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Executive Summary

E.S.1 General

An Airport Master Plan is a comprehensive study of an airport that describes short-, medium-, and long-term development plans to meet future aviation demand. Master planning studies that address major revisions are referred to as "Master Plans" while those that only change parts of the existing document and require a relatively low level of effort are referred to as "Master Plan Updates."

The elements of the master planning process vary in the level of detail and complexity depending upon the size, function, and problems of the individual airport. Airport Master Plans are prepared to support the creation of a new airport or the modernization or expansion of an existing airport. The Master Plan presents the strategy for the development of the airport by providing a framework to cost-effectively satisfy aviation demand while considering the potential environmental and socioeconomic impacts.

Master plans generally meet the following objectives:

- Document the issues that the proposed development will correct or mitigate;
- Justify the proposed development with technical, economic, and environmental investigation of designs and alternatives;
- Provide an effective graphic representation of the development of the airport and the anticipated land uses in the vicinity of the airport;
- Establish a realistic schedule, especially for the short-term, for the implementation of the development proposed;
- Propose an achievable financial plan to support the implementation schedule;
- Provide sufficient project scope and detail for future environmental evaluations that may be required before the project is approved;
- Provide a plan that adequately addresses the issues and satisfies local, state, and Federal regulations;
- Document policies and future aeronautical demand to support municipal or local deliberations on land use controls, spending, debt, and other policies necessary to preserve the integrity of the airport and its surroundings; and
- Establish the framework for continued planning.

The Master Plan usually includes a pre-planning phase, public involvement, a review of environmental considerations, an inventory of existing conditions, forecasts of aeronautical demand, facility requirements, alternative development and evaluation, airport layout plans, a facilities implementation plan, and a financial feasibility analysis. The Airport Layout Plan drawings are a key product of the master plan.

E.S.2 Airport Funding

The Airport Improvement Program (AIP) was established by the Airport and Airway Improvement Act of 1982 to provide funding to airports on a priority needed basis. The FAA (Federal Aviation Administration) coordinates this program.

Revenues that fund the AIP program are generated from taxes on aviation activity such as the sale of aviation fuel and oil, aircraft, aircraft parts, and airline tickets. The AIP is a user funded program and is not funded by federal income tax dollars. The AIP funds are collected in the Airport and Airway Trust fund which is divided into several entitlements. While some of the funding is used for FAA overhead costs, the majority of the money is distributed to community airports through grants. Eligible airports range from small community facilities to the largest commercial airports in the national system.

Eligible projects include those improvements that enhance airport safety, capacity, security, and address environmental concerns. Aviation demand at the airport must justify the projects. Eligible projects include such things as runway construction, airfield lighting, land acquisition, planning studies, and

weather observation stations (AWOS). Ineligible projects include such things as landscaping, marketing plans, improvements for commercial enterprises, and maintenance or repairs of buildings. Currently, 95 percent of the total cost for eligible AIP projects are paid for through the federal grant funds.

There are several entitlements that are included within the AIP. A non-primary entitlement of $150,000 per year is granted to smaller general aviation airports under the current legislation. The non-primary entitlement can be stored for up to four years for larger projects. If a project exceeds that amount, it may be eligible for state apportionment funds, money granted to the State of Wyoming through the AIP program for Wyoming projects. If the project exceeds both the non-primary and state apportionment funds available or is a high priority, it can compete on a regional level for discretionary funds.

The State of Wyoming Department of Transportation (WYDOT), Division of Aeronautics also collects funds for aviation improvements. The State of Wyoming also helps finance airport projects through the state's general budget. Generally, the State of Wyoming provides a 3 percent match to the federal AIP funding. The State currently also helps pay for NAVAID maintenance at the airport.

Local communities provide the remaining 2 percent funding for eligible projects. Occasionally, projects that are not eligible for AIP funding are eligible for 80/20 assistance with the State paying 80 percent of the total cost and the local community paying the remaining 20 percent. An example of this type of projects is the purchase of new snow removal equipment. The local community also supports the airport with an operation and maintenance budget.

The local community's investment in the airport helps ensure that a safe route of transportation is available into and out of the community. This includes the ability to safely land emergency aircraft such as the Intermountain Life Flight aircraft.

E.S.3 Economic Impacts

Local airports provide resources to businesses who rely on aviation to transport people, equipment, and supplies. These businesses include air charter, air cargo companies, fixed base operators, agricultural sprayers, flight schools, government agencies, and aircraft maintenance companies. Hundreds of thousands of visitors come to Wyoming each year via airports and spend hundreds of millions of dollars on lodging, dining, recreation, and entertainment.

A local airport can have many economic impacts on the community. There are direct impacts with on-airport businesses and government agencies involved with aviation activities. Indirect impacts include spending by visitors at hotels, restaurants, retail stores, and entertainment venues. Indirect impacts also include support jobs and businesses within the local community. There are also induced impacts which are a function of the re-circulation of direct and indirect impacts.

A Wyoming Statewide Airport Economic Impact Study was recently prepared for the Wyoming Department of Transportation Aeronautics Division. According to the study, nearly 14,460 jobs with a payroll of $375.5 million can be tied to airport activity in Wyoming. The total economic activity from Wyoming airports exceeds $1.4 billion. The airports generate more than $50 million in annual tax revenues for the state with approximately 60 percent coming from visitor taxes.

According to the Wyoming State System Plan, the airport in Pinedale is considered to be a business airport. Business airports serve multi-county areas and economic centers providing a connection to state and national economies. A business airport is intended to accommodate larger business jet activity and support tourism and recreational demand.

Ralph Wenz Field can be linked to 47 jobs (27 direct and indirect and 20 induced) with a total payroll of $1,725,400. Ralph Wenz Field has a total economic output, including visitor and induced impacts, of

$6,431,800. The annual GA visitor expenditures total $284,900.

As part of the study, more than 2,000 Wyoming businesses were surveyed to understand their dependence on aviation. Almost 18 percent indicated that they own, lease, or charter a general aviation aircraft to support their business operations. Almost 27 percent indicated that the proximity to a general aviation airport is of importance in their location decision.

E.S.4 Qualitative Benefits

Local airports support many activities that provide health, safety, welfare, and environmental benefits. Qualitative benefits are those factors that a dollar amount cannot be assigned to readily. The Wyoming Statewide Airport Economic Impact Study found that airports support recreational activities, serve as gateways to communities and tourist attractions, support air cargo and air freight shipments, support the military and its operations, and provide access in times of emergency.

Airports house aircraft that are used to distribute aerial applications to crops and forests. They support fire fighting activities for forest and grassland areas, are used by law enforcement, and search and rescue operations. Airports are also used for medical evacuation and for doctors to staff clinics in remote areas. For instance, Gem City Bone and Joint from Laramie is able to provide orthopedic care to numerous remote locations in the state.

Aerial inspections, air cargo transport, flight training, prisoner transport, military exercises/training, career training/education, environmental patrol, real estate tours, aerial advertising/banner towing, and youth outreach (Young Eagles) are included as qualitative benefits.

Other qualitative benefits include providing entertainment opportunities such as museums or air shows, educational events such as hosting school field trips, and serving as a staging area for community events. The University of Wyoming uses aircraft to conduct research on the atmosphere. The Museum of Flight and Aerial Firefighting in Greybull is a unique educational facility.

The study found that Ralph Wenz Field serves the following qualitative uses:

- Recreational flying - daily
- Agricultural spraying - monthly
- Energy (oil, gas, coal) business - weekly
- Other corporate/business activity - weekly
- Search and Rescue/Civil Air Patrol - seasonal
- Emergency medical evacuation/patient transfer - monthly
- Medical doctor transport - monthly
- Forest/rangeland firefighting - seasonal
- Aerial photography/surveying - Monthly

E.S.5 Facility Requirements

Chapter 3 describes the need for certain facility requirements and Chapter 4 describes the development alternatives. The facility requirement determinations are based upon the current and forecasted traffic for the airport (Chapter 2). The required facilities to be designed meet the standards for an ARC B-II airport (Chapter 3). The facilities the airport should provide include:

- Apron parking areas
- Tiedowns meeting FAA Design Standards
- Hangar space with associated hangar taxiways and access as needed
- Possible new approach and all necessary approach aids, including lights such as ODALs
- Maintain the NDB
- Enhanced low altitude radar or equivalent coverage
- Possible new FBO building/hangar along new large aircraft parking apron
- Set aside space for Forest Service/BLM
- Fill in and pave area between new apron and existing fuel area
- Relocation of segmented circle
- Appropriate Land Use Zoning

E.S.6 Planned Projects

The Master Plan process for Ralph Wenz Field has come to the conclusion that the following improvements will be necessary:

Phase I (5 years)
- Small aircraft apron tiedowns brought into compliance
- Apron expansion
- FBO development
- Hangar development

Phase II (10 years)
- Hangar taxiway II development
- Access road development

Phase III (20 years)
- Hangar taxiway III and IV development
- Forest Service apron development

E.S.7 Environmental Overview

Chapter 6 provides an environmental overview to evaluate the potential impacts that may be caused by the proposed Airport Master Plan Update. Appropriate dust mitigation practices should be used during construction. Any renovation or demolition of buildings will require an asbestos inspection prior to work commencing and additional permitting should asbestos be present.

Wyoming State Department of Environmental Quality permits may be required for mining, air quality, and water quality. A cultural resource survey may be required prior to ground disturbing activities. Consultation with the U.S. Army Corps of Engineers is recommended before any activities that could result in filling or disturbance of Waters of the United States or wetlands.

E.S.8 Planning for Compliance

Chapter 9 gives a brief overview of FAA Airport Compliance Manual, Order 5190.6B. The Airport Compliance Program was developed to ensure that airport sponsors comply with federal obligations in the form of grant assurances, surplus and nonsurplus obligations, or other applicable federal laws. The manual provides guidance on interpreting and administering the various commitments airport sponsors make to the U.S. Government when they accept grants of federal funds or federal property for airport purposes.

Chapter 1 Inventory

1.0 General

The purpose of this Master Plan Report is to update information from the 2002 Airport Layout Plan (ALP) prepared by JPS AeroConsultants, Inc. The goal of the Master Plan is to provide the framework needed to guide future airport development that will consider potential environmental and socioeconomic impacts and cost-effectively satisfy aviation demand. Particular emphasis on changes in airport operation types and numbers or changes in the airport environment such as community and socioeconomic data and land use will be evaluated.

Information for the existing airport and surrounding area was collected through site visits, review of existing studies, conversations with airport personnel, the fixed base operator (FBO), airport tenants and users, FAA, other state and federal agencies, and other knowledgeable sources.

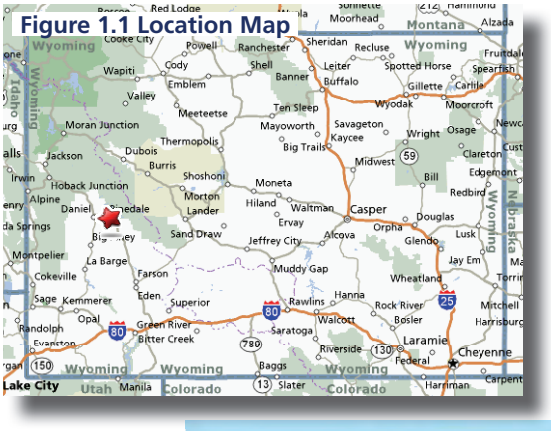


Figure 1.1 Location Map

1.1 Pinedale Area

Sublette County was created in 1921 and is the newest county in Wyoming and Pinedale became the county seat in 1928. Pinedale is located approximately 90 miles south of Yellowstone National Park and 78 miles south of Jackson Hole, surrounded by three mountain ranges in the middle of the Upper Green River Valley. Approximately 80% of the County is public land managed by the US Forest Service, State of Wyoming, or the Bureau of Land Management (BLM). The town is located at the northern edge of the Jonah Field, one of the largest natural gas producing fields in Wyoming.

The population of Pinedale was 1,412 at the 2000 census. The population of Sublette County as of the 2000 census was 5,920. In 2007, the population estimate for Pinedale was 2,043 and the estimated population for Sublette County was 7,925. Major employment industries in the area include oil and gas, ranching, tourism, recreation, and government.

The City of Pinedale has a courthouse, town hall, medical center, county library, a retirement center, a senior citizen's center, a recycling center, a new recreation center, indoor public pool, public ice skating rink, skateboard park, tennis courts, cross-country ski facilities, and paved walking paths. Local attractions include the Museum of the Mountain Man, White Pine Ski Area, Rendezvous Meadows Golf Course, and the Continental Divide Snowmobile Trail.

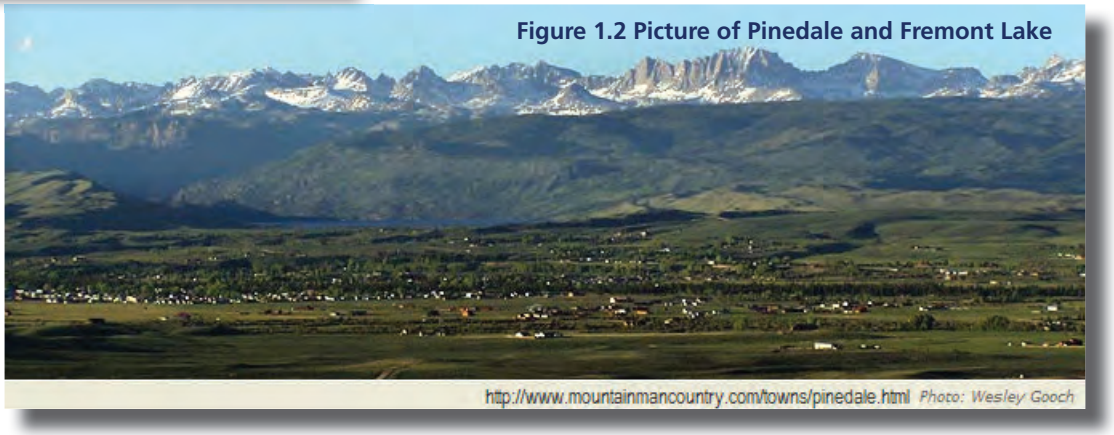


Figure 1.2 Picture of Pinedale and Fremont Lake

The second largest natural lake in Wyoming and the 7th deepest lake in the country at 696 feet is Fremont Lake. The Astorian Route, Oregon Trail, Mormon Emigrant Trail, the Overland Trail, and the Pony Express Route passed through this region. One of the largest wild horse herds on the continent inhabits the high desert south of Pinedale. Wyoming's tallest mountain, Gannett Peak at 13,804 feet, is located in the Wind River Range near Pinedale. Six of the largest seven glaciers in the contiguous states can also be found in the Wind River Mountain Range.

1.2 Natural Environment

Vegetation

Sublette County vegetation varies widely and includes sagebrush prairies, willow-lined creeks, aspen groves, and densely forested hills. The area around the airport is primarily sagebrush.

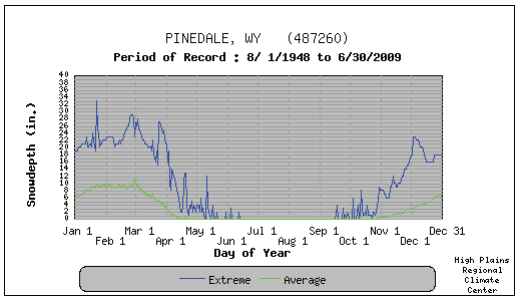
Figure 1.3 Local Vegetation

Climate

At an elevation of 7,195 feet above sea level, Pinedale has a semi-arid climate. From an average maximum temperature in July of 78.7ºF and an average low temperature in January of -1.0ºF, the seasons vary widely. Average annual precipitation is 10.95 inches. Monthly precipitation averages range from a high of 1.63 inches in May to 0.54 inches in February. The highest average snow depth generally occurs during the month of February and is approximately 9 inches. There are approximately 234 sunny days per year and approximately 85 precipitation days.

Average annual total snowfall is 62.2 inches (5.2 feet). During the year 1972-1973 the snowfall was recorded at 137.5 inches or almost 11.5 feet (the highest recorded year on record). The graph shown in Figure 1.4 was obtained from the High Plains Regional Climate Center.

Figure 1.4 Daily Snowdepth Average and Extreme



- Extreme is the greatest daily snowdepth recorded for the day of the year.
- Average is the average of all daily snowdepth recorded for the day of the year.

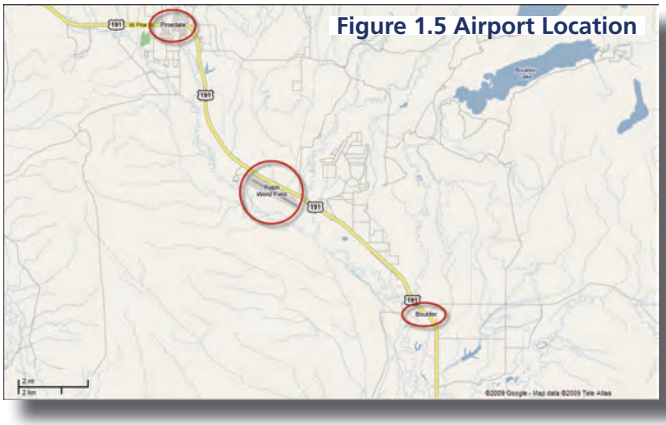
The maximum mean temperature of the hottest month (the basis for all FAA calculations) is 78.49ºF in July at weather station 487260 based on data from 1948-2005 (High Plains Regional Climate Center).

1.3 Physical Environment

Airport Location

Ralph Wenz Field (PNA) is located 5 miles southeast of Pinedale, Wyoming on U.S. Highway 191. Figure 1.5 shows the airport location in relationship to Pinedale. The airport is owned by the Town of Pinedale and operated by the Pinedale Airport Board, a Wyoming Joint Powers Board. The current manager is Jim Parker. Emblem Aviation is the Fixed Base Operator (FBO) at the airport. The 468.99 +/- acre airport property is not contiguous with the incorporated town of Pinedale. The airport elevation is approximately 7102 feet above mean sea level.

Figure 1.5 Airport Location



Brief Legal Description and Coordinates

The main airport buildings are located within the NE1/4SE1/4 of Section 25, T. 33 N., R. 109 W., 6th P.M., Sublette County, Wyoming. The approximate latitude is 42°47'43.7" N and approximate longitude is 109°48'25.5" W.

Airport Use

Ralph Wenz Field is a general aviation airport and is open to the general public. The airport has an airport reference code (ARC) of C-II (the ARC will be described in Chapter 3). The field is suitable for corporate jets up to GV's (Gulfstreams), medium and large turboprop, and piston engine aircraft.

Pilots operating out of Ralph Wenz Field may obtain information from the CTAF/UNICOM at 122.8 MHZ. A lighted wind indicator and a segmented circle can be found at the airport. There is also an AWOSIII-P/T weather station located at the airport at frequency 118.325.

Topography and Drainage

The runway has a 0.3% gradient making the property nearly flat as shown in Figure 1.6. The Topography is shown with 2 foot Digital Elevation Models (DEM) contours that are interpolated from raw USGS data. Generally, the property drains from the north to south. Two Geotechnical Engineering Reports have been completed recently at Ralph Wenz Field in different locations on the airport property.

A Geotechnical Engineering Report was completed by Terracon Consultants, Inc. in 2006 that took 29 bole holes along the new access road, new taxiway extension, new runway extension, crossover taxiway, and at potential borrow areas. The prevailing soils at the site are gravels with varying amounts of sand and silt. Soils at the borrow areas, under the topsoil layer, were well graded sand with silt and gravel underlain by well graded gravel with silt and sand (northwest) and poorly graded sand with trace amounts of gravel (southeast).

Another Geotechnical Engineering Report was completed by Terracon Consulting Engineers & Scientists in 2008 along the eastern edge of the airport at the location of the new hangar/taxiway. The soils information from the report shows that sand with varying amounts of silt, clay, and gravel extended from the surface to the full depth of exploration (10 feet) on 5 of the 6 bore holes. The other bore hole consisted of sandy lean clay to a depth of about 4 feet below the existing site grade and the material underlying the surface soil and extending down to the full depth of exploration consisted of silty sand with trace gravel.

Airport History

Ralph Wenz Field is named for Ralph Wenz, a Pinedale area pilot who tested cold weather equipment as a navigator for the Army Corps in Alaska. Mr. Wenz was killed in an airplane crash in Alaska in 1947. A brief history of Ralph Wenz Field is shown in the time line in Figure 1.7.

