

RUNWAY MARKINGS	RUNWAY 7-25		RUNWAY 12-30
Designation markings	YES		YES
Centerline markings	YES		YES
Threshold markings	YES		NO
Aiming point markings	YES		NO
Touchdown zone markings	7 – NO	25 – YES	NO
Side stripe markings	YES		NO

SOURCE: Federal Aviation Administration, Airport Master Record, Form 5010, effective October 22, 2009.
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

- **Designation markings** – Runway numbers and letters are determined from the approach direction. The runway number is the whole number nearest one-tenth the magnetic azimuth of the centerline of the runway, measured clockwise from magnetic north.
- **Centerline markings** – The center of the runway is marked to provide alignment guidance during takeoff and landings. The centerline markings consist of a line of uniformly spaced stripes and gaps.
- **Threshold markings** – Runway thresholds are marked in one of two configurations, consisting either of eight longitudinal stripes of uniform dimensions located symmetrically about the runway centerline, or the number of stripes is related to the runway width. Threshold markings at TWF consist of the latter configuration. Both ends of Runway 7-25 have 12 threshold stripes, indicating a runway width of 150 feet.
- **Aiming point markings** – Aiming point markings are also known as fixed-distance markers. They are found on runways longer than 4,000 feet and used by jet aircraft. Located 1,000 feet past the approach end of the runway, they mark the spot where a jet on a normal glidepath would touch down.
- **Touchdown zone markings** – Touchdown zone markings are a series of stripes spaced at 500-foot intervals, extending from the threshold of the runway to a point near the runway midpoint. They provide distance information to the pilot based on the number of parallel bars.
- **Side stripe markings** – Side stripe markings provide a visual contrast of the boundaries of the usable runway surface. These markings consist of one solid white line on each side of the runway.

Other markings on the airfield include taxiway and taxilane centerline markings, taxiway and runway hold position markings, apron markings, aircraft parking position markings, and helicopter landing area markings. In addition, a compass rose is painted on the west apron near Taxiway G and on the east apron near Taxiway A, which allows aircraft to maneuver on and be aligned with the different magnetic headings marked on the pavement for purposes of calibrating magnetic compasses on aircraft.

A number of illuminated airfield signs at the Airport display instruction and guidance information to the operators of aircraft and ground vehicles. Standard airfield signage is used to indicate an intersection of or an entrance to a runway, taxiway, or other critical movement area. Other signage includes mandatory instruction signs and directional signs.

2.2.1.5 Navigational Aids

A variety of equipment supports the safe and efficient navigation of aircraft to, from, and in the vicinity of the Airport, and provides pertinent weather information to pilots operating at the Airport. This equipment consists of visual navigational aids, electronic navigational aids, and weather reporting equipment.

Visual Navigational Aids

Visual navigational aids provide important visual cues for pilots operating at the Airport and do not require the use of onboard receiving instruments. Visual navigational aids available at the Airport include the following:

- **Wind cones** – Wind cones are the most basic navigational aid available at the Airport; they provide pilots with existing wind conditions and direction. Currently, three wind cones are located at TWF. Runway 7-25 has a wind cone mounted near each end for pilot reference on arrival and departure. A wind cone is also located north of Taxiway A near the Runway 30 threshold.
- **Visual slope indicators** – To aid pilots in judging the correct approach slope of the aircraft toward the touchdown zone of the runway, several effective visual slope indicators have been developed. Both ends of Runway 7-25 are equipped with visual slope indicators. Runway 7 is equipped with a two-bar visual approach slope indicator (VASI) consisting of two wingbars, each having two light units. The two wingbars are located on the left side of the runway approach end. Runway 25 is equipped with a precision approach path indicator (PAPI), which consists of four lights installed in a row perpendicular to the runway. Both VASI and PAPI systems operate by showing pilots a combination of red and white lights indicating the slope at which the aircraft is descending toward the touchdown point. Runway 12-30 is not equipped with any type of visual slope indicator.

Electronic Navigational Aids

Electronic navigational aids are established to maintain accurate navigation using ground-based transmission facilities and onboard receiving instruments. Electronic navigational aids can be used for en route navigation, as well as for instrument approaches to a runway.⁵ The electronic navigational aids installed at or in the vicinity of the Airport include the following:

- **Instrument landing system** – Runway 25 is equipped with an instrument landing system (ILS) that provides both horizontal and vertical guidance to pilots making instrument approaches to the runway. The ILS projects a radio beam from the end of the runway that fans out along an aircraft's landing approach. The resultant path is a straight line to the runway, extending 5 to 7 miles from the threshold. It is set for a fixed vertical slope of approximately 3.0 degrees. The ILS includes the following primary components installed at the Airport:
 - **Localizer** – A localizer provides directional guidance along the extended centerline of a runway. One localizer antenna is installed at the Airport, approximately 2,300 feet off the approach end of Runway 7. The localizer equipment building is located approximately 230 feet south of the localizer antenna.
 - **Glideslope** – A glideslope provides vertical guidance toward the runway touchdown point, usually at a horizontal slope of approximately 3.0 degrees. The glideslope is located approximately 1,050 feet from the approach end of Runway 25, with a lateral spacing of approximately 350 feet from the runway centerline.
 - **Marker beacons** – Marker beacons are located along the localizer approach path at fixed distances and convey to the pilot precise distance location information from the runway threshold during the ILS approach. Marker beacons associated with the Runway 25 ILS include an outer marker, located 5.2 nautical miles from the threshold, and a middle marker, located on Airport

⁵ A discussion of en route instrument procedures published for the Airport is provided in Section 2.3.2.3.

property, approximately 3,000 feet from the runway threshold. The middle marker was decommissioned April 8, 2010.

- **Visual information** – Functional components of the ILS include the previously described approach lighting and markings on Runway 25, as well as the PAPI visual slope indicator, which aids pilots in transitioning from an instrument environment to a visual environment for landing.
- **VOR/VORTAC** – The very high frequency (VHF) omnidirectional radio range (VOR) is a navigational aid used extensively throughout the United States. A VOR ground transmitter radiates individual signals in all directions. Conventionally, 360 different tracks away from the VOR are used, each separated from the next by 1.0 degree, and each with its own direction related to magnetic north. Each of these 360 VOR courses is called a radial. Using an onboard VOR indicator coupled with a VHF navigation radio, a pilot is able to indicate the desired course and the angular deviation from that course, as well as navigate an aircraft directly to or from the VOR station along any of the 360 radials. Many civil VORs have distance measuring equipment (DME)⁶ capability and are known as VOR/DMEs.

A VORTAC combines a VOR/DME ground station with a tactical air navigation system (TACAN), which is the military equivalent of a VOR. The end result for a civil pilot using a VORTAC is the same as that using a VOR/DME—both VOR and DME information is available. The Twin Falls VORTAC is located at the Airport approximately 300 feet south of Runway 7-25 near the midpoint of the runway, and is used for both en route navigation and instrument approaches to the Airport.

- **Nondirectional radio beacon** – The nondirectional radio beacon (NDB) is the simplest form of radio navigation used by aircraft. It is a ground-based transmitter that transmits low-frequency or medium-frequency radio waves in all directions. The automatic direction finder installed in an aircraft has a needle that indicates the direction from which the signals of the selected NDB ground station are being received. The nearest NDB to TWF is 5.2 nautical miles east of the Runway 25 threshold and is configured as a compass locator, serving as the outer marker for the Airport's ILS.

Weather Reporting Equipment

The availability of accurate and timely weather condition information at TWF is essential for enhancing the safety of aircraft operations at the Airport. This information is used by pilots, ATCT controllers, and Airport operations personnel. Weather reporting equipment installed at the Airport includes the following:

- **Automated surface observing system** – The ASOS is used to measure and record weather conditions by using a variety of sensors. ASOS units are operated and controlled cooperatively by the National Weather Service and the FAA, which distributes the information to pilots. ASOS stations typically record meteorological conditions, such as temperature, visibility, precipitation types and amounts, wind direction and speed, cloud ceiling, and barometric pressure, among other information. The ASOS at TWF is located southwest of the Runway 25 threshold.

⁶ DME provides information on how far the aircraft is from the DME ground station. It accomplishes this by determining the length of time it takes for a signal to travel from the aircraft to the ground station and back to the aircraft. The airborne DME converts this time to a distance in nautical miles, which is measured as the slant distance from the aircraft to the DME ground station.

- **Stand alone weather station** – A stand alone weather station (SAWS) is located along a service road approximately 1,200 feet southeast of the VORTAC. The SAWS unit consists of three major components: (1) a sensors unit, which includes all the sensors (including an ultrasonic anemometer), enclosure, power distribution, and telemetry, (2) a control and display unit, which receives the telemetered data and distributes the data to one or more displays, and (3) a sensor display unit, which is a specially designed active matrix style display. Used in conjunction with the ASOS, the SAWS enhances the weather reporting capabilities of air traffic controllers, who disseminate weather information to pilots operating at or in the vicinity of the Airport.

2.2.1.6 Airfield Safety and Protection Areas

Safe and efficient airport operations require that certain areas on or near the airport are clear of objects/obstructions or restricted to those objects functionally necessary, such as lights and navigational aids. These areas are depicted on the ALP presented in Section 9, "Airport Layout Plan Narrative." Section 4, "Facility Requirements," describes the applicable design standards for these areas. The key airfield safety and protection areas at the Airport include the following:

- **Runway safety area** – Runway safety areas (RSAs) are rectangular areas that surround runways and taxiways and are prepared and suitable for reducing the risk of damage to aircraft in the event of a runway undershoot, overshoot, or excursion. Similar safety areas surround taxiways to mitigate against the excursion of aircraft from the taxiway.
- **Object free area** – Object free areas (OFAs) are ground areas centered on the runway, taxiway, or taxilane centerline that enhances the safety of aircraft operations by providing an area free of objects (with some exceptions).
- **Obstacle free zone** – The obstacle free zone (OFZ) is the defined volume of airspace established to provide a greater measure of safety for pilots and their aircraft in the immediate area of the runway.
- **Runway protection zone** – The runway protection zone (RPZ) is a trapezoid-shaped area off the ends of each runway designed to enhance the protection of people and property on the ground; the RPZ identifies the innermost portion of the approach surface to a runway.
- **Building restriction line** – The building restriction line (BRL) identifies suitable building areas or aircraft parking locations on airports.
- **Navigational aid critical areas** – Critical areas are established for several navigational aids located on the Airport (i.e., VOR, localizer, and glideslope) to reduce the potential for signal interference.
- **Imaginary surfaces** – 14 CFR Part 77 defines surfaces intended to identify obstacles in the vicinity of the Airport and to establish notification requirements for any new construction on the Airport.

2.2.2 PASSENGER TERMINAL FACILITIES

The passenger terminal facilities consist of the passenger terminal building, terminal curb, and terminal apron, which are located adjacent to the center of the airfield. Other facilities that support the passenger terminal include vehicle parking and rental car staging areas. These facilities are described in Section 2.2.7. An overview of the TWF passenger terminal facilities is provided on **Exhibit 2-6**.



SOURCE: ESRI, May 2010 (Bing Maps aerial photograph).
PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-6



NORTH



Passenger Terminal Facilities

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-6_Passenger Terminal Facilities.mxd

2.2.2.1 Terminal Building

The passenger terminal building at the Airport was originally constructed in 1947 and rebuilt in its current configuration in 1996. The terminal building is configured as a single-level structure, although a small mechanical equipment area is located on a second level. The total building area consists of approximately 28,000 square feet. **Table 2-8** presents a breakdown of space within the terminal building, which provides the basis for determining deficiencies in the existing building as described in Section 4, "Facility Requirements." **Exhibit 2-7** shows the existing interior layout and use of space in the terminal building.

Table 2-8 Breakdown of Terminal Facility Space

FUNCTIONAL AREA	EXISTING SPACE (SQUARE FEET)	DESCRIPTION
Airline Areas		
Ticket lobby	1,400	Passenger queuing space
Airline counters & offices	1,100	2 airline counter positions with associated office space
Baggage sortation/makeup	1,000	Baggage sorting/loading and conveyor
Baggage claim	2,300	3 claim ramps and passenger waiting/circulation area
Baggage claim (unloading)	800	Drive-thru area for unloading baggage from carts onto claim ramps
Holdroom	1,400	Sterile area for holding screened passengers prior to boarding
Total airline areas	8,000	
Public Areas		
Waiting lobby	4,200	Seating/waiting area
Circulation/other	2,200	Hallway and corridor between lobby and west vestibule
Restrooms	1,500	Men's, women's and family facilities
Total public areas	7,900	
Concessions		
Food/gift shop	3,100	Restaurant and gift shop
Rental car	700	Counters and office space for 4 agencies
Total concessions	3,800	
Security		
Baggage screening	300	Transportation Security Administration baggage screening
TSA office	900	Transportation Security Administration (TSA) office space
Passenger screening	1,600	Queuing area, screening checkpoint, and reclaim area
Total security	2,800	
Other Areas	5,400	Entrance, exits, gates, electrical & mechanical, storage, and administration, etc.
Total Building Area	27,900	

SOURCE: Ricondo & Associates, Inc., March 2011, based on terminal floor plan drawings produced by Harald E. Gerber, AIA.
 PREPARED BY: Ricondo & Associates, Inc., August 2011.



SOURCE: Ricondo & Associates, Inc., March 2011, based on terminal floor plan drawings produced by Harald E. Gerber, AIA.
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-7



Passenger Terminal Building Layout

E:\Ricondo GIS\WPMaster Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-7_Passenger Terminal Building Layout.mxd

Overview of Terminal Building Facilities

The following is an overview of the general areas within the passenger terminal building:

- **Airline areas** – Airline areas include facilities and space specifically related to processing enplaning and deplaning commercial airline passengers and related baggage claim space. SkyWest Airlines occupies one of three ticket counter positions and operates several self-serve check-in kiosks in the ticket lobby. The Transportation Security Administration (TSA) currently uses one of the ticket counter positions and the third position is vacant. Airline offices and baggage sortation/loading areas are located behind the ticket counters. A sterile holdroom is provided for passengers that have undergone TSA security screening. Three departure gates are located in the holdroom, although typically only Gate 2 is used. The baggage claim area includes three claim ramps for retrieving checked baggage.
- **Public areas** – Public areas consist of waiting and general circulation areas. A large waiting lobby includes seating with a view of the airfield. Restroom facilities are centrally located adjacent to the waiting lobby.
- **Concessions** – A full service restaurant provides sitdown or takeout service (including in-flight catering) and also sells souvenirs. The restaurant serves both Airport passengers and employees, as well as off-Airport patrons. Vending machines and arcade games are also located in the terminal building. Rental car facilities include counter and office space for the four rental car companies that currently serve the Airport.
- **Security** – Checked baggage is screened by the TSA using explosives trace detection (ETD) equipment located adjacent to the ticket lobby. TSA personnel occupy office space behind the screening area. The TSA also operates the passenger security screening checkpoint, which consists of a walk-through metal detector, passenger search area, carry-on baggage screening equipment, and a reclaim area for personal possessions, in a one-lane configuration.
- **Other areas** – Other areas of the passenger terminal building consist of entrances, exits, arrival and departure gates, electrical and mechanical space, storage space, Airport administration offices, and other miscellaneous areas. Existing administration areas consist of offices for the Airport Manager and the administrative assistant, as well as a conference room, all of which are located just inside the west vestibule.

General Passenger Flow

Departing passengers enter the terminal building through either the east or west vestibule. The east vestibule leads directly to the airline check-in and ticket lobby area. Checked baggage is brought to the TSA baggage screening area where it is screened and delivered to the baggage sortation/makeup areas of the airline. Passengers who have checked in typically proceed either to the waiting lobby or directly to the TSA security screening checkpoint and then to the boarding area.

Arriving passengers enter the terminal through the single arrivals gate and proceed either directly out to the terminal curb/parking area or to the baggage claim area to retrieve checked baggage. Rental car facilities are located adjacent to the baggage claim area, along the corridor leading to the west vestibule.

2.2.2.2 Terminal Curb

The terminal curb is approximately 145 feet long and accommodates both passenger dropoff and pickup.

2.2.2.3 Terminal Apron

A 6,600-square-yard commercial airline aircraft apron is located adjacent to and south of the passenger terminal building and is constructed of asphalt pavement. The apron is designed to accommodate a B-727-200 aircraft using power in/push back parking, as well as up to four regional/commuter aircraft. The apron currently supports the parking, servicing, and loading/unloading requirements of the EMB-120 Brasilia aircraft operated by SkyWest Airlines. The terminal apron also accommodates occasional large charter and diverted commercial aircraft.

2.2.3 TENANT FACILITIES

A variety of tenants own, lease, and/or operate facilities at the Airport. These tenant facilities include general aviation facilities, BLM facilities, and other tenant facilities, as depicted on **Exhibit 2-8**.

2.2.3.1 General Aviation Facilities

General aviation facilities at the Airport include fixed base operator (FBO) facilities, other aviation-related commercial business facilities, and private/noncommercial tenant facilities, as follows:

- **FBO facilities** – The largest general aviation tenant at the Airport is Reeder Flying Service, which is the only full-service FBO at the Airport, and has had a significant role in the development and evolution of the Airport over its history. Services offered by Reeder Flying Service include line service (i.e., fueling, the provision of oxygen, pre-heating, deicing/anti-icing, lavatory service, air start, etc.), helicopter charters and maintenance, aircraft sales, and short-/long-term parking (hangar and tiedown). The FBO offers many amenities for pilots, such as a flight planning room, a pilot's lounge, crew cars, catering, and hotel reservations.

FBO facilities within the west building area include a terminal/administration building with vehicle parking, two large conventional hangars, and two T-hangars. Reeder Flying Service also maintains two large conventional hangars within the east building area and leases most of the aircraft tiedowns on both the east and west aprons.

- **Other aviation-related commercial business facilities** – Several other aviation-related businesses own, lease, and/or operate facilities at the Airport, and either conduct or support general aviation aircraft operations. These businesses provide services such as agricultural aerial spraying, aircraft maintenance, flight instruction, aircraft chartering, and aerial fire-fighting. Associated facilities include hangars and office/storage space.
- **Private noncommercial tenant facilities** – Noncommercial general aviation tenants at the Airport primarily consist of individuals who construct conventional hangars (or rent T-hangar space) for aircraft used for personal travel and recreation. These private tenants account for the majority of the general aviation hangars and leased area at the Airport.



SOURCES: ESRI, May 2010 (Bing Maps aerial photograph); Riedesel Engineering, Inc., January 2011 (airport property line).
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-8



Tenant Facilities

E:\Ricondo GIS\TWF\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-8_Tenant Facilities.mxd

Master Plan Update
 Existing Conditions

General Aviation Hangars

General aviation tenants lease Airport land and have constructed a variety of hangars on the Airport to provide storage for based aircraft. In 2009, general aviation facilities accommodated 108 based aircraft, including 90 single-engine aircraft, 10 multi-engine aircraft, 2 jet aircraft, and 6 helicopters.⁷ Hangar facilities can also support transient aircraft and some large hangars at the Airport support full-service maintenance and other aircraft support activities.

General aviation hangar facilities at the Airport include both conventional hangars and T-hangars. Conventional hangars are designed to accommodate one or more aircraft within a single structure. Large conventional hangars may accommodate multiple aircraft and provide space for full-service aircraft maintenance operations, as well as associated office/storage areas, while smaller hangars are generally designed to accommodate a single small aircraft. T-hangars are basically elongated metal shed structures divided into individual storage bays designed to accommodate small aircraft. According to Airport lease records, hangar facilities at the Airport consist of 46 conventional hangars encompassing 178,823 square feet, and 7 T-hangars encompassing 62,098 square feet.

General Aviation Aprons

Two primary aircraft parking aprons are located adjacent to each corresponding building area and are primarily used for parking and servicing of based and transient general aviation aircraft. These apron areas are identified on Exhibit 2-8 and include the following:

- **West apron** – The west apron is located northwest of the passenger terminal building along Runway 12-30. The large apron consists of asphalt pavement and encompasses approximately 479,000 square feet. The apron provides parking area for based and transient aircraft of various sizes and includes a system of 50 anchor and chain tiedown positions. The northern half of the apron (between Taxiways G and J) was reconstructed in 2001. The southern half of the apron (between Taxiway J and the passenger terminal apron) was reconstructed in 2009.
- **East apron** – Additional aircraft parking positions are available on an asphalt apron east of the passenger terminal apron. The apron encompasses approximately 202,300 square feet, has 36 aircraft tiedown positions, and was reconstructed in 2005.

In addition to small general aviation aircraft, the aprons also accommodate air cargo turboprop aircraft, as well as business jets and other aircraft that are diverted from other airports during the winter months.

2.2.3.2 Bureau of Land Management Facilities

The BLM's South Central Idaho Interagency Dispatch Center, located in Shoshone, Idaho, is responsible for dispatching fire-fighting resources to fires on Federal and State lands in southcentral Idaho. One of the primary response units for fires in this region is the BLM's Twin Falls Airbase, located at TWF. The Airbase is fully operational during fire season, from mid-June through mid-October.

⁷ Federal Aviation Administration, Airport Master Record, Form 5010, effective October 22, 2009.

Various fire-fighting activities operate from or are coordinated through the Twin Falls Airbase. These activities include aerial retardant application for wildfire suppression, using a fleet of aircraft ranging from single-engine air tankers to heavy air tankers and helicopters with water buckets; smokejumper operations; air attack operations for aerial supervision and airspace control; crew transport; and flight operations in support of Leafy Spurge, wild horse, and burro surveys, elk counts, and reconnaissance missions.

The BLM Airbase facilities and supporting equipment are located on the east side of the Airport. These facilities/equipment encompass a total land area of approximately 7.5 acres and include a 5,800-square-foot administration/operations building, vehicle parking, six remote fire retardant field operations trailers, two helitack⁸ vehicles, one single-engine air tanker chase vehicle, one International truck for trailer transport, a tank farm with a capacity of 30,000 gallons of liquid fire retardant concentrate, a 10,000-gallon self-filling water tank, offload tank capacity of 12,000 gallons, various pumping equipment, two 8,000-square-foot pads for loading fire retardant onto aircraft, and a helicopter parking area. The administration/operations building was constructed in 2004 and includes a full kitchen, pilot's lounge, conference room, restrooms with showers, laundry room, offices, a crew readiness area, and a large utility room for vehicle maintenance.

2.2.3.3 Other Tenant Facilities

The following tenants also maintain facilities at the Airport:

- **U.S. Army Reserve** – The U.S. Army Reserve occupies approximately 6 acres of land north of the west general aviation area. Facilities include 15,600 square feet of building space and parking space for automobiles and military vehicles.
- **Civil Air Patrol** – The Civil Air Patrol serves as the civilian auxiliary of the U.S. Air Force and performs missions that may include search and rescue, disaster relief, aerospace education, and various cadet programs. The Twin Falls detachment of the Civil Air Patrol is located on approximately 12,200 square feet of land at the Airport, east of the public parking area and adjacent to the FBO parking area. Facilities include an 1,800-square-foot training/administration building.
- **Magic Valley Speedway** – The Magic Valley Speedway is located on the west side of Airport property, separated from aviation-related Airport facilities by 2800 East Road; 2800 East Road also provides access to the speedway. The speedway leasehold encompasses approximately 25 acres and includes a 1/3-mile semibanked paved (asphalt) oval track, 3,500 seats, restrooms, food/beverage concessions, souvenirs, and a lighted parking lot.
- **Air cargo facilities** – TWF does not currently have a designated facility for air cargo. Operators of delivery vans/trucks drive onto the apron where cargo is sorted and loaded directly onto waiting aircraft. All air cargo at the Airport is currently carried by all-cargo airlines, including Ameriflight (operating as FedEx, UPS Air Cargo, and DHL), Corporate Air (operating as FedEx), and Western Air Express. All-cargo aircraft types range from single-engine piston aircraft to multi-engine turboprop aircraft.

⁸ Helitack refers to helicopter-delivered fire resources. Helitack crews use helicopters to rapidly transport personnel and cargo to a fire (usually wildfires) and then remain on-scene to perform a variety of tactical and logistical missions.

2.2.4 SUPPORT FACILITIES

Support facilities at the Airport include aircraft rescue and fire-fighting (ARFF) facilities, air traffic control (ATC) facilities, snow removal equipment and Airport equipment storage facilities, and fueling facilities. These facilities are depicted on **Exhibit 2-9**.

2.2.4.1 Airport Rescue and Fire-Fighting Facilities

Airports certificated under 14 CFR Part 139 are required to provide a certain level of ARFF capability, including facilities, equipment, personnel, and operational performance requirements. ARFF crews conduct fire-fighting operations and provide fire prevention services, and serve as medical first responders for an aircraft accident or incident, as well as all medical emergencies at the Airport.

The ARFF station at the Airport is located adjacent to Taxiway L on the east side of the Airport near the BLM Airbase. The 3,000-square-foot facility accommodates the vehicles and personnel necessary to comply with 14 CFR Part 139. Airport ARFF equipment consists of a 1997 Oshkosh T-1500 tanker truck, which is capable of delivering 1,500 gallons of water and 500 gallons of foam. An ARFF access road provides vehicle access from the ARFF station to Airport Road.

2.2.4.2 Air Traffic Control Facilities

The FAA provides ATC services to pilots arriving at or departing from the Airport, or overflying the immediate area.⁹ ATC facilities at the Airport include the ATCT, an office trailer, and vehicle parking. These facilities are located adjacent to the east general aviation area, approximately 350 feet northeast of the passenger terminal building. The ATCT houses the FAA staff and equipment necessary to facilitate the safe, efficient, and expeditious movement of air traffic. The ATCT is staffed and operational from 6:00 a.m. to 9:00 p.m. local time.

2.2.4.3 Snow Removal Equipment and Airport Equipment Storage Facilities

In 2001, a 4,000-square-foot sand storage building was constructed on the east side of the Airport along Taxiway L, between the BLM administration/operations building and ARFF station. Half of this facility is used for sand storage (for winter operations) and the remainder is used for maintenance vehicle storage, including storage of the Airport's snow removal equipment, which is listed in **Table 2-9**. Another equipment building maintained by Airport staff is located north of the passenger terminal building and adjacent to the public parking lot. This facility encompasses approximately 3,300 square feet and houses a variety of equipment used to maintain the airfield and grounds, including lawn mowers, tractors, hand tools, and other equipment.

⁹ ATC services include separating aircraft operating in the system to prevent a collision, organizing and expediting the flow of traffic on and around an airport to provide support for national security/defense, and providing information and other support for pilots when able.



SOURCES: ESRI, May 2010 (Bing Maps aerial photograph); Riedesel Engineering, Inc., January 2011 (airport property line).
PREPARED BY: Ricondo & Associates, Inc., August 2011.

EXHIBIT 2-9



Support Facilities

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-9_Support Facilities.mxd

Table 2-9 Inventory of Snow Removal Equipment at the Airport

MAKE AND MODEL	MODEL	YEAR	CONDITION
International 11-foot plow	Snow Removal Unit	1983	Fair
International 11-foot plow	4900 Sander	2001	Good
John Deere 20-foot ramp plow	Wheel Loader 644 H	2002	Excellent
Kodiak rotary snow blower	LMSC3644-120	2005	Excellent
International 20-foot snow plow	5600i 4X4	2006	Excellent
Wausau SnowDozer 4X4 Chassis	SD3131	2010	Excellent

SOURCE: City of Twin Falls, Airport Department, October 2011.
 PREPARED BY: Ricondo & Associates, Inc., October 2011.

2.2.4.4 Fueling Facilities

The Airport fuel storage facility (fuel farm) is located west of the U.S. Army Reserve facilities and just north of the west general aviation hangar area. This facility includes underground storage tanks with a capacity of 40,000 gallons of Jet A fuel and 20,000 gallons of 100LL aviation gasoline (avgas), as well as associated above-ground piping/pumping infrastructure. Reeder Flying Service provides all fueling services at the Airport for both commercial and general aviation aircraft. Fuel trucks fill up at the fuel farm and are parked in a lot adjacent to the Civil Air Patrol facility. In addition to the fuel farm, a 24-hour self-serve fuel pumping facility (avgas only) is located on the east general aviation apron.

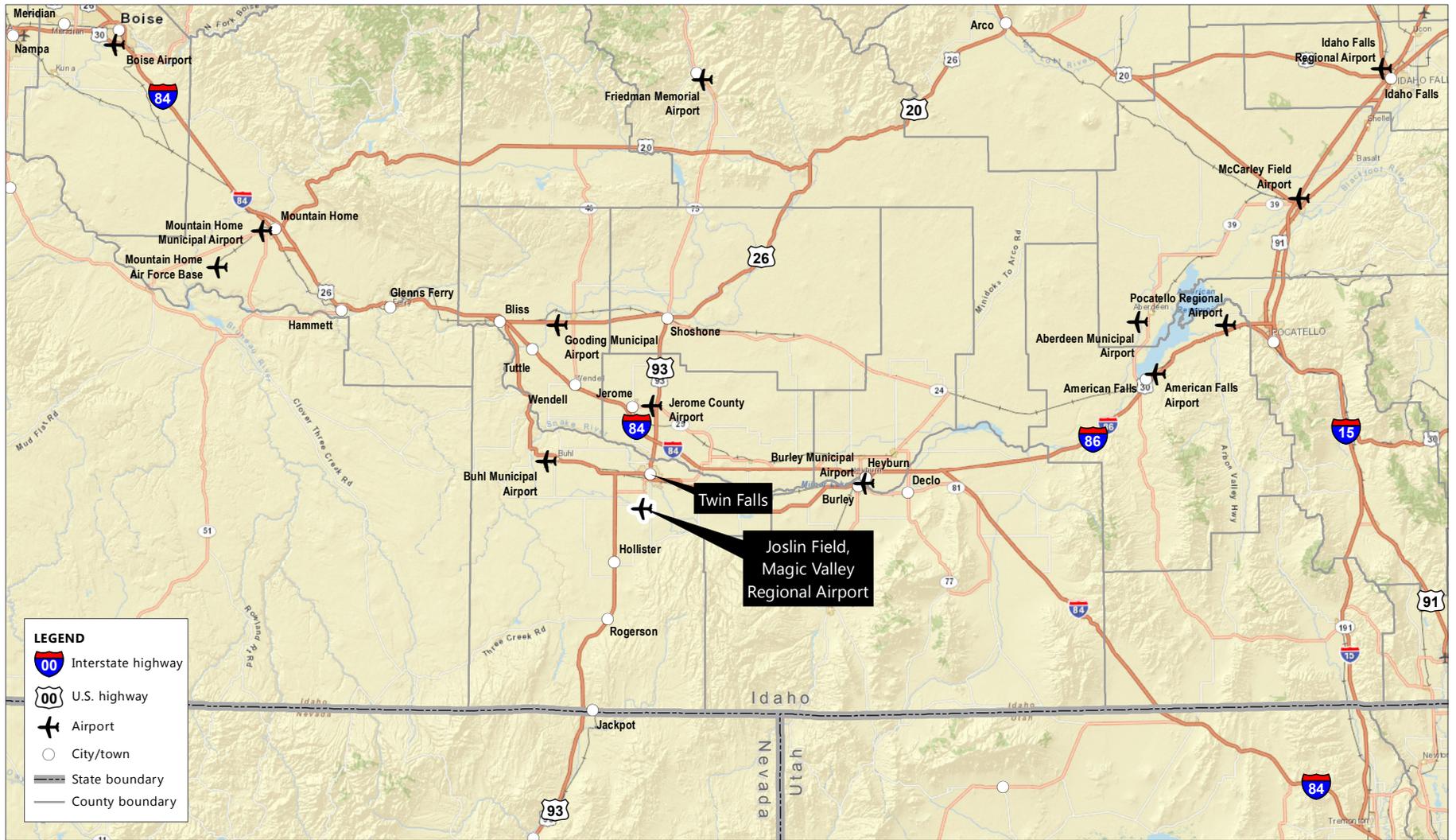
2.2.5 AIRPORT GROUND ACCESS

An inventory of the Airport ground transportation system, describing regional access to the Twin Falls area, local access to the Airport, and circulation around various parts of the Airport is presented in this section. Existing automobile parking facilities at the Airport are also described.

2.2.5.1 Regional Roadway Access

Regional access to Twin Falls is presented on **Exhibit 2-10**. Access from the east and west of the Twin Falls area is provided primarily by I-84, a four-lane interstate highway that serves as the major east-west highway link in southwestern Idaho. I-84 runs from Portland, Oregon, to a junction with I-80 near Echo, Utah, about 28 miles northeast of Salt Lake City.

From the west, I-84 enters Idaho by crossing the Snake River at Ontario, Oregon, and continues to the major cities of the Treasure Valley (Caldwell, Nampa, Meridian, and Boise). From Boise, I-84 continues southeast toward Twin Falls, passing through smaller communities, such as Mountain Home, Hammett, Glens Ferry, Bliss, Tuttle, Wendell, and Jerome. From the east, I-84 enters southeast Idaho from Utah. Approximately 7 miles east of Declo, Idaho, in Cassia County, I-84 intersects with I-86, which connects to American Falls and Pocatello to the east. Continuing west from the I-86 interchange, I-84 passes near Heyburn and Burley before heading northwest toward Jerome.



SOURCE: ESRI, December 2009 (World Street Map basemap).
 PREPARED BY: Ricondo & Associates, Inc., September 2011.

EXHIBIT 2-10



Regional Roadway Access

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-10_Regional Access.mxd

Just east of Jerome, I-84 passes within 5 miles of Twin Falls, but does not cross the Snake River Canyon into Twin Falls County. Primary access to the City from I-84 is via U.S. Highway 93 (U.S. 93) at Exit 173 heading south across the Snake River via the Perrine Bridge. U.S. 93 provides primary north/south access to Twin Falls and extends from Montana to Arizona. In southern Idaho, U.S. 93 runs with U.S. 26 and U.S. 20 southwest of Arco until passing through Shoshone. From Shoshone, U.S. 93 turns south, crosses the Snake River, and passes through the Twin Falls CBD before proceeding south through Hollister and Rogerson, and crossing the border at Jackpot, Nevada.

2.2.5.2 Local Roadway Access

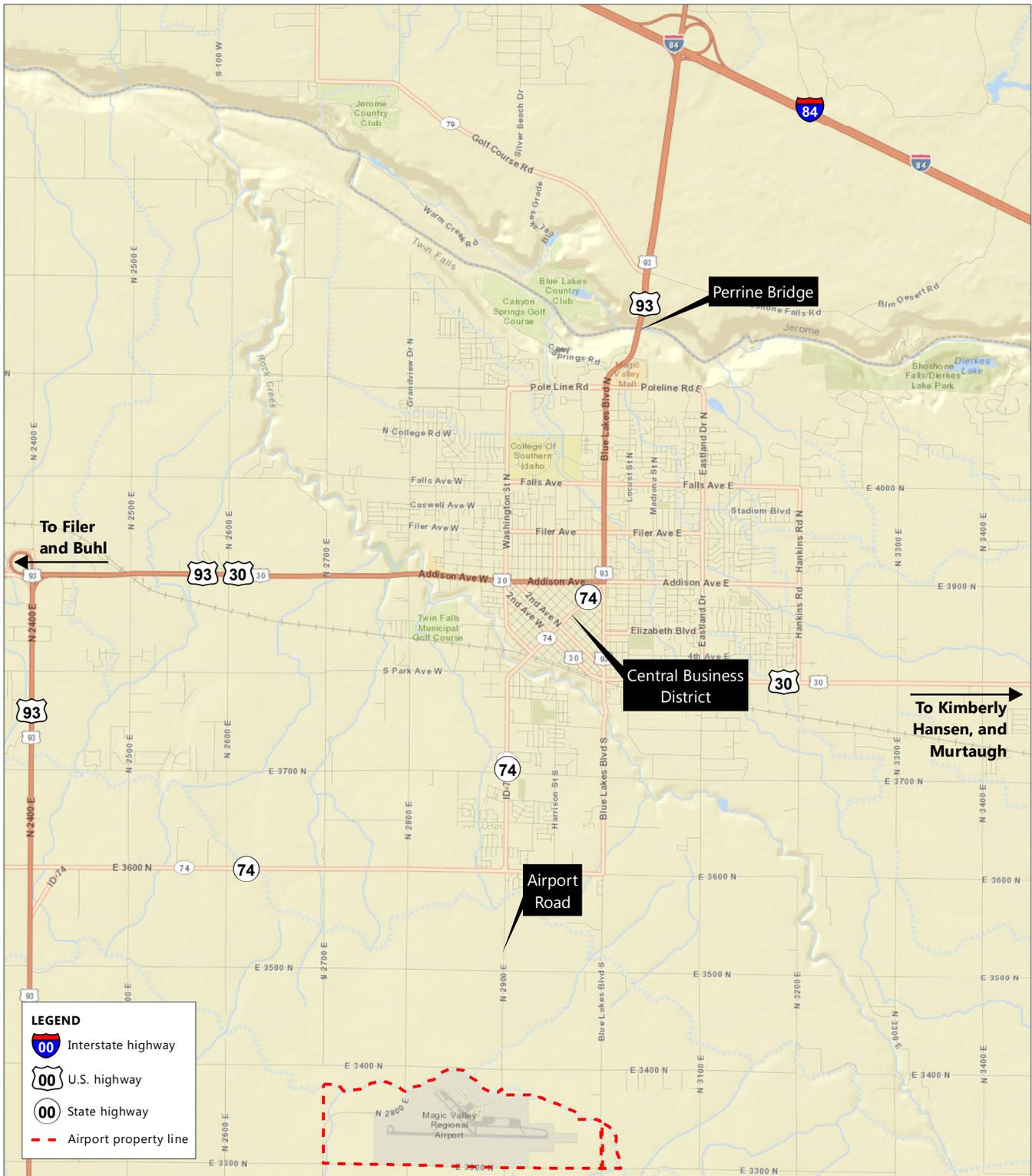
Local access to the Airport from within the City is depicted on **Exhibit 2-11**. The City roadway network is based on a grid that is generally distinguished by arterial and collector roadways. Arterial roadways are based on mile spacing and collectors are based on half-mile and quarter-mile spacing. Local roadways connect residential neighborhoods with the collector roadway network.