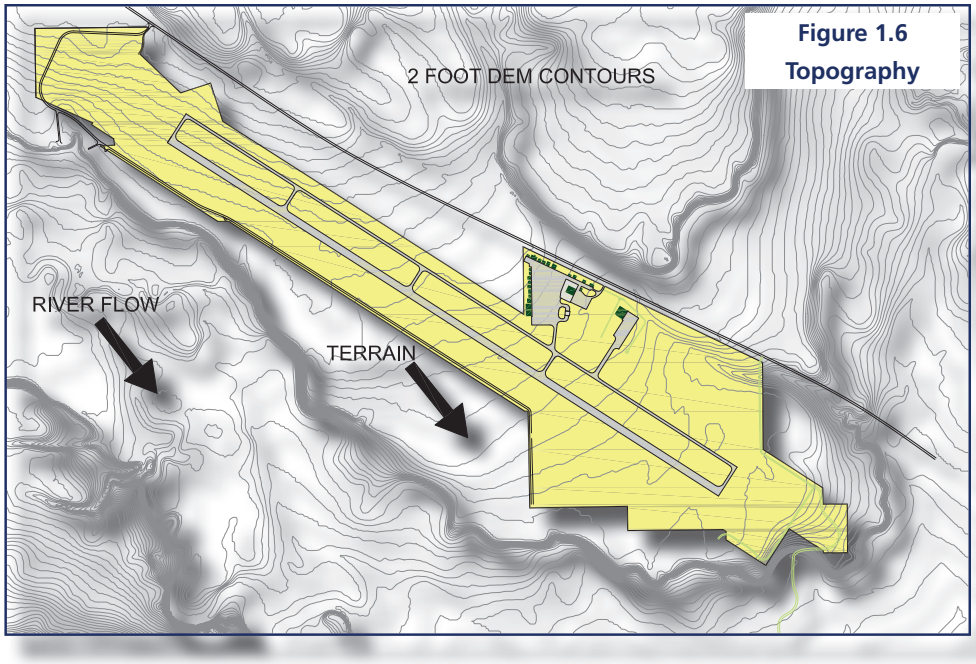


Figure 1.6
Topography

Ralph Wenz Field History

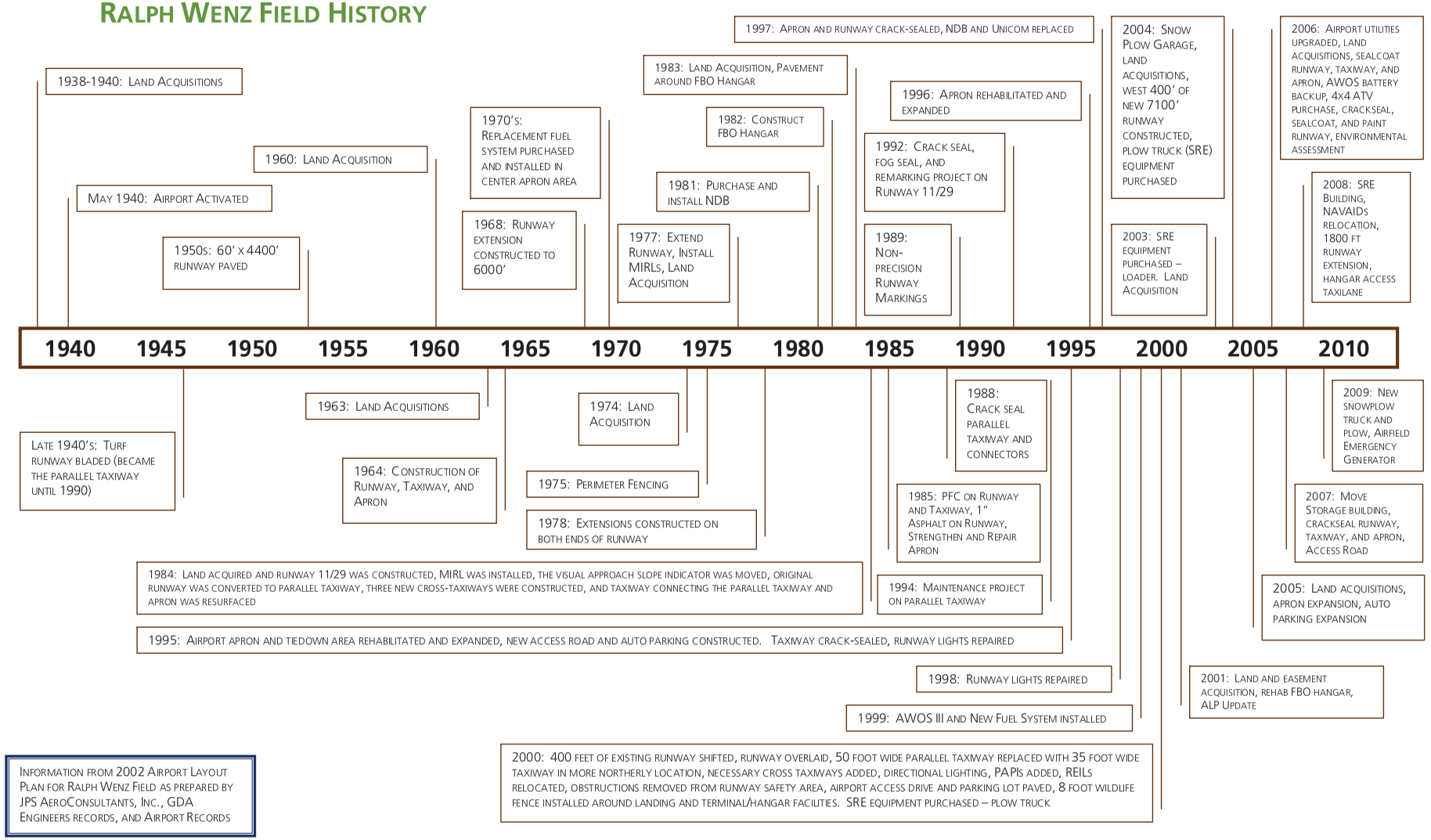


Figure 1.7
Time line

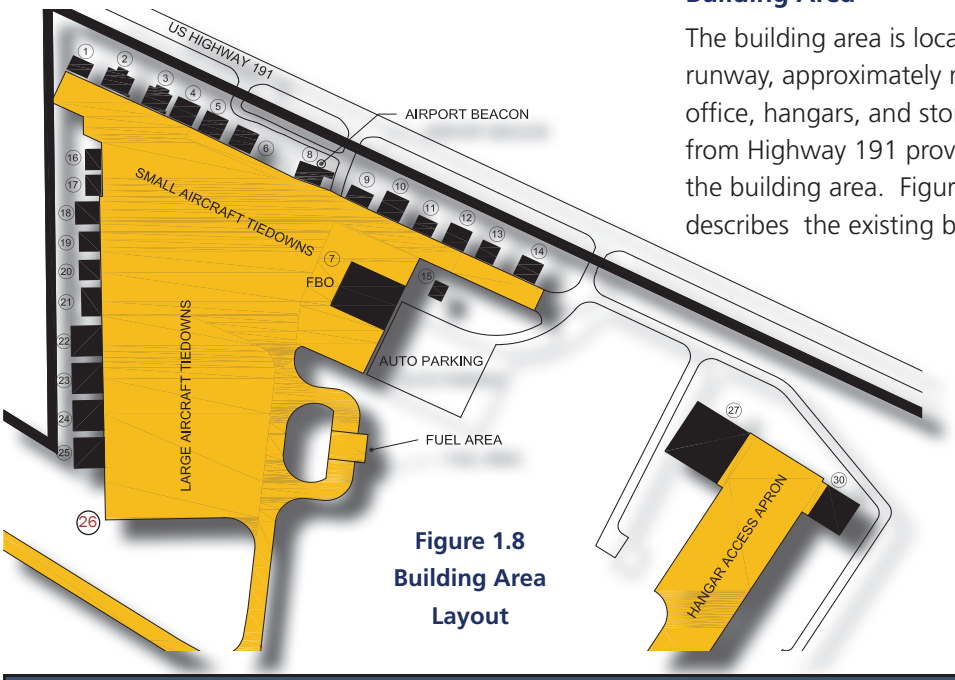


Figure 1.8
Building Area Layout

Building Area

The building area is located on the north side of the runway, approximately mid-field. There is an FBO office, hangars, and storage buildings. A paved access from Highway 191 provides access to a parking and the building area. Figures 1.8 ,1.9, and Table 1.1 describes the existing buildings, heights, and uses.

Table 1.1 Building Heights and Uses
Ralph Wenz Field

Lot ID #	Height (feet)	Current Use	Lot ID #	Height (feet)	Current Use	Lot ID #	Height (feet)	Current Use
1	15.7	Hangar	14	16.2	Equipment Storage Building	27	45.6	Hangar
2	25.0	Hangar	15	15.9	Airport Shop/SRE Building	28		Leased Lot - No Hangar
3	26.5	Hangar	16	18.3	Hangar	29		Leased Lot - No Hangar
4	20.1	Hangar	17	18.5	Hangar	30		Leased Lot - No Hangar
5	20.1	Hangar	18	13.9	Hangar	31		Open Lot
6	25.3	Hangar	19	21.2	Hangar	32		Open Lot
7	24.3	FBO Hangar and Office	20	27.1	Hangar	33		Open Lot
8	16.9	Hangar	21	18.8	Hangar	34		Open Lot
9	14.9	Hangar	22	16.6	Hangar	35		Open Lot
10	15.0	Hangar	23	26.4	Hangar	36		Open Lot
11	15.8	Hangar	24	36.9	Hangar	37		Open Lot
12	22.9	Hangar	25	36.9	Hangar	38		Open Lot
13	16.3	SRE Building	26		Open Lot			

Figure 1.9


Buildings 9-25-08


Buildings 8-12-09

Runways and Taxiways

The Ralph Wenz Field has a single asphalt surface runway, Runway 11/29, that is 8,900 feet long and 100 feet wide. The runway weight capability has an estimated pavement strength of 45,000 pounds single wheel gear and 65,000 pounds dual wheel gear. Non-precision instrument runway markings are existing. The airport has a full parallel taxiway that is 35 feet wide.

Airfield Lighting

The runway has medium intensity runway lights (MIRLs) and 2-light precision approach path indicators (PAPI) on left as you approach (3.00 degrees glide path). Pilots can activate the runway lights via the radio. The runway lights are located approximately 10 feet from the pavement edge, meeting the FAA recommended 10-foot distance. There are runway end indicator lights (REIL) on both Runway 11 and Runway 29. The airport has a standard green and white beacon, which designates that the runway is lighted.

Apron and Tiedown Area

The aircraft parking apron and tiedown area is asphalt and encompasses approximately 367,756 square feet. There are currently 28 aircraft tiedowns on the apron as shown in Figure 1.10 taken on October 25, 2007. There are 19 small aircraft tiedowns and 9 large aircraft tiedowns. The existing small aircraft tiedowns do not meet design standards. The apron area includes the space for tiedowns, maneuvering, taxiing, and has access to the fueling location.

Figure 1.10 Apron and Tiedown Area

Vehicle Parking

Paved vehicle parking is located east of the FBO building. There is space for approximately 72 vehicles.

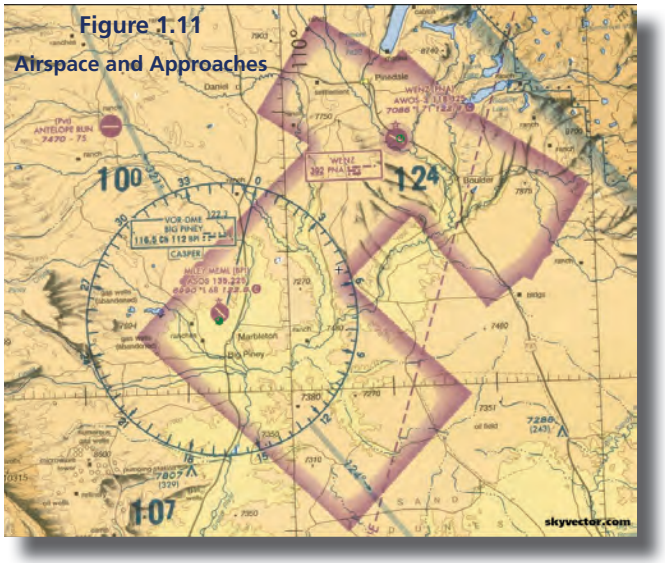
FBO (Fixed Base Operator) Services

Emblem Aviation, LLC, based out of Mesa, AZ, has been the FBO since May of 2008. They provide services at the airport that include 100LL and JET-A fuel, line service, aircraft maintenance, repair and inspection, aircraft parts, transient hangar and tie down space, crew car, flight instruction, GPU/Power cart, passenger terminal and lounge, rental cars, courtesy transportation, and 24-hour availability.

Airspace, Approaches, and NAVAIDs

The Ralph Wenz Field (PNA) is located within uncontrolled airspace, which is airspace within which the FAA air traffic control has no authority or responsibility. The airspace immediately surrounding the airport is designated as Class "E" airspace, with a floor of 700 feet AGL (Above Ground Level).

Figure 1.11
Airspace and Approaches



Ralph Wenz Field has a NDB (Nondirectional Beacon) approach to both Runway 11 and Runway 29 located south of the airport buildings on the opposite side of the runway. There are RNAV(GPS) approaches to both

Runway 11 and Runway 29 which will be explained in detail in Chapter 3.

The closest VOR (Very High Frequency Omnirange) is Big Piney VOR/DME (BPI) with a frequency of 116.50. This VOR is located approximately 18.4 nautical miles (NM) from PNA at 227 degrees. All helicopter traffic is directed to come and go via the taxiway as flying over the buildings adjacent to the ramp is prohibited.

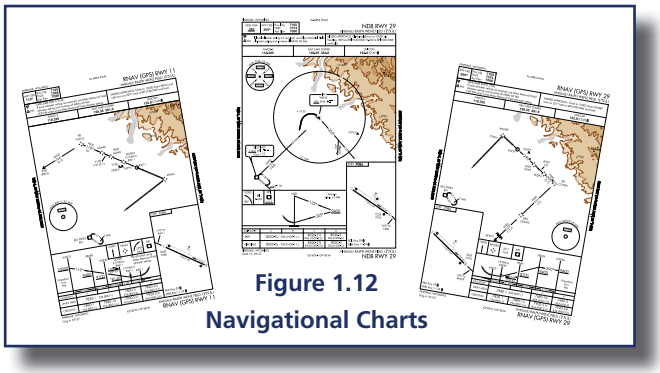


Figure 1.12
Navigational Charts

Area Airports

The closest public use airports to Ralph Wenz Field are shown in Figure 1.13 and are as follows:

Miley Memorial Field Airport (BPI) is located 18.4 NM SW at 227 degrees three miles north of Big Piney, WY. The airport has an asphalt runway, Runway 13/31, that is 6803 feet long and 75 feet wide listed in fair condition. The airport also has a turf/dirt runway listed in good condition, Runway 8/26, that is 3300 feet long and 140 feet wide. BPI has a published GPS and VOR approach to Runway 31 with a one mile visibility minimum for Category A & B aircraft for both circling and straight-in landings.

Afton Municipal Airport (AFO) is located 50.3 NM W at 265 degrees one mile southwest of Afton, WY. The airport has a single asphalt runway, Runway 16/34, that is 7023 feet long and 75 feet wide and is listed in good condition. AFO has a published RNAV/GPS approach to Runway 34. They also have a RNAV/GPS approach to Runway 16.

Riverton Regional Airport (RIW) is located 61.3 NM ENE at 74 degrees three miles northwest of Riverton, WY. The airport has an asphalt runway, Runway 10/28, that is 8203 feet long and 150 feet wide and is listed in fair condition. The airport also has an asphalt runway, Runway 1/19, that is 4800 feet long and 70 feet wide and is listed in good condition. RIW has a published ILS or LOC approach to Runway 28 with visibility minimums for Category A and B aircraft ranging from ½ mile to 1 mile depending upon the type of approach. There is an RNAV/GPS approach to Runway 10 and a GPS approach to Runway 28. There is a VOR approach to Runway 10 and Runway 28.

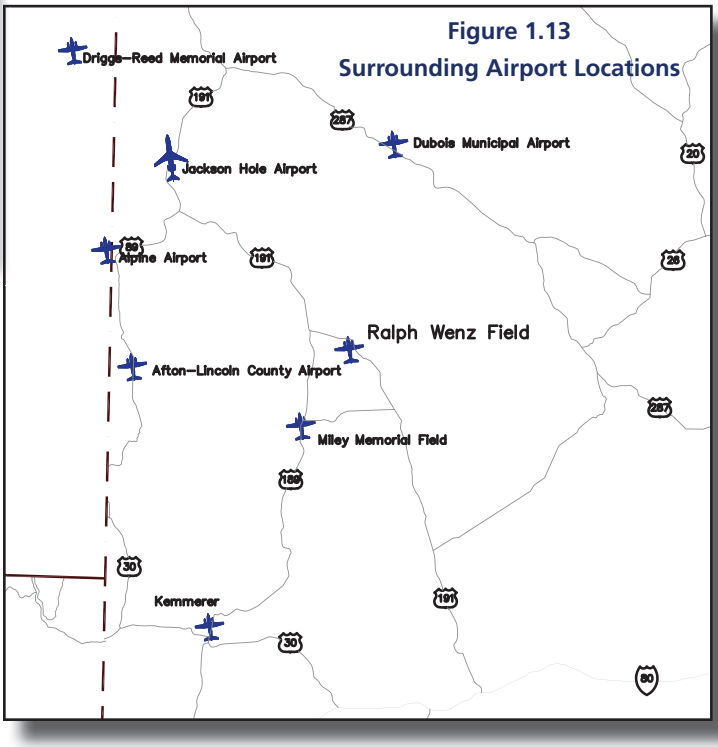


Figure 1.13
Surrounding Airport Locations

Jackson Hole Airport (JAC) is located 63.5 NM NW at 320 degrees seven miles north of Jackson, WY. The airport has a single asphalt runway, Runway 1/19, that is 6300 feet long and 150 feet wide and is listed in good condition. JAC has numerous published approaches as follows: ILS or LOC Y to Runway 19; ILS or LOC Z to Runway 19; RNAV/GPS X to Runway 1; RNAV/GPS Y to Runway 19; RNAV/RNP Y to Runway 1; RNAV/RNP Z to Runway 1; RNAV/RNP Z to Runway 19; VOR/DME to Runway 1; and VOR/DME to Runway 19. Jackson Hole Airport is the closest commercial airport to Ralph Wenz Field (PNA).

Kemmerer Municipal Airport (EMM) is located 67.1 NM SSW at 210 degrees two miles northwest of Kemmerer, WY. The airport has an asphalt runway, Runway 16/34, that is 8208 feet long and 75 feet wide and listed in good condition. The airport has a concrete runway, Runway 4/22, that is 2668 feet long and 60 feet wide and listed in fair condition. The airport also has a turf/dirt runway that is 3250 feet long and 60 feet wide and is listed in fair condition with large rocks, depressions, and mounds on runway. EMM has a published RNAV/GPS approach to Runway 16. There is also a published RNAV/GPS approach to Runway 34.

Dubois Municipal Airport (U25) is located 45.5 NM N at 6 degrees three miles northwest of Dubois, WY. The airport has an asphalt runway, Runway 10/28. Runway 10/28 is in good condition and is 6100 feet long and 60 feet wide. U25 has no published instrument procedures.

Driggs-Reed Memorial Airport (DIJ) is located 80 NM NW at 316 degrees, one mile north of Driggs, ID. The airport has an asphalt runway, Runway 3/21 that is listed in good condition. Runway 3/21 is 7302 feet long and 75 feet wide. There is an RNAV/GPS approach to Runway 3 and a GPS-A approach.

Alpine Airport (46U) is located 59 NM WNW at 294 degrees one mile northwest of Alpine, WY. The airport has an asphalt runway, Runway 13/31. Runway 13/31 is in good condition and is 5850 feet long and 50 feet wide. There are no published instrument approaches at 46U.

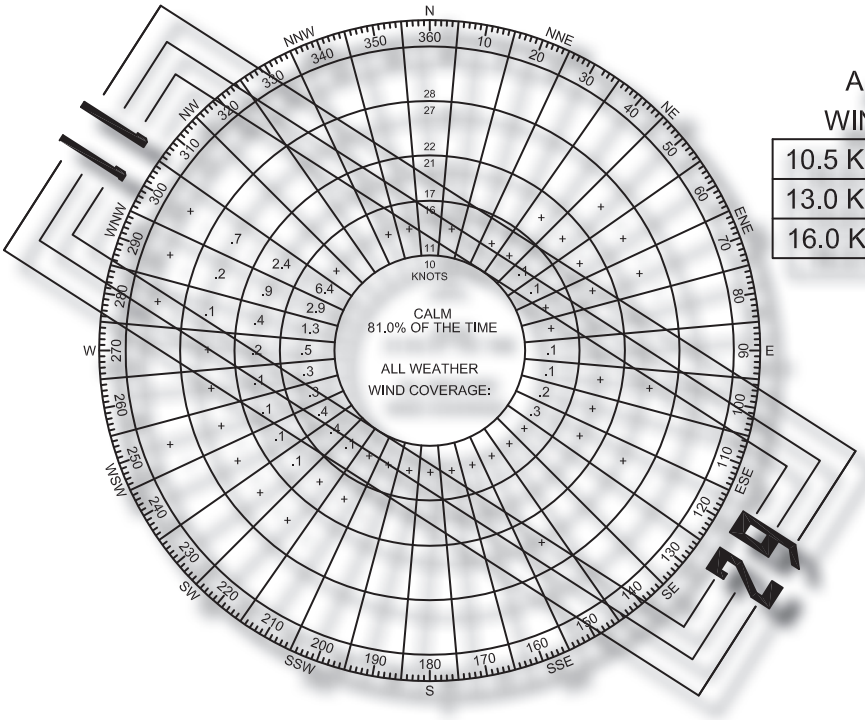
Wind Coverage

A factor that influences runway orientation and the number of runways is wind. The runway should be aligned with the prevailing wind when at all possible. According to the FAA Airport Design Circular, the most desirable runway orientation based on wind is one that has the largest wind coverage and minimum crosswind components. The desirable wind coverage for an airport is 95 percent based on the total number of weather observations. A crosswind runway is recommended when a runway orientation provides less than 95 percent wind coverage for any aircraft that is forecasted to use the airport on a regular basis. The 95 percent wind coverage is computed on the basis of the crosswind not exceeding the established knots for each Airport Reference Code as listed in Table 1.2. If 95 percent coverage cannot be obtained with one runway, a crosswind runway may be necessary.

Table 1.2 Wind Conditions
95% Wind Coverage/Crosswind

Airport Reference Code	Not Exceeding
A-I and B-I	10.5 knots
A-II and B-II	13 knots
A-III and B-III and C-I thru D-III	16 knots
A-IV thru D-VI	20 knots

A wind rose has been developed for Ralph Wenz Field. The All Weather, Figure 1.14 and Instrument Meteorological Conditions (IMC), Figure 1.15 wind roses can be found on page 9. Runway 11/29 provides 98.1% wind coverage at 10.5 knots, 98.93% wind coverage at 13.0 knots, and 99.62% wind coverage at 16.0 knots for all weather wind coverage. For IMC wind coverage is provided at 98.02% at 10.5 knots, 98.66% at 13.0 knots, and 99.41% at 16.0 knots. Therefore, there is no need for a cross-wind runway at Ralph Wenz Field.



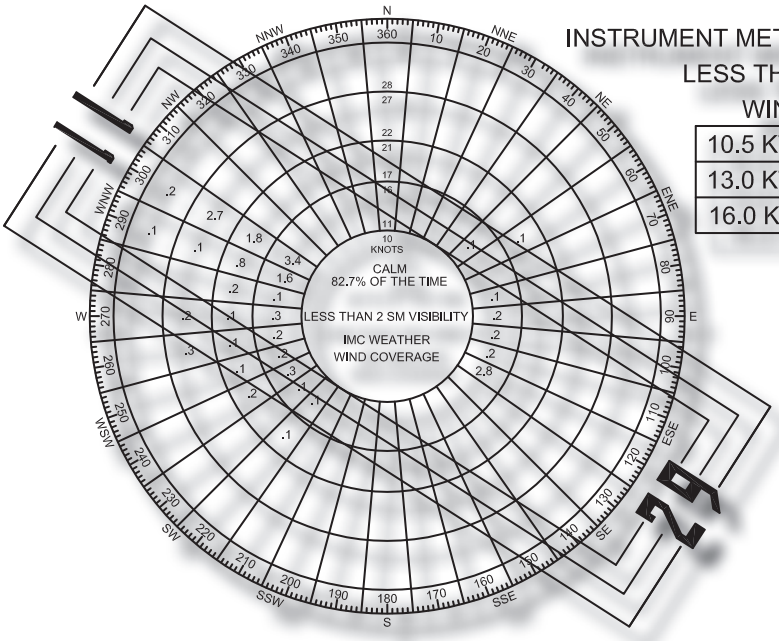
ALL WEATHER
WIND COVERAGE

10.5 KTS	98.10 %
13.0 KTS	98.93 %
16.0 KTS	99.62 %

RALPH WENZ FIELD
PINEDALE, WYOMING

SOURCE: ON AIRPORT AWOS
PERIOD: NOV 2006 TO MAY 2009
41,324 USABLE OBSERVATIONS

Figure 1.14 All Weather Wind Rose



INSTRUMENT METEOROLOGICAL CONDITIONS
LESS THAN 2 SM VISIBILITY
WIND COVERAGE

10.5 KTS	98.02 %
13.0 KTS	98.66 %
16.0 KTS	99.41 %

RALPH WENZ FIELD
PINEDALE, WYOMING

SOURCE: ON AIRPORT AWOS
PERIOD: NOV 2006 TO MAY 2009
930 USABLE OBSERVATIONS

Figure 1.15 IMC Wind Rose

1.4 Based Aircraft and Operations

There are currently 17 single engine, 1 twin engine and 1 helicopter based at the Ralph Wenz Field according to the Airport Manager. Based upon the FAA Terminal Area Forecast (TAF) numbers, the number of based aircraft has dropped during the past five years from a high of 29 in both 2005 and 2006. The data from the TAF are not completely accurate, but they do show the general trends of operation numbers and cover a long history. Total historical based aircraft and total historical operations are shown in Figure 1.16 based upon the TAF data. The year 1996 was excluded as based aircraft were not reported for that year.