Within Twin Falls County, U.S. 30 passes east/west through the CBD and provides access to the CBD from Hansen, Kimberly, and Murtaugh to the east. U.S. 93 runs south from the interchange with I-84 until reaching the CBD where it turns west and converges with U.S. 30, which connects the towns of Filer and Buhl and other points to the west.

Several arterial roadways provide access from the CBD and surrounding areas to the south toward the Airport. Primary access to the Airport from the CBD is via Washington Street, which overlaps State Highway 74 until turning west at 3600 North Road. Washington Street continues south and is also called Airport Road, which leads directly to the main entrance of the Airport. Airport Road is a two-lane arterial roadway that provides the only access to the Airport terminal area. Access to Airport Road from the CBD is also provided by Blue Lakes Boulevard, which serves as the primary commercial arterial roadway running north/south through the City. Several east/west arterial roadways connect Blue Lakes Boulevard with Airport Road.

Existing traffic conditions on the local access roadways were obtained from the *Twin Falls Master Transportation Plan*, in which a level of service (LOS) was assigned to each arterial roadway in the City.¹⁰ LOS is a grading system that identifies how efficiently traffic flows on a roadway segment, as defined in **Table 2-10**. It is generally accepted that LOS D is the minimum acceptable level of service in urbanized areas. According to the *Twin Falls Master Transportation Plan*, Airport Road from the CBD to the Airport has an existing LOS of A/B. Blue Lakes Boulevard provides LOS D north of the CBD, LOS C from the CBD to Orchard Drive, and LOS A/B south of Orchard Drive toward the Airport.

¹⁰ City of Twin Falls, *Twin Falls Master Transportation Plan*, January 2009.



SOURCES: ESRI, December 2009 (World Street Map basemap); Riedesel Engineering, Inc., January 2011 (Airport property line).
 PREPARED BY: Ricondo & Associates, Inc., September 2011.



0 1.5 miles

Local Roadway Access

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-11_Local Access.mxd

Table 2-10 Roadway Level of Service Description

LEVEL OF SERVICE	DESCRIPTION	TRAFFIC LOADING PERCENT OF ROADWAY CAPACITY
A	Free-flowing traffic	< 50%
B	Low-density stable traffic flow	51% - 70%
C	Medium-density stable traffic flow	71% - 80%
D	High-density stable traffic flow	81% - 90%
E	Unstable flow at or near capacity	91% - 100%
F	Breakdown of traffic flow	> 100%

SOURCE: Transportation Research Board, *Highway Capacity Manual*, 2000.
 PREPARED BY: Ricondo & Associates, Inc., August 2011.

2.2.5.3 Airport Roadway Access

Exhibit 2-12 depicts the primary on-Airport roadway system. Airport Road provides roadway access to the Airport across the High Line Canal. Roadways connecting to Airport Road provide access to various facilities, including hangars, the ARFF station, the BLM Airbase, and the U.S. Army Reserve facility. Airport Road provides direct access to the main automobile parking area, the FBO facilities, and the terminal curb.

2.2.5.4 Vehicle Circulation and Parking Facilities

Vehicle circulation and parking facilities in the vicinity of the passenger terminal building are depicted on **Exhibit 2-13**. Airport Road is configured as a loop roadway. Inbound vehicles dropping off or picking up passengers proceed counterclockwise around the loop, which provides access to the terminal curb.

The loop roadway also provides access to several automobile parking areas. Public parking at the Airport is accommodated in short-term and long-term lots. Short-term parking spaces are located closest to the terminal curb and currently accommodate 95 vehicles. Two long-term parking lots currently accommodate approximately 350 vehicles. A large area of land adjacent to the easternmost long-term parking lot is used for overflow parking. The southernmost section of this area was recently stabilized and marked to accommodate approximately 80 vehicles. In addition, a 35-stall auxiliary parking lot is located adjacent to the FBO and Civil Air Patrol facilities, which provides parking for these facilities, as well as employees.

2.2.5.5 Rental Car Facilities

Four rental car companies currently lease office/counter space in the passenger terminal building. As shown on Exhibit 2-13, parking for rental cars is available in a 42-stall lot adjacent to and west of the passenger terminal building. The rental car companies also operate car wash facilities on the Airport, which are also identified on Exhibit 2-13.



SOURCE: ESRI, May 2010 (Bing Maps aerial photograph).
PREPARED BY: Ricondo & Associates, Inc., September 2011.



On-Airport Roadway Access

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-12_Airport Access.mxd

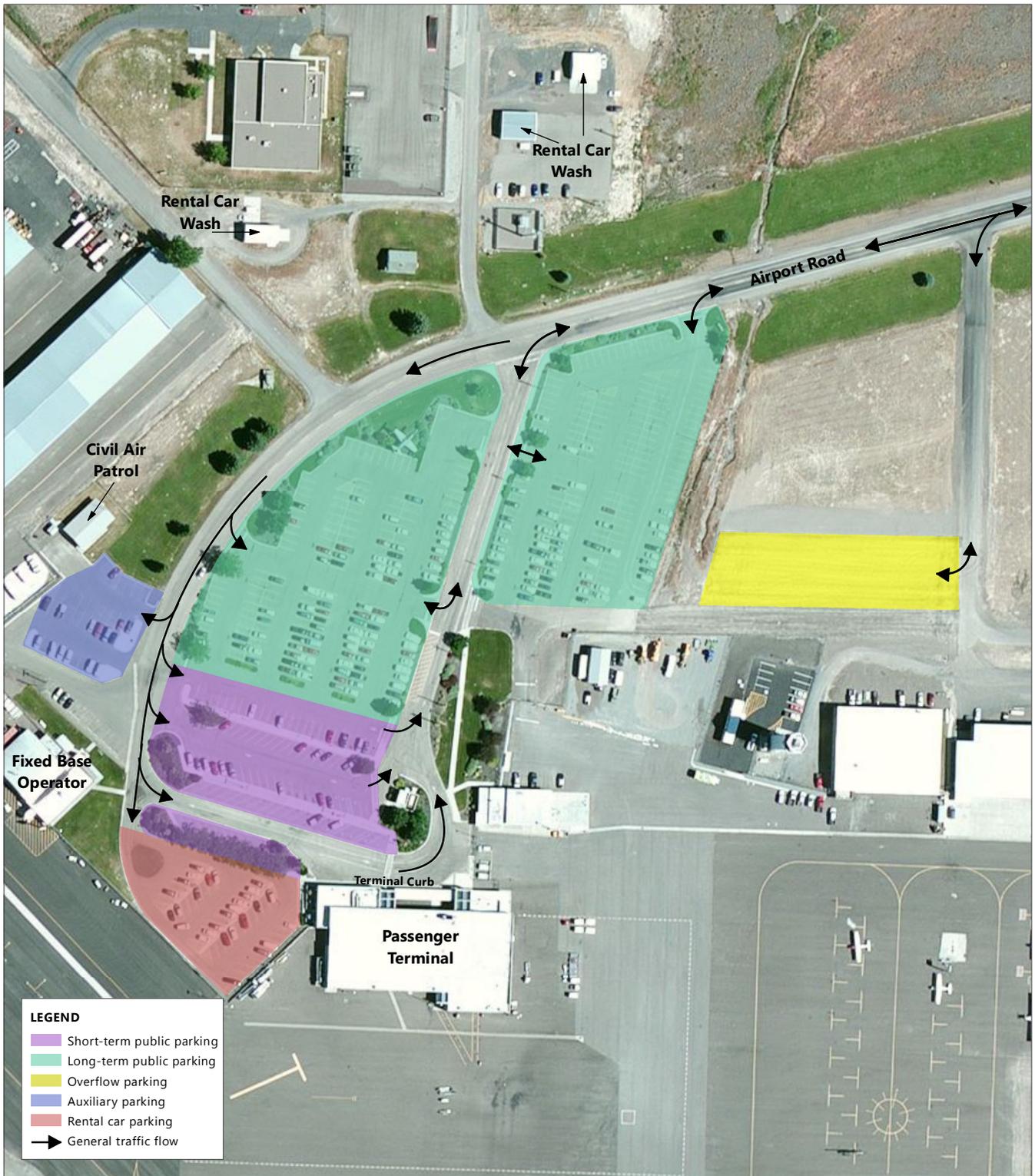


EXHIBIT 2-13



Terminal Circulation and Parking

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-13_Terminal Circulation and Parking.mxd

2.2.6 UTILITIES AND STORMWATER

The major utility systems at the Airport are sanitary sewer, water, power, communications, and stormwater drainage. Natural gas service is not available at the Airport.

- **Sanitary sewer** – Sewer services at the Airport are provided by the City. TWF is connected to the City's sewer system through the Airport Interceptor trunk line located between the Airport and Rock Creek along Washington Street/Airport Road. The 24,600-foot trunk line is constructed of 6-inch to 18-inch diameter piping at depths ranging from 1 foot to 9 feet, with a full flow capacity between 80 gallons per minute (gpm) and 8,500 gpm. Current services result in flows ranging from 45 gpm to 1,690 gpm.¹¹ The Airport Interceptor line connects to the Rock Creek trunk line, which collects and conveys flows to the Rock Creek Lift Station. The Rock Creek Lift Station is a major regional lift station that pumps residential and industrial wastewater to the Grandview trunk line and onward to the City's wastewater treatment plant located in the Snake River Canyon. Sewer services are available for major tenant facilities at the Airport, including the passenger terminal building, the FBO facilities, and BLM facilities, among others. Hangar development on the east side of the Airport is also connected to the City's sewer system.
- **Water** – The Airport is located outside of the boundary within which the City provides residential and commercial water service. Therefore, the Airport is reliant on a separate City-operated well/storage system to provide adequate water service for Airport facilities. The Airport's water system consists of a well, a pump house, and a 214,000-gallon water storage tank. These facilities are located just west of Airport Road and south of the High Line Canal.
- **Power** – Existing power services for the City, including the Airport, are supplied by Idaho Power. Power is transferred along transmission lines to five substations. Electricity for TWF is delivered from the South Park substation and powers various Airport buildings and airfield lighting/equipment. The main electrical vault at the Airport is located adjacent to the public parking area north of the passenger terminal building.
- **Communications** – Data and voice communications lines run along Airport Road. Communications services are provided by CenturyLink.
- **Stormwater drainage** – Sheet flow and drainage inlets are used to remove excess water from the airfield and funnel it into one of several stormwater retention basins located primarily on the north side of the Airport along the High Line Canal. The basins capture and retain the excess water until it can be filtrated into the existing soil or evaporated.

2.3 Airspace and Air Traffic Control

This section describes the airspace surrounding the Airport and ATC facilities and procedures in place to safely control aircraft flying to, from, or in the vicinity of the Airport.

¹¹ Murray, Smith & Associates, Inc., *Collection System Report*, February 2009.

Aircraft operating to or from an airport do so under either visual flight rules or instrument flight rules (IFR). VFR governs the procedures for flying under VMC, when a pilot is able to safely navigate an aircraft by visual reference to the environment outside of the cockpit. Conditions that do not meet the minimum requirements for VFR flight are IMC, under which a flight may only operate under IFR. IFR are a set of regulations and procedures for flying aircraft whereby navigation and obstacle clearance are maintained with reference to aircraft instruments only, while separation from other aircraft is provided by ATC.

2.3.1 AIRSPACE STRUCTURE

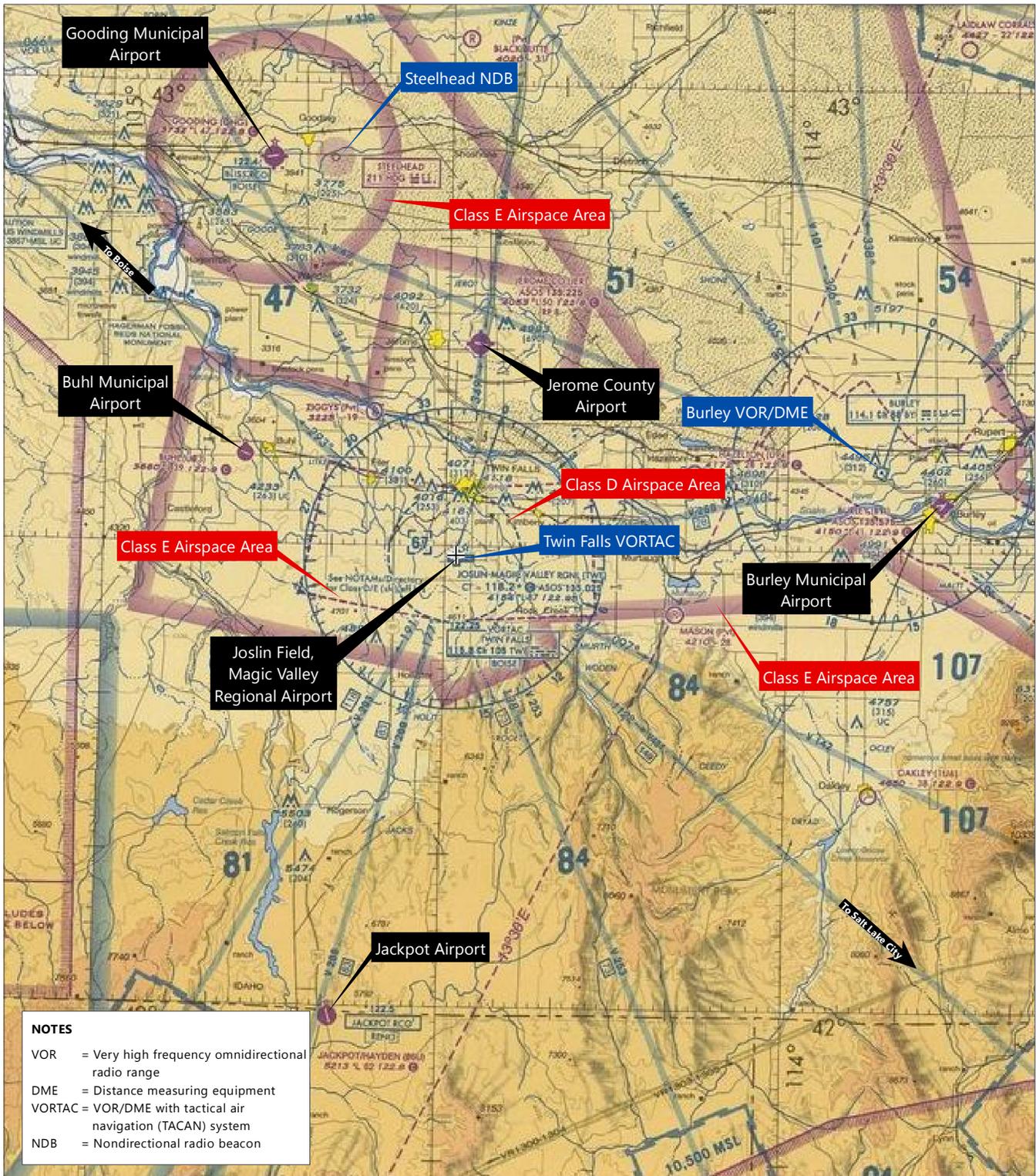
Airspace in the United States is generally classified as controlled or uncontrolled, and is further classified as Class A, B, C, D, E, or G. **Exhibit 2-14** depicts the airspace structure and other aeronautical features in the vicinity of the Airport.

All airspace at and above 18,000 feet above MSL in the vicinity of the Airport is classified as Class A, which is specified as IFR only. Class B airspace is established around the nation's largest airports (e.g., Salt Lake City International Airport) and is not found in the vicinity of TWF. Class C airspace is established at airports that have an operational ATCT, are serviced by radar approach control, have a certain number of IFR operations or enplaned passengers, and where ATC provides radar vectoring/sequencing for all traffic (e.g., Boise Airport).

The airspace immediately surrounding TWF is classified as Class D, depicted on Exhibit 2-14 by a dashed blue circle around the Airport. The controlled airspace within this Class D area extends from the surface to 6,700 feet above MSL. Two-way radio communication must be established with the facility providing ATC services (i.e., the TWF ATCT) prior to entry into the Class D airspace and thereafter those communications must be maintained while in the Class D airspace. The TWF ATCT is a non-radar facility and no VFR separation services are provided within the Class D airspace. The TWF Class D airspace is only active when the ATCT is operational. When the ATCT is not operational, the Class D airspace reverts to Class E.

Exhibit 2-14 also depicts Class E airspace, which is general controlled airspace that typically extends from either 700 feet AGL or 1,200 feet AGL to either 18,000 feet above MSL or the lower limit of overlying airspace. Most of the country has a Class E lower limit of 1,200 feet AGL. Where the controlled airspace decreases to 700 feet AGL is depicted on the exhibit by a broad magenta line with a faded side. The faded side is where the floor of Class E airspace is 700 feet AGL, while the more defined side of the line indicates areas where the floor of Class E airspace increases to 1,200 feet. The Class E airspace areas in the vicinity of the Airport ensure that IFR aircraft remain in controlled airspace while conducting instrument approaches into airports without Class D airspace or operating ATCTs, such as Jerome County Airport, Gooding Municipal Airport, and Burley Municipal Airport. The dashed magenta lines on the exhibit extending from the Twin Falls Class D airspace area indicate where Class E airspace extends to the surface. This area provides greater protection for IFR aircraft on published instrument approach procedures to the Airport.

Class G airspace is uncontrolled airspace. Only VFR aircraft can operate in Class G airspace. Class G airspace begins at the surface throughout much of the area surrounding the Airport, except for areas where Class E or Class D airspace extends to the surface.