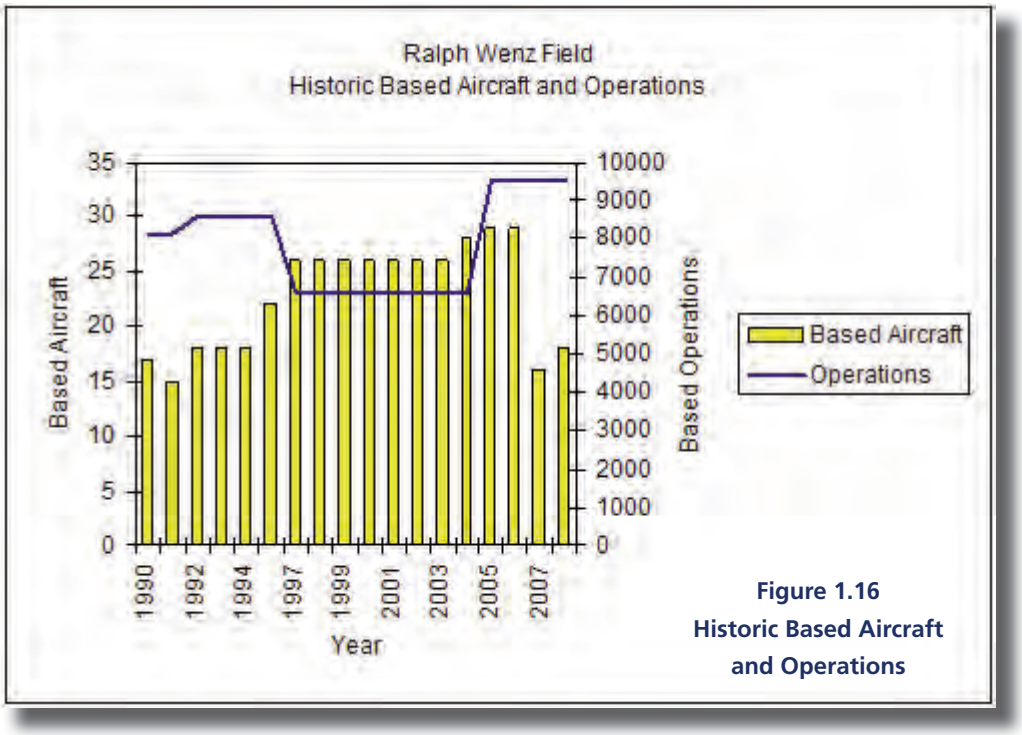


Figure 1.16
Historic Based Aircraft and Operations

1.5 Airport Area Land Use

The airport property is owned by the Town of Pinedale and is located within the County Zoning District I-L (Light Industrial). Building Permits are required in the I-L Zoning District. Requirements for expanding a pre-existing conditional use are not specifically listed with the County's Zoning and Development Regulations.

There are multiple private property owners adjacent to the airport. Zoning on those properties includes industrial, commercial, and rural residential. Zoning on the properties can be seen in Figure 1.17 as obtained from the Sublette County website.

Surrounding land uses are shown in Figure 1.18 and include residences, businesses, grazing lands, gravel mining, oil and gas production, and hay production.

The County Zoning and Development Regulations include Airport Safety Zone Requirements in any Zoning District which states that within the safety zones around airports as established by the current Federal Aviation Agency requirements, all structures and site improvements shall conform to the requirements and regulations of the FAA for such safety zone (Chapter III, Section 8).

New regulations will be proposed as part of this Master Plan Update to provide more specific guidelines for the areas around Sublette County's airports.

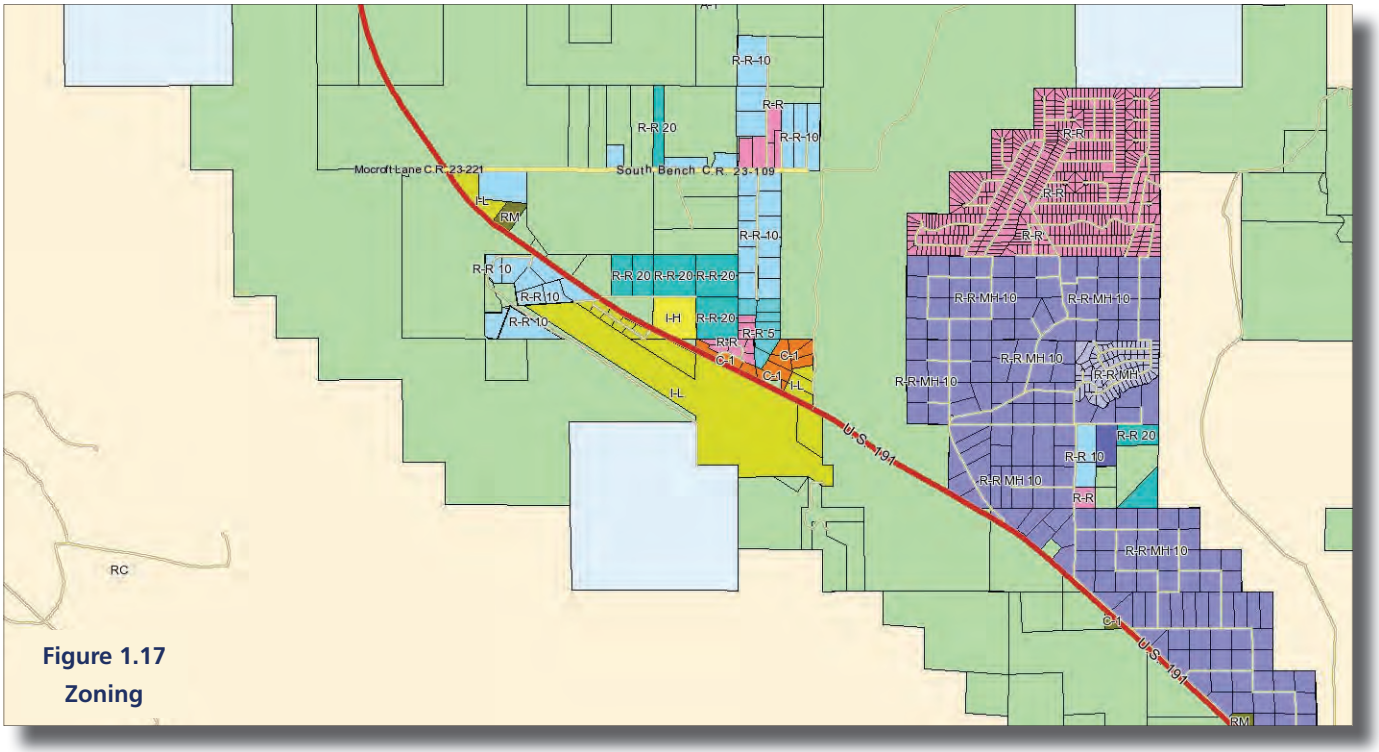


Figure 1.17
Zoning

A-1: Agricultural
C-I: Commercial
I-H: Industrial, Heavy
I-L: Industrial, Light
RC: Resource Conservation
RM: Rural Mixed Zoning

R-R: Rural Residential
R-R 5: Rural Residential
R-R 10: Rural Residential
R-R 20: Rural Residential
R-R MH: Rural Residential Mobile Home
R-R MH 10: Rural Residential Mobile Home

Figure 1.18
Area Land Use

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Chapter 2 Forecasts

2.0 General

Forecasts of future levels of aviation activity at an airport are the foundation for effective decisions in airport planning. The projections are used to determine the need and timing for new and/or expanded facilities. Forecasts are intended to be realistic and based upon the latest available data that is supported by information in the study and provide adequate justification for airport planning and development. With an accurate forecast, an appropriate time frame for phasing of capital investments can be created to help avoid early and unnecessary operating expenses or a loss of economic benefits for the community.

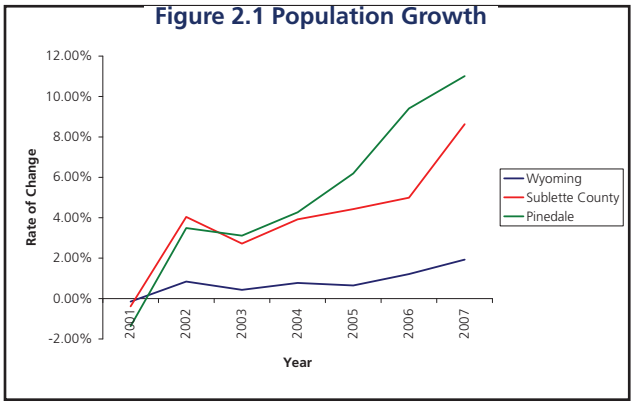
The forecast is not absolute as it is only an indicator of aviation trends based upon past and current events. This study focuses on the 5-, 10-, and 20-year time frames. The degree of accuracy for forecasting is more precise short-term. A brief demographic and economic analysis for Pinedale and Sublette County is provided. A review was also made of historic aircraft operations, based aircraft, and existing aviation forecasts including the FAA's Terminal Area Forecasts and the 2002 Airport Layout Plan prepared by JPS AeroConsultants, Inc.

2.1 Socioeconomic and Demographic Analysis

The major force driving the current population growth in Sublette County and Pinedale is an oil and gas boom. Wyoming's state population grew by more than 2 percent between 2006 and 2007. The growth rate was the ninth highest among the 50 states. In Sublette County, the population grew almost 9.5 percent between 2006 and 2007 based on population estimates. Overall, the population in Sublette County has increased almost 34 percent since 2000, as obtained from the Wyoming State Department of Economic Analysis. Comparative population growth rates of change are shown in Figure 2.1.

The town of Pinedale has seen a population growth of almost 45 percent since 2000, with a 12.4 percent increase from July 2006 to July 2007. In addition, a transient population of workers of an estimated 53% of employees per well are residing in man-camps or motels according to the Sublette County Socioeconomic Impact Study, Phase I prepared by Ecosystem Research Group in January 2008.

Figure 2.1 Population Growth



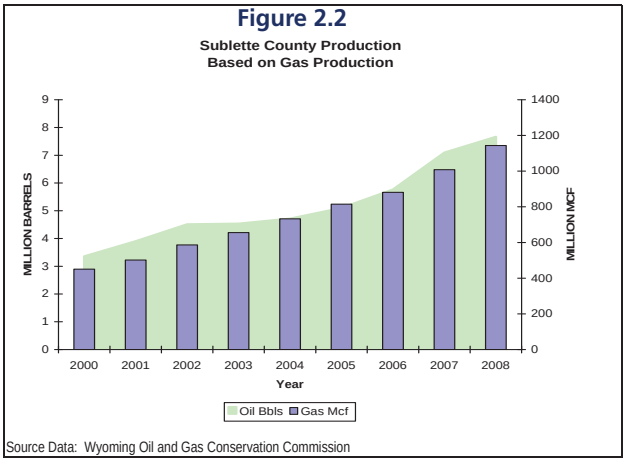
Historically, oil and gas booms have not provided a steady and prolonged growth rate. A June 2, 2007 Economist article points out what is very true about booms: "the most serious threat posed by Wyoming's gas boom is that it will end. . . . And if the price of gas falls so far that drilling becomes unaffordable, Pinedale will not just lose the backbone of its economy. It will have lost some of its natural beauty, too."

Sublette County's oil and gas fields were originally developed in the 1920s and experienced booms in both the 1950s and 1980s. According to a report completed by the U.S. Forest Service in August 2008 concerning their lands in Sublette County, drilling and production activity in the future will be related to prices for natural gas. It is expected that there will be an increase of approximately 50 percent in the U.S. for demand for natural gas by 2020.

Future anticipated prices for natural gas through 2020 may make it possible for unconventional resource plays to achieve rates of return on investments that will be adequate to support higher levels of anticipated activity. Projected future crude oil prices are not anticipated to have a significant impact on gas development in the area.

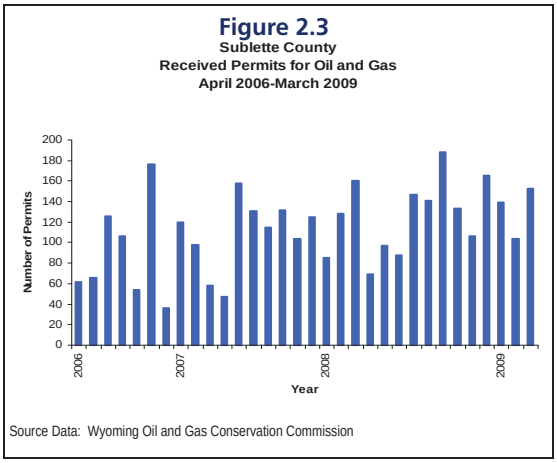
Figures 2.2 and 2.3 show the recent production and permitting in Sublette County based on information from the Wyoming Oil and Gas Commission. Within the early months of 2009, gas and oil prices have fallen. Gas and oil production statewide has slowed due to the decrease in price.

Figure 2.2



Source Data: Wyoming Oil and Gas Conservation Commission

Figure 2.3



Source Data: Wyoming Oil and Gas Conservation Commission

A report from the Sublette Board of County Commissioners on the State of the County (2007-2008) states that the assessed valuation in Sublette County accounts for 21 percent of the entire state's valuation, a larger percentage than any other county in the state. The oil and gas industry accounts for over 97 percent of the county's total valuation. The top twelve taxpayers in Sublette County include Encana Oil & Gas, Ultra Resources, Shell Rocky Mountain, BP America, ExxonMobil, Questar, EOG, Wexpro, Lance, Southern California Power, Chevron USA, and TEPPCO.

According to a report produced by the Economic Development Intelligence System in January 2009, the median household income in Sublette County in 2000 was $39,020. By 2008, it had risen to $46,115 and their projections put it at $51,626 for 2013. The 2008 median disposable income was $38,458. The 2008 median value of owner occupied housing was $250,175. According to the Wyoming Department of Employment, the unemployment rate in Sublette County in 2006 was 1.6 percent compared with a national rate of 4.6 percent for the same year.

Tourism, ranching, and amenity-seeking second home owners continue to be a strong factor in Sublette County's economy. At the time of the 2000 census, large portions of the County's housing infrastructure were predominantly populated by people who registered a permanent residence elsewhere according to a report on Housing and Real Estate Trends for the Sublette County Partnership. Realtors have indicated that the demand for high-end homes has only very recently declined. Tourism in the area currently suffers from a lack of lodging options as at least 75% of the available rooms are occupied by the gas industry workers. This may have a long term effect on the community's economy as a rebound in tourism may take some time after the boom ends.

According to a report titled Social & Economic Impacts to Sublette County, WY from Natural Gas Development for the Sublette County Partnership, there is a smaller and less diverse array of small businesses than before the gas boom. A June 2, 2007 article in the Economist states that high wages and property values make it difficult to start and maintain businesses in the area not directly related to the oil and gas industry. Between 2001 and 2006, the number of retail and

entertainment businesses declined, even though disposable income increased dramatically.

2.2 Industry Trends

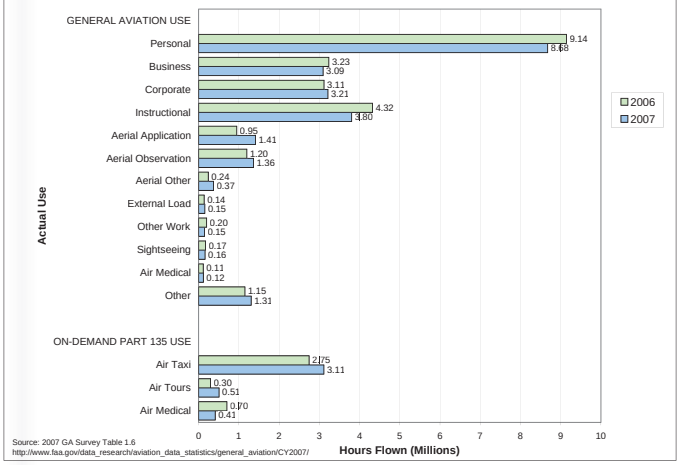
An important component in this analysis is to determine which factors are driving the use of aviation in the nation, region, and at the local airport. According to a recent National Business Aviation Association (NBAA) report, there has been a nationwide increase in business aircraft and business related general aviation flights. One reason this trend is occurring is the great increase in 'fractional ownership' of business aircraft. With fractional ownership in an aircraft, businesses are able to control the costs associated with a flight department and often upgrade to a nicer aircraft that they would have been able to afford otherwise. The impacts seen to general aviation airports are in direct relation to this growth. As the number of business owners and individuals that travel by private aircraft increases, the more operations will be seen at destination, general aviation airports.

The Airplane Owners and Pilots Association (AOPA) 2008 third quarter report showed mixed results for flight activity, pilot certification, aircraft shipments and aviation safety compared with the third quarter of 2007. Year to date numbers for center and tower operations were at their lowest point in ten years. Pilot licenses for students were down 16% and airline transport pilots were down 7%. However, private certificates were up 27%, commercial certificates were up 51%, certificated flight instructor certificates (CFI) were up 25%, and Instrument Ratings certificates were up 45%. General aviation aircraft shipments were up by 9%. Accident data showed a decline of 30%.

Figure 2.4 as produced by the Federal Aviation Administration (FAA) as part of their General Aviation and Part 135 Activity Surveys and available on their website shows the general aviation hours flown by use for 2006 and 2007. The survey was completed to enable the FAA to monitor the general aviation fleet to anticipate and meet the demand for National Airspace System (NAS) facilities and services and to provide data for use in the analysis of general aviation issues.

Corporate, aerial application, aerial observation, external load, and other use types increased during 2007. Generally, the other uses did not show significant decreases in hours flown.

Figure 2.4 2006 and 2007 Hours Flown by Actual Use



The general aviation industry, including airports, tends to be moving toward a growth in business related flights.

These business flights generally use ARC B-II or larger aircraft. According to an April 2008 article on Butler International's website, the FAA forecasts the active general aviation fleet to increase at an average annual rate of 1.3 percent from 2007 to 2025. The turbine-powered fleet, including rotorcraft, is projected to grow at an average of 3.7 percent a year and the turbine jet fleet is expected to increase 5.6 percent per year. The FAA Aerospace Forecast Fiscal Years 2008-2025 says that the general aviation business and corporate area should increase due to a growing market for very light jets (VLJs).

A November 2008 article on the Butler International, a leading provider of TechOutsourcing services, website says that despite the current global crisis and the housing market decline in the United States, 2008 and 2009 are still set to witness a record number of business jet deliveries based on the backlog of orders. Studies from both Forecast International and Honeywell indicate that the current financial situation is not expected to have a long-term impact on the demand

for business jets. However, a small decline is expected in deliveries from 2010-2011. An October 2008 article on aerospace-technology.com states that the demand for very light jets (VLJ) is booming and VLJs might become a more attractive option for business related flights due to lower initial purchase prices, lower operating costs, and better fuel-efficiency.

A March 2009 article by the AOPA (Aircraft Owners and Pilots Association) ePublishing staff states that the American Recovery and Reinvestment Act of 2009 signed by President Obama in February 2009 extended the special 2008 tax incentives for aircraft purchases used in a business or leasing situation. Brand new aircrafts costing more than $200,000 are eligible for a 50 percent bonus depreciation. The bonus depreciation may also be available for improvements on aircraft that is already owned including a new engine or new avionics. Other incentives include deductions and an extension of net operating loss (NOL) carry-back provisions for small businesses. Expected beneficiaries from the incentives include flight schools, charter companies, agricultural operators, small businesses, and corporate owners.

Fuel prices can have an impact on airport traffic. The chart shown in Figure 2.5 as prepared by the International Air Transport Association (IATA) show the recent trends of jet fuel prices. The price index is equal to 100 in year 2000 or 87cts/gallon. While fuel prices have been at historical highs, the price has recently decreased as shown in Figures 2.6 and 2.7.

Figure 2.5 Jet Fuel Price Index (2000=100)

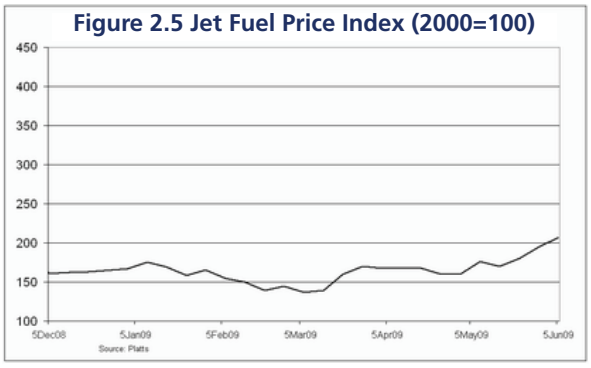


Figure 2.6 Jet Fuel and Crude Oil Price ($/Barrel)

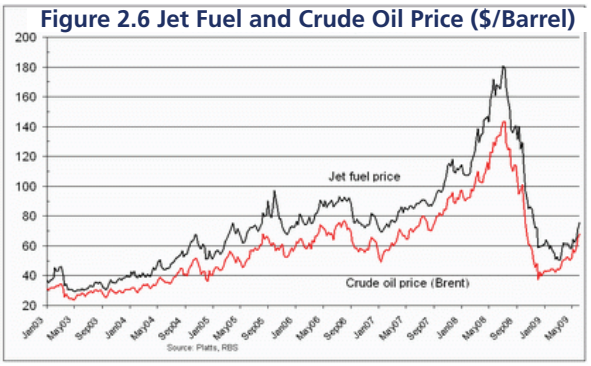


Figure 2.7 Fuel Price Report

Summary of fuel prices at 3707 FBOs nationwide

	FUEL TYPES											
	100LL Avgas					Jet A				Mogas (auto)			
	FBOs	FBOs	Avg	Min	Max	FBOs	Avg	Min	Max	FBOs	Avg	Min	Max
Nationwide	3707	3605	$4.31	$2.00	$8.44	2512	$3.95	$2.05	$9.25	130	$3.09	$2.05	$6.01
Alaska	76	66	$4.97	$3.62	$8.33	55	$4.79	$3.06	$9.25	6	$4.92	$2.65	$6.01
Central	358	354	$4.20	$2.80	$6.97	201	$3.75	$2.05	$5.75	24	$3.05	$2.29	$4.65
Eastern	370	356	$4.46	$3.10	$8.44	254	$4.21	$2.69	$8.61	7	$2.72	$2.05	$3.42
Great Lakes	755	743	$4.27	$2.83	$7.82	471	$3.93	$2.37	$6.56	51	$2.99	$2.08	$4.55
New England	145	139	$4.44	$3.09	$6.31	80	$4.12	$2.59	$6.53	10	$3.84	$2.75	$4.80
Northwest Mountain	395	384	$4.30	$2.00	$6.73	272	$3.90	$2.45	$6.70	7	$2.77	$2.59	$2.96
Southern	668	653	$4.26	$2.99	$7.00	518	$3.92	$2.40	$7.50	7	$2.96	$2.60	$3.20
Southwest	572	564	$4.17	$2.68	$7.03	395	$3.81	$2.34	$5.91	14	$2.86	$2.48	$3.30
Western-Pacific	368	346	$4.48	$2.97	$7.91	266	$4.04	$2.50	$5.99	4	not available		

This report prepared by AirNav on 15-Jun-2009
Report includes prices reported between 12-Mar-2009 and 15-Jun-2009
At least 50% of prices are no more than 11 days old (04-Jun-2009 or more recent)

2.3 Forecasting Methodology

There are several accepted forecasting techniques. The Trend Analysis will be used for Ralph Wenz Field. The Trend Analysis is one of the fundamental techniques used to analyze and forecast aviation activity and it relies on projecting historic trends into the future by using a regression equation with time as the independent variable. Trend Analysis is relatively simple to apply and can be used as a reasonable method of projecting variables that would be very complicated and costly to project by other means.

2.4 Based Aircraft

Forecasts of based aircraft and based aircraft types give an indication of the improvements needed, including building area changes. Based aircraft types determine the number and types of hangars needed, the size and configuration of the aircraft parking apron, and

the required number of tie downs needed during the planning period.

Existing based aircraft can be a good indicator of future aircraft operations. Table 2.1 shows the historic based aircraft for the past 10 years as reported on the Terminal Area Forecast for 1998-2007 and by the Airport Manager for 2008.

There are currently 19 aircraft based on the field according to the Airport Manager.