NOTES

- VOR = Very high frequency omnidirectional radio range
- DME = Distance measuring equipment
- VORTAC = VOR/DME with tactical air navigation (TACAN) system
- NDB = Nondirectional radio beacon

SOURCE: SkyVector.com, August 2011 (Salt Lake City Sectional Chart).
 PREPARED BY: Ricondo & Associates, Inc., September 2011.

EXHIBIT 2-14



Not to scale.

Airspace Structure

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-14_Airspace Structure.mxd

2.3.2 AIR TRAFFIC CONTROL

The FAA ATC system is constructed to manage the flow of air traffic at and between airports. This section describes the procedures followed by pilots and ATC personnel to maintain safe and efficient aircraft operations at and in the vicinity of the Airport throughout the three phases of flight: departure, en route, and arrival.

Within the Airport's Class D airspace and on the airfield, ATC services are provided by the ATCT controllers. ATCT controllers at the Airport are responsible for separating aircraft in the air and on the ground, sequencing aircraft in the traffic pattern, expediting arrivals and departures, and providing clearances and weather information to pilots. From the ATCT, FAA personnel maintain air traffic control and communications with pilots operating aircraft on the runways or within the Airport's Class D airspace.

2.3.2.1 Departure Procedures

Pilots of aircraft departing from the Airport contact controllers in the ATCT for authorization to taxi to a particular runway and for clearance to take off. Under VFR, departing aircraft typically follow a pilot-requested or ATCT-controller-assigned route away from the Airport. Under IFR, aircraft may be directed to follow a predetermined departure procedure, referred to as a standard instrument departure (SID). TWF currently has one published SID, which can be used for departures from any runway end. Once the aircraft is airborne, this SID, named SNAKO, instructs pilots to proceed on a defined route to the SNAKO airspace fix, which is located 10 nautical miles west of the Twin Falls VORTAC. Once at SNAKO, aircraft proceed on one of five defined transition routes depending on the intended direction of flight.

Prior to an aircraft leaving the Airport's Class D airspace, the ATCT controller will typically instruct the pilot to contact the Salt Lake City Air Route Traffic Control Center (ARTCC). A letter of agreement (LOA) delegates areas of jurisdiction and establishes procedures for coordinating air traffic between the Salt Lake City ARTCC and the TWF ATCT. Pursuant to the LOA, departing aircraft are provided a vector or routing that establishes the aircraft on a cleared route prior to leaving the lateral boundaries of the ATCT's delegated airspace. A vector is a heading that provides navigational guidance, and can be issued during any phase of flight.

2.3.2.2 En Route Procedures

The en route phase of flight generally occurs when aircraft are operating between departure and destination airport airspace areas. The Salt Lake City ARTCC is responsible for controlling aircraft across a multistate area, including Idaho, Montana, Utah, and Nevada and parts of Wyoming and North and South Dakota, making it the largest ARTCC area in the nation. ARTCC controllers provide separation services and traffic advisories to aircraft operating on IFR flight plans during the en route phase of flight, and to VFR aircraft on request.

Most aircraft enter or exit the Twin Falls area via one of several available federal airways, called Victor Airways, which act as "highways in the sky." Victor Airways are 8-mile-wide corridors of controlled (Class E) airspace between 1,200 feet AGL and 18,000 feet above MSL, used to transition between the approach/departure and en route environments. Federal airways are defined between VOR or VORTAC facilities. The Twin Falls VORTAC is important in en route and local navigation, serving as the originating/termination point for six Victor Airways. These airways are depicted on Exhibit 2-14 as thick faded blue lines stemming from the Twin Falls VORTAC.

In addition to the Twin Falls VORTAC, other significant navigational aids in the vicinity of the Airport include the Burley VOR/DME, located approximately 28 nautical miles east of the Airport, and the STEELHEAD NDB, located approximately 27 nautical miles north of the Airport.

2.3.2.3 Arrival Procedures

Pilots of aircraft under Salt Lake City ARTCC control intending to land at the Airport are “handed off” to ATCT controllers prior to entering the Airport’s Class D airspace. Arrival aircraft altitudes are established by the LOA. Aircraft not under ARTCC control are required to contact the TWF ATCT prior to entering the Airport’s Class D airspace and are vectored to the appropriate arrival runway at the Airport. Pilots of aircraft operating under IFR will then execute an instrument approach procedure to the Airport, while pilots of aircraft operating under VFR will execute a visual approach.

Instrument Approach Procedures

Instrument approach procedures are published by the U.S. Department of Commerce and describe, in graphic and tabular forms, the headings and altitudes pilots must observe when flying the approach procedures. These procedures allow pilots to land aircraft safely at an airport during poor weather conditions or when cloud cover is low and visibility is limited. Both precision and nonprecision instrument approaches are available at the Airport. **Table 2-11** summarizes the instrument approach procedures currently published for the Airport.

A precision instrument approach provides both vertical and horizontal navigational guidance. The ILS approach to Runway 25 is the only precision approach available at the Airport. Using the ILS indicator instrument in the cockpit, a pilot can position the aircraft on the proper glide path to the runway. The aircraft descends along the glide path to the published decision height, which is the height in feet above MSL at which a pilot must execute a missed approach procedure if the runway (or the runway lights) is not in sight.

A nonprecision instrument approach is one in which the pilot uses only horizontal navigational guidance to line the aircraft up with the runway. When flying such an approach, the pilot proceeds along the specified course and descends to the minimum descent altitude (MDA) while locating the runway. If the runway (or runway lights) is in sight, the pilot may land; otherwise, the pilot must execute a missed approach. Several types of nonprecision approaches have been published for the Airport. Each type of approach uses a specific type of navigational aid or technology to provide the required horizontal guidance for these approaches, such as the Airport’s localizer, VORTAC, and NDB equipment.

Table 2-11 Summary of Published Instrument Approach Procedures for the Airport

APPROACH MINIMUMS BY AIRCRAFT APPROACH CATEGORY ^{1/}						
APPROACH NAME	APPROACH TYPE	A	B	C	D	E
ILS RWY 25 ^{2/}	Precision	4,354 – ½ (same for all approach categories)				
LOC RWY 25 ^{2/}	Nonprecision	4,480 – ½ (same for A, B, and C)			4,480 – ¾ (same for D and E)	
RNAV (GPS) RWY 25 ^{3/}	Nonprecision	4,354 – ½ (same for all approach categories)				
RNAV (GPS) RWY 07 ^{3/}	Nonprecision	4,399 – ¾ (same for all approach categories)				
VOR RWY 25	Nonprecision	4,620 – ½ (same for A and B)		4,620 – ¾	4,620 – 1¼	n.a.
VOR/DME RWY 07	Nonprecision	4,560 – 1 (same for A, B, and C)			4,560 – 1½	
VOR RWY 07	Nonprecision	4,920 – 1	4,920 – 1¼	4,920 – 2¼	4,920 – 2½	n.a.
NDB RWY 25	Nonprecision	4,680 – ¾ (same for A and B)		4,680 – 1	4,680 – 1½	n.a.

Notes: DME = distance measuring equipment; GPS = global positioning system; ILS = instrument landing system; LOC = localizer; NDB = nondirectional radio beacon; RNAV = area navigation; VOR = very high frequency omnidirectional radio range; n.a. = not applicable.

- 1/ Approach minimums listed include descent and visibility minimums. Descent minimums indicate the height in feet above mean sea level at which a pilot, while on approach, must execute a missed approach procedure if the runway (or the runway lights) is not in sight. Visibility minimums are reported in statute miles. Approach minimums may vary depending on the Aircraft Approach Category (A through E), which corresponds to the speed of the approaching aircraft. Aircraft with faster approach speeds are generally held to higher decision heights and visibility minimums. Aircraft Approach Category A is representative of a small single-engine piston aircraft; Aircraft Approach Category C is representative of a large business jet or a narrow-body passenger airline jet.
- 2/ The ILS and LOC approaches for Runway 25 are technically published together as one approach. If the ILS glide slope is not available or an aircraft is not properly equipped to use the ILS, the LOC may be used, resulting in increased minimums.
- 3/ Assuming that aircraft are properly equipped to fly the localizer performance vertical guidance approach. If not so equipped, the decision height and visibility minimums for the standard GPS approach (without vertical guidance) are increased depending on Aircraft Approach Category.

SOURCE: Published instrument approach procedure charts obtained from www.aeroplanner.com (accessed November 2, 2010).

PREPARED BY: Ricondo & Associates, Inc., September 2011.

Nonprecision approaches have also been developed for the Airport that do not require physical equipment to be installed at the Airport. This technology includes area navigation (RNAV) and global positioning systems (GPS). RNAV allows pilots to define electronic waypoints relative to a VORTAC using radial and distance to create pseudo-VORTACs. This technology allows an aircraft to fly point to point on a direct course without having to overfly ground-based navigational aids, and can be used to execute nonprecision approaches. GPS is a satellite-based navigation system that uses a network of 24 orbiting satellites to achieve better accuracy than most land-based navigational aids. GPS technology can be used for both en route navigation and instrument approaches. In the context of instrument approaches at TWF, a wide area augmentation system (WAAS) station (not located on the Airport) enhances the capabilities of GPS signals to allow GPS to be used for nonprecision approaches to precision approach minimums (for Runway 25), without the need for on-Airport equipment.

Visual Approach Procedures

Prior to entering the Airport’s Class D airspace, pilots of aircraft operating under VFR conditions contact ATCT controllers for instructions as to where and how the aircraft is to enter the local traffic pattern for landing. The local traffic pattern consists of a downwind leg, a base leg, and a final approach leg. A standard left-hand

traffic pattern is used at the Airport. ATCT controllers are responsible for the ATC services provided to pilots of aircraft operating in the local traffic pattern within sight of the ATCT. ATCT controllers ensure that aircraft operating in the local traffic pattern are separated from other aircraft operating in the local traffic pattern and from itinerant arrival and departure traffic.

2.4 Regional Setting and Land Use

This section describes the regional setting of the Airport, including the area served by the Airport, an analysis of the socioeconomic data for the area, and an overview of the regional planning and development in the area (including the policies that influence land use within and around the Airport).

2.4.1 AIRPORT SERVICE AREA

The Airport serves an important role in accommodating general aviation, commercial airline service, air cargo, and other aviation activity within its general service area, which primarily consists of the eight counties that in the southcentral Idaho/Magic Valley region, as depicted on Exhibit 2-1. However, the proximity and characteristics of other airports in the area also influence the nature and level of aviation activity at the Airport.

With regard to commercial air service, the Airport's service area (the geographical area from which Airport passengers originate) overlaps the service area of four other commercial airports, including Friedman Memorial Airport, Pocatello Regional Airport, Boise Airport, and Salt Lake City international Airport.¹² **Table 2-12** presents a comparison of the aviation activity, facilities, and market characteristics of TWF and these airports.

As shown in Table 2-12, not all passengers originating their trips from within the Airport service area enplane at the Airport because of "leakage," which occurs when passengers use another airport rather than the airport closest to their residences. A comprehensive market analysis is beyond the scope of this Master Plan Update, but the 2003 *Idaho Air Passenger Demand Study* states that the Airport captures no more than 25 percent of the originating commercial airline passengers in any of the eight counties in the Airport service area, and captures about 25 percent of originating passengers from the theoretical market service area, which is defined as those passengers within a 60-minute drive time of the Airport.¹³ Competition from other airports within a reasonable drive-time distance from TWF affects the Airport's capture rates within its service area. The most significant leakage of potential TWF passengers is captured by Boise Airport, with approximately 44 percent of originating passengers that may otherwise fly out of TWF.

¹² Wilbur Smith Associates, *Idaho Air Passenger Demand Study*, 2003.

¹³ Ibid.

Table 2-12 Comparison of TWF with Other Commercial Service Airports

	MAGIC VALLEY REGIONAL AIRPORT	FRIEDMAN MEMORIAL AIRPORT	POCATELLO REGIONAL AIRPORT	BOISE AIRPORT	SALT LAKE CITY INTERNATIONAL AIRPORT
General Information					
Distance from Twin Falls (and drive time) ^{1/}	6 miles (0.3 hr)	68 miles (1.4 hrs)	111 miles (1.8 hrs)	127 miles (2.0 hrs)	225 miles (3.5 hrs)
Classification ^{2/}	Nonhub	Nonhub	Nonhub	Small hub	Large hub
Aviation Activity (2009)					
Enplaned passengers ^{3/}	25,337	50,540	21,212	1,400,890	9,816,763
Commercial operations ^{4/}	9,336	10,930	7,253	55,331	311,991
Facilities^{5/}					
Commercial runways	1	1	2	2	3
Longest runway	8,700 feet	7,550 feet	9,060 feet	10,000 feet	12,000 feet
Precision approach?	Yes	No	Yes	Yes	Yes
Lowest visibility minimum	½ statute mile	1¼ statute miles	½ statute mile	0 statute miles	0 statute miles
Market Characteristics					
Capture of TWF service area ^{6/}	12%	19%	3%	44%	21%
Capture of Twin Falls County ^{6/}	18%	0%	0%	57%	25%
Airlines serving airport ^{7/}	1	2	1	9	19
Nonstop cities served ^{7/}	1	4	1	19	85
Daily nonstop flights ^{7/}	4	10	4	66	415

Notes:

- 1/ Roadway distance and travel time are measured from each airport to the middle of downtown Twin Falls, as obtained from the American Automobile Association, <http://www.aaa.com> (accessed December 2010).
- 2/ Airport classifications obtained from Federal Aviation Administration, *National Plan of Integrated Airport Systems (2011-2015)*, September 2010.
- 3/ Enplaned passengers at TWF obtained from City of Twin Falls, Airport Department, September 2010. Enplaned passengers at other airports obtained from FAA, *Terminal Area Forecast, Fiscal Years 2010-2030*.
- 4/ Commercial aircraft operations were obtained from the FAA Air Traffic Activity Data System (ATADS), and are reported as the sum of air carrier operations and air taxi operations. ATADS categorizes most regional/commuter airline operations as air taxi, which may also include charter, cargo, and other for-hire aircraft operations.
- 5/ Facility information obtained from www.airnav.com (accessed December 2010). Commercial runways are defined as runways capable of accommodating passenger airline aircraft. A precision instrument approach is defined as a published approach that provides both horizontal and vertical navigation guidance to aircraft landing on a given runway, such as an instrument landing system. Certain precision instrument approaches at Boise Airport and Salt Lake City International Airport allow aircraft to land in zero visibility.
- 6/ Percent capture rates for originating passengers were derived from information in Wilbur Smith Associates, *Idaho Air Passenger Demand Study*, 2003. Capture rates of the TWF service area are for the following counties: Blaine, Camas, Cassia, Gooding, Jerome, Lincoln, Minidoka, and Twin Falls. Percent capture rates for the TWF service area do not total 100 percent because Idaho Falls Regional Airport captures approximately 1 percent of originating passengers within the TWF service area.
- 7/ Airline and nonstop service data were obtained from individual airport websites, accessed August 2010. The data for TWF included Allegiant Air, which discontinued service between TWF and Las Vegas McCarran International Airport in January 2012. Cities served nonstop do not include cities outside the United States.

SOURCE: Ricondo & Associates, Inc., based on the sources noted above.

PREPARED BY: Ricondo & Associates, Inc., September 2011.

Of particular note in Table 2-12 is that all of the airports that compete with TWF have at least one precision instrument approach with published visibility minimums equal to or less than ½ statute mile, except for Friedman Memorial Airport. As the closest commercial service airport to TWF (and the only one located within the Airport's service area), the relatively high visibility minimums at Friedman Memorial Airport indicate the importance of TWF as an alternate airport. Airport records indicate that, during the busy winter ski season in the Sun Valley area, airline passengers are often diverted to TWF and bused to Sun Valley during periods of poor weather conditions.

In addition to commercial service airports, the Airport also faces competition from general aviation airports in the service area for based and transient aircraft operations. **Table 2-13** presents a comparison of the location, facilities, and services at TWF with those at general aviation airports within 50 road miles or a 1-hour drive time of downtown Twin Falls. Facilities such as an ATCT, multiple (and relatively long) runways, and a precision instrument approach, along with numerous services, generally make TWF safer, more accessible, and more desirable for general aviation operations.

2.4.2 SOCIOECONOMIC DATA AND ANALYSIS

The collection and analysis of socioeconomic data for the Airport's service area helps develop an understanding of the characteristics of the region and the change in these characteristics over time, and provides an indication of aviation demand at the Airport.

The economic strength of the Airport Service Area provides the primary support for air transportation at the Airport. A community's economic character affects its potential to generate air traffic. Manufacturing, service industries, primary/resource businesses, agricultural flying, instructional flying, and aircraft sales all generate air transportation activity.

The economic indicators presented in this section include population, personal income per capita, and employment. Sources of data used in this analysis include the U.S. Department of Commerce, Bureau of the Census; the U.S. Department of Labor, Bureau of Labor Statistics; the Idaho Department of Labor; and Woods & Poole Economics, Inc.¹⁴

¹⁴ Woods & Poole Economics, Inc., is a data vendor located in Washington, D.C. that specializes in long-term economic and demographic projections for the 50 states, 3,091 counties, and the District of Columbia in the United States. Its database contains approximately 900 variables for every U.S. county, including population, age, race, ethnicity, income, and employment by industry. Woods & Poole's demographic projections are revised annually to reflect both new computational techniques and new data sources. Its clients include the U.S. Department of Defense, the National Institutes of Health, the U.S. Department of Commerce, Bureau of the Census, and numerous counties and municipalities.