Table 2.1 Historic Based Aircraft Ralph Wenz Field	
Year	Based Aircraft
1998	26
1999	26
2000	26
2001	26
2002	26
2003	26
2004	28
2005	29
2006	29
2007	16
2008	19

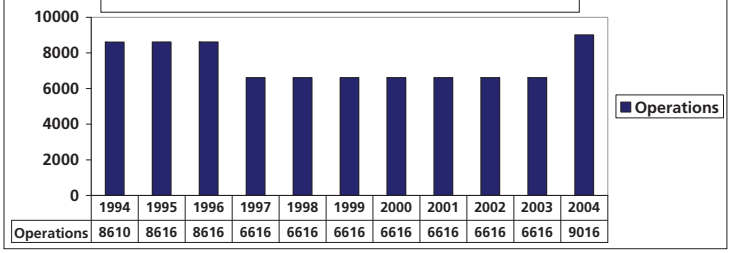
2.5 Aircraft Operations

Total Operations

Making projections of total aircraft operations for a smaller airport, such as Ralph Wenz Field, is somewhat difficult because at non-towered airports, there are usually not accurate estimates of total annual aircraft operations. An aircraft operation is defined as a takeoff or landing, with a touch-and-go counting as two.

Estimates are shown in Figure 2.8 from information as reported in the Wyoming Statewide Aviation Forecast Update. While this data is not completely accurate, it does provide a general indicator for airport use. The only readily available FAA 5010 Form states that the number of operations was 9,516 for the 12 months ending on July 31, 2007.

Figure 2.8 Operations Ralph Wenz Field



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Operations	8610	8616	8616	6616	6616	6616	6616	6616	6616	6616	9016

Current aircraft operations average 26 per day based upon FAA numbers. The average daily operations include 5 general aviation transient, 11 general aviation local, and 10 air taxi. Forty-two percent of the operations are local general aviation, 37 percent are air taxi, 21 percent are transient general aviation, and less than 1 percent are military. As reported yearly, there are 2000 general aviation transient, 4000 general aviation local, 3500 air taxi, and 16 military operations.

IFR Flight Plan Reports from August 4, 2007 to August 5, 2008 show that 305 Jet, 248 Turbo, and 250 Piston operations occurred.

Observed Aiport Operations

Since May of 2007 the airport manager has been photographing most of the incoming and outgoing aircraft at the airport using a motion sensor activated camera located on the connector taxiway of the parking apron area. For this study, the consultant reviewed each photograph to determined the aircraft type. Since the airport has begun photographing traffic, approximately 16% of the days have been missed.

Because the camera is located on the connector taxiway "B", it also misses touch-and-go operations occurring on the runway and those that use taxiway "C". Since it is very rare that a larger aircraft performs a touch-and-go, most of the critical operations have been captured. Approximately 16 touch-and-go operations per week occur of single-engine piston of both local and itinerant operations. There is not an instructor on the field.

A certain percentage of traffic is also missed by the camera or occurs outside of the cameras abilities - such as at night or where just the tip of the airplane is captured as shown in Figures 2.9 and 2.10. Additional samples of images taken by the camera are shown on Pages 20 and 21.

The Airport Manager is doing a great job in maintaining the camera and downloading images to obtain accurate operation accounts. Information in Tables 2.2 and 2.3 show data collected, excluding days with zero photographs taken.

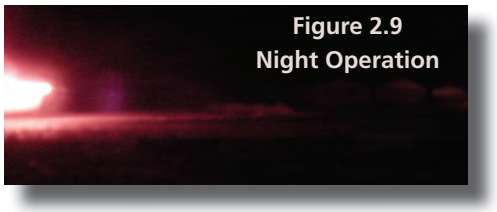


Figure 2.9
Night Operation

Figure 2.10
Tip of Aircraft

Table 2.2 Observed Airport Operations ARC
Ralph Wenz Field

	A-I	A-II	B-I	B-II	C-I	C-II	C-III	D-I	D-II	Heli-copter 2009 only	Unable to Determine 2009 only	Total
Average Daily Operations 5/22/07-11/20/09	3.3	0.4	1.2	2.3	0.3	0.2	0.02	0.02	0.17	0.11	0.21	N/A
Average Daily Operations Calendar Year 2008	2.8	0.6	1.5	2.1	0.4	0.1	0	0.02	0.1	0	0	N/A
Total Operations 5/22/07-11/20/09	2495	288	888	1748	247	157	16	12	127	84	158	6220
Total Operations Calendar Year 2008	889	177	464	670	112	32	0	6	43	0	0	2393

Table 2.3 Observed Airport Operations Type
Ralph Wenz Field

	Single Engine Piston	Multi-Engine Piston	Single Engine Turbine	Multi-Engine Turbine	Jet	Helicopter 2009 only	Glider	Unable to Determine 2009 only	Total
Average Daily Operations 5/22/07-11/20/09	3.2	0.9	0.5	1.5	1.8	0.3	0.02	0.1	N/A
Average Daily Operations Calendar Year 2008	2.8	1.2	0.6	1.4	1.7	0.3	0	0	N/A
Total Operations 5/22/07-11/20/09	2444	690	391	1128	1388	219	16	105	6381
Total Operations Calendar Year 2008	889	368	189	442	529	105	0	0	2522

Fuel numbers can also provide an indicator of traffic at the airport. Figures 2.11 and 2.12 show Airport Fuel Storage or Bulk Fuel Purchases in gallons at Ralph Wenz Field per calendar year and fiscal year. Fiscal year 2009 is not over, but is shown. Fuel storage has steadily increased, until the last three years when it has remained somewhat stable.

Figure 2.11

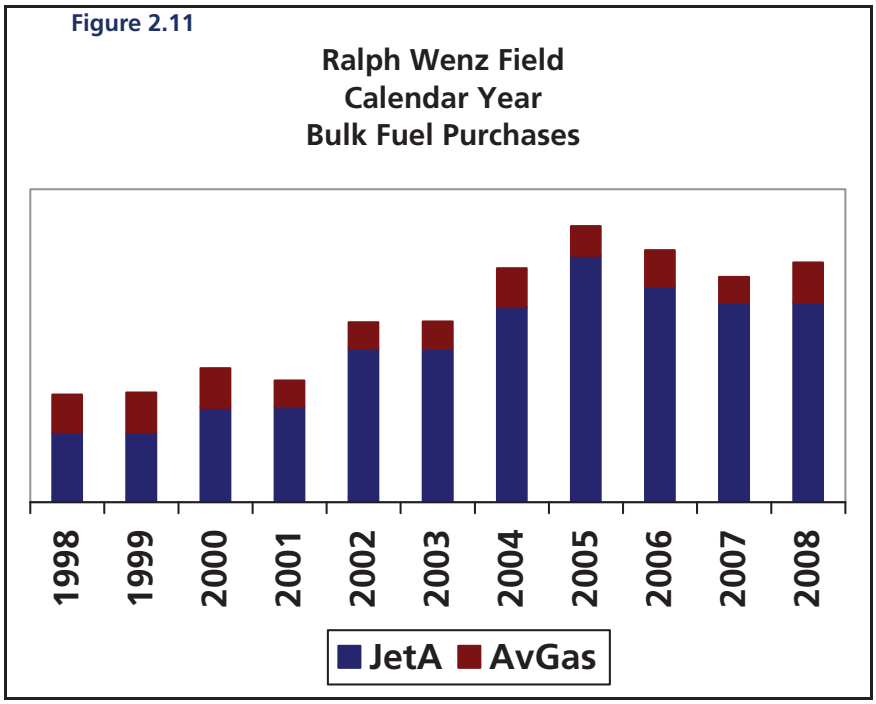
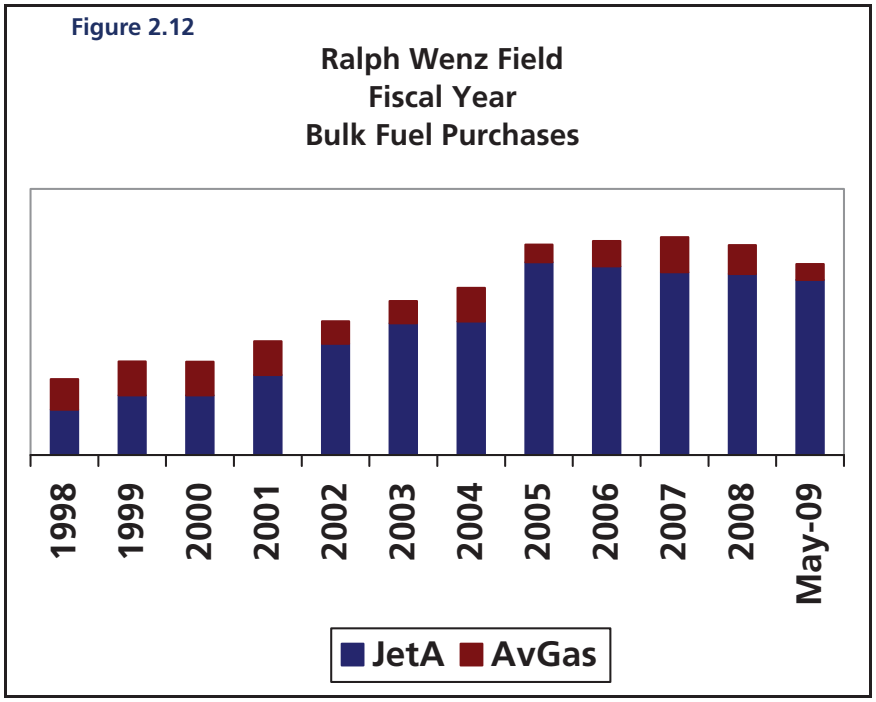
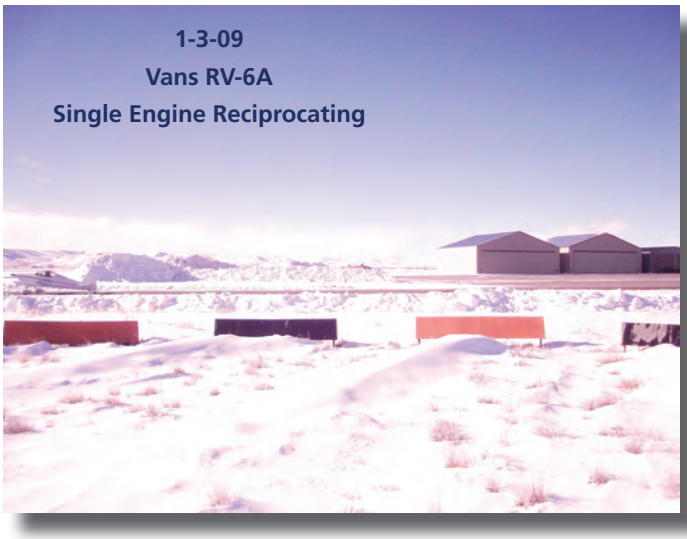


Figure 2.12



Airport Operation Photos



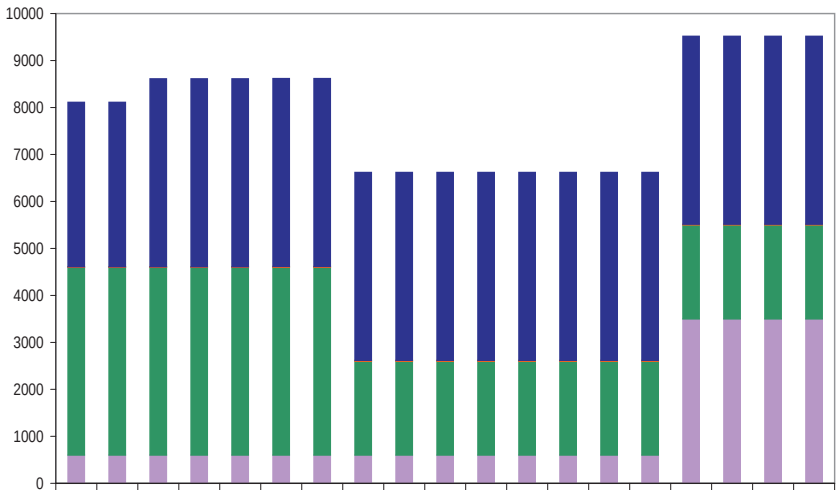
Airport Operation Photos

2.6 FAA Terminal Area Forecasts

The FAA publishes the Terminal Area Forecast annually. This forecast contains historical aviation activity data and FAA's forecasts for airports receiving FAA financial aid (in the National Plan of Integrated Airport Systems (NPIAS)). These forecasts project the activity of major U.S. air traffic system users: large air carriers, air taxi/commuters, general aviation, and the military. The FAA uses these forecasts to meet their budget and planning needs. The information in Figures 2.13 and 2.14 was taken from the Terminal Area Forecast issued in December 2008.

Figure 2.13

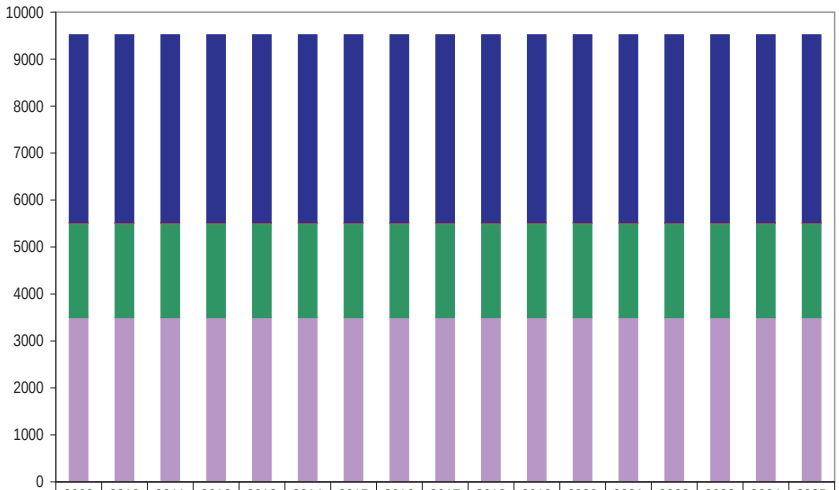
Ralph Wenz Field TAF History



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Local Civil	3500	3500	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Itinerant Military	10	10	10	10	10	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Itinerant GA	4000	4000	4000	4000	4000	4000	4000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Itinerant Air Taxi and Commuter	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	3500	3500	3500	3500

Figure 2.14

Ralph Wenz Field TAF Forecast



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Local Civil	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Itinerant Military	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Itinerant GA	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Itinerant Air Taxi and Commuter	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500

2.7 Forecast Operations - State of Wyoming

The State of Wyoming published a document titled, "Wyoming Statewide Aviation Forecast Update" prepared by Wilbur Smith and Associates using 2004 as the forecast base year. The forecast data for the Pinedale Airport for both based aircraft and aircraft operations is listed in Table 2.4 and Table 2.5 was taken from that report. They utilized several forecast methods to determine the varying results.

Table 2.4 Based Aircraft Forecasts
Wyoming Statewide Aviation Forecast Update
Wilbur Smith and Associates
(http://dot.state.wy.us)

Top Down Socioeconomic	
Year	Forecast
2009	30
2014	30
2024	31
Top Down FAA Growth Rates	
Year	Forecast
2009	29
2014	30
2024	31
Bottom Up Linear Trend	
Year	Forecast
2009	35
2014	40
2024	51
Bottom Up Socioeconomic	
Year	Forecast
2009	32
2014	34
2024	38

Table 2.5 Aircraft Operations Forecasts
Wyoming Statewide Aviation Forecast Update
Wilbur Smith and Associates
(http://dot.state.wy.us)

Top Down Socioeconomic	
Year	Forecast
2009	9,265
2014	9,463
2024	9,617
Top Down FAA Growth Rates	
Year	Forecast
2009	9,248
2014	9,484
2024	9,995
Bottom Up Linear Trend	
Year	Forecast
2009	9,219
2014	9,422
2024	9,828
OPBA	
Year	Forecast
2009	9,265
2014	9,463
2024	9,617

2.8 Forecast Operations - Total

The FAA's TAF does not forecast any growth for the airport. The State's Forecast may not have taken into account the local area oil and gas boom. The FAA Aerospace Forecast Fiscal Years 2008-2025 shows an average annual growth rate for active general aviation and air taxi hours flown of 3.0% for 2007-2025 and a 1.4% average annual growth rate for active general aviation and air taxi aircraft for 2007-2025. The Forecast states that the active general aviation fleet is projected to increase at an average annual rate of 1.3% over the 18-year forecast period.

Current estimates of the FAA show that present operations are around 9,516 per year; 26 operations per day; or approximately 183 operations per week. The airport manager's observed traffic for 2008 was approximately 2,522 operations, which may have missed numerous operations for the reasons described on page 15.

An average 1.44 percent growth rate (1.25%-1.63% based off the Forecast of Aircraft by Type, see Section 2.10) will be used for this forecast. The 1.44% average growth rate for Ralph Wenz Field should take into consideration the potential for continued and/or expanded use of the airport by the oil and gas industry and recreational users.

As stated in Section 2.5, approximately 16% of days have been missed since photographing of aircraft has begun at the airport. It will be assumed that the camera, when working, misses an additional 12% of operations for various reasons. Therefore, from this point forward the forecast will begin with 4,335 operations for 2008, based upon observed operations of 2,522 for 2008 assuming that 72% of operations are photographed and assuming 832 touch-and-go operations occur per year (2522/0.72=3503 and 3503+832=4335). The base forecast of operations is shown in Table 2.6.

Table 2.6 Forecasted Operations
Average 1.44% Growth Rate

Year	Aircraft Operations	Percent Growth
2008	**4,335**	**N/A**
2009	**4,389**	**1.25%**
2010	4,445	1.27%
2011	4,503	1.29%
2012	4,562	1.31%
2013	4,622	1.33%
2014	**4,684**	**1.35%**
2015	4,748	1.36%
2016	4,814	1.38%
2017	4,881	1.40%
2018	4,951	1.42%
2019	**5,022**	**1.44%**
2020	5,095	1.46%
2021	5,170	1.48%
2022	5,247	1.50%
2023	5,327	1.51%
2024	5,409	1.53%
2025	5,493	1.55%
2026	5,579	1.57%
2027	5,668	1.59%
2028	5,759	1.61%
2029	**5,853**	**1.63%**
		Average 1.44%

As a balance check, utilizing a 10 percent growth rate (just over the estimated population growth rate for Sublette County in 2006-2007), operations in 2029 would be 32,080 as shown in Table 2.7. Therefore, the facility will not come close to approaching the Annual Service Volume (ASV) even with a much higher growth rate (see Chapter 3, Section 3.1).

Table 2.7 Forecasted Operations Assumed 10% Growth Rate	
Year	Aircraft Operations
2008	4,335
2009	4,769
2014	7,680
2019	12,368
2029	32,080

2.9 Forecast Operations by Aircraft Mix

General aviation operations are classified into two broad types of operations: local or itinerant. Local operations are defined as a takeoff or landing performed by an aircraft that: (1) operates in the local traffic pattern or within sight of the airport; (2) is known to be departing for, or arriving from flights in local practice areas located within a twenty-five (25) mile radius of the airport; or (3) executes simulated instrument approaches or low passes at the airport. An itinerant operation is defined as all aircraft operations other than local operations.

Table 2.8 shows the forecast operations mix, including air taxi and military operations. Local operations account for approximately 42 percent of general aviation operations and itinerant operations account for approximately 21 percent according to airnav.com. The split between local and itinerant operations is expected to remain relatively the same throughout the planning period. Air taxi and military operations should compromise approximately 37 percent of total operations, military operations currently account for less than 1 percent.

Table 2.8 Forecast of Operations by Mix Ralph Wenz Field					
Year	Operations				
	GA Local	GA Itinerant	Air Taxi	Military	Total
2008	1821	910	1561	43	4,335
2009	1843	922	1580	44	4,389
2014	1967	984	1686	47	4,684
2019	2109	1055	1808	50	5,022
2029	2458	1229	2107	59	5,853

2.10 Forecast Operations by Aircraft Type

Table 2.9 shows forecasts by operation type. The 2008 aircraft type numbers are based upon percentages of airport manager observed aircraft operations from 5/22/07-11/20/09 including the estimated touch-and-go operations:

- Single-Engine Pistons 44.26%
- Multi-Engine Piston 10.04%
- Single Engine Turbine 5.69%
- Multi-Engine Turbine 16.41%
- Jet 20.19%
- Helicopter 3.18%; and
- Glider 0.23%

Based on the FAA Aerospace Fiscal Years 2008-2025, Table 28 Average Annual Growth 2007-2025 the following numbers were used:

- Single Engine Pistons are expected to grow at a rate of 1.0%
- Multi-Engine Pistons are expected to decline at a rate of -1.2%
- Turbo Props are expected to grow at a rate of 1.2%
- Turbo Jets are expected to grow at a rate of 7.7%
- Helicopters (Rotorcraft) are expected to grow at a rate of 3.1%; and
- Other Aircraft (including Gliders) are expected to increase at a rate of 0.5%

The forecast shows that in 2029 total operations will be comprised of the following:

- Single-Engine Pistons 40.4%
- Multi-Engine Piston 5.77%
- Single Engine Turbine 5.41%
- Multi-Engine Turbine 13.66%
- Jet 31.39%
- Helicopter 3.19%; and
- Glider 0.18%

Table 2.9 Forecast of Aircraft by Type Ralph Wenz Field								
Year	Operations							
	Single Engine Piston	Multi-Engine Piston	Single Engine Turbine	Multi-Engine Turbine	Jet	Helicopter	Glider	Total
2008	1919	435	247	711	875	138	10	**4,335**
2009	1938	430	249	715	907	140	10	**4,389**
2014	2037	405	265	735	1082	150	10	**4,684**
2019	2141	381	281	756	1291	162	10	**5,022**
2029	2364	338	317	800	1837	186	11	**5,853**

The Forecast broken down as shown equates to the following averages in 2029:

Table 2.10 2029 Operations Per Day	
Ralph Wenz Field	
Single Engine Piston	6
Multi-Engine Piston	1
Single Engine Turbine	1
Multi-Engine Turbine	2
Jet	5
Helicopter	1
Glider	Approximately 1 per month

Table 2.11 2029 Operations Per Week	
Ralph Wenz Field	
Single Engine Piston	45
Multi-Engine Piston	6
Single Engine Turbine	6
Multi-Engine Turbine	15
Jet	35
Helicopter	4
Glider	Approximately 1 per month

2.11 Forecast Operations by ARC

At smaller general aviation airports, the forecast by Airport Reference Code (ARC) may be the most important factor to review. The ARC is a designation of aircraft according to its wingspan and approach speed. More detail on the ARC can be located in Chapter 3. Most of the safety surfaces surrounding the runway, taxiway, and airport in general are based upon the standards derived from the ARC category of the most critical aircraft.

There are a limited number of category C and D aircraft that are considered small aircraft (under 12,500 pounds). All aircraft in category C and D that operate at Ralph Wenz Field are assumed to be large aircraft (over 12,500 pounds). There are only a few aircraft types in the B-II category that are small aircraft and include the Beech King Air 90, Beech Super King Air 200, and Cessna-441 Conquest. Of the A-I, A-II, and B-I categories of aircraft, a large percentage are under 12,500 pounds. Several large (over 12,500 pounds) B-I aircraft such as the Falcon 10, Raytheon 390, and Raytheon 400A occasionally operate at Ralph Wenz Field.

Ralph Wenz Field has seen increased larger jet activity for business and recreational land owner airport users. It has been determined through a review of operations and aircraft types that aircraft in approach category D and above and Group III and above do not regularly use the facility (perform over 500 operations per year). According to the information collected by the camera, the current primary users of the airport are A and B aircraft. The following list illustrates the breakdown of observed and forecasted larger aircraft operations:

	2008	**2009**	**2029**
C & D	193	164	475
II and above	922	645	1,983

Recently, a hangar was built at the airport to accommodate a Global 5000 aircraft purchased by a local property owner. It is unclear if the aircraft will be based at the airport, but with a 94-foot wingspan, it is well into the "III" design group. During a three-month time frame in 2009, there have been 14 operations by the aircraft. By 2029, the Global 5000 or a similar aircraft could potentiality have 25 or more operations per year, contributing to the airport's status as a C-III or larger facility.