Table 2-13 Comparison of TWF and General Aviation Airports

	MAGIC VALLEY REGIONAL AIRPORT	BUHL MUNICIPAL AIRPORT	BURLEY MUNICIPAL AIRPORT	GOODING MUNICIPAL AIRPORT	JEROME COUNTY AIRPORT
General Information					
County	Twin Falls	Twin Falls	Cassia	Gooding	Jerome
Distance from Twin Falls ^{1/}	6 miles (20 min)	18 miles (25 min)	44 miles (45 min)	37 miles (45 min)	12 miles (20 min)
Classification ^{2/}	Nonhub	General aviation	General aviation	General aviation	General aviation
Aviation Activity (2009) ^{3/}					
Based aircraft	108	33	90	79	50
General aviation operations	22,179	15,255	27,300	21,006	25,500
Local operations	9,670	3,071	7,300	5,337	4,000
Itinerant operations	12,509	12,184	20,000	15,669	21,500
Facilities ^{5/}					
Runways	2	1	2	1	1
Longest runway	8,700 feet	3,900 feet	4,092 feet	4,745 feet	5,001 feet
Instrument approach?	Yes	No	Yes	Yes	Yes
Precision approach?	Yes	No	No	No	No
Airport traffic control tower?	Yes	No	No	No	No
Transient aircraft storage	Hangars, tiedowns	Tiedowns	Tiedowns	Hangars, tiedowns	Tiedowns
Services ^{6/}					
Fixed base operator?	Yes	Yes	Yes	Yes	Yes
Airframe/engine maintenance?	Yes	Yes	Yes	Yes	Yes
Fuel	Avgas, Jet A	Avgas	Avgas, Jet A	Avgas, Jet A	Avgas, Jet A

Notes:

- 1/ Roadway distance and travel time are measured from each airport to the middle of downtown Twin Falls, as obtained from the American Automobile Association, <http://www.aaa.com> (accessed December 2010).
- 2/ Airport classifications obtained from Federal Aviation Administration, *National Plan of Integrated Airport Systems (2011-2015)*, September 2010.
- 3/ Based aircraft and general aviation operations at TWF obtained from City of Twin Falls, Airport Department, September 2010. Based aircraft and general aviation operations at other airports obtained from FAA, *Terminal Area Forecast, Fiscal Years 2010-2030*.
- 4/ Local operations are generally defined as aircraft operating in the traffic pattern or within sight of the airport traffic control tower (if available).
- 5/ Itinerant operations are generally defined as all aircraft operations that are not local.
- 5/ Facility information obtained from www.airnav.com (accessed December 2010). A precision instrument approach is defined as a published approach that provides both horizontal and vertical navigation guidance to aircraft landing on a given runway, such as an instrument landing system.
- 6/ Services information obtained from www.airnav.com (accessed December 2010).

SOURCE: Ricondo & Associates, Inc., based on the sources noted above.

PREPARED BY: Ricondo & Associates, Inc., September 2011.

2.4.2.1 Population

Table 2-14 summarizes the historical and projected population in the Airport Service Area, the State of Idaho, and the United States for selected years between 2000 and 2029. As shown, the Airport Service Area's population increased an average of 0.7 percent per year between 2000 and 2004 and 1.5 percent per year between 2004 and 2009. This population increase in the Airport Service Area was lower than the population increase in the State of Idaho, which averaged 1.7 percent per year between 2000 and 2004 and 2.1 percent per year between 2004 and 2009.

Both the Airport Service Area and the State of Idaho experienced higher population growth than the nation as a whole during that period. From 2000 to 2009, the nation's population increased an average of 0.9 percent per year, while the Airport Service Area and State of Idaho increased an average of 1.1 percent and 1.9 percent per year, respectively, over the same period. Between 2000 and 2009, five of the eight counties (Blaine, Camas, Jerome, Lincoln, and Twin Falls) in the Airport Service Area experienced higher average annual population growth than that experienced nationwide. Twin Falls County, which accounted for 41.8 percent of the Airport Service Area's population in 2009, experienced an average population increase of 1.8 percent per year from 2000 to 2009. During this same 9-year period, according to the U.S. Department of Commerce, Bureau of the Census, the population of the City of Twin Falls increased from 34,949 to 42,741, representing an average growth rate of 2.3 percent per year.

As shown in Table 2-14, population growth in the Airport Service Area is projected to increase from 179,994 in 2009 to approximately 219,232 in 2029, representing an average growth rate of 1.0 percent per year. This rate is lower than the average population growth projected for the State of Idaho (1.6 percent per year) and higher than the average population growth projected for the United States (0.9 percent per year) during this same time period.

2.4.2.2 Personal Income per Capita

One measure of the relative income of an area is personal income per capita. Personal income per capita (PIPC) is a composite measurement of market potential and indicates an individual's general ability to purchase an available product or service. **Table 2-15** presents the historical PIPC for the Airport Service Area, the State of Idaho, and the United States for selected years between 2000 and 2009, and projected PIPC for selected years through 2029. As shown, the average annual growth in PIPC was higher in the Airport Service Area (3.7 percent) than in the State of Idaho (2.8 percent) and in the United States (2.9 percent) between 2000 and 2009. PIPC in the Airport Service Area was \$34,095 in 2009 – higher than in the State of Idaho (\$31,646), but lower than in the United States (\$39,138) in that year.

Within the Airport Service Area, Blaine County has accounted for the highest PIPC, with \$44,543 in 2000 and \$57,716 in 2009. The county in the Airport Service Area with the lowest PIPC is Minidoka, with \$18,524 in 2000 and \$26,337 in 2009. Gooding County accounted for the largest percentage growth in PIPC, which increased from \$23,630 in 2000 to \$35,141 in 2009, representing 48.7 percent total growth, or an average of 4.5 percent per year. Blaine County accounted for the least growth in PIPC, averaging 2.9 percent per year between 2000 and 2009.

Table 2-14 Historical and Projected Resident Population

COUNTIES											
YEAR	BLAINE	CAMAS	CASSIA	GOODING	JEROME	LINCOLN	MINIDOKA	TWIN FALLS	AIRPORT SERVICE AREA	STATE OF IDAHO	UNITED STATES
Historical											
2000	19,123	978	21,393	14,205	18,431	4,047	20,091	64,341	162,609	1,299,551	282,171,957
2004	21,097	1,017	20,967	14,202	18,994	4,237	18,879	67,869	167,262	1,391,718	293,045,739
2009	22,328	1,109	21,698	14,430	21,262	4,645	19,226	75,296	179,994	1,545,801	307,006,550
Projected											
2014	24,639	1,141	22,268	15,016	22,338	4,790	19,422	79,803	189,417	1,686,029	322,220,074
2019	26,989	1,175	22,883	15,631	23,457	4,945	19,660	84,456	199,196	1,829,109	338,042,159
2024	29,351	1,211	23,525	16,263	24,598	5,105	19,924	89,184	209,161	1,968,727	353,901,341
2029	31,736	1,247	24,176	16,902	25,751	5,268	20,193	93,959	219,232	2,119,002	370,504,553
CAGR											
2000 – 2004	2.5%	1.0%	-0.5%	0.0%	0.8%	1.2%	-1.5%	1.3%	0.7%	1.7%	0.9%
2004 – 2009	1.1%	1.7%	0.7%	0.3%	2.3%	1.9%	0.4%	2.1%	1.5%	2.1%	0.9%
2000 – 2009	1.7%	1.4%	0.2%	0.2%	1.6%	1.5%	-0.5%	1.8%	1.1%	1.9%	0.9%
2009 – 2014	2.0%	0.6%	0.5%	0.8%	1.0%	0.6%	0.2%	1.2%	1.0%	1.8%	1.0%
2009 – 2019	1.9%	0.6%	0.5%	0.8%	1.0%	0.6%	0.2%	1.2%	1.0%	1.7%	1.0%
2009 – 2029	1.8%	0.6%	0.5%	0.8%	1.0%	0.6%	0.2%	1.1%	1.0%	1.6%	0.9%

Notes: Projections for 2024 were interpolated based on 2000 through 2025 average annual growth; projections for 2029 were interpolated based on 2025 through 2030 average annual growth; CAGR = compounded annual growth rate.

SOURCES: U.S. Department of Commerce, Bureau of the Census (historical); Woods & Poole Economics, Inc. (projected), October 2010.

PREPARED BY: Ricondo & Associates, Inc., September 2011.

Table 2-15 Historical and Projected Personal Income per Capita

COUNTIES											
YEAR	BLAINE	CAMAS	CASSIA	GOODING	JEROME	LINCOLN	MINIDOKA	TWIN FALLS	AIRPORT SERVICE AREA	STATE OF IDAHO	UNITED STATES
Historical											
2000	\$44,543	\$23,212	\$22,507	\$23,630	\$22,851	\$20,663	\$18,524	\$22,415	\$24,665	\$24,683	\$30,318
2004	\$51,957	\$27,864	\$26,398	\$32,641	\$27,953	\$24,069	\$21,598	\$27,262	\$30,087	\$28,425	\$33,881
2009	\$57,716	\$33,915	\$30,336	\$35,141	\$30,662	\$28,354	\$26,337	\$31,280	\$34,095	\$31,646	\$39,138
Projected											
2014	\$65,886	\$38,921	\$36,065	\$44,176	\$37,410	\$31,902	\$31,010	\$36,236	\$40,211	\$37,216	\$46,235
2019	\$82,134	\$47,989	\$44,230	\$53,101	\$45,341	\$39,126	\$37,939	\$44,668	\$49,653	\$46,733	\$57,953
2024	\$104,399	\$60,034	\$55,126	\$64,916	\$55,894	\$48,769	\$47,165	\$56,037	\$62,393	\$59,914	\$66,203
2029	\$134,204	\$75,750	\$69,330	\$80,169	\$69,580	\$61,352	\$59,186	\$71,007	\$79,213	\$76,813	\$94,794
CAGR											
2000 – 2004	3.9%	4.7%	4.1%	8.4%	5.2%	3.9%	3.9%	5.0%	5.1%	3.6%	2.8%
2004 – 2009	2.1%	4.0%	2.8%	1.5%	1.9%	3.3%	4.0%	2.8%	2.5%	2.2%	2.9%
2000 – 2009	2.9%	4.3%	3.4%	4.5%	3.3%	3.6%	4.0%	3.8%	3.7%	2.8%	2.9%
2009 – 2014	2.7%	2.8%	3.5%	4.7%	4.1%	2.4%	3.3%	3.0%	3.4%	3.3%	3.4%
2009 – 2019	3.6%	3.5%	3.8%	4.2%	4.0%	3.3%	3.7%	3.6%	3.8%	4.0%	4.0%
2009 – 2029	4.3%	4.1%	4.2%	4.2%	4.2%	3.9%	4.1%	4.2%	4.3%	4.5%	4.5%

Notes: Amounts are in current dollars; projections for 2024 were interpolated based on 2000 through 2025 average annual growth; projections for 2029 were interpolated based on 2025 through 2030 average annual growth; CAGR = compounded annual growth rate.

SOURCE: Woods & Poole Economics, Inc., October 2010.

PREPARED BY: Ricondo & Associates, Inc., September 2011.

As shown in Table 2-15, PIPC in the Airport Service Area is projected to increase an average of 4.5 percent per year throughout the planning period, which is comparable to the 4.3 percent average annual increase projected in the State and the nation. PIPC in the Airport Service Area is expected to remain higher than that in the State through 2029. By 2029, PIPC in the Airport Service Area is projected to be \$79,213, and PIPC in the State is projected to be \$76,813. PIPC for the United States as a whole is projected to reach \$94,794 in 2029. Throughout the planning period, the highest average annual growth in PIPC is expected to occur in Blaine County (4.3 percent), while the lowest growth is expected to occur in Lincoln County (3.9 percent).

2.4.2.3 Employment

Labor Force

Table 2-16 presents historical employment data for the Airport Service Area, the State of Idaho, and the United States for 2000, 2004, and 2009, and projected employment for selected years through 2029. Total employment in the Airport Service Area increased from 102,444 workers in 2000 to 112,912 workers in 2009, representing an average increase of 1.1 percent per year. This growth is lower than employment growth in State of Idaho (averaging 1.6 percent per year) and higher than employment growth in the United States (averaging 0.6 percent per year). With the exception of Minidoka County, each county in the Airport Service Area averaged positive growth in employment between 2000 and 2009, with the highest growth occurring in Camas (2.4 percent) and Jerome (2.0 percent) Counties. Employment in Minidoka County decreased an average of 1.7 percent per year, from 10,823 workers in 2000 to 9,263 workers in 2009.

Employment projections for the Airport Service Area through 2029 indicate that the greatest increase in the actual number of workers will occur in Blaine and Twin Falls Counties, which are expected to add 7,127 and 13,078 workers, respectively. Compared to 2009 employment levels, employment growth is projected to total 34.6 percent in Blaine County and 27.8 percent in Twin Falls County. Consequently, these two counties are projected to experience the highest average annual growth in employment between 2009 and 2029 (1.5 percent in Blaine County and 1.2 percent in Twin Falls County).

Table 2-17 summarizes the average annual unemployment rates in the Airport Service Area, the State of Idaho, and the United States for 2000 through 2009. As shown, unemployment rates generally increased from 2000 to 2001 and increased again in 2002. From 2003 through 2007, unemployment rates decreased across all three segments. In 2008, the unemployment rates increased due to a nationwide recession. In 2009, the unemployment rate in the Airport Service Area (7.1 percent) was lower than the rates in the State of Idaho (8.0 percent) and the United States (9.3 percent).

Table 2-16 Historical and Projected Total Employment

COUNTIES											
YEAR	BLAINE	CAMAS	CASSIA	GOODING	JEROME	LINCOLN	MINIDOKA	TWIN FALLS	AIRPORT SERVICE AREA	STATE OF IDAHO	UNITED STATES
Historical											
2000	17,723	559	12,745	8,026	9,864	1,997	10,823	40,707	102,444	781,431	165,370,978
2004	20,140	647	12,321	8,082	10,033	2,119	9,560	42,638	105,540	826,479	169,026,633
2009	20,590	691	12,971	8,265	11,776	2,262	9,263	47,094	112,912	901,064	175,179,046
Projected											
2014	21,653	713	14,000	8,923	12,483	2,371	9,851	50,313	120,307	961,938	184,881,544
2019	23,524	746	14,490	9,260	13,065	2,484	10,007	53,401	126,977	1,032,599	195,675,783
2024	25,541	784	14,994	9,606	13,665	2,606	10,181	56,681	134,058	1,108,346	206,979,966
2029	27,717	817	15,509	9,971	14,287	2,729	10,369	60,172	141,573	1,189,522	218,826,545
CAGR											
2000 – 2004	3.2%	3.7%	-0.8%	0.2%	0.4%	1.5%	-3.1%	1.2%	0.7%	1.4%	0.5%
2004 – 2009	0.4%	1.3%	1.0%	0.4%	3.3%	1.3%	-0.6%	2.0%	1.4%	1.7%	0.7%
2000 – 2009	1.7%	2.4%	0.2%	0.3%	2.0%	1.4%	-1.7%	1.6%	1.1%	1.6%	0.6%
2009 – 2014	1.0%	0.6%	1.5%	1.5%	1.2%	0.9%	1.2%	1.3%	1.3%	1.3%	1.1%
2009 – 2019	1.3%	0.8%	1.1%	1.1%	1.0%	0.9%	0.8%	1.3%	1.2%	1.4%	1.1%
2009 – 2029	1.5%	0.8%	0.9%	0.9%	1.0%	0.9%	0.6%	1.2%	1.1%	1.4%	1.1%

Notes: Projections for 2024 were interpolated from 2000 – 2025 average annual growth rates; projections for 2029 were interpolated from 2025 – 2030 average annual growth rates; CAGR = compounded annual growth rate.

SOURCE: Woods & Poole Economics, Inc., October 2010.

PREPARED BY: Ricondo & Associates, Inc., September 2011.

Table 2-17 Average Annual Unemployment Rates

YEAR	AIRPORT SERVICE AREA	STATE OF IDAHO	UNITED STATES
2000	4.5%	4.6%	4.0%
2001	4.3%	4.9%	4.7%
2002	4.7%	5.4%	5.8%
2003	5.0%	5.2%	6.0%
2004	4.7%	4.6%	5.5%
2005	3.7%	3.7%	5.1%
2006	3.1%	3.0%	4.6%
2007	2.9%	3.0%	4.6%
2008	4.1%	4.9%	5.8%
2009	7.1%	8.0%	9.3%

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, October 2010.
 PREPARED BY: Ricondo & Associates, Inc., September 2011.

Employment Sectors

Table 2-18 presents historical and projected employment by sector for the Airport Service Area, as derived from data obtained from Woods & Poole Economics, Inc. In 2000, Retail Trade was the largest employment sector in the Airport Service Area, with 12,266 workers. Between 2000 and 2009, the Health Care and Social Assistance sector experienced the greatest growth, averaging 5.8 percent per year. Employment in the Real Estate, Rental, and Lease sector increased an average of 5.7 percent per year. No other employment sector averaged greater than a 3.9 percent per year increase.

As shown in Table 2-18, the Retail Trade sector is projected to remain the largest employment sector in the Airport Service Area by 2029, with 14,633 workers. Employment in the Health Care and Social Assistance sector is projected to increase an average of 1.6 percent per year through 2029, totaling 13,301 workers in that year. From 2009 through 2029, the Professional and Technical Services sector is projected to be the fastest growing employment sector, averaging 2.3 percent growth per year over the period. Employment is projected to decrease in three sectors between 2009 and 2029: Utilities, Farm, and Military (projected to decrease averages of 0.7 percent, 0.3 percent, and 0.1 percent per year, respectively).

In keeping with its agricultural history, the Twin Falls area is still an important agricultural center, with many of the largest employers involved in processing food, such as Amalgamated Sugar, Bettencourt Dairies, Clear Springs Foods, ConAgra Foods, Glanbia Foods, Independent Meat Company, Jerome Cheese Company, and McCain Foods. Other top employers in the Airport Service Area include the C3 Call Center, the College of Southern Idaho, Dutchmen RV, Jayco, St. Luke’s Medical Center, and Wal-Mart.¹⁵

¹⁵ Idaho Department of Labor, *Work Force Trend Profiles for the South Central Region*, December 2011.

Table 2-18 Airport Service Area Employment by Sector

EMPLOYMENT SECTOR	EMPLOYMENT BY YEAR			CAGR	
	HISTORICAL		PROJECTED	HISTORICAL	PROJECTED
	2000	2009	2029	2000-2009	2009-2029
Accommodation and Food Services	6,939	7,428	9,281	0.8%	1.1%
Administrative and Waste Services	4,340	5,745	8,961	3.2%	2.2%
Arts, Entertainment, and Recreation	1,570	1,875	2,405	2.0%	1.3%
Construction	7,272	7,597	10,510	0.5%	1.6%
Educational Services	1,151	1,630	2,474	3.9%	2.1%
Farm	11,510	10,261	9,743	-1.3%	-0.3%
Federal Civilian Government	1,087	1,025	1,035	-0.7%	0.0%
Finance and Insurance	2,878	3,456	4,335	2.1%	1.1%
Forestry, Fishing, and Related Activities	2,833	2,450	3,334	-1.6%	1.6%
Health Care and Social Assistance	5,835	9,672	13,301	5.8%	1.6%
Information	1,237	1,619	2,236	3.0%	1.6%
Management of Companies and Enterprises	389	379	471	-0.3%	1.1%
Manufacturing	9,191	8,345	8,287	-1.1%	0.0%
Military	665	692	684	0.4%	-0.1%
Mining	414	548	593	3.2%	0.4%
Other Services	5,336	6,468	9,723	2.2%	2.1%
Professional and Technical Services	4,447	5,412	8,521	2.2%	2.3%
Real Estate, Rental, and Lease	3,808	6,257	7,919	5.7%	1.2%
Retail Trade	12,266	11,986	14,633	-0.3%	1.0%
State and Local Government	11,078	11,159	12,325	0.1%	0.5%
Transportation and Warehousing	4,052	4,840	6,743	2.0%	1.7%
Utilities	336	427	374	2.7%	-0.7%
Wholesale Trade	3,810	3,641	3,685	-0.5%	0.1%
Total/Average^{1/}	102,444	112,912	141,573	1.1%	1.1%

Notes: Projections for 2029 were interpolated from 2025 – 2030 average annual growth; CAGR = compounded annual growth rate.