Figure 2.15
Global 5000 at Ralph Wenz Field
9-21-2009

The "C" Category aircraft with the most observed operations in 2009 has been the Hawker 800XP (28), Cessna Sovereign 680 (20), and the Global 5000 (14). The "II" Group aircraft with the most observed operations in 2009 has been the Beechcraft B300 (161), Cessna 560 Encore (82), Beechcraft B200 (63), and the Gulfstream GIV (51).

Ralph Wenz Field sees a general mix of various types of jet traffic including the Pilatus PC-12/47 (41), Cessna 560XL (31), Cessna 550 (24), Cessna 750 Citation X (15), Learjet 35A (6), and Gulfstream GV (2). The numbers shown in parentheses above are the number of observed operations in 2009. Since most of these aircraft are over 12,500 pounds, the airport should be considered a 'large aircraft' facility for purposes of design.

The "Design" or "Critical" Aircraft is the Gulfstream GIV as it has had the most operations during the observed period in 2009 of the aircraft in C and D categories. With use at the airport by a Gulfstream G-V (93.5 foot wingspan) and the anticipated use by the Global 5000 (94 foot wingspan), the critical aircraft may change in the future to a Group III. For weight (pavement strength), the Gulfstream G-IV (71,780 pounds), Gulfstream G-V (90,900 pounds), and Global 5000 (87,950 pounds) should be considered.

The 2008 ARC use numbers are based upon percentages of total observed observations from 5/22/07-11/20/09:

- A-I aircraft averaged 48.2%
- A-II averaged 4.2%,
- B-I averaged 12.9%
- B-II averaged 25.4%
- C-I averaged 3.6%
- C-II averaged 2.3%
- C-III averaged 0.23%
- D-I averaged 0.17%
- D-II averaged 1.8%
- Helicopters averaged 1.2%

In 2008, approximately 33.9% of all aircraft were within category "II" and above and approximately 8.1% were in category "C" or "D". The forecast for 2029 shows the same approximate split.

Table 2.12 Forecast by ARC
Ralph Wenz Field

Year	Operations										
	A-I	A-II	B-I	B-II	C-I	C-II	C-III	D-I	D-II	Helicopter	Total
2008	2092	181	558	1099	155	99	10	8	80	53	**4,335**
2009	2118	183	565	1113	157	100	10	8	81	54	**4,389**
2014	2260	196	603	1188	168	107	11	8	86	57	**4,684**
2019	2423	210	647	1273	180	114	12	9	93	61	**5.022**
2029	2825	244	754	1484	210	133	14	10	108	71	**5,853**

2.12 Forecast of Based Aircraft

Forecasts of based aircraft and based aircraft types are important because they give an indication of the hangar, parking apron, and tie down area requirements during the planning period. There are currently 19 aircraft based at Ralph Wenz Field: 17 single engine, 1 twin engine, and 1 helicopter.

According to the FAA Aerospace Forecast Fiscal Years 2008-2025, Table 27, the active general aviation and air taxi aircraft fleet is expected to grow at an average annual growth rate of 1.4% from 2007-2025. The FAA's TAF does not predict any growth or decline in based aircraft at Ralph Wenz Field. The Wyoming Statewide Forecast Update's forecast of based aircraft for the airport ranged from a high of 51 to a low of 31 for the year 2024.

At least one new large hangar has been built at the airport by an owner that has business jets within their fleet. Therefore, it will be assumed that a jet will be based at the airport by 2014. The forecast for based aircraft as shown in Table 2.13 assumes a 3% growth rate in based aircraft to account for the growing economy in the area, the high number of business related flights, and for the second-home and recreational user.

2.13 Instrument Operations

According to the 2009 Northwest Mountain Regional Airport Plan, Ralph Wenz Field is expected to have an obstruction survey funded through master plans and state system planning grants in FY-2009. This will help facilitate the development of LPV (localizer performance with vertical guidance) procedures.

2.14 Planning for the Future

Planning should take into consideration the long-term future of the airport, beyond the horizon of this Master Plan. Room for expansion and growth should be left in case the airport should start seeing larger aircraft or more operations from existing airport users. The three biggest impacts to an airport when planning to increase to the next ARC level are in the Runway Safety Areas (RSA), taxiway separation distances, and runway longitudinal grade requirements. These surfaces and dimensions will be discussed in Chapter 3.

2.15 Summary

Table 2.14 is a comparison of the Airport Planning Forecasts to the TAF Forecasts. There is a difference as the TAF has not shown or predicted any growth for Ralph Wenz Field since 2005 and based upon actual observed traffic, has been a high estimate.

Trend lines for the forecasts mentioned within this chapter are shown in Figure 2.16.

In summary, the airport should maintain it's status as an ARC C-II, large aircraft facility through the planning period while always protecting and planning for the possibility of moving to a C-III status.

Table 2.13 Forecast of Based Aircraft by Mix
Ralph Wenz Field

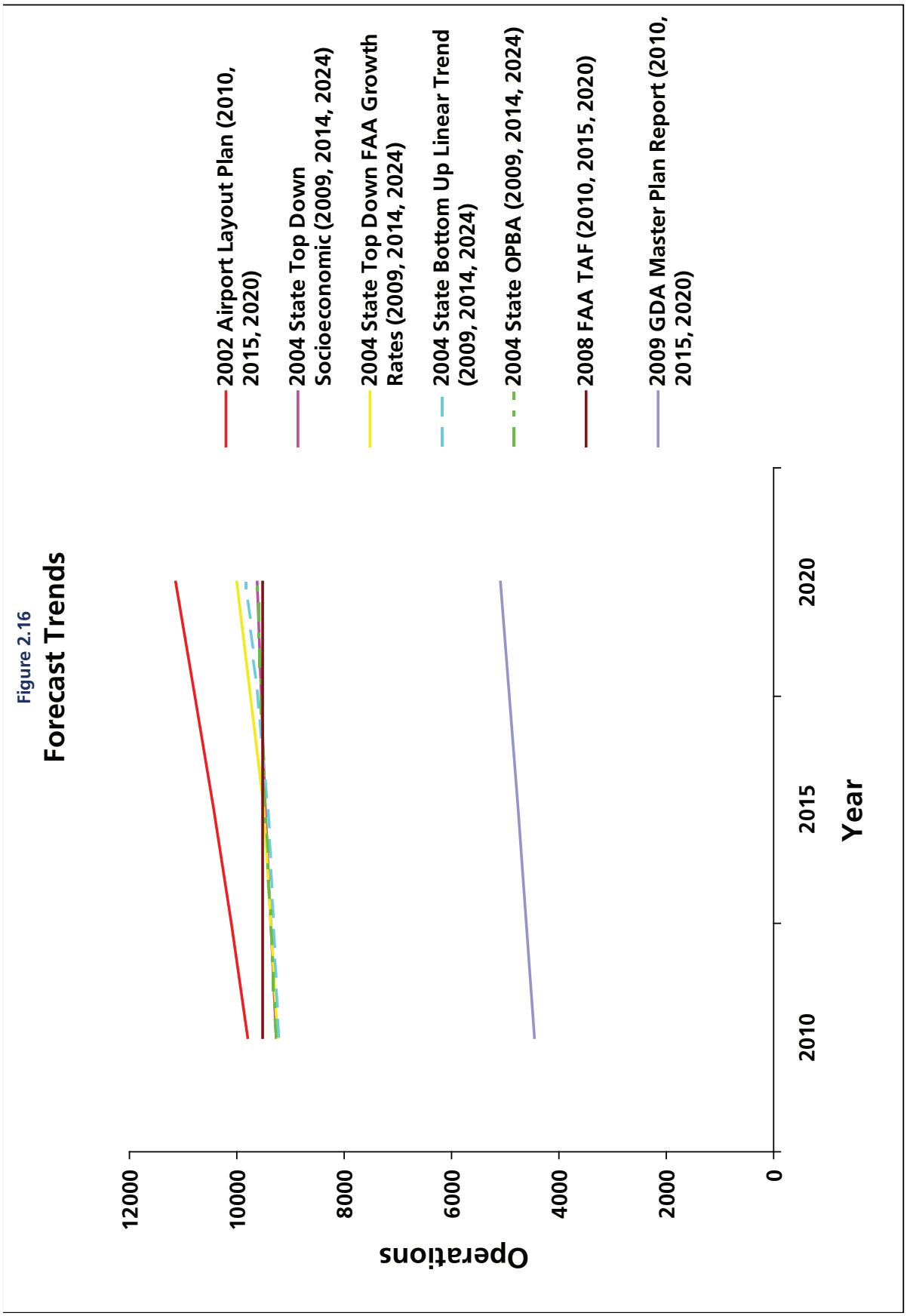
Year	Based Aircraft				
	Single Engine	Twin Engine Piston	Business Jet	Helicopter	Total
2008	17	1	0	1	**19**
2009	18	1	0	1	**20**
2014	20	1	1	1	**24**
2019	24	1	1	1	**27**
2029	32	2	2	2	**38**

Table 2.14 Planning Forecast Compared to Terminal Area Forecast
Ralph Wenz Field

Year	Planning Forecast Master Plan Document (PF)	Terminal Area Forecast FAA (TAF)	PF/TAF % Difference
2008	4335	9516	-54.45%
2009	4389	9516	-53.87%
2014	4684	9516	-50.77%
2019	5022	9516	-47.23%
2029	5853	9516	-38.49%

Figure 2.16

Forecast Trends



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Chapter 3 Facility Requirements

3.0 General

The purpose of this Chapter is to translate the forecasts into the facilities necessary to accommodate the demand represented by the forecasts.

Demand/capacity represents the relationship between anticipated aviation demand (especially during peak operational periods) and an airport's physical ability to safely accommodate that demand. The purpose of a demand/capacity analysis is to assess the ability of the airport's existing facilities to efficiently accommodate its day-to-day and long-term demand without undue delays or safety compromises. This analysis also assists in determining when improvements are needed to meet specific operational demands.

3.1 Airfield Capacity

The FAA quantifies airfield capacity in terms of an airport's annual service volume (ASV) which is defined in FAA Advisory Circular 150/5060-5, "Airport Capacity and Delay". ASV is defined as a reasonable estimate of an airport's ability to accommodate demand. Airfield capacity is determined by a combination of elements including weather, runway configuration, aircraft mix, percent touch and go activity, taxiway exit rating, and other similar variables that would be encountered over the span of a normal year. The advisory circular also provides a basis for determining other capacity measures, including an airport's VFR (Visual Flight Rules) and IFR (Instrument Flight Rules) capacity.

Airfield capacity for Ralph Wenz Field was determined using the FAA Airport Design Program, version 4.2b. Using the program with the assumption that not more than 40 percent of the operations will be by aircraft over 12,500 pounds, the existing ASV for the Ralph Wenz Field was calculated to be approximately 205,000 operations per year. The forecast total annual operations of 5,287 for the 20-year planning period will not exceed the existing capacity at the airport. It is not probable that the Airport's ASV will be exceeded in the years beyond the 20-year planning period as the total 20 year forecasted operations is approximately 2.5 percent of the calculated ASV.

The remainder of this chapter focuses on individual demand components and requirements analysis (airfield, terminal area, etc.) and provides the rationale for recommended airport improvements.

3.2 Airfield Development

Airport Reference Code

The FAA has developed an airport coding system referred to as the "airport reference code" (ARC) that establishes the specific design criteria for facility development. The ARC is based on two separate components of aircraft design: aircraft approach category and aircraft wingspan. The ARC is designated by a letter (A through E) and a Roman numeral (I through VI). The letter represents the aircraft approach category, which is determined by an aircraft's speed as it approaches an airport for landing (Table 3.1). The higher the aircraft's speed, the longer the runway must be to accommodate that aircraft.

Table 3.1 Airport Reference Cody (ARC) Aircraft Approach Category

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

The Roman numeral is the aircraft's "design group" and is determined by an aircraft's wingspan and height (Table 3.2). Typically, as an aircraft's wingspan increases, the separation requirements also increase between runways, taxiways, aprons, and aircraft parking areas.

Table 3.2 Airport Reference Code (ARC) Airplane Design Group (ADG)		
Group #	Tail Height (Feet)	Wingspan (Feet)
I	<20	<49
II	20 - <30	49 - <79
III	30 - <45	79 - <118
IV	45 - <60	118 - <171
V	60 - <66	171 - <214
VI	66 - <80	214 - <262

The ARC is determined based on the most demanding aircraft that uses the airport, referred to as the "critical" or "design" aircraft. The FAA has established a threshold requiring that the aircraft perform at least 500 annual itinerant operations (takeoffs and/or landings) in order to be established as the critical aircraft.

The ARC provides insights into the performance, design characteristics, and physical facility requirements of aircraft using an airport. Some typical ARC codes and sample aircraft for each ARC are listed in Table 3.3.

Table 3.3 Airport Reference Code (ARC)		
ARC	Description	Example Aircraft
A-I	Single-Engine Aircraft	Cessna 172 and 182, Vans RV-6A
B-II	Multi-Engine and Small Jet Aircraft	Beechcraft King Air B200 and B300, Cessna 560 and 560XL
B-III	Long Winged Business Jets	Global 5000
C-I	Short Winged Business Jets	Learjet 45
C-II	Larger Multi-Engine and Corporate Jet Aircraft	Cessna Sovereign (680), Hawker 800XP and 900XP, Challenger 800
C-III	Medium-Sized Air Carrier Aircraft	Boeing 737
D-II	High Approach Speed Corporate Jets, Small Commuter Jets	Citation X (750), Gulfstream GIV, Canadair Regional Jet 200, 700, 900
D-IV	Larger Air Carrier Aircraft	Boeing 707-320, Lockheed 1011-500
D-V	All Large Air Carrier Aircraft	Boeing 747

Ralph Wenz Field currently has operations performed by a variety of aircraft in aircraft approach category C and D and airplane designed group II including the Hawker 900XP and the Gulfstream GIV. The forecasts project that these type aircraft will be performing more than 500 annual itinerant operations during the planning period.

Aircraft are also classified into two subcomponents: small and large aircraft. Small aircraft are those with maximum gross takeoff weights (MGTW) of less than 12,500 pounds. Large aircraft are those with MGTW greater than 12,500 pounds. Large aircraft are further subdivided into those aircraft that have maximum gross takeoff weights between 12,500 pounds and 60,000 pounds and those with MGTW greater than 60,000 pounds. The forecasts indicate that the vast majority of large aircraft forecast to use the airport will fall within the weight range between 12,500 pounds and 60,000 pounds.

Therefore, the airport would be C-II, large aircraft airport. However, due to the anticipated use of the airport by the Global 5000, the facility requirements will also take into account the potential for the airport to accommodate Group III aircraft in the future.

Runway Analysis

The runway length requirements for the airport were developed using the above variables and existing airport conditions. The runway length requirement is a function of the airport elevation, mean maximum temperature of the hottest month, aircraft weight, aircraft engine performance, runway gradient, runway pavement condition (wet or dry), etc. All of these variables affect an aircraft's ability to land or take off from the runway surface. Runway length is a recommendation, not an FAA design 'standard'. The individual pilot taking off or landing under the unique circumstances and demands of a particular flight must determine the safety of the available runway length for the aircraft's operation. The goal of the Sponsor is to provide enough runway length to handle the typical range of aircraft operating at the facility.

Runway length is most critical during emergency situations. Runway design recommendations take into account an emergency at the worst possible moment for a pilot, near rotation when the aircraft is beginning to leave the ground. If an aircraft approaches takeoff speed, just prior to physically leaving the runway and the pilot aborts the takeoff, there should be adequate runway pavement remaining to enable the aircraft to come to a full stop. If a pilot rotates more than halfway down the runway ("over the numbers"), they most likely are not operating "safely".

A pilot must review all of the factors that affect aircraft performance to ensure safe operations. If safety is marginal for a particular operation, a pilot has three options. These options include changing a factor, aborting the operation, or accepting an unsafe level of risk. The aircraft's takeoff weight is the only factor the pilot can change of those factors involved in determining a safe runway length.

It is important to understand the difference between an aircraft's total weight and the aircraft's useful load. Useful load is the difference between the airplane's maximum certified takeoff weight and its operating empty weight. Passengers, baggage, cargo, and useable fuel compromise the useful load. Since a pilot cannot change the physical characteristics of the aircraft, the "load" must be changed. A pilot can either offload fuel, or drop (bump) passengers and/or luggage (or a combination of both) to balance the equation of safety versus runway needed.

The data in Table 3.4 represents the recommended range of runway lengths for Pinedale as determined from the FAA's Airport Design Program.

Table 3.4 Runway Length Requirements - Dry Runways
Ralph Wenz Field Airport

Airport and Runway Data	
Airport elevation (approximate)	7,086 feet
Mean daily maximum temperature of the hottest month	78.49°F
Maximum difference in runway centerline elevation (estimated)	25 feet
Length of haul for airplanes of more than 60,000 pounds	500 miles
Runway Lengths Recommended for Airport Design	
Small airplanes with approach speeds of less than 30 knots	510 feet
Small airplanes with approach speeds of less than 50 knots	1,370 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	5,860 feet
95 percent of these small airplanes	8,300 feet
100 percent of these small airplanes	8,300 feet
Small airplanes with 10 or more passenger seats	8,300 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	7,550 feet
75 percent of these large airplanes at 90 percent useful load	8,850 feet
100 percent of these large airplanes at 60 percent useful load	11,250 feet
100 percent of these large airplanes at 90 percent useful load	11.250 feet
Airplanes of more than 60,000 pounds Approximately	7,500 feet
REFERENCE: Chapter 2 of AC 150/5325-4B, Runway Length Requirements for Airport Design, Version 4.2D	

Runway Length Analysis Summary

The existing Runway 11/29 length is 8,900 feet. This runway length can support 100 percent of small airplanes with less than and more than 10 passenger seats, 75 percent of large airplanes at 90 percent useful load, and airplanes of more than 60,000 pounds (FAA AC 150/5325-4B).

Runway Width

The FAA recommends a 100 foot runway width for C-II aircraft. The runway at Ralph Wenz Field meets these recommendations. The runway also meets the width standards for C-III aircraft that are under 150,000 pounds maximum certified takeoff weight as shown in Table 3.5.

Blast Pads

A project was recently completed for the construction of blast pads on each end of the runway that are 150 feet long and 120 feet wide as required for the Group II airport. A Group III airport would require blast pads to be 200 feet long and 140 feet wide. However, most of the Group III aircraft using or anticipated to use Ralph Wenz Field have engines that are located up and center so the Group II airport blast pad size should be sufficient.

Wind Analysis

FAA criteria state that the airfield should provide 95 percent crosswind coverage for small aircraft with an ARC of A-I and B-I, using a 10.5-knot crosswind component. Consideration should be given to development of a crosswind runway for aircraft in the A-II and B-II ARCs, assuming a 13-knot crosswind component, if the runway does not provide 95 percent coverage, and for a C-II and D-II ARC assuming a 16-knot crosswind component.

Wind information from the on airport AWOS from November 2006 to May 2009 revealed that the existing Ralph Wenz Field runway alignment provides 98.1% coverage for a 10.5-knot crosswind component and 98.93% coverage for a 13-knot crosswind. The existing runway provides 99.62% coverage for a 16.0-knot crosswind. The All Weather Wind Rose is shown in Figure 3.1. More information on the developed wind roses can be found within Chapter 1. Therefore, no crosswind runway is necessary for Ralph Wenz Field.

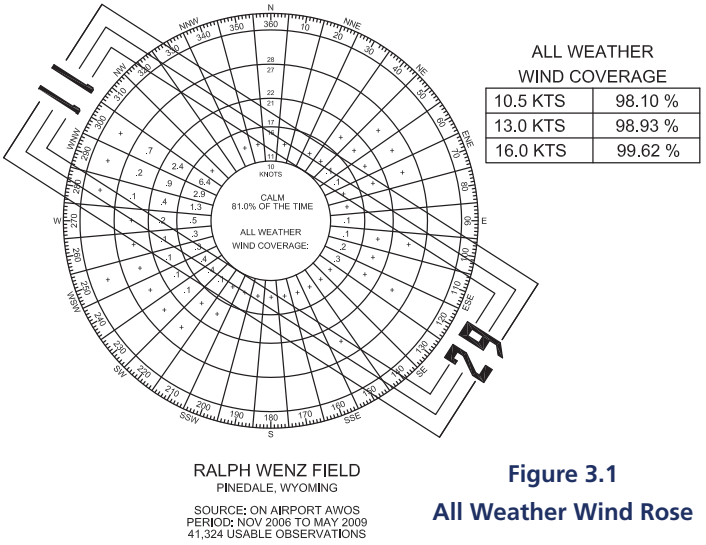

Figure 3.1
All Weather Wind Rose

Table 3.5 Runway Width Standards
FAA AC 150/5300-13: Tables 3-1 and 3-3

Runway Width	ARC Code			
60 feet	A-I and B-I			
75 feet	A-II and B-II			
100 feet	A-III and B-III	C-I and D-I	C-II and D-II	C-III and D-III*
150 feet	A-IV and B-IV	C-III and D-III**	C-IV and D-IV	C-V and D-V
*under 150,000 pounds maximum certified takeoff weight				
**over 150,000 pounds maximum certified takeoff weight				

Pavement Strength

Runway pavements must be designed to physically withstand the weight of arriving, taxiing, and departing aircraft. These pavements should also provide the necessary runway, taxiway, and apron dimensions to accommodate the aircraft using the airfield, which would be represented by the "design" or "critical" aircraft. The maximum takeoff weight of existing critical aircraft and those critical aircraft forecast to use the airport must be considered to determine how strong the pavements should be. The existing pavement strength at Ralph Wenz Field is rated at 45,000 pounds, single-wheel gear (SWG) and 65,000 pounds dual wheel gear (DWG). Table 3.6 shows characteristics of sample aircraft that have utilized Ralph Wenz Field in 2009. As shown, the pavement may need to be strengthened in the future to accommodate increased useage of the airport by heavier aircraft such as the Gulfstream G-IV, Gulfstream G-V, and Global 5000.

Table 3.6 Ralph Wenz Field
Aircraft Information

Aircraft	ARC	Approach Speed or 1.3x Stall Speed (Knots)	Wingspan (Feet)	Length (Feet)	Tail Height (Feet)	Maximum Takeoff (Pounds)
Beechcraft King Air C90GTI	B-II	101	50.3	35.5	14.3	10,160
Beechcraft Super King Air B200	B-II	119	54.5	43.8	15	12,500
Beechcraft Super King Air B300	B-II	109	57.9	46.7	14.3	15,000
Canadair CL-600-2B16	C-II	125	61.8	68.4	20.7	41,250
Cessna Bravo (550)	B-II	108	51.6	47.1	15	13,800
Cessna Citation I (501)	B-I	108	47.1	43.5	14.3	11,850
Cessna Citation X (750)	D-II	151	63.9	72.3	19.3	36,100
Cessna Conquest (441)	B-II	100	49.3	39	13.1	9,925
Cessna Encore (560)	B-II	108	54.1	48.1	15.2	16,630
Cessna Excel (560XL)	B-II	107	56.3	52.5	17.2	20,000
Cessna Sovereign (680)	C-II	131	63.3	25.3	20.3	30,300
Dassault Falcon 10	B-I	104	13.1	13.9	4.6	8,500
Dassault Falcon 2000	B-II	109	63.4	66.3	23.2	41,000
Dassault Falcon 900	B-II	100	63.4	66.3	24.8	46,700
Global 5000 (anticipated useage)	B-III	106	94	96.8	25.5	87,950
Gulfstream Aerospace G-IV	D-II	145	77.8	87.8	24.4	71,780
Gulfstream Aerospace G-V	C-III	136	93.5	96.4	25.5	90,900
Hawker 800XP	C-II	130	54.3	51.6	17.5	27,400
Hawker 900XP	C-II	122	54.3	51.6	17.5	28,000
Learjet 35A	D-I	143	39.5	48.7	12.3	18,300
Learjet 45	C-I	123	47.8	57.6	14.1	20,500
Learjet 60	D-I	139	43.8	58.6	14.6	23,500
Pilatus PC-12	B-II	95	53.3	47.3	14	9,039
Pilautus PC-12/47	B-II	98	53.3	47.3	14	10,450
Piper PA-31-350	B-I	96	40.7	34	13	7,000
Rockwell Aero Commander 690B	B-I	120	46.5	45	14.9	10,350
Rockwell Aero Commander AC-500S	B-II	100	50	37	14.7	8,000

Taxiway Analysis

A full-length parallel taxiway system is considered a fundamental requirement of long-term airport development and affects overall airfield capacity. A full-length parallel taxiway system, with adequate numbers of appropriately spaced connecting taxiways, should be maintained in the future to improve safety and efficient flow on the runway.