1/ Columns may not add to totals shown because of rounding.

SOURCE: Woods & Poole Economics, Inc., October 2010.

PREPARED BY: Ricondo & Associates, Inc., September 2011.

2.4.3 REGIONAL PLANNING AND DEVELOPMENT

Land development policies can influence the characteristics of the Airport and the surrounding area. This section identifies the political entities that have jurisdiction over land use and development in the vicinity of the Airport, and describes the existing land use and zoning in the area.

2.4.3.1 Political Jurisdictions

In the State of Idaho, counties and municipalities have control to amend their comprehensive plans and municipal zoning ordinances. Both the City and County have developed comprehensive plans to manage development within their jurisdictions. The City and County jurisdictions with regard to planning and development in the vicinity of the Airport are discussed below.

City of Twin Falls

The City encompasses approximately 17 square miles (City Limits) and oversees an Area of Impact that encompasses approximately 31 square miles, for a total of approximately 48 square miles under the City's jurisdiction. The Area of Impact is primarily agricultural, but is being annexed into the City Limits. The Airport is located on the southern boundary of the Area of Impact (not within City Limits). Title 10, Chapter 8, Section 4 of the *Twin Falls City Code* authorizes the City to issue zoning and building permits within the Area of Impact and to essentially administer the Area of Impact as it administers the City Limits. As such, the City of Twin Falls has jurisdiction over all existing Airport property and controls land use and zoning within the Airport boundary. **Exhibit 2-15** depicts the Airport in relation to the City Limits and the Area of Impact.

Within the City Limits and Area of Impact, the City's Planning and Zoning Department is responsible for helping to plan growth and administer the Comprehensive Plan and Title 10 of the *Twin Falls City Code* (Zoning and Subdivision Regulations). The Planning and Zoning Department exercises these responsibilities by advising the City Manager, the City Council, the City's Planning and Zoning Commission, and the public on issues relating to land use and the City's planning and zoning regulations. The Planning and Zoning Department reviews building permit requests and investigates and seeks resolution of zoning complaints.

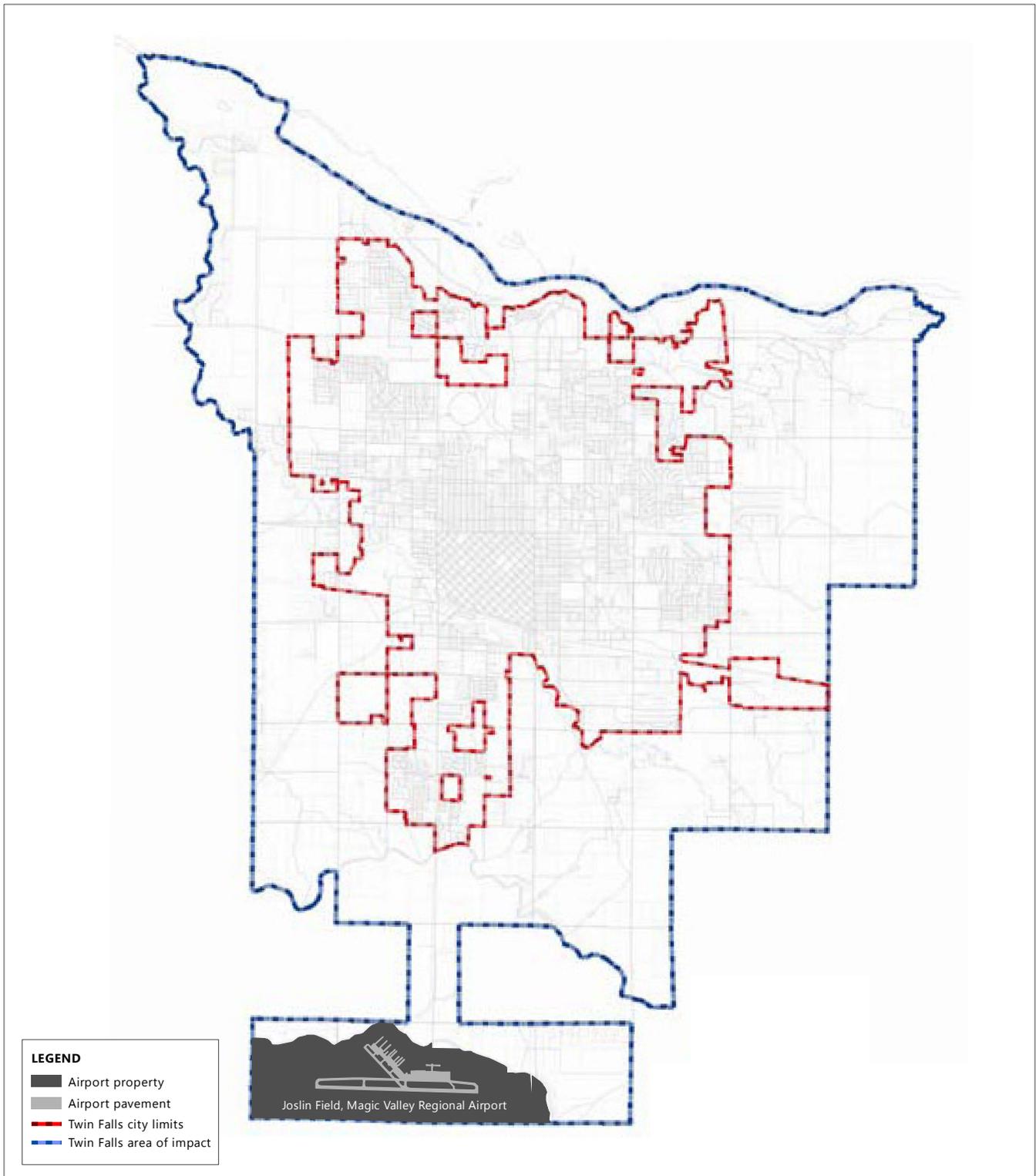
A City Planning Administrator is appointed by the City Manager and confirmed by the City Council. The City Planning Administrator provides assistance and guidance to the Planning and Zoning Commission and the City Council, advises interested persons on the zoning provisions, notifies the news media regarding matters of public interest, assists applicants in preparing required applications, issues zoning permits and notifications, and investigates all violations of the City's Zoning and Subdivision Regulations. The Planning and Zoning Commission provides guidance and assistance to the City Council, holds public hearings as required by law, and grants or denies applications presented it. The Planning and Zoning Commission makes written recommendations to the City Council, over which the City Council has final decision-making powers.

Twin Falls County

Land use and zoning in those areas within the County, but outside the City's Area of Impact, is controlled by Twin Falls County. Members of the County's Planning and Zoning Commission are appointed by the Board of County Commissioners. The Planning and Zoning Commission has the jurisdiction to hold public hearings, conduct studies pertaining to land use within the County, and make recommendations and suggestions to the Board of County Commissioners.

2.4.3.2 Land Use and Zoning

The land use and zoning designations within and around the Airport, as defined by the adopted City and County Comprehensive Plans are described below. Additional information regarding on- and off-Airport land use is presented in Section 6 of this document.



SOURCES: City of Twin Falls, Twin Falls Vision 2030—A Comprehensive Plan for a Sustainable Future, adopted February 2009 (city limits and area of impact); Riedesel Engineering, Inc., January 2011 (Airport property and pavement areas).
PREPARED BY: Ricondo & Associates, Inc., October 2011.

EXHIBIT 2-15



Twin Falls City Limits and Area of Impact

E:\Ricondo GIS\TWF\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-15_Area of Impact.mxd

City of Twin Falls Land Use and Zoning

The City's Comprehensive Plan identifies existing land uses within the City Limits and in the City's Area of Impact. **Exhibit 2-16** depicts existing land uses within and around the Airport, as shown in the City's Comprehensive Plan. All Airport property is designated as Airport, except for the Magic Valley Speedway, which is designated as Commercial. A small parcel located between the northern section of Airport property and the High Line Canal is designated as Industrial, but is currently undeveloped. Areas north and east of the Airport within the Area of Impact are designated primarily as Agriculture-Vacant, with some Residential-Single Family areas. These residential areas indicate the presence of a home or farmhouse on agricultural land and represent very low-density, large-lot uses.

Exhibit 2-17 depicts the future land use plan for the Airport and its immediate surroundings within the Area of Impact. Future land use in this area is designated as Airport, except for the Magic Valley Speedway, which is planned to remain Commercial. Within the Airport use area, the Comprehensive Plan specifies that surrounding land uses should be carefully considered to avoid land use and safety conflicts, and suggests that appropriate land uses surrounding the Airport could include Light Industrial, Manufacturing, Commercial, and Business Parks.¹⁶

The current zoning designations within and around the Airport are depicted on **Exhibit 2-18**. As shown, all land in the southern portion of the Area of Impact is zoned as Airport. The Airport "zone" is intended to prevent the encroachment into airspace required for flight safety, which also increases the safety of residential and other uses on the ground. Horizontal and vertical spacing is generally based on FAA recommendations, and electromagnetic restrictions are provided to prevent the distortion of electronic navigational aids. In addition, light, glare, and smoke are restricted to prevent the loss of visual contact with ground structures or other obstructions.¹⁷

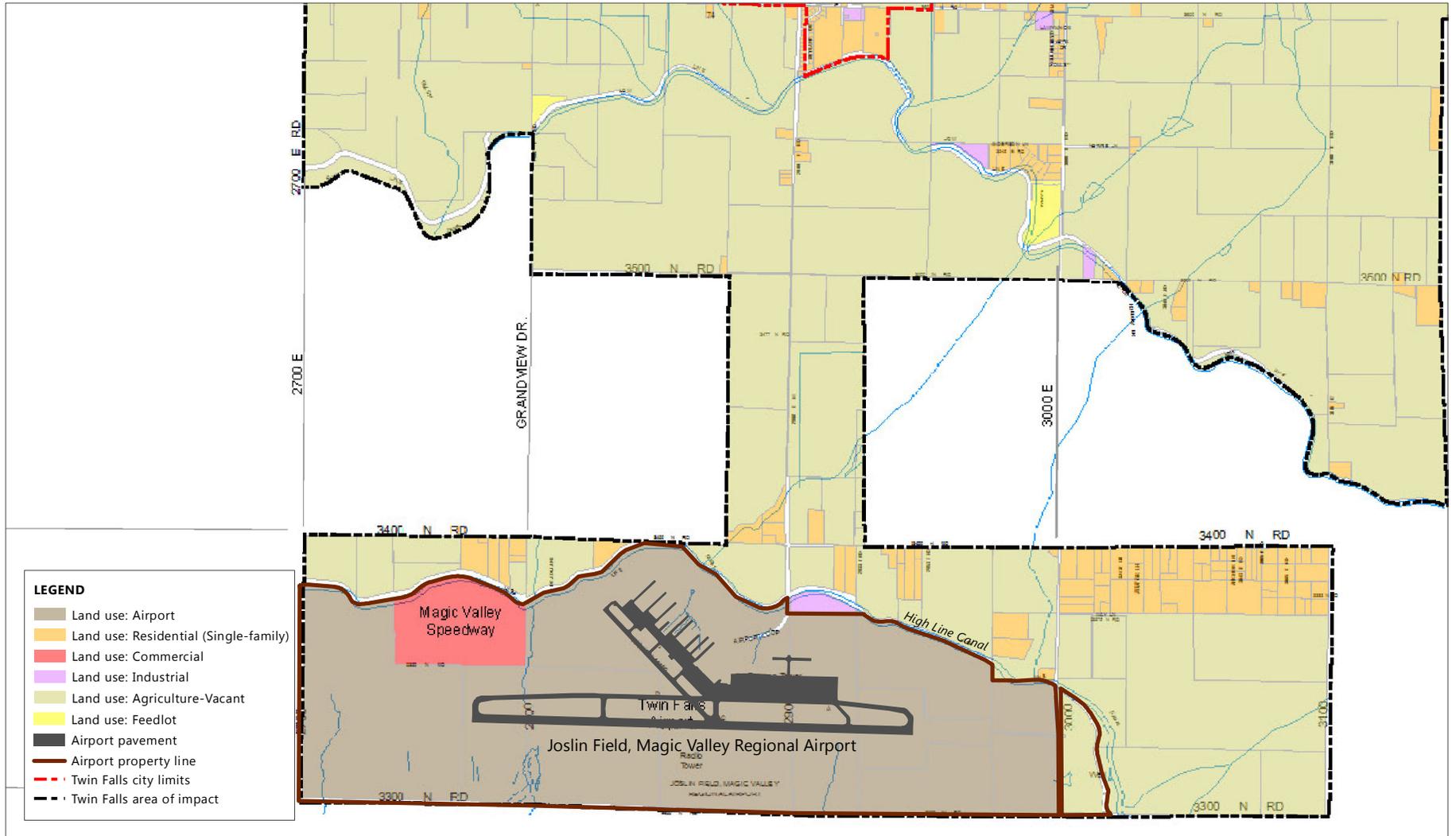
Twin Falls County Land Use and Zoning

The predominate land uses in Twin Falls County have historically been and continue to be agricultural in nature. This holds true for much of the land surrounding the Airport, where irrigation water sources have allowed agricultural activities to thrive. The existing land use surrounding the Airport outside of the City's Area of Impact is designated by the County as Agricultural.

County zoning of the land around the Airport is also Agricultural. According to Title 8, Chapter 6 of the *Twin Falls County Code*, the purpose of the Agricultural zone is to protect the agricultural character and base of the County and allow for limited residential development consistent with the rural environment and to determine suitability for land uses by identifying and delineating prime and poor croplands. Residential use is only encouraged on the least fertile agricultural soils. Potential density would be one residential dwelling per 40 acres and subdivisions are discouraged.

¹⁶ City of Twin Falls, *Twin Falls Vision 2030—A Comprehensive Plan for a Sustainable Future*, adopted February 2009.

¹⁷ *Ibid.*



LEGEND

- Land use: Airport
- Land use: Residential (Single-family)
- Land use: Commercial
- Land use: Industrial
- Land use: Agriculture-Vacant
- Land use: Feedlot
- Airport pavement
- Airport property line
- Twin Falls city limits
- Twin Falls area of impact

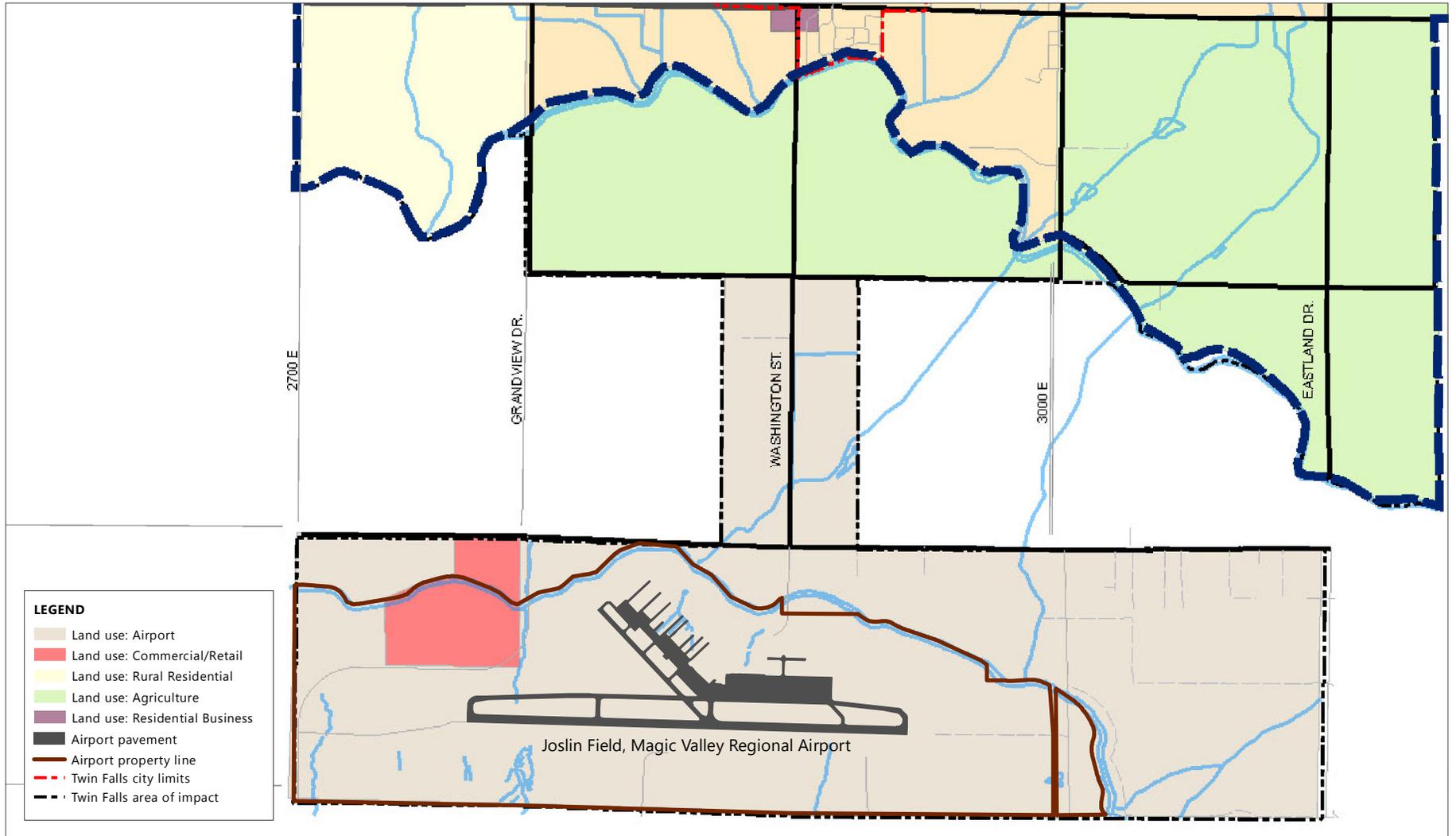
SOURCES: City of Twin Falls, Twin Falls Vision 2030—A Comprehensive Plan for a Sustainable Future, adopted February 2009 (existing land use basemap); Riedesel Engineering, Inc., January 2011 (Airport property line and pavement area).
 PREPARED BY: Ricondo & Associates, Inc., October 2011.

EXHIBIT 2-16



Existing Land Use

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-16_Existing Land Use.mxd



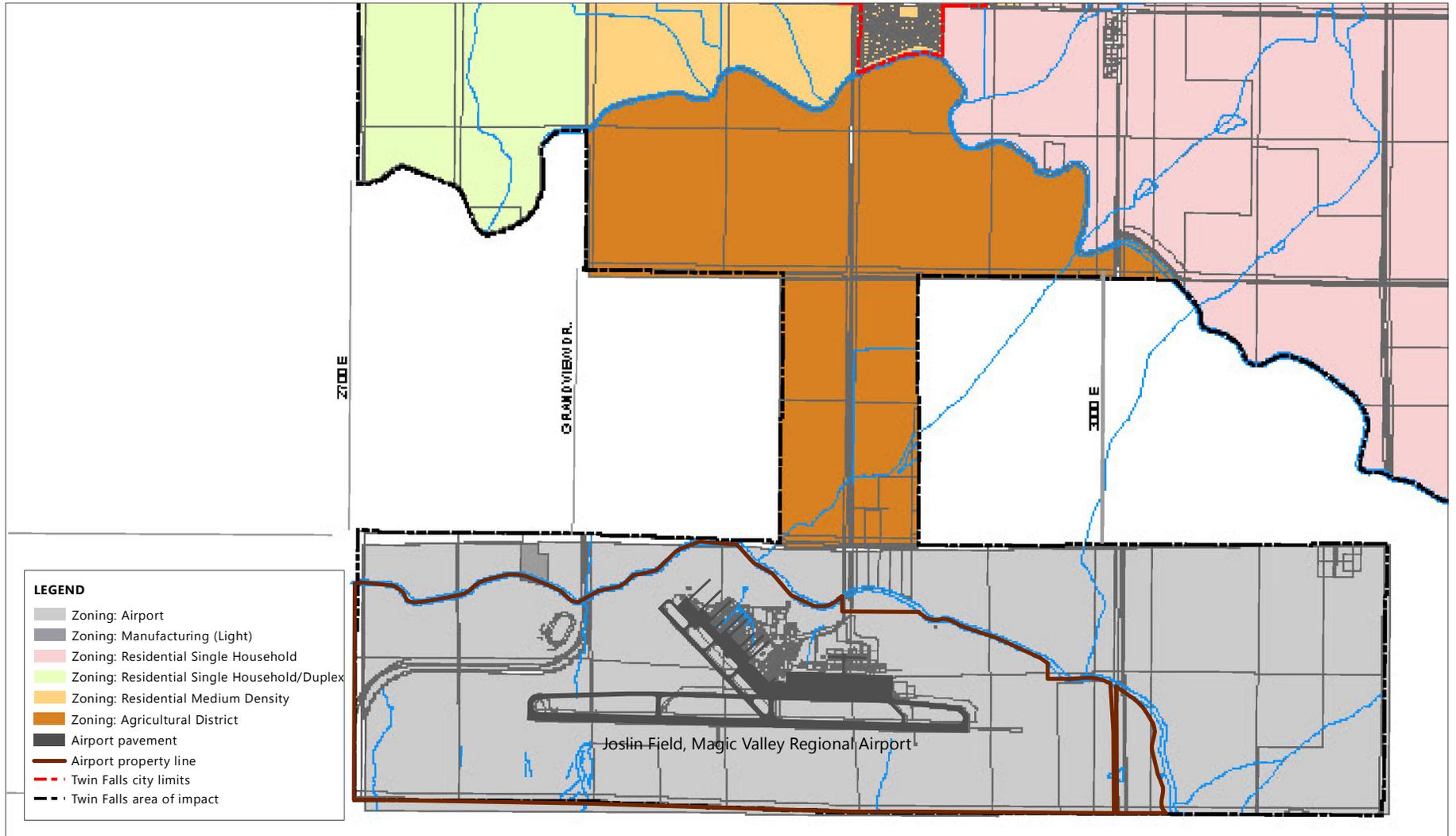
SOURCES: City of Twin Falls, Twin Falls Vision 2030—A Comprehensive Plan for a Sustainable Future, adopted February 2009 (future land use basemap); Riedesel Engineering, Inc., January 2011 (Airport property line and pavement area).
 PREPARED BY: Ricondo & Associates, Inc., October 2011.

EXHIBIT 2-17



Future Land Use Plan

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-17_Future Land Use.mxd



LEGEND

- Zoning: Airport
- Zoning: Manufacturing (Light)
- Zoning: Residential Single Household
- Zoning: Residential Single Household/Duplex
- Zoning: Residential Medium Density
- Zoning: Agricultural District
- Airport pavement
- Airport property line
- Twin Falls city limits
- Twin Falls area of impact

SOURCES: City of Twin Falls, Twin Falls Vision 2030—A Comprehensive Plan for a Sustainable Future, adopted February 2009 (existing zoning basemap); Riedesel Engineering, Inc., January 2011 (Airport property line and pavement area).
 PREPARED BY: Ricondo & Associates, Inc., October 2011.

EXHIBIT 2-18



Existing Zoning

2.5 Environmental Overview

Environmental factors were considered throughout the preparation of this Master Plan Update. Following a review of readily available information, this overview of significant environmental features or conditions at the Airport was prepared to identify those features or conditions that could affect the planning of future Airport development. This information was used to help evaluate various Airport development concepts. A summary of potential environmental impacts associated with implementation of the recommended Airport Development Plan (ADP) is provided in Section 7, "Implementation Plan." Taken together, the discussion and evaluation of environmental factors in this Master Plan Update will help expedite subsequent environmental processing of the ADP projects, pursuant to requirements of the National Environmental Policy Act of 1969 (NEPA).

With regard to airport development, NEPA is implemented through FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts*, and FAA Order 5050.4B, *Airport Environmental Handbook*. FAA Order 1050.1E includes a comprehensive list of environmental impact categories that may apply to airport development projects (in general). This overview is not intended to provide a comprehensive examination of all existing environmental conditions at the Airport pursuant to each of these impact categories. Such a review would typically be undertaken in a detailed NEPA environmental analysis (i.e., an Environmental Assessment or Environmental Impact Statement).

Information used to develop the environmental overview was obtained from various sources, including previous studies (where applicable), various environmental mapping/database tools, the Idaho Department of Environmental Quality (IDEQ), the U.S. Environmental Protection Agency (EPA), and onsite field investigations conducted by North Wind, Inc., on April 18, 2011.

2.5.1 AIR QUALITY

The federal Clean Air Act, as amended, requires individual states to identify general geographic areas where the National Ambient Air Quality Standards (NAAQS) are not met for six criteria pollutants.^{18,19} The U.S. EPA has designated such areas as nonattainment areas. A state with a nonattainment area must prepare a State Implementation Plan (SIP) that sets forth the programs and requirements that the state will implement to meet the NAAQS by the deadlines specified in the Clean Air Act Amendments (CAAA) of 1990 and subsequent rules promulgated by the U.S. EPA.

In Idaho, the IDEQ has been delegated authority by the U.S. EPA to issue air quality permits and enforce air quality regulations. The IDEQ's air quality protection policies are designed to assure compliance with federal and State air quality standards. The IDEQ's air quality programs and policies are developed in the State office (in Boise) and implemented throughout the State by its regional offices, one of which is located in Twin Falls.

¹⁸ The criteria pollutants include ozone (O₃), carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), particulate matter less than 10 microns in diameter (PM₁₀), particulate matter (fine particles) less than 2.5 microns in diameter (PM_{2.5}), and lead (Pb).

¹⁹ The IDEQ has adopted ambient air quality standards that are the same as the NAAQS.

The IDEQ is responsible for developing and maintaining Idaho's SIP, which was originally submitted in 1980, and has since undergone several revisions. The SIP includes the State's rules for controlling air pollution; a site-specific nonattainment area plan for various areas, including northern Ada County and the cities of Pinehurst, Sandpoint, and Pocatello; and facility permits limiting air pollutant emissions. According to the U.S. EPA's *Green Book*,²⁰ Twin Falls County is not currently designated as a nonattainment or maintenance area for any of the NAAQS and, therefore, development projects at the Airport are not subject to the General Conformity regulations of the CAAA (40 CFR 93, Subpart B).

2.5.2 NOISE

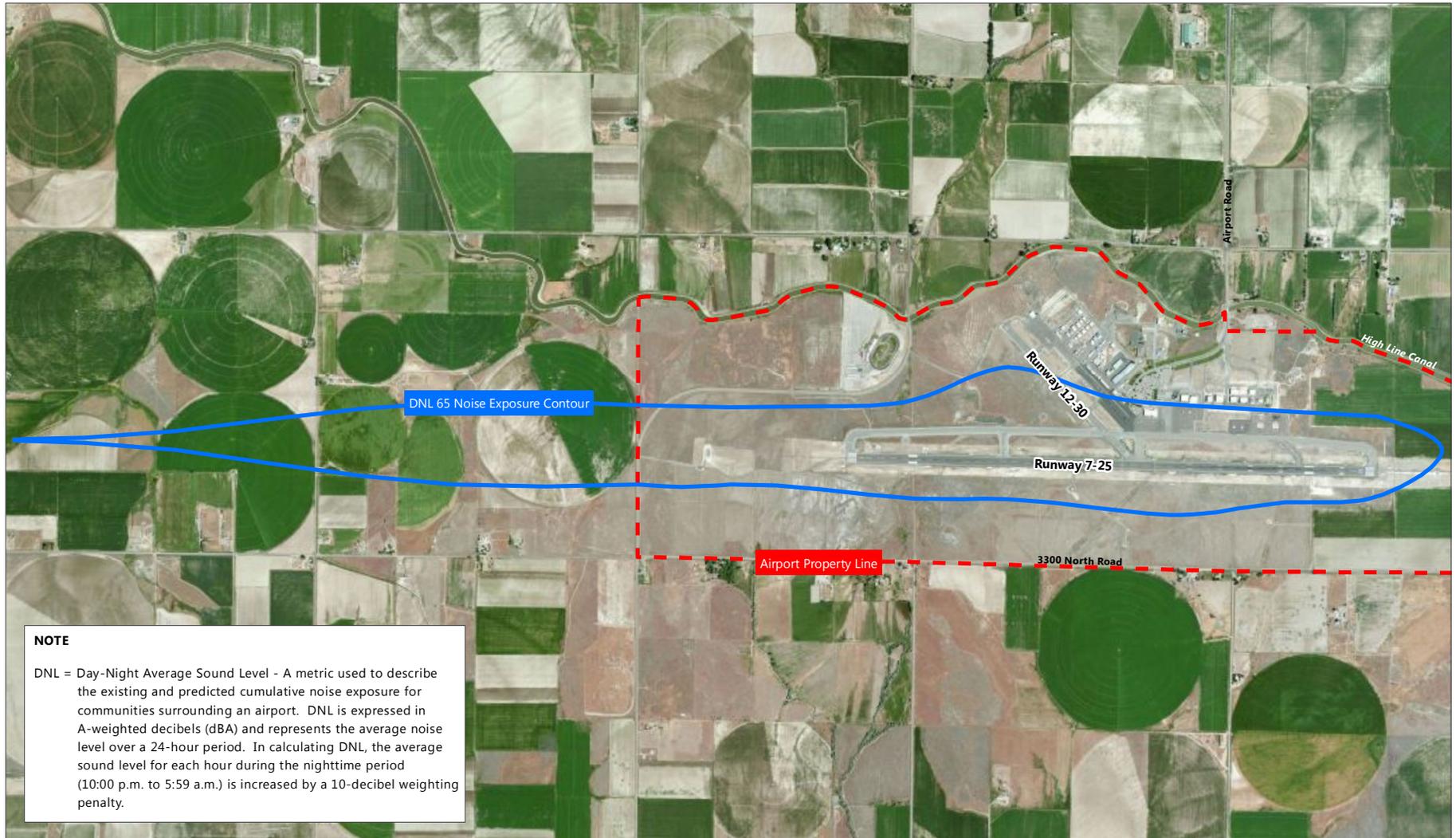
Noise, or unwanted sound, is one of the most intrusive environmental effects associated with airport activity. The effect of aircraft noise on existing and future noise-sensitive land uses is important in relation to the development and growth of the Airport and its environs. Aircraft noise originates from both the engines and the airframe of an aircraft; the engines are, by far, the most significant source of aircraft noise. Although noise from propeller-driven aircraft (mostly regional/commuter and general aviation aircraft) can be annoying to some people, jet aircraft are the primary source of disturbing noise from the Airport.

The day-night average sound level (DNL) is the most common metric used to describe aircraft noise. DNL is expressed in A-weighted decibels (dBA)²¹ and represents the average noise level over a 24-hour period. The FAA's Integrated Noise Model (INM) is the accepted tool for determining the total effect of aircraft noise at and around airports. The INM generates a map of contour lines that connect points of equal DNLs. The FAA considers aircraft noise of DNL 75+ to be severe noise and DNL 65 to 75 to be significant noise for airport environs.

A DNL 65 noise contour was developed for the Airport as part of the 2003 Master Plan Update, as depicted on **Exhibit 2-19**. The contour was based on forecast 2002 aviation activity, totaling 46,281 aircraft operations. In 2009, 33,424 aircraft operations were reported at the Airport. In addition, the aircraft fleet mix and arrival/departure routes at the Airport have not changed significantly since 2002. Therefore, the DNL 65 noise contour presented on Exhibit 2-19 was assumed to be representative, if not a very conservative estimate, of the existing noise exposure conditions at the Airport. As shown on Exhibit 2-19, the DNL 65 noise contour is partially contained within Airport property, with an elongated area that extends west of the Airport. This area reflects departures from Runway 25, which, based on prevailing wind conditions, is the predominant departure runway used at the Airport. Although not shown, areas of noise exposure in excess of DNL 65 would be confined to Airport property. Although extending off Airport property, the area exposed to DNL 65 does not encompass any noise sensitive land uses, such as residences, churches, schools, hospitals, and the like. Rather, the area underlying the DNL 65 contour is predominantly open/pasture land, which is considered a compatible land use in accordance with 14 CFR Part 150, *Airport Noise Compatibility Planning*.

²⁰ U.S. Environmental Protection Agency, *Green Book*, <http://www.epa.gov/oar/oaqps/greenbk/> (accessed May 18, 2011).

²¹ The decibel (dB) is a unit used to describe sound pressure levels. When written as "dBA", the "A" indicates that the sound has been filtered to reduce the strength of very low and very high frequencies, much as the human ear does. Aircraft noise exposure analyses are typically based on this A-weighted scale of sound measurement.



NOTE

DNL = Day-Night Average Sound Level - A metric used to describe the existing and predicted cumulative noise exposure for communities surrounding an airport. DNL is expressed in A-weighted decibels (dBA) and represents the average noise level over a 24-hour period. In calculating DNL, the average sound level for each hour during the nighttime period (10:00 p.m. to 5:59 a.m.) is increased by a 10-decibel weighting penalty.

SOURCES: ESRI, May 2010 (Bing Maps aerial photograph); Riedesel Engineering, Inc. and Washington Group International, Joslin Field, Magic Valley Regional Airport Master Plan Update, September 2003 (DNL 65 noise exposure contour); Riedesel Engineering, Inc., January 2011 (Airport property line).
 PREPARED BY: Ricondo & Associates, Inc., October 2011.

EXHIBIT 2-19



Noise Exposure Contour

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-19_Noise Exposure Contour.mxd

2.5.1 AQUATIC FEATURES

This section identifies the significant aquatic features located on or in the vicinity of the Airport. Identification of these features is important, as the physical effects on or contamination of such features as a result of airport operations or development may have negative effects on important habitats and water quality. **Exhibit 2-20** identifies aquatic features located on and in the vicinity of the Airport.

2.5.1.1 Surface Water

The most prominent surface water feature in the vicinity of the Airport is the High Line Canal, which runs along the northern edge of the Airport. The 36-mile canal provides irrigation water for thousands of acres along its 36-mile run from Salmon Falls Canyon to the town of Castleford. The canal forms the southern boundary of the Twin Falls irrigation tract, which is managed by the Twin Falls Canal Company (TFCC). During a normal water year, the TFCC indirectly delivers Snake River water to the High Line Canal (via the Twin Falls Main Canal) from approximately mid-April to mid-October. However, during drought years when irrigation water is short, the water may be delivered at reduced rates or over a shorter time period.²²

2.5.1.2 Stormwater Drainage

Stormwater runoff is generated by gradient-induced drainage of paved and impervious surfaces. Activities such as aircraft washing, fueling, deicing, and minor maintenance on paved surfaces can result in contaminants in stormwater runoff. As previously described in Section 2.2.6, stormwater at the Airport is captured by several retention basins located primarily on the north side of the Airport along the High Line Canal, where the excess water either evaporates or is filtrated in the soil.