Ralph Wenz Field currently has a full-length parallel taxiway with five connector taxiways. The separation between the runway centerline and taxiway centerline on Runway 11/29 is 400 feet, meeting the requirements for Airplane Design Group IV aircraft (Table 2-2 of AC 150/5300-13). The taxiway is 35 feet wide, meeting the dimensional standards for Airplane Design Group II aircraft (Table 4-1 of AC 150/5300-13). The taxiway width for Group III aircraft is 50 feet. A potential short-term solution for the taxiway to be able to accommodate any Group III aircraft is provide larger length of lead-in to fillets on the two end connector taxiways. The dimensional standards are shown in Table 3.7.

Table 3.7 Taxiway Dimensional Standards AC 150/5300-13 Table 4-1 and Table 4-2

Item	Group II	Group III
Taxiway Width	35 feet	50 feet
Taxiway Shoulder Width	10 feet	20 feet
Taxiway Safety Area Width	79 feet	118 feet
Taxiway Object Free Area Width	131 feet	186 feet
Taxilane Object Free Area Width	115 feet	162 feet
Radius of Taxiway Turn	75 feet	100 feet
Length of Lead-in to Fillet	50 feet	150 feet

3.3 Airspace and Approaches

FAR Part 77 Surfaces

Federal Aviation Regulations (FAR) Part 77 "Objects Affecting Navigable Airspace" establishes standards for determining obstructions in navigable airspace. Part 77 describes imaginary surfaces that surround each airport and are defined relative to the specific airport and each runway. The imaginary surfaces vary in size and configuration based on the category of each runway.

The runway category is determined by the types of approaches that exist or are proposed for that runway. The most precise existing or proposed approach for the specific runway end determines the slope and dimensions of each approach surface. Any object, natural or manmade, that penetrates these imaginary surfaces is considered to be an obstruction.

Primary Surfaces

The Primary Surface is a rectangular area, symmetrically located along the runway centerline and extending a distance of 200 feet beyond each runway threshold. The elevation of the Primary Surface is the same as the corresponding runway elevation. The most demanding type of existing or planned approach for either runway end establishes the width of the Primary Surface. In all cases, the width equals the inner width of the approach surface.

Horizontal Surface

The Horizontal Surface is an oval-shaped, level area situated 150 feet above the airport elevation, the perimeter of which is established by swinging arcs of specified radii from the center of each end of the Primary Surface of each runway and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is 5,000 feet for all runways designated as utility or visual and 10,000 feet for all other runways. The arcs at either end will have the same value.

Conical Surface

The Conical Surface is a sloping area whose inner perimeter conforms to the shape of the horizontal surface. The Conical Surface extends outward from the horizontal surface a distance of 4,000 feet measured horizontally, while sloping upward at a ratio of 20:1 (horizontal:vertical).

Transitional Surface

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

Approach Surfaces

The Approach Surfaces begin at the ends of the Primary Surface (200 feet beyond the runway threshold) and slope upward and flare outward horizontally at a predetermined ratio. The width and elevation at the inner ends of the Approach Surfaces conform to that of the Primary Surface. Slope, length, and width of the outer ends are governed by the runway service category, existing or proposed instrument approach procedure, and approach visibility minimums. Approach surfaces for the airports planned improved non-precision (NPI) approaches are shown in Table 3.8.

Table 3.8 Approach Surface Dimensions Non-Precision (NPI) Approaches (FAR Part 77)	
Approach Surface Length	10,000 feet
Width of primary surface and approach surface at inner end	500 feet
Approach surface width at end	4,000 feet
Approach Slope	34:1

Runway Protection Zone (RPZ)

The runway approach surface overlays the Runway Protection Zone (RPZ). The RPZ is a portion of the inner approach zone projected onto the ground surface. Its function is to enhance the protection of people of the ground. It is a ground-surface-level zone and begins 200 feet beyond the end of the area useable for takeoff or landing. The RPZ is trapezoidal in shape and centered around the extended runway centerline.

The RPZ dimensions, like the approach zone, are determined by the design aircraft, type of operation, and visibility minimums. The approach zone and RPZ geometric for visual approaches are smaller than those for non-precision approaches which in turn are smaller than those for precision approaches.

Runway Protection Zone dimensions for an airport with not lower than 3/4 nautical mile (NM) of visibility and a runway end with an NPI approach are shown in Table 3.9.

Table 3.9 Runway Protection Zone Dimensions Not Lower Than 3/4 NM Visibility, NPI Approach (AC 150/5300-13, Change 14)	
Length	1,700 feet
Inner Width	1,000 feet
Outer Width	1,510 feet

It is intended that Ralph Wenz Field protect for this type of approach.

Land uses prohibited within the RPZ include residences and places of public assembly including churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons. Fuel storage facilities or the storage or use of significant amounts of materials which are explosive, flammable, toxic, corrosive, or otherwise exhibit hazardous characteristics shall not be located within the RPZ.

Allowable uses include those that do not attract wildlife, do not interfere with navigational aids, and are located outside of the Runway Object Free Area. Automobile parking lots are allowable only if they are located outside of the central portion of the RPZ (which is equal to the width of the Object Free Area).

Whenever possible, the FAA strongly encourages fee simple Sponsor ownership of the RPZ for complete control of the land uses in these areas. An avigation easement is strongly recommended where fee simple ownership is not possible.

Obstructions

The FAA recommends that all obstructions to the imaginary surfaces be removed if possible. The approach zones and RPZs define the most heavily used airspace around an airport and every effort should be made to minimize obstruction within these areas. However, sometimes it is impossible

to achieve a completely obstruction-free airspace because of excessive costs or other considerations. The obstructions that cannot be removed or those obstructions that cause the FAA to reduce the approach minimums should be lighted with hazard beacons.

There is not a clearly defined point where the presence of obstructions renders the airport unusable. Influencing factors include type, height, and location of the obstruction. Pinedale and Sublette County should do everything possible to prohibit growth or construction of potential obstructions. This can be accomplished through a referral process that allows airport management to approve or at a minimum, comment on proposed construction that may result in an obstruction to the Part 77 surfaces. Federal law also stipulates that proponents of certain actions resulting in specific types of construction proposed in the airport vicinity be coordinated with the FAA and other interested agencies and parties through preparation and submittal of FAA Form 7460-1, "Notice of Landing Area Proposal".

Dimensional Standards

Table 3.10 contains a summary of the recommended dimensional standards for a C-II Facility and comparisons with a C-III facility (FAA Advisory Circular 150/5300-14). The airport site should be capable of accommodating expanded safety areas of the next higher category ARC for future facility growth and development.

Table 3.10 Dimensional Standards

	C-II Facility	C-III Facility
Aircraft Approach Category	C	C
Airplane Design Group	II	III
Airplane Wingspan	78.99 feet	117.99 feet
Runway Centerline to Parallel Taxiway Centerline	300 feet	400 feet
Runway Centerline to Edge of Aircraft Parking	400 feet	500 feet
Runway Centerline to any on-airport crops	530 feet	530 feet
Runway Protection Zones Visibility Minimums Not Lower Than 3/4 Mile at Both Runway Ends:		
Length	1700 feet	1700 feet
Width 200 feet from Runway End	500 feet	500 feet
Width 1,200 feet from Runway End	1010 feet	1010 feet
Runway Obstacle Free Zone (OFZ) Width	400 feet	400 feet
Runway Obstacle Free Zone Length Beyond each Runway End	200 feet	200 feet
Runway Width	100 feet	100 feet
Runway Safety Area Width	400 feet	500 feet
Runway Safety Area Length Beyond each Runway End	1000 feet	1000 feet
Runway Object Free Area (OFA) Width	800 feet	800 feet
Runway Object Free Area Length Beyond each Runway End	1000 feet	1000 feet
REFERENCE: AC 150/5300-14, Airport Design, including Changes 1 through 14		

3.4 Building Area Capacity and Development

Apron Area and Tiedowns

Apron parking and tiedowns should be provided for all transient aircraft and based aircraft that are not kept in hangars. The parking space planned for transient aircraft should accommodate peak-day demand when the number of transient aircraft will be at a maximum.

The existing tiedowns in the small aircraft parking area do not meet FAA standards. These will be reconstructed and painted to approved standards, reducing the number of spaces on the existing apron by approximately half. Additional tiedown areas will be then be necessary. The construction of a new large aircraft apron and parking area between the existing ramp and taxiway C will allow the existing parking apron to be converted to tiedowns meeting standards for small aircraft.

As identified in the May 2009 Terminal Area Plan Update for Ralph Wenz Field, there is also a desire to separate the small aircraft parking apron from the large aircraft parking apron to reduce the risks of unintentional interaction and to alleviate operational concerns.

Hangar Space

There are currently 19 based aircraft stored in hangars. The number of based aircraft is projected to increase to 37 over the 20-year planning period, including 31 single-engine, 2 multi-engine aircraft, and 2 jet aircraft. Generally, an airport should provide 1,000 to 1,200 square feet of area per aircraft for executive hangar space. Larger itinerant aircraft kept in hangars will require greater amounts of space.

To accommodate the projected demand for hangar space at Ralph Wenz Field, additional hangar areas are proposed.

3.5 Instrument Approach Procedures

Access to the air transportation system plays an increasingly vital role in day-to-day business throughout the region and the nation whether general aviation or commercial travel. During periods of low clouds and reduced visibility, an airport can only be used with the aid of instruments. These instruments allow flight during poor weather conditions as pilots can safely fly an aircraft using instrument flight rules (IFR) when ceiling and visibility minimums do not allow flight under visual rules. IFR capability enables pilots to descend to minimum safe altitudes providing greater potential for the pilot to see the Airport environment before needing to break off the approach. The precision of the navigational aids (NAVAIDs), both in the cockpit and on the ground, determines the minimum altitude and visibility ("minimums") to which a pilot can safely descend.

The higher these minimums, the more frequently an airport cannot be used during periods of adverse weather conditions. If pilots cannot see the runway at the minimum descent height, they must seek an alternative airport. An airport's utility and value to the community can be increased by limiting the number of times an airport is not usable and reducing the diversion of trips to more distant airports or flight cancellations during extreme weather conditions. The local airport becomes a greater economic asset to the community and the region with better approach aids and minimums.

For the recreational pilot, missing an afternoon of flying is usually not a big concern. However, canceling emergency or business related flights due to weather can result in significant consequences, inconvenience, and increased costs. In addition to the obvious needs of the lowest possible minimums, the Pinedale business community depends upon reliable air transportation.

There are three main approach type categories: visual, non-precision, and precision. Approach Procedure with Vertical Guidance or APV falls somewhere in between non-precision and precision approaches. Currently used at Ralph Wenz Field are RNAV (Random Area Navigation)/GPS and NDB (Non-Directional Radio Homing Beacon). The NDB is a non-directional approach that gives the pilot horizontal guidance using a terrestrial based navigation aid (NAVAID). The NDB, like the VOR (Very High Frequency Omnidirectional

Range/Distance Measuring Equipment) and LOC (Localizer) are radio beacons that broadcast on a specific frequency. The RNAV approach uses satellite navigation and GPS receivers.

Ralph Wenz Field (PNA) has a published RNAV (Area Navigation)/GPS approach as shown in Figure 3.2 to Runway 11 with the limitations shown in Table 3.11.

Table 3.11 Ralph Wenz Field Approaches				
RNAV (GPS) Runway 11				
Category	A	B	C	D
LNAV MDA	7820 MDA (Minimum Descent Altitude) 1 mile visibility minimums		7820 MDA 2 mile visibility minimums	7820 MDA 2 1/4 mile visibility minimums
Circling	7820 MDA 1 mile visibility minimums	7880 MDA 1 1/4 mile visibility minimums	7900 MDA 2 1/2 mile visibility minimums	7920 MDA 2 3/4 mile visibility minimums

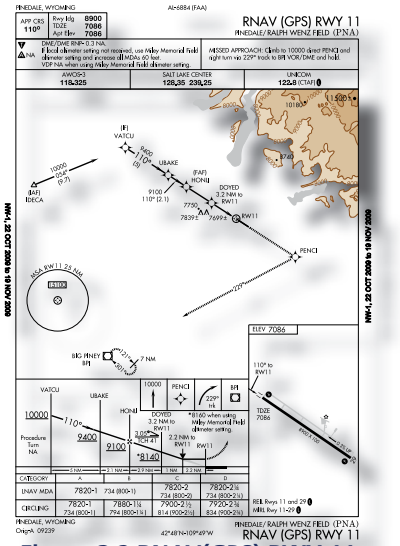

Figure 3.2 RNAV(GPS) RWY 11

There is a published RNAV/GPS approach to Runway 29 as shown in Figure 3.3 with the limitations shown in Table 3.12

Table 3.12 Ralph Wenz Field Approaches				
RNAV (GPS) Runway 29				
Category	A	B	C	D
LNAV MDA	7680 MDA 1 mile visibility minimums		7680 MDA 1 3/4 visibility minimums	7680 MDA 2 mile visibility minimums
Circling	7820 MDA 1 mile visibility minimums	7880 MDA 1 1/4 mile visibility minimums	7900 MDA 2 1/2 mile visibility minimums	7920 MDA 2 3/4 mile visibility minimums

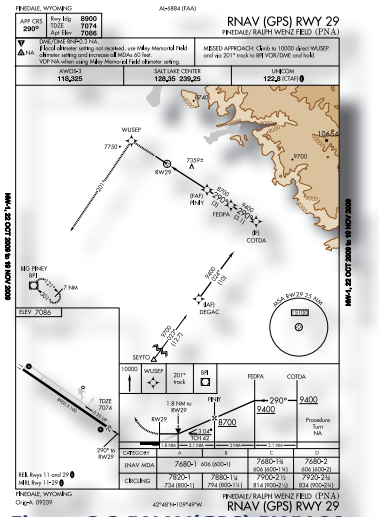

Figure 3.3 RNAV(GPS) RWY 29

A NDB (Non-Directional Radio Homing Beacon) approach as shown in Figure 3.4 exists with the limitations shown in Table 3.13.

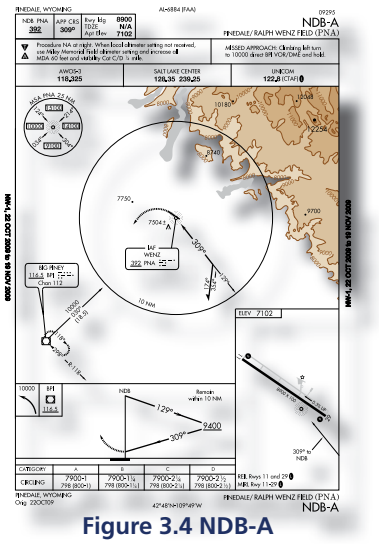

Figure 3.4 NDB-A

Table 3.13 Ralph Wenz Field Approaches				
NDB-A				
Category	A	B	C	D
Circling	7900 MDA 1 mile visibility minimums	7900 MDA 1 1/4 mile visibility minimums	7900 MDA 2 1/4 mile visibility minimums	7900 MDA 2 1/2 mile visibility minimums

According to the 2009 Northwest Mountain Regional Airport Plan, Ralph Wenz Field is expected to have an obstruction survey funded through master plans and state system planning grants in FY-2009. This will help facilitate the development of LPV (localizer performance with vertical guidance) procedures.

Depending upon the results of the study, a new approach may become available to PNA and new approach aids such as approach lights may be needed.

3.6 Visual Approach Aids

The runway has 2-light precision approach path indicators (PAPI) on the left as you approach (3.00 degrees glide path). The PAPIs provide visual cues to the pilot that indicate when the aircraft is above, below, or aligned with the proper descent angle to the runway end. There are runway end indicator lights (REIL) on Runway 29 and Runway 11.

3.7 Take-Off Minimums and (Obstacle) Departure Procedures

Ralph Wenz Field has special take-off minimums and departure procedures in place to either assist pilots in avoiding obstacles during the climb to the minimum enroute altitude and/or has different civil IFR take-off minimums other than the standard. Runway 29 has take-off minimums stated as follows: std. with a minimum climb of 265 feet per NM to 8300 or 4900-3 for climb in visual conditions. The departure procedure for Runway 11 states that the pilot must climb via heading 110° to 8100, then climbing right turn 10000 via BPI VOR/DME R-053 to BPI VOR/DME before proceeding on course. Departure procedures on Runway 29 state that the pilot must climb heading 290° to 8300, then climbing left turn to 10000 via BPI VOR/DME R-356 to BPI VOR/DME before proceeding on course or climb in visual conditions to cross Ralph Wenz Field at or above 11800 before proceeding on course.

3.8 Land Use Zoning

Sublette County has enacted limited land use zoning regulations that states the following within Chapter III, Section 8: Airport Safety Zone Requirements in any Zoning District. Within the safety zones around airports as established by the current Federal Aviation Agency requirements, all structures and site improvements shall conform to the requirements and regulations of the Federal Aviation Agency for such safety zone.

The County regulations, at a minimum, should refer the reader to the appropriate FAA regulations. However, it would be preferable to include the specific restrictions within the Sublette County Zoning and Development Regulations. A proposed regulation and drawing for Ralph Wenz Field is shown in Appendix 11. A drawing would need to be created for the other airport in Sublette County, Miley Memorial Field.

3.9 May 2009 Terminal Area Plan Update

A Terminal Area Plan Update was completed in May 2009 for Ralph Wenz Field. The TAP Update process identified several goals at the airport including the need/desire for a new large FBO hangar to be located along a new large aircraft parking apron and the need to identify and set aside an area for the Forest Service/ BLM.

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Chapter 4 Development Alternatives

4.0 General

The purpose of this Chapter is to demonstrate alternatives to effectuate the facility requirements as established by Chapter 3. A Terminal Area Plan Update was completed in May 2009 for Ralph Wenz Field that also shows building and apron area related facility improvements. With the exception of the Forest Service Area and the feeder taxiway which can easily be changed to a 50 foot width, all of the Terminal Area Plan improvements meets FAA design standards for a C-III facility.

Ralph Wenz Field has reliably served the aviation needs of the local community for numerous years. Significant development has taken place at the Airport during this time with both physical and capital resources invested into the airport facilities. Some of the most recent improvements, not shown in Figures 4.1 and 4.2, have included a runway and taxiway extension, apron extension, relocation of NAVAIDs, a new hangar/ taxiway, and a new access road. Some of these improvements are shown in Figure 4.3. A detailed history can be found in Chapter 1.

Figure 4.1 1996 Aerial Image

Figure 4.2 2006 Aerial Image


Figure 4.3 September 2008

During the recent past, the types of aviation demand experienced in at the Ralph Wenz Field has changed, with greater use of the facilities by larger and more sophisticated aircraft. The critical aircraft at Ralph Wenz Field has changed during this period. In the past, the Airport primarily served a wide variety of small general aviation aircraft from the A-I to D-II aircraft categories. Current and projected demand indicates that more D-II and Group III aircraft will be utilizing the airport.

However, forecasts show that the field would not be designated as a D-II or C-III field by the end of the 20-year planning period and as such, the plan continues to show the airport as a C-II facility while protecting for larger aircraft use.

The Airport Reference Code (ARC) of an aviation facility is not "given" to the airport by the FAA, the Consultant, or the Sponsor. The airport users determine the ARC by flying a type of aircraft(s) into the facility enough times to establish it as the "critical" design standard necessary.

Ralph Wenz Field is currently an ARC C-II category airport as it has over 500 annual operations of category "C" and "D" and group "II" and "III" aircraft. The airport is in compliance with the FAA ARC C-II design standards. The proposed projects at the airport will accommodate existing needs and the potential for future growth.

4.1 The "Planned" Airport

The argument can be made that a thriving community "needs" an airport. Airports provide the opportunity for individuals and aircraft to get into and out of communities. This capability can have a significant positive impact on the local economy.

Ralph Wenz Field does not have a "capacity" problem. The current airport configuration will accommodate more than 205,000 operations per year. The current estimated operations count is approximately 9,500 per year based on the FAA TAF or approximately 4,000 based on observations. The forecast demand is projected to be in the range of approximately 5,300 operations per year as established by Chapter 2.

Aircraft using Ralph Wenz Field vary from the A-I category including the American Champion, Cessna 172s and 182s, to the B-I Piper PA-31-350, the B-II Beechcraft B200 and B300, to the D-II Gulfstream GIV and the anticipated C-III Global 5000. The facility requirements grow with the size and/or approach speed of the aircraft utilizing the facility.

The specific development requirements for the existing airport were established in the Facility Requirements Chapter and the May 2009 Terminal Area Plan (TAP) Update. These facility requirements were determined based on the traffic now using the airport and the forecasted future use. The required facilities to be designed meet the standards for an ARC of C-II category. There are no anticipated length or width changes to the existing runway that is 8900 feet long and 100 feet wide during the planning period.

Specific additional facilities the airport should provide/ maintain include:

- Apron parking areas
- Tiedowns meeting FAA Design Standards
- Hangar space with associated hangar taxiways and access as needed
- Possible new approach and all necessary approach aids, including lights such as ODALs
- Maintain the NDB
- Enhanced low altitude radar or equivalent coverage
- Possible new FBO building/hangar along new large aircraft parking apron
- Set aside space for Forest Service/BLM
- Fill in and pave area between new apron and existing fuel area
- Relocation of segmented circle
- Appropriate Land Use Zoning

4.2 Planning for Group III Aircraft

Facilities that may become necessary should the airport see a significant increase in Group III aircraft include:

- Pavement strength to accommodate 90,900 pounds Dual Wheel Gear (DWG) which can be accomplished with a pavement overlay
- Taxiway built to a width of 50 feet with required safety areas
- Lead-in fillets on end connector taxiways
- Increase in size of blast pads
- Increase in Runway Safety Area width and separation distances from runway centerline to parallel taxiway centerline and edge of aircraft parking

4.3 Alternatives

The alternatives for development were explored in detail as part of the May 2009 Terminal Area Plan Update. The Terminal Area Plan Update reviewed the existing apron area to the property line west of the north/south hangar row, the NAVAID area where the segmented circle, NDB, and AWOS was located, and the gravel pit area between Highway 191 and the parallel taxiway to the property line southeast of the terminal area.

The gravel pit area is approximately 15 to 20 feet deep and for the most part was used for airport related projects in the past. There is an undeveloped parcel of land to the west of the existing parking apron. The off-airport land was not considered in the Terminal Area Plan Update, but possibly could be in the future. Figure 4.4 shows the gravel pit and off-airport land.

Figure 4.4
"Existing" Conditions
(Old Aerial Photo)

Several alternatives for development were reviewed. The reviewed alternatives included the three alternatives shown in Figures 4.5, Alternative 1; Figure 4.6, Alternative 4; and Figure 4.7, Alternative 7.