2.5.1.3 Groundwater

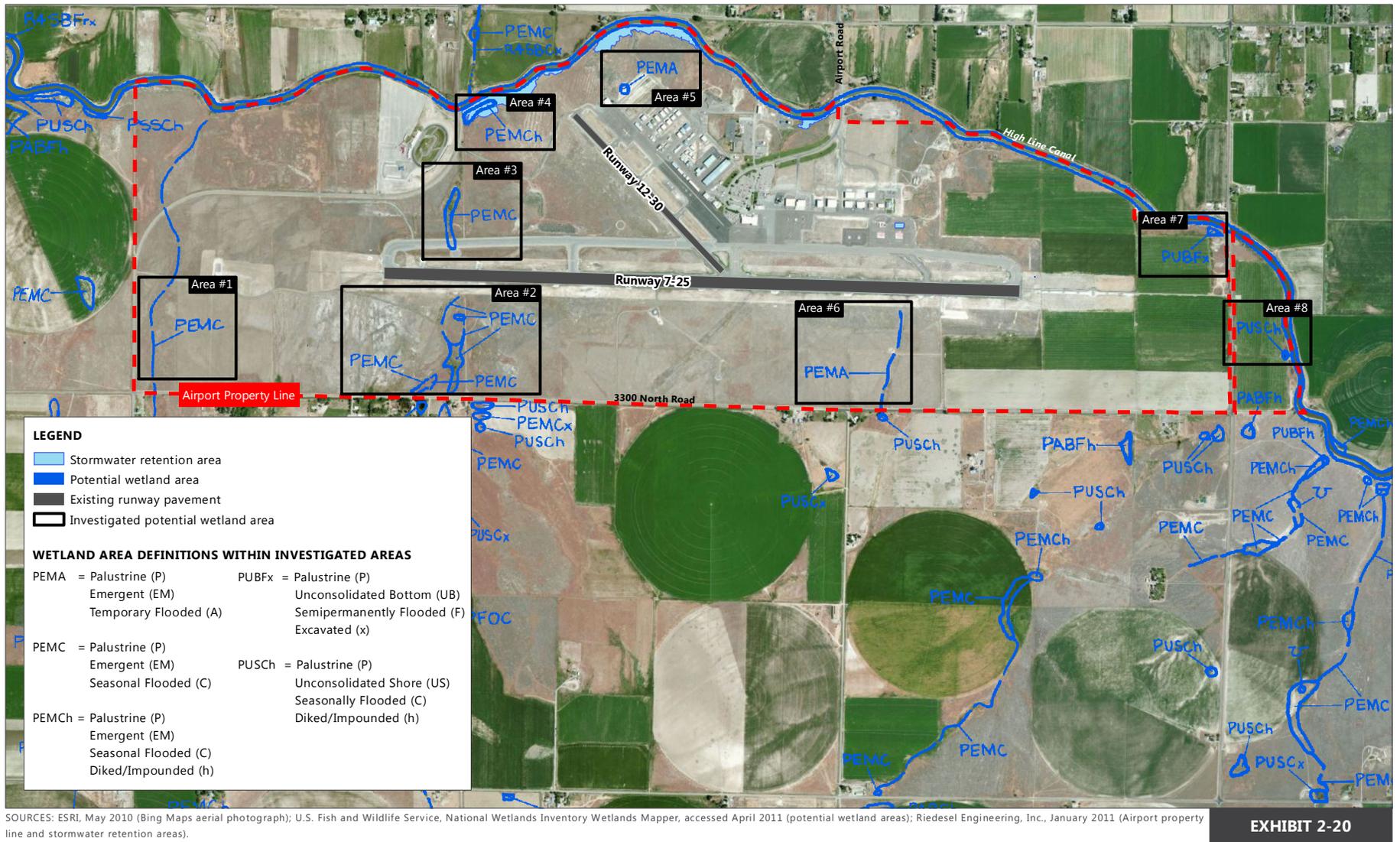
The Airport lies within the Snake River Plain Aquifer area, which was designated a sole source aquifer in 1991. The aquifer stretches across much of southcentral Idaho and is Idaho's largest basalt aquifer, covering an area of approximately 10,800 square miles, and is one of the most productive aquifers in the nation.²³

The IDEQ is tasked with protecting the quality of groundwater in Idaho. According to Idaho's Ground Water Quality Rule, it is illegal to cause or allow the release of a contaminant into the environment in a manner that causes a groundwater quality standard to be exceeded, injures a beneficial use of groundwater, or is not in accordance with a permit, consent order, or applicable best management practice.²⁴

²² Brockway Engineering and J-U-B Engineers, Inc., *City of Twin Falls Water System Facilities Plan*, October 2009.

²³ Idaho Department of Environmental Quality.

²⁴ Idaho Administrative Procedures Act 58, Title 1, Chapter 11, "Ground Water Quality Rule," 2011.



Aquatic Features

E:\Ricondo GIS\WPMaster Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-20_Aquatic Features.mxd

2.5.1.4 Wetlands

Wetlands are defined as those areas that are inundated by surface or groundwater at a frequency sufficient to support vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas, such as sloughs, wet meadows, river overflows, mud flats, and natural ponds. Wetlands also include estuarine areas, tidal overflows, and shallow lakes and ponds with emergent vegetation.

Exhibit 2-20 depicts potential wetland areas on and in the vicinity of the Airport, which were obtained from the National Wetlands Inventory (NWI) Wetlands Mapper. As shown, eight potential wetland areas have been identified within the Airport property, representing the following five types:²⁵

- **Palustrine Emergent Temporary Flooded (PEMA)** – Palustrine (P) is a system of wetlands that includes all nontidal freshwater wetlands containing trees, shrubs, emergent (EM), as well as habitats where tidal-driven salinity is below 0.5 part salt per 1,000 parts seawater. Nontidal wetlands less than 20 acres that lack these plant characteristics are also palustrine. Emergent is a class of wetlands characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. Temporary Flooded (A) is a water regime defined where water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the growing season. Plants that grow in both uplands and wetlands may be characteristic of this water regime.
- **Palustrine Emergent Seasonal Flooded (PEMC)** – The system (P) and class (EM) of this wetland type are defined above. The water regime of this wetland type is Seasonal Flooded (C), which is defined where surface water is present for extended periods, especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to well below the ground surface.
- **Palustrine Emergent Seasonal Flooded Diked/Impounded (PEMCh)** – The system (P), class (EM), and water regime (C) of this wetland type is the same as PEMC described above. This type of wetland is further classified as Diked/Impounded (h), which describes wetlands that were created or modified by a manmade barrier or dam that obstructs the inflow or outflow of water.
- **Palustrine Unconsolidated Bottom Semipermanently Flooded Excavated (PUBFx)** – The system (P) of this wetland type is defined above. Unconsolidated Bottom (UB) is a class that includes all wetlands and deepwater habitats with at least 25 percent cover of particles smaller than stones and a vegetative cover less than 30 percent. The water regime is defined as Semipermanently Flooded (F), meaning that surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface. This wetland type is further classified as Excavated (x), which describes wetlands that lie within a basin or channel that have been dug, gouged, blasted, or suctioned through artificial means by man.

²⁵ Wetland areas and definitions obtained from the U.S. Fish and Wildlife Service, *National Wetlands Inventory*, <http://www.fws.gov/wetlands/> (accessed June 15, 2011).

- **Palustrine Unconsolidated Shore Seasonally Flooded Diked/Impounded (PUSCh)** – The system (P) of this wetland type is defined above. Unconsolidated Shore (US) is a class that includes all wetland habitats having two characteristics: (1) unconsolidated substrates with less than 75 percent areal cover of stones, boulders, or bedrock and (2) less than 30 percent areal cover of vegetation. The water regime (C) is defined as Seasonally Flooded, as previously described. The Diked/Impounded (h) classification was also described previously.

An initial investigation of the eight potential wetland areas on Airport property was conducted during a field survey by North Wind, Inc., on April 18, 2011, to determine if they meet the three criteria necessary to identify wetlands, as defined jointly by the U.S. EPA (40 CFR 230.3) and the U.S. Army Corps of Engineers (ACE) (33 CFR 328.3).²⁶ According to the initial investigation, only one area within Airport property met the U.S. EPA/U.S. ACE criteria. A willow pocket was observed near the High Line Canal, which supports wetland indicators (Area #4 on Exhibit 2-20).²⁷ The other seven potential wetland areas on the Airport include depressions, drainages, and canals, but were not found to support any wetland indicators, according to the field survey. Wetland areas identified on NWI maps that are located outside Airport property were not investigated by a field survey.

2.5.1.5 Floodplains

As defined in Executive Order 11988, *Floodplain Management*, floodplains are the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands. At a minimum, floodplains include any area subject to a 1.0 percent or greater chance of a flood in any given year (i.e., the area that would be inundated by a 100-year flood). The Executive Order directs federal agencies to take action to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial value served by floodplains. According to applicable Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), the Airport and surrounding area are located in an area determined to be outside the 0.2 percent annual chance floodplain.

2.5.2 TERRESTRIAL FEATURES

This section documents various terrestrial features on and in the vicinity of the Airport to identify features/resources that may be affected by Airport development. **Exhibit 2-21** depicts land areas on and in the vicinity of the Airport.

2.5.2.1 Landfill

A prominent terrestrial feature on the Airport is a former County landfill, which is believed to have operated from around 1940 to the 1960s. As shown on Exhibit 2-21, the landfill area is generally located in a disturbed area of the northwest portion of the Airport, surrounding the Runway 12 threshold and a portion of the west building area. The generalized landfill boundary was estimated by Riedesel Engineering, Inc., in June 2011 based on aerial photographs, field reconnaissance, and construction experience at the Airport. Further delineation would be required to determine the precise extent of the landfill, as well as the nature of its contents.

²⁶ U.S. EPA/U.S. ACE wetland criteria include various types, amounts, and characterizations of vegetation, soils, and hydrology.

²⁷ Field survey conducted by North Wind, Inc., April 18, 2011.



SOURCES: ESRI, May 2010 (Bing Maps aerial photograph); U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed March 2011 (farmland designations); Riedesel Engineering, Inc., June 2011 (estimated landfill boundary); Riedesel Engineering, Inc., January 2011 (Airport property line).
PREPARED BY: Ricondo & Associates, Inc., October 2011.

EXHIBIT 2-21



Terrestrial Features

E:\Ricondo GIS\TWP\Master Plan Update\Exhibits\Section 2 - Existing Conditions\Exhibit 2-21_Terrestrial Features.mxd

Existence of the landfill was confirmed during the field survey conducted by North Wind, Inc., on April 18, 2011. During that survey, the site was found to consist of numerous tin can and glass artifacts, as well as automobile and appliance parts. Evidence of construction waste included concrete fragments and a few asphalt piles. The artifacts were exposed on the ground surface in widely dispersed concentrations. The site is generally characterized as a shallow depression with gently sloping sides. Deposits are aeolian and consist of tan loamy silt. Vegetation is mostly weedy consisting of cheatgrass and Russian thistle.

2.5.2.2 Farmlands

Important farmlands generally include all pasturelands, croplands, and forests considered to be prime, unique, or statewide or locally important lands, as reported by the U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS), and defined as follows:

- **Prime farmland** – This land has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimal use of fuel, fertilizer, pesticides, or products.
- **Unique farmland** – This land is used for producing high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture necessary to produce high quality crops or high yields of such crops economically.
- **Statewide and locally important farmland** – This land has been designated as “important” by either a state government or by county commissioners or an equivalent elected body.

The landscape of the Airport can be characterized as a relatively level, broad, gentle north-facing slope surrounded by farm fields and pasture land. Some of this land includes active farmland. As depicted on Exhibit 2-21, land within and in the vicinity of the Airport is generally characterized as either “not prime farmland” or “prime farmland if irrigated.” Additional investigation of these lands would be necessary to determine if a dependable irrigation source of adequate quality is available within the prime lands.

2.5.2.3 Endangered and Threatened Species

The Endangered Species Act, as amended, protects federally listed species and protects against the deterioration of critical habitat. Section 7 of the Endangered Species Act mandates all federal agencies to consult with the U.S. Fish and Wildlife Service (FWS) regarding any federal action that may affect a federally listed species. The term “endangered species” means any member of the animal kingdom (mammal, fish, bird, etc.) or plant kingdom (seeds, roots, etc.) that is in danger of extinction throughout all or a significant portion of its range. “Threatened species” refers to those members of the animal or plant kingdom that are likely to become endangered within the foreseeable future.

The Airport environs consist of areas of agricultural lands, undeveloped disturbed land, and undeveloped vacant land in its native desert state. The semi-arid, variable weather conditions of the local environs, combined with the exposed location of the Airport, support a plant community dominated by grasses and intermittent sagebrush.

Potential habitat exists in the less-developed areas of Airport property for several animal species, including mice and other small rodents, black-tailed jackrabbits, coyotes, and badgers. Birds commonly found in the vicinity of the Airport include the western meadowlark, common raven, and occasional sightings of raptors, waterfowl, and upland game birds. No perennial surface waters that support fish populations are located on Airport property. The nearest perennial surface water is Rock Creek, located approximately 4 miles east of the Airport. The High Line Canal, located at the northern edge of the Airport, conveys water only during the irrigation season, limiting the habitat value of the canal for aquatic species.

The species listed, or that are candidates for listing, by the U.S. FWS under the Endangered Species Act within Twin Falls County are presented in **Table 2-19**.

Table 2-19 Federally Listed and Candidate Fish and Wildlife Species in Twin Falls County

SPECIES	SCIENTIFIC NAME	FEDERAL STATUS
Banbury Springs lanx	<i>Lanx sp.</i>	Endangered
Bliss Rapids snail	<i>Taylorconcha serpenticola</i>	Threatened
Snake River physa snail	<i>Haitia (Physa) natricinia</i>	Endangered
North American wolverine	<i>Gulo luscus</i>	Candidate
Columbia spotted frog – Great Basin population	<i>Rana luteiventris</i>	Candidate
Greater sage-grouse	<i>Centrocercus urophasianus</i>	Candidate
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate

SOURCE: U.S. Fish and Wildlife Service, Pacific Region, Idaho Fish and Wildlife Office, May 9, 2011 update, <http://www.fws.gov/idaho/species/IdahoSpeciesList.pdf> (accessed August 2, 2011).
 PREPARED BY: Ricondo & Associates, Inc., September 2011.

No federally listed species or prime or unique habitat for the species listed in Table 2-19 are known to exist in the Airport area. Habitat for the yellow-billed cuckoo is absent because of the lack of riparian gallery forests. In addition, no habitat is present for the wolverine, Columbia spotted frog, or greater sage-grouse on or around the Airport.

2.5.3 CULTURAL FEATURES

An understanding of cultural features on and in the vicinity of the Airport is necessary so that potential development projects do not significantly affect features of cultural importance. Cultural features include U.S. Department of Transportation (DOT) Act, Section 4(f) lands, as well as historic, architectural, or archaeological features of cultural importance.

2.5.3.1 Section 4(f) Lands

Section 4(f) of the DOT Act (recodified and renumbered as Section 303C of Title 49 of the United States Code [U.S.C.]) states that the U.S. DOT Secretary shall not approve any project using publicly owned land that is considered to be of national, state, or local significance, such as a publicly owned park or recreation area, or a

wildlife or waterfowl refuge. There are no publicly owned parks, recreation areas, or wildlife or waterfowl refuges on or in the immediate vicinity of the Airport.

2.5.3.2 Historic, Architectural, Archaeological, and Cultural Resources

Historic, architectural, archaeological, and cultural resources are addressed pursuant to two main federal acts:

- **National Historic Preservation Act of 1966** – This act requires an initial review to determine if properties listed in the National Register of Historic Places (NRHP) or properties eligible for inclusion in the NRHP would be affected by a proposed project. Properties listed in the NRHP must be at least 50 years old unless the property is deemed to be of exceptional historical or cultural significance.
- **Archaeological and Historic Preservation Act of 1974** – This act requires a survey, recovery, and preservation of historical and archaeological materials that may be destroyed or irreparably lost as the result of a federal, federally licensed, or federally funded action.

Impacts to historic, architectural, archaeological, and cultural resources can result from airport development and include both direct (e.g., relocation or disruption of a site caused by construction) and indirect (e.g., noise, air pollution, water pollution) impacts.

A file search was conducted at the Idaho State Historic Preservation Office (SHPO) by North Wind, Inc., on January 25, 2011, in Boise, Idaho. **Table 2-20** summarizes the results of the file search, which revealed seven sites that have been recorded within one mile of the Airport. Irrigation system-related sites include the High Line Canal, the High Line Canal Bridge, and the Lateral 13 Division 2 High Line Canal. Three previously recorded sites are historic houses. One site is an unknown historic site.

Table 2-20 Previously Recorded Historic Sites in the Vicinity of TWF

SITE NUMBER	TYPE OF PROPERTY	ARTIFACTS/FEATURES	NRHP ELIGIBILITY	NRHP CRITERIA ^{1/}
	High Line Canal	Channel, headgates, check dams	Eligible	A
10TF1700	Lateral 13 Division 2 High Line Canal	Channel, headgates, check dams	Eligible	A, C
83-15660	Unknown	Unknown	Not eligible	
83-19065	Highline Canal Bridge	Concrete walls, abutments, and deck	Not eligible	
83-19066	House	House	Not eligible	
83-19067	House	House	Not eligible	
83-19068	House	House	Not eligible	

Notes: NRHP = National Register of Historic Places.

1/ NRHP Criteria: A = artifacts/features associated with events that have made a significant contribution to the broad patterns of U.S. history; C = artifacts/features that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction.

SOURCE: North Wind, Inc., January 2011, based on a file search conducted at the Idaho State Historic Preservation Office on January 25, 2011.

PREPARED BY: Ricondo & Associates, Inc., September 2011.

North Wind, Inc., checked the BLM's Historic General Land Office records for the possibility of historic homesteads located on current Airport property.²⁸ In 1934, one 40-acre parcel of patented land located on the Airport had the title transferred to Alonzo Griffin under the Homestead Act of 1862. According to the field survey conducted by North Wind, Inc., on April 18, 2011, the previously described former County landfill should be considered eligible for listing on the NRHP under Criterion D. Under Criterion D, the landfill has potential for intact datable deposits that can reveal information on demographics, consumption patterns, trade, and the obsolescence of various goods of the Twin Falls area in the mid twentieth century.

2.5.4 SUMMARY OF PRINCIPAL ENVIRONMENTAL CONCERNS

Based on the environmental overview, the primary environmental features or conditions that should be considered when identifying and analyzing future Airport development projects include the following:

- **Air quality** – Any future construction projects at the Airport may generate air pollutant emissions resulting from engine exhaust, earthmoving activities, and other sources. The nature and amount of such construction activity would dictate whether or not resulting emissions would be considered significant.
- **Water quality** – Water features on and in the vicinity of the Airport are susceptible to potential contamination from typical Airport activities, particularly construction. New or expanded pavement areas increase stormwater runoff, which must be properly contained to avoid contaminating surface water and groundwater resources.
- **Wetlands** – Upon initial investigation, one wetland pocket was identified and verified on Airport property. However, several unverified potential wetland areas are located immediately beyond Airport property. A more thorough investigation of potential wetland areas (both on-Airport and off-Airport) would be required if future Airport development is planned in the vicinity of any of these potential wetland areas.
- **Landfill** – The site of a former County landfill is located on Airport property. Although the approximate boundary and nature of the contents were estimated through initial investigations, further investigation will be required to provide more detailed information about the site. The site may contain hazardous waste and may also be classified as a feature of cultural/historical significance. Future development should be planned giving consideration to the potential sensitivity of this area.
- **Farmlands** – Although no prime or unique farmlands exist on or in the vicinity of the Airport, portions of the land surrounding the Airport are designated as prime farmland if irrigated. While further investigation would be required to determine if a dependable irrigation source of adequate quality is available in these areas, the location and potential sensitivity of these lands should be considered, particularly for any off-Airport development.

²⁸ U.S. Department of the Interior, Bureau of Land Management, General Land Office Records Automation website, <http://www.glorerecords.blm.gov/> (accessed by North Wind, Inc., April 14, 2011).