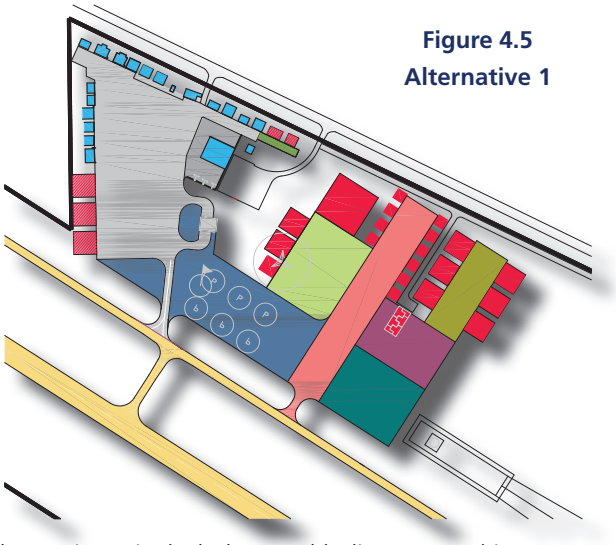

Figure 4.5
Alternative 1

Alternative 1 included several helicopter parking spots and a helicopter approach area to the east. This approach area could be added to nearly any alternative in the future. It also has several smaller development aprons facilitating lower cost phasing if necessary.

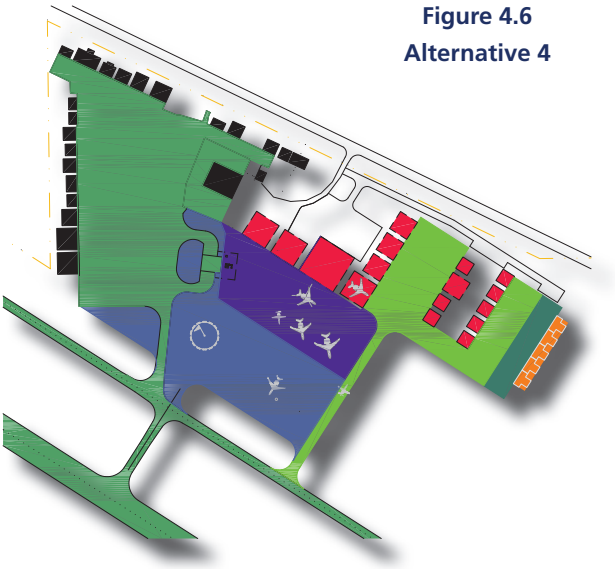

Figure 4.6
Alternative 4

Alternative 4 provided an expanded apron in front of the future FBO hangars, allowing for aircraft movement while not taking up parking space. It pushes back the FBO hangars and reduces the available area for auto parking. This alternative also works around the gravel pit building on the relatively flat ground to the north.

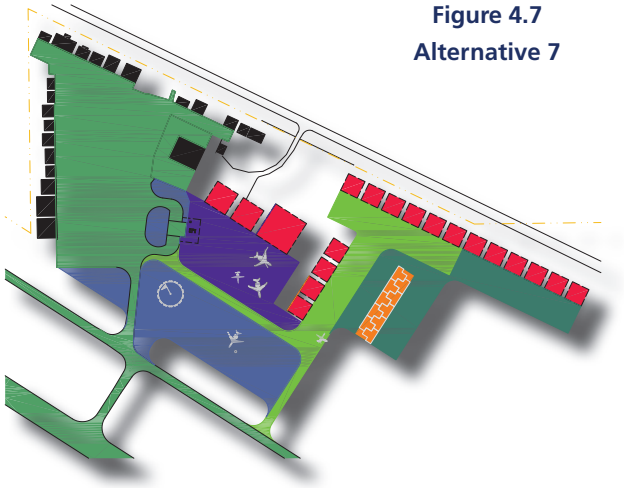

Figure 4.7
Alternative 7

Alternative 7 provided a number of south facing hangar doors. This alternative could be started without filling in the gravel pit. It also provides room for a large FBO area.

4.4 Selected Alternative

Eventually, the preferred alternative (Figure 4.8) emerged that combined various elements of the other alternatives. Some of the preferred elements included a large new FBO hangar and apron area and multiple separate hangar taxiways to maximize the number of possible hangar lots. A detailed image of the FBO hangar area is shown in Figure 4.10.

A portion of the Taxiway I apron has already been constructed as shown in Figure 4.9 has been built to accommodate the Global 5000, a Group III aircraft due to it's wingspan. The design phase for the area shown in brown began in Fall 2009.

4.5 Recommendations

The airport is a safe C-II facility in the current configuration, with the exception of the small aircraft parking apron and tiedowns. It is the recommendation of the Consultant to provide the facilities listed within Section 4.1. As necessary to accommodate traffic, the Airport should consider providing the facilities listed within Section 4.2. Therefore, for long-term planning, the protection for an upgrade to ARC C-III should be shown and planned.

Equipment needs at the airport will also be an important factor in planning for funding and expenditures. This will include the replacement of the tractors, mowers, and the loader within the next 20-year time frame. An older snow plow truck will need to be replaced in the nearer term and the snow plow

Figure 4.8
Selected Alternative

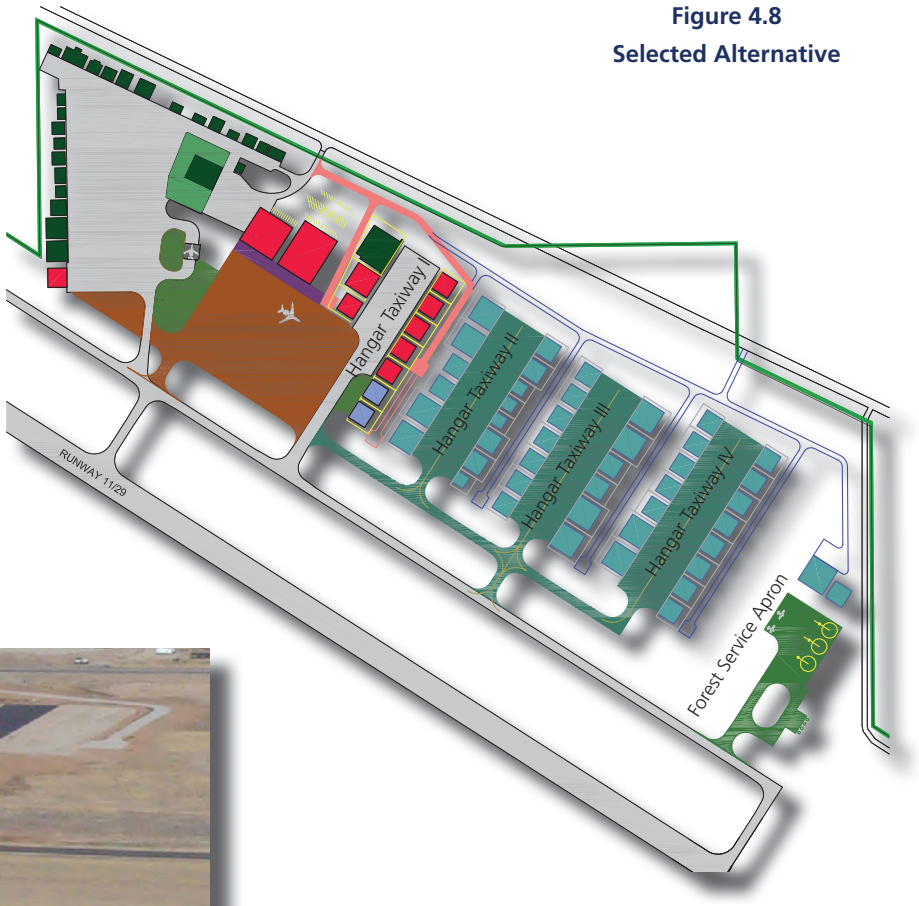

Figure 4.9
Hangar Taxiway I

truck purchased in 2009 will likely need to be replaced near the end of the 20-year time frame. The aviation fueling system that includes fuel storage tanks, pumps, piping, etc. will need to be upgraded or replaced within the next 10 years.

Figure 4.10
FBO Hangar Area

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Chapter 5 Environmental Overview

5.0 General - Purpose and Need

The purpose of this environmental overview is to evaluate potential impacts that may be caused by the proposed master plan improvement proposals for Ralph Wenz Field. These proposed improvements include aprons, accesses, and hangars. The improvements were determined as necessary through the airport layout planning process that included review of the existing inventory, forecasts, demand, capacity, and facility requirements. All applicable state and federal agencies were contacted for comments pertaining to the proposed improvements and agency responses are included in the Appendices. Public hearings were also held to gather input during the planning process.

5.1 Requested Federal (FAA) Action

- Approval of the Airport Master Plan.
- Participation in funding required to accomplish airport improvement goals.

5.2 Alternatives

As described in earlier chapters in this master plan, various alternatives for airport improvements were considered that could meet the forecasted demands of Ralph Wenz Field over the 20-year time frame. These alternatives included options for airfield layout and building layout. The alternative chosen was determined to best meet the needs of the airport with the least impact on the environment.

5.3 Environmental Consequences and Environmental Impact Categories

The FAA encourages the airport Sponsor to participate in early coordination with appropriate federal, state, and local agencies, industry groups, environmental agencies, and the community in the environmental review process. Early involvement by members of these groups can help aid in the identification of environmental impacts and can help initiate advance planning of actions, including design changes, to mitigate those environmental impacts.

It is necessary to consult with the applicable federal, state, and local agencies that have jurisdiction in the environmental categories as defined by FAA environmental documents and listed:

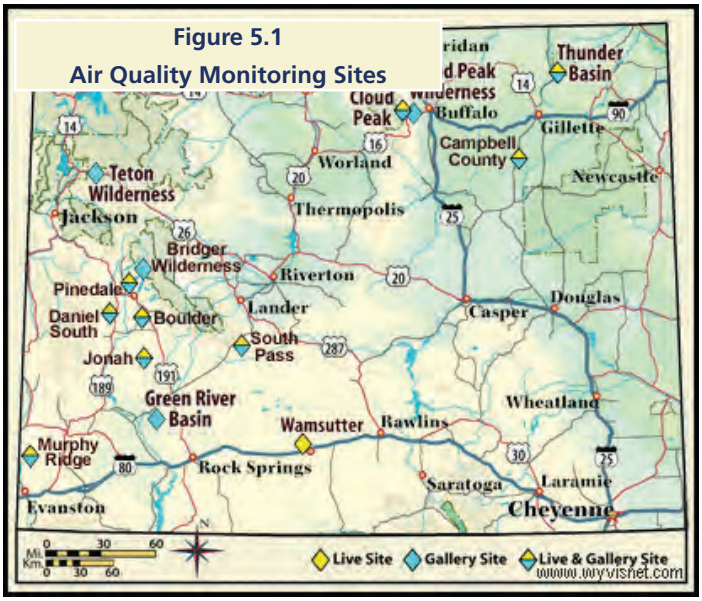
- Air Quality
- Coastal Resources
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act Section 4(F)
- Farmlands
- Fish, Wildlife and Plants
- Floodplains
- Hazardous Materials
- Historical, Architectural, Archaeological, and Cultural Resources
- Light Emissions and Visual Impacts
- Natural Resources and Energy Supply
- Noise
- Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks
- Solid Waste
- Water Quality
- Wetlands
- Wild and Scenic Rivers

The letter sent to agencies for comment requests can be found within Appendix 1. A list of agencies contacted can be found within Appendix 2. All agency response letters can also be found within the Appendices.

Air Quality

The Ralph Wenz Field is not located within an area designated as Federal Class I under the 1977 Clean Air Act. Due primarily to oil and gas development in the area, Sublette County has several active air quality monitoring stations as shown in Figure 5.1 in association with the Wyoming Department of Environmental Quality and their Wyoming Visibility Monitoring Network.

Figure 5.1
Air Quality Monitoring Sites

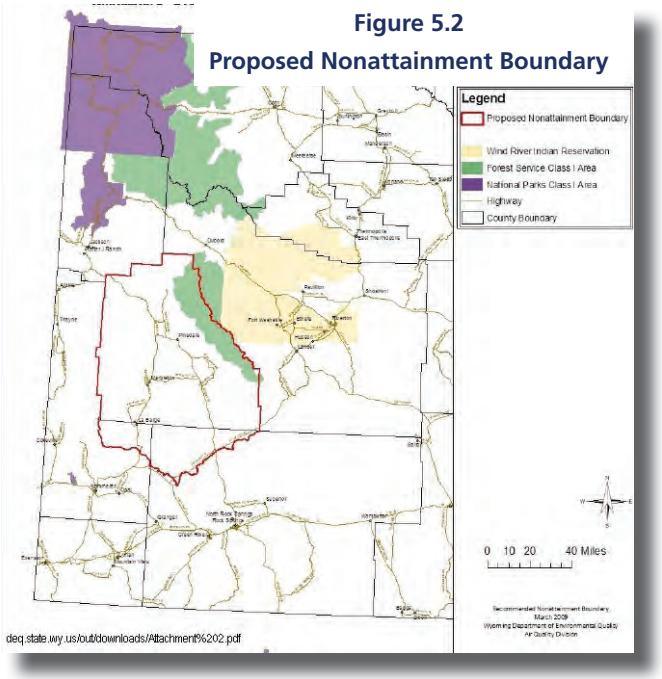


The Pinedale air quality monitoring site is located southwest of Pinedale at -109°53'4.51"W and 42°51'9.29"N. The Boulder air quality monitoring site is located approximately 4 miles southeast of the town of Boulder. The Daniel South air quality monitoring site is located approximately 5 miles south of the town of Daniel. The Jonah air quality monitoring site is located approximately 40 miles northwest of Farson, approximately 7 miles west of Highway 191.

As of March 12, 2009, the State of Wyoming has recommended that under the Clean Air Act, the EPA place the Pinedale area in an ozone nonattainment area. It appears that a final decision on the nonattainment area will not occur until December 2010. Ozone levels in the area exceed the National Ambient Air Quality Standards (NAAQS). Following a formal nonattainment designation, Wyoming will be required to develop a state implementation plan to return the area to attainment status.

The nonattainment area may result in additional review and/or requirements for airport projects in the future. According to the FAA Environmental Desk Reference for Airport Actions (October 2007), Chapter 1, Section 1(d) states that general conformity regulations do apply to a Federal action located in an area that is designated nonattainment and that depending upon the size of the airport and nature of the project, it is normally

Figure 5.2
Proposed Nonattainment Boundary



necessary to conduct an air quality analysis for NEPA purposes.

Figure 5.2 shows the proposed nonattainment boundary was obtained from the Wyoming Department of Environmental Quality's website.

An Environmental Assessment was completed for the Ralph Wenz Field in August of 2006 by James Gores and Associates that included information from an Air Quality Impact Analysis that was performed by TRC Mariah in March of 2005. This was completed for a runway extension project. The report concluded at that time that forecasted increases in air traffic were not anticipated to have a significant impact on ambient air quality resulting from the runway extension. The Environmental Assessment also stated that 180,000 annual operations were necessary to require an air quality model based upon FAA Order 5050.4A. Ralph Wenz Field operations, current and projected, fell below 180,000 annual operations.

Dust control or suppression techniques are recommended for all unpaved parking areas. Combustion and fuel storage equipment such as boilers, generators, and storage tanks should be evaluated for all applicable Federal and State standards.

The State Department of Environmental Quality, Division of Air Quality, Asbestos stated via a phone call that any renovation or demolition of buildings will require an asbestos inspection prior to work commencing and additional permitting should asbestos be present.

A letter from the Department of Environmental Quality, Air Quality Division states that the compliance section of the Air Quality Division does not foresee any adverse air quality impacts associated with the proposed projects with the exception of possible dust problems during construction. With the use of dust mitigation practices, the Wyoming Air Quality Standards and Regulations should be complied with. These practices include frequent watering, compaction, mulching, and reseeding.

Costal Resources

Ralph Wenz Field is located in the middle of the continent. Therefore, there are no coastal zones associated with the master plan. Because of the location, the Coastal Zone Management Act of 1972 and the Coastal Barriers Resources Act of 1982 do not apply to this review. No significant impact will occur to coastal resources or barriers.

Compatible Land Use

According to the Environmental Assessment completed in 2006 by James Gores and Associates, the nearest noise sensitive area is Skinner Park, located approximately 5.5 miles from the airport. The nearest school is approximately 5.6 miles from the airport.

The New Fork River riparian area closely parallels the runway at a distance that varies from 3,000 to 4,500 feet. At the time of the report, there was no history of wildlife conflicts arising as a result of the closeness of the riparian area.

The property is not located within City limits and area land use is under the jurisdiction of Sublette County. There are several residential and industrial subdivisions around the airport as shown in Figure 5.3. A Conservation Easement is located at the northwest end of the airport property. The State of Wyoming has property adjacent on the south. Properties around the airport are zoned industrial, commercial, and rural residential. Several homes, ranches, and businesses are near the airport.

There is extensive oil and gas development to the southwest of the airport on the Bureau of Land Management property. The County Zoning and Development Regulations have established Airport Safety Zone Requirements in any Zoning District (Chapter III, Section 8).

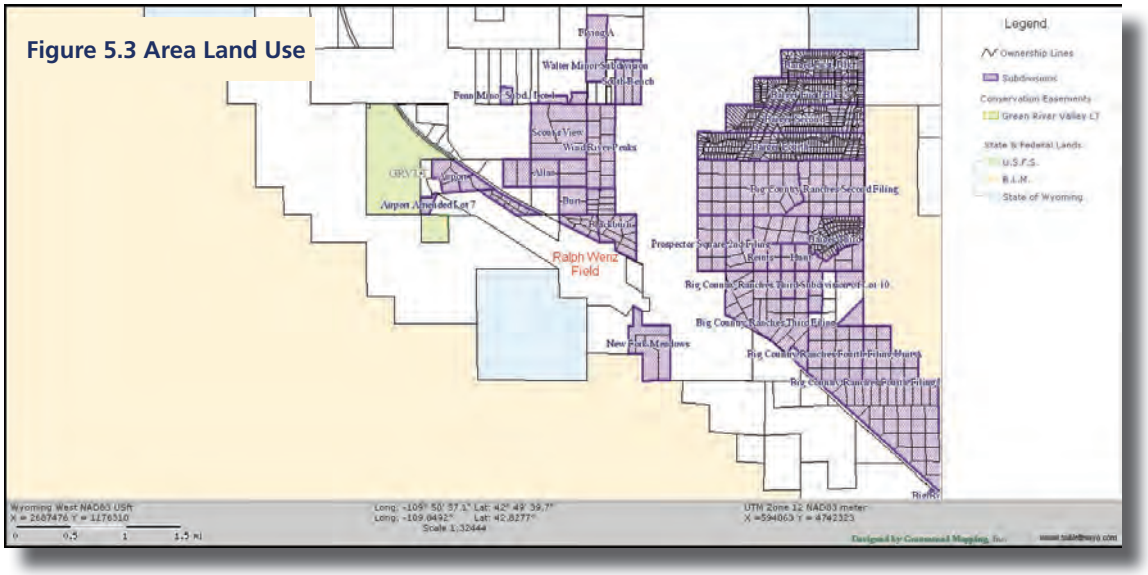


Figure 5.3 Area Land Use

Construction Impacts

Construction impacts will be temporary, limited exclusively to the construction period, and will be the direct result of the construction. The following construction related impacts may occur at Ralph Wenz Field:

- A temporary increase in particulate and gaseous air pollution levels as a result of dust generated from construction activity and by vehicle emissions from construction equipment and employee transportation;
- A temporary increase in noise from construction equipment and traffic;
- Temporary erosion, scarring of land surfaces, and loss of vegetation in excavated or otherwise disturbed areas;
- Generation of solid and sanitary waste from on-site construction workers;
- A temporary increase in traffic volumes in the airport vicinity.

Methods and practices will be used to minimize the effects on water quality during construction. These methods will conform to FAA Advisory Circular 150/5370-10C, Standards for Specifying Construction of Airports, Item P-156 Temporary Air and Water Pollution, Soil Erosion, and Siltation Control and FAA Advisory Circular 150/5370-2E, Operational Safety of Airports During Construction. Wyoming State Department of Environmental Quality Permits may be required for mining, air quality, and water quality.

Department of Transportation Act, Section 4(f)

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

None of the proposed alternatives will require the use of or acquisition of any public property as defined by Section 4(f).

Farmlands

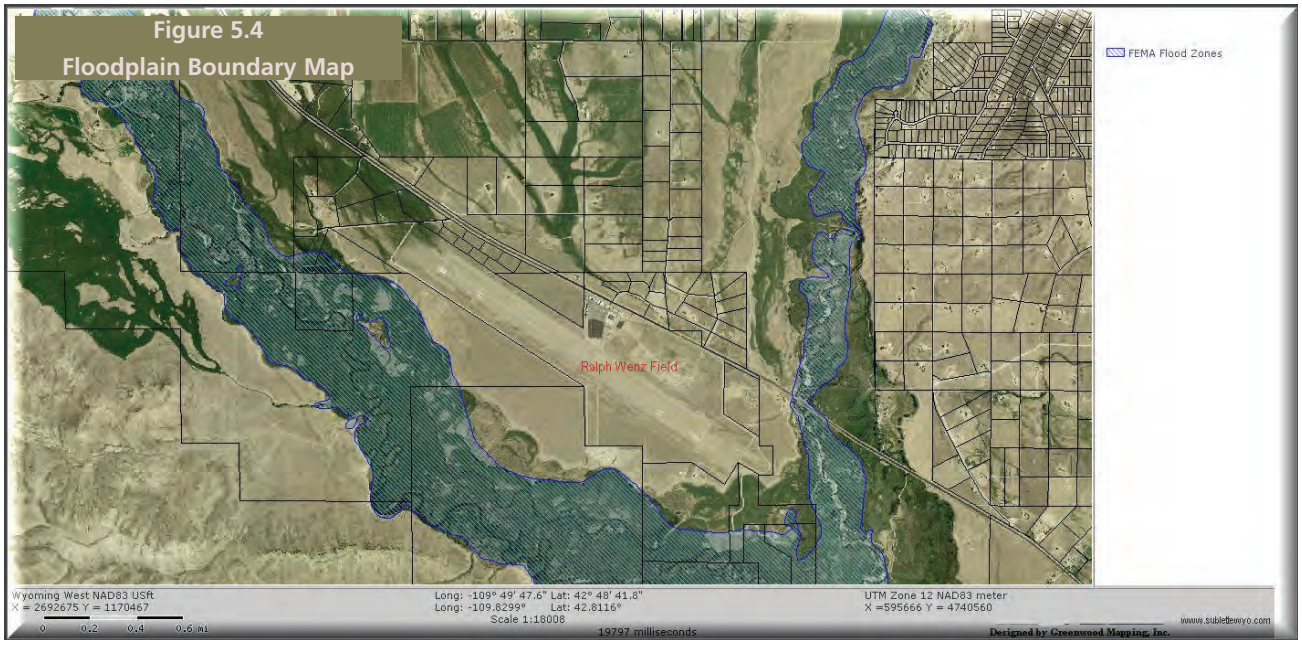
The goal of the Farmland Protection Policy Act (FPPA) is the preservation of prime and unique farmlands and the minimization of adverse effects from the conversion of farmlands to nonagricultural uses. Prime and unique farmlands are defined as those that on a national level produce unusually high yields or lands that produce crops that can be grown only in specific climates. Land surrounding the airport is used for agricultural activities. According to the USDA at the time of the 2002 Airport Layout Plan prepared by JPS AeroConsultants, Inc., none of the lands in Sublette County are considered prime and unique farmlands because of the short frost-free growing season in the arid, high-altitude region. Therefore, none of the proposed alternatives will have an impact on farmlands as defined above. A letter from the NRCS confirms that since there will be no conversion of farmlands from agricultural use to non-agricultural use, the work will not adversely impact important agricultural lands.

Fish, Wildlife and Plants

The 2006 Environmental Assessment completed by James Gores and Associates identified several species that may occur within the vicinity of the project area that are threatened, endangered, proposed, candidate, and Wyoming sensitive species. At that time, for the proposed runway and parallel taxiway extensions (1,800 feet each to the north), it was determined that there would be no significant impacts to fish, wildlife, or plants.

A letter from the Wyoming Game and Fish Department dated June 5, 2009 states that there are no terrestrial wildlife concerns pertaining to the proposed projects. Best management practices should be incorporated to ensure that all sediments and other pollutants are contained within the boundaries of the work area during construction activities in order to minimize impacts to the aquatic resources of the New Fork River.

A letter from the U.S. Fish and Wildlife Service dated July 1, 2009 states that as proposed, the project is currently in compliance with the Endangered Species Act of 1973, as amended and the Migratory Bird Treaty Act. The Sponsor is encouraged to consult with their office during all phases of construction to ensure compliance with current guidelines. The project is also subject to a review should the proposed projects change significantly.



Floodplains

The airport property is not located within the FEMA designated floodplain. The information in Figure 5.4 is from the FEMA Flood Hazard Zone: A (11/15/1977), FEMA FIRM Panel: 5600480010A as obtained from the Sublette County website.

Hazardous Materials

A phase I Environmental Site Assessment prepared by TRC Mariah in 2004 and referenced in the August 2006 Environmental Assessment prepared by James Gores and Associates did not identify any known hazardous materials at Ralph Wenz Field. Construction projects may require permitting by the Wyoming Department of Environmental Quality to include storm water permits. Additional solid waste production will be minimal once construction projects are completed.

Historical, Architectural, Archaeological, and Cultural Resources

The 2006 Environmental Assessment prepared by James Gores and Associates included a Class III Cultural Resource Inventory for the runway extensions project. It stated that there are three sites approximately 3,280 feet away on the opposite site of the New Fork River. At that time, they recommended the following measures:

- All ground-disturbing activities be restricted to the area inventoried by TRC Mariah;
- If evidence of prehistoric or historic sites is discovered during ground-disturbing activities, all activities should immediately cease within a 100 foot radius of the site and the appropriate personnel within the State Historic Preservation Office should be notified;
- All construction and maintenance personnel should be instructed of the confidentiality of the site location information and be notified that collection of cultural materials is prohibited.

The 2002 Airport Layout Plan by JPS AeroConsultants, Inc. stated that past plans and correspondence with SHPO indicated a low probability of surface archaeological or historic manifestations. The 2006 Environmental Assessment completed by James Gores and Associates stated that the Wind River Reservation and Wind River Agency were contacted and that the Wind River Reservation indicated that they had no additional comments to the three measures described above.

The letter from the State Historic Preservation Office (SHPO) received during this planning process can be found within the appendices. They recommend that a consultant meeting the Secretary of the Interior's Professional Qualification Standards be retained to complete a cultural resource survey to be reviewed by SHPO prior to any ground disturbing activities. A list of cultural resource consultants was included with the letter which is located in the appendices. It is recommended that the cultural resource survey completed for the 2006 Environmental Assessment be reviewed with SHPO to determine it's adequacy for future projects at the airport.

Light Emissions and Visual Impacts

The aesthetic and visual impacts of the proposed improvements should be minimal. The proposed development will not significantly increase light emissions or hinder traffic on nearby roads. If light emissions from the airport lights become a problem, the lights can be shielded or baffled to reduce their impact.

Natural Resources and Energy Supply

There is not a foreseen impact to existing natural resource development in the area or a significant increase in the use of energy due to the construction of the proposed improvements.

Noise

The FAA has developed a computer model that evaluates noise generated by aircraft operations and is referred to as the Integrated Noise Model (INM) program. The INM program can calculate cumulative aircraft noise by using forecasted air traffic by aircraft type, runway alignment, direction of aircraft movement, and time of day. Noise levels are measured in Day/Night Levels (Ldn). Ldn is an average of day and nighttime levels of sound and are computed so that nighttime sound levels are given more weight. The FAA and EPA have set the guideline at 65 Ldn to determine compatible land use around airports. Noise complaints can and will occur in areas impacted by lesser noise levels because individual human perception of noise is subjective.

As referenced in the 2006 Environmental Assessment completed by James Gores and Associates, a noise analysis for Ralph Wenz Field was completed in 2005 by Washington Group International. The noise analysis concluded that one property adjacent to the airport may be near or encroached upon by the 65 Ldn contour. The airport holds a noise easement on that property. The remaining area affected by the 65 Ldn contour was airport property.

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

The proposed improvements are not expected to significantly impact population movement, growth, or public service demands. There are no proposed relocations of residences, businesses, long-term disruptions of local traffic patterns, or a foreseen substantial loss in the community tax base. Generally a well maintained and adequate airport facility serves as an attractant for industry and business development and therefore may have a positive impact on the local economy in the future. Short-term beneficial impacts to the local economy include employment, service, and material needs during the construction period.

Environmental justice impacts will not be a concern for any alternative as all project meetings have afforded the same opportunities for public participation to minority, low-income, and the general public. Ralph Wenz Field is not near a Native American reservation or other population who rely upon subsistence food gathering.

The Pinedale elementary school is located in the Town of Pinedale, approximately 5.5 miles northwest of the

airport. None of the alternatives will have a significant impact on children's health or safety risks.

Solid Waste

Existing and proposed solid waste disposal facilities have the capacity to handle any increase in solid waste that the airport users will generate due to construction and the expanded infrastructure.

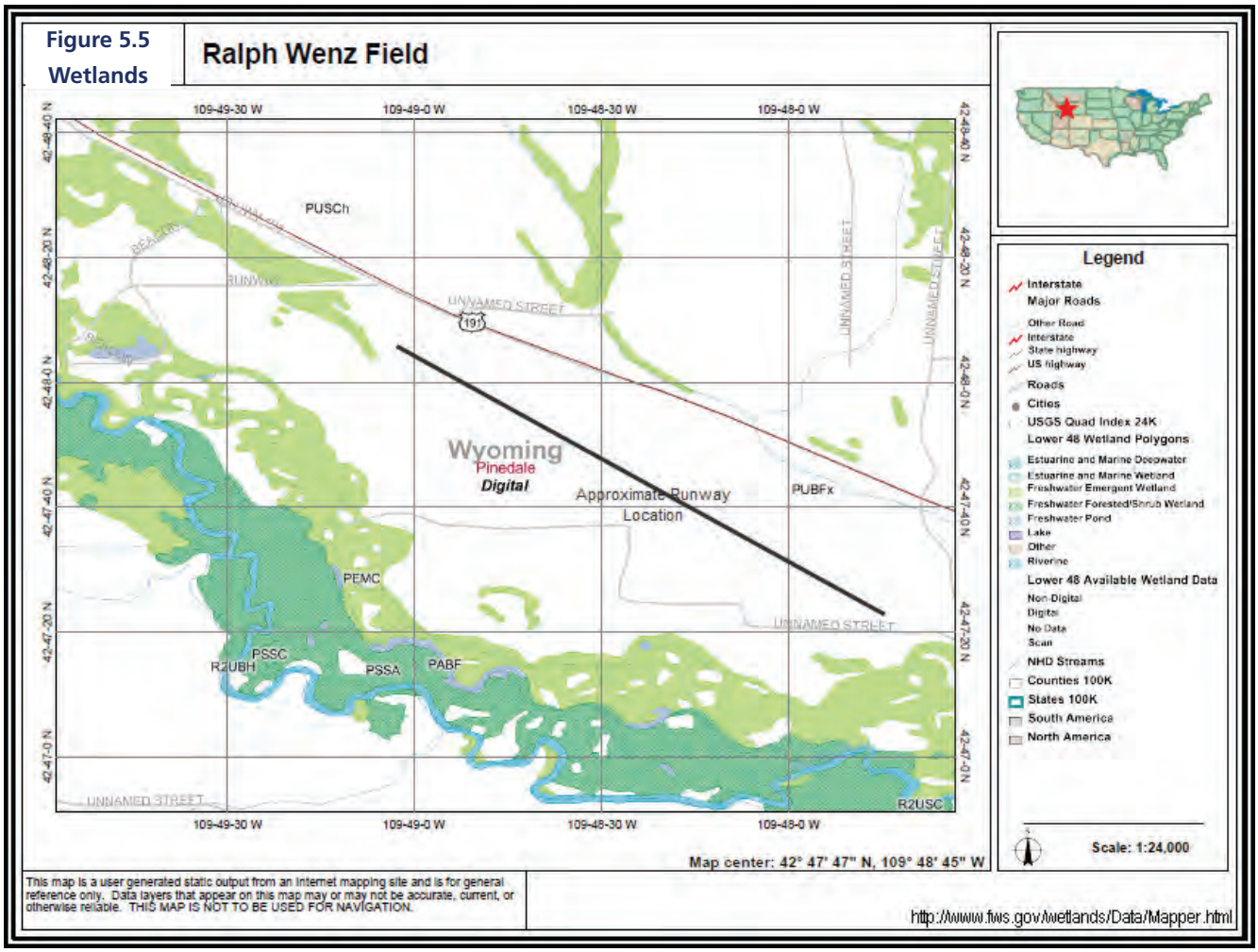
Water Quality

There are no known existing water quality concerns in the proximately of the airport. Best Management Practices (BMPs) will be implemented during construction to minimize potential impacts to surrounding water sources. Construction of improvements may require a storm water runoff permit to be issued by the Wyoming Department of Environmental Quality. Chemical waste products at the site must be disposed of properly to avoid groundwater contamination.

Wetlands

Figure 5.5 was created at the United States Fish & Wildlife Service's online Wetlands Mapper. A portion of the airport property within the northwest corner lies within designated floodplain areas. The 2006 Environmental Assessment completed by James Gores and Associates stated that Ralph Wenz Field contained 34.03 acres of wetlands and 6,023 linear feet of Waters of the United States (WUS) according to a 2004 Wetland Delineation report by TRC Mariah, Associates. Consultation with the U.S. Army Corps of Engineers is recommended before any activities that could result in filling or disturbance of WUS or wetlands.

Figure 5.5
Wetlands



Wild and Scenic Rivers

The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve and protect rivers with outstanding recreational, cultural, and natural values in a free-flowing condition. The New Fork River south of the airport and Pole Creek east of the airport are not designated as Wild and Scenic Rivers. According to http://www.rivers.gov/ there are two designated rivers in Wyoming, a portion of the Clarks Fork of the Yellowstone River and the Snake River Headwaters as shown in Figure 5.6. These rivers are not near the Ralph Wenz Field and therefore, no Wild and Scenic Rivers will be impacted by airport plans.

Figure 5.6
Wild and Scenic Rivers

Chapter 6 Airport Layout Plan

6.0 General

This chapter describes, in detail, the drawings of the Airport Layout Plan (ALP) and gives a description of the proposed improvements for the airport. The airport and the areas the airport impacts are graphically represented within the drawing set. All layout drawings appropriate to the project were produced with FAA standards as defined in Advisory Circular 150/5070-6B, "Airport Master Plans" and 150/5300-13, "Airport Design". The following drawings were produced on 24" x 36" sheets and on 11" x 17" sheets to be incorporated in the Master Plan Report:

- Cover Sheet
- Airport Layout Plan
- Data Sheet
- Building Area Plan (1)
- Building Area Plan (2)
- FAR Part 77 Airspace
- Airport Land Use/Contours
- Runway 11/29 Plan & Profile
- Runway 11/29 RPZ
- Airport Area Land Use
- Airport Property Exhibit "A"

6.1 Cover Sheet

The cover sheet lists the drawings within the set. This sheet also includes the location and vicinity map showing Pinedale and Sublette County in relationship to the State of Wyoming and the local area.

6.2 Airport Layout Plan

The airport layout plan includes the following items:

- North Arrow showing True and Magnetic North and the year of the magnetic declination.
- Airport Reference Point (ARP), existing and ultimate.
- Elevations, existing and ultimate, for runway, touchdown zones, intersections, runway high and low points, structures on the airport.
- Building limit lines.
- Runway details, existing and ultimate, including dimensions, orientation, markings, threshold lighting, runway safety areas, and end coordinates.
- Taxiway details, existing and ultimate, including widths and separations from the runway centerlines, parallel taxiway, aircraft parking, and objects.
- RPZ details, existing and ultimate, including dimensions and type of property acquisition.
- Approach slope ratio.
- Title and Revision Blocks.
- Standard Legend.
- Existing and ultimate airport facility and building list.

The airport layout plan for Ralph Wenz Field shows the proposed future layout of the entire airport property. The proposed future airport will include additional hangar areas, hangar taxiways, and aircraft parking. There is also space shown for additional hangars and a new FBO building. A future RPZ is shown for not less than 3/4 SM visibility.

6.3 Data Sheet

The Data Sheet includes the following information:

- Wind rose(s) including data source, time period covered, and coverage for runways with 10.5, 13, and 16 knot crosswinds.
- Airport Data Table, existing and ultimate, airport elevation, Airport Reference Point data, mean maximum temperature, Airport Reference Code, and design aircraft for each runway or airfield component.
- Runway Data Table, existing and ultimate, percent effective gradient, percent wind coverage, maximum elevation above MSL, runway length and width, runway surface type, runway strength, FAR Part 77 approach category, approach type, approach slope, runway lighting, runway marking, navigational and visual aids, and RSA dimensions.

- Title and Revision Blocks.

The wind rose information shown on page 3 indicates that a crosswind runway is not necessary at Ralph Wenz Field. The runway data table indicates a future NDB approach.

6.4 Building Area Plan (1) and (2)

The Building Area Plans show the following information:

- Large scale plan views of the area or areas where aprons, buildings, hangars, and parking lots are located.
- Title and revision blocks.
- A Building and Data Table that lists structures and shows pertinent information including a numbering system to identify structures, top elevations of structures, and existing and planned obstruction markings.
- Title and Revision Blocks.
- Standard Legend.

The Building Area Plan (1) for Ralph Wenz Field shows the area closest to the existing apron, hangars, and the FBO. The proposed improvements within this area include a large-aircraft parking apron, additional auto parking, the relocation of taxiway B, and the reconfiguration of the small aircraft parking apron to meet Group II standards. The table on the building area plan shows the height of the existing buildings.

Building Area Plan (2) shows the expanded proposed improvements area. These improvements include additional hangar taxiways, hangar access roads, the proposed area for the Forest Service, and the areas for additional hangars.

6.5 FAR Part 77 Airspace

The Airport Airspace Drawing contains the following items:

- Plan view of all FAR Part 77 surfaces, based on the ultimate runway lengths.
- Small scale profile views of existing and ultimate approaches.
- Obstruction data tables.
- Title and revision blocks.
- Approach Plan View Details including USGS for base map, runway end numbers, 50’ elevation contours on all slopes, most demanding surfaces shown with solid lines and others shown with dashed lines, and top elevations of objects that penetrate any of the surfaces.
- Approach Profile Details including a depiction of the ground profile along the extended runway centerline representing the composite profile, based on the highest terrain across the width and along the length of the approach surface. The Approach Profile Details also includes the identification of all significant objects and top elevations within the approach surfaces, regardless of whether or not they are obstructions and the existing and ultimate runway ends and FAR Part 77 approach slopes.

The Ralph Wenz Field Airspace Drawing shows several terrain obstructions located both within the horizontal and the conical surfaces. These obstructions are determined using the airport high point of 7102.2 feet and the FAR Part 77 guidelines.

6.6 Airport Land Use/Contours

The Airport Land Use/Contours drawing shows the existing land use on the airport. The land north of the highway may be used for nonaeronautical purposes and all of the airport land south of the highway is used for aeronautical purposes. The contours drawing shows the ground contours as part of the requirements for the Airport Layout Drawing.

6.7 Runway 11/29 Plan & Profile and Runway 11/29 RPZ

The Runway 11/29 Plan & Profile and the Runway 11/29 Runway Protection Zone (RPZ) Drawing shows the following items:

- Large scale plan views of inner portions of approaches for each runway, usually limited to the RPZ areas.
- Large scale projected profile views of inner portions of approaches for each runway, usually limited to the RPZ areas.

- Title and revision blocks.
- Plan View Details including aerial photos for base maps, numbering system to identify obstructions, property line, existing and ultimate physical end of the runways with runway end numbers and elevation, and ground contours.
- Profile View Details including terrain and significant items, obstructions with numbers on the plan view, and roads and railroads with dashed lines at the edge of approach.
- Obstruction Table Details including terrain and significant items, obstructions identified with numbers on the plan view, roads and railroads shown with dashed lines at the edge of the approach, a separate table for each RPZ, and obstruction identification number and description, the amount of the approach surface penetration, and the proposed disposition of the obstructions.

6.8 Airport Area Land Use

The Land Use Drawing shows the following information:

- All land uses including industrial and residential, on and off the airport, to at least the 65 DNL contour.
- Title and revision blocks.
- Aerial base map.
- Legend with symbols and land use descriptions.
- Public facilities such as schools, parks, etc.
- Existing and future airport features such as runways, taxiways, aprons, RPZs, terminal buildings, and navigational aids.

The Land Use Drawing for Ralph Wenz Field also includes a description of land use limitations and restrictions for each zone depicted on the drawing. These zones include the Runway Protection Zone (RPZ), Approach Surface, Horizontal Surface, Conical Zone, Object Free Area (OFA), and the Transitional Zone.

6.9 Airport Property Map Exhibit "A"

The Airport Property Map includes the following information:

- Title and revision blocks.
- Legend.
- Data Table with a numbering or lettering system to identify tracts of land, the date the property was acquired, the Federal Aid project number under which it was acquired, the type of ownership, and existing and future airport features that would indicate a future aeronautical need for airport property.

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Chapter 7 Facilities Implementation Plan

7.0 General

The facilities implementation plan provides guidance on how to implement the findings and recommendations of the planning effort. The plan must balance funding constraints, project sequencing limitations, environmental processing requirements, agency and tenant approvals and coordination processes, business issues (leases and property acquisition), and Sponsor preferences. The plan must coordinate with the master plan ALP and the airport's financial plan. The plan should be implemented on an "as needed" basis that is consistent with the financial capability and needs of the airport and community.

The recommended improvements are presented within this chapter. The cost estimates for these improvements, based on 2010 dollars, are presented in Chapter 8, Section 8.2. The Sponsor, State, and FAA shares of the total costs are estimates.

The Federal Aviation Administration coordinates the Airport Improvement Program (AIP). The AIP was established by Congress to provide funding to airports on a priority basis. Revenues for this program are not generated from federal income taxes, but from taxes on aviation activity such as the sale of aviation fuel and oil, aircraft, aircraft parts, and airline tickets. The vast majority of the money for this study is being funded through the AIP program. More information on the AIP program can be found within Chapter 8, Section 8.1.

7.1 Planned Capital Projects

The facilities implementation plan addresses all of the airport's planned capital projects, including those not associated with recommendations of the master plan, to ensure that adequate fiscal, staff, scheduling, and other resources are available.

7.2 Capital Improvement Plan

Capital projects differ from maintenance and general upkeep of the airport. Capital projects are normally large infrastructure improvements, new or reconstructed. These can include runways, runway extensions, taxiways, and aprons. Certain types of equipment such as snow removal plows and blowers, fire fighting/rescue trucks, and their associated storage buildings may also be eligible for FAA funding assistance. Because capital projects often require substantial funding, they must be planned for several years in advance.

The State of Wyoming assists the FAA in maintaining lists of projects at each airport in the NPIAS (National Plan of Integrated Airport Systems) and/or the Wyoming State Aviation System. This list is referred to in Wyoming as the Wyoming Capital Improvement Program (WCIP). Each individual airport also has its own version of a Capital Improvement Program (CIP). These lists shown the development projects for each year with the planned funding levels and the general split of the funding.

Airport Master Plans and Airport Layout Plan (ALP) Updates are usually completed every seven to ten years at a general aviation airport. Larger development items are determined to be needed and are justified through these planning efforts. Once the planning identifies a needed project, the project is added to the CIP through review by the State of by the Sponsor during the annual CIP review. Typically at the review, completed projects are removed, close-in projects are refined, and new needs are added for future years.

Once the project is on the CIP, it may take years to schedule (program) the funding depending upon the priority of the project. Runways and safety areas have top priority.

7.3 Master Schedule

The master schedule is intended to help establish interrelationships between projects, determine a sequence to minimize conflicts, and to help ensure that the sequence is maintained throughout the implementation plan. Detailed information is provided for the five-year horizon (Phase I) with less detailed information provided for the 10- (Phase II) and 20-year (Phase III) horizons.

Project with significant costs associated take many years to schedule into the tight Statewide Capital Improvement Program. There always are more 'needs' than funding and it is very important for the Sponsor to plan ahead and program projects well in advance of pavements failing or the need actually arising. This pre-planning helps assure that the airport does not unduly impact the State's goals for a given year or fall into a situation where funds must be allocated on an emergency level.

The projects listed with a year and CIP behind them have been approved or programmed in the Wyoming Aviation Capital Improvement Program.

Phase I Projects (2011-2015)

- Apron Expansion - Phase I (2010 CIP)
- Apron Expansion - Phase II (2011/12 CIP)
- Construct Apron Expansion, Phase I (2012 CIP)
- Widen Taxiway A-1 and A-5 to 50 feet, C-III (2012 CIP)
- Acquire Snow Removal Equipment
- Seal Coat and Paint All Pavements
- Acquire Land for Approach Protection and Lights
- Install ODALs (Approach Lights)
- Airport Layout Plan Update

Phase I includes the design and construction of the apron expansion to the east. This new area will be mainly for the parking and service of larger and heavier jets.

Currently the existing small aircraft parking area on the north end of the parking ramp has tiedowns that do not meet standards for wing-tip clearances. When this area is reconstructed in Phase II these tiedowns will need to be replaced with spacing to design standards. This will force the loss of 19 small aircraft parking spots to be replaced with 7 new ones that meet standards.

The loss of tiedowns during the busy summer months small aircraft parking would eventually cause the spill of aircraft onto the large aircraft parking. The new apron expansion will help with the overflow by giving all of the proposed total of 16 tiedowns on the existing apron area to mainly serve the smaller aircraft.

The expansion will move Taxiway Bravo to the west 215 feet to allow for additional parking area on the new ramp. This will also meet the FAA guidance by shifting access directly onto the active runway from the parking apron to avoid unintentional runway incursions.

In FY10, a small construction project was completed to prepare the site and construct the drainage improvements needed for the apron expansion.

Maintenance is due for the northern portion of the oldest ramp area. Several areas around the in-pavement drains are failing and need to be repaired.

A user built a hangar for his Global 5000 business jet aircraft. This aircraft is a ARC C-III and standards require a 50 foot taxiway. To accommodate the plane, without undue hardship on the airport, it is recommended to increase A-I and A-5 connectors to 50 feet wide. This will allow the pilot to exit the runway safely and get to Taxiway-C (the hangar taxiway).

The airport plans on acquiring a large piece of Snow Removal Equipment (SRE) in FY14. The extension to the runway is taxing the airport's ability to quickly get the deep snow typical in Pinedale off the operational surfaces. Because the airport is a vital transportation link in the area the ability to get open or stay open is very important.

Periodic maintenance is extremely important to obtain the longest life from pavements. The airport will continue to participate in scheduled crackseal and sealcoats through the State's pavement maintenance

program (PMP). This program satisfies the FAA's requirement for a maintenance program to continue to be eligible for federal funding.

New improvements in GPS approaches, namely the addition of adding vertical guidance to a GPS approach will enhance the capabilities of the airport. However, it will require some additional investment to maximize the potential. An approach with as low as 3/4 statute mile requires an approach lighting system. The least expensive qualifying system is an ODAL arrangement. The ODAL system is a series of lights spaced evenly 300 feet apart leading to the runway threshold. To accommodate the system, a small parcel of land will need to be acquired off Runway 29. This area is within the RPZ and is eligible for reimbursement. The lighting system increases the need for the land.

The final project is the Airport Layout Plan Update. The FAA recommends that for an airport the class and size of Pinedale, an ALP or Master Plan Update occur every five to seven years. This assures the Sponsor and the aviation system that the airport planning is up to date and meets the needs and requirements of the users.

Phase II Projects (2016-2021)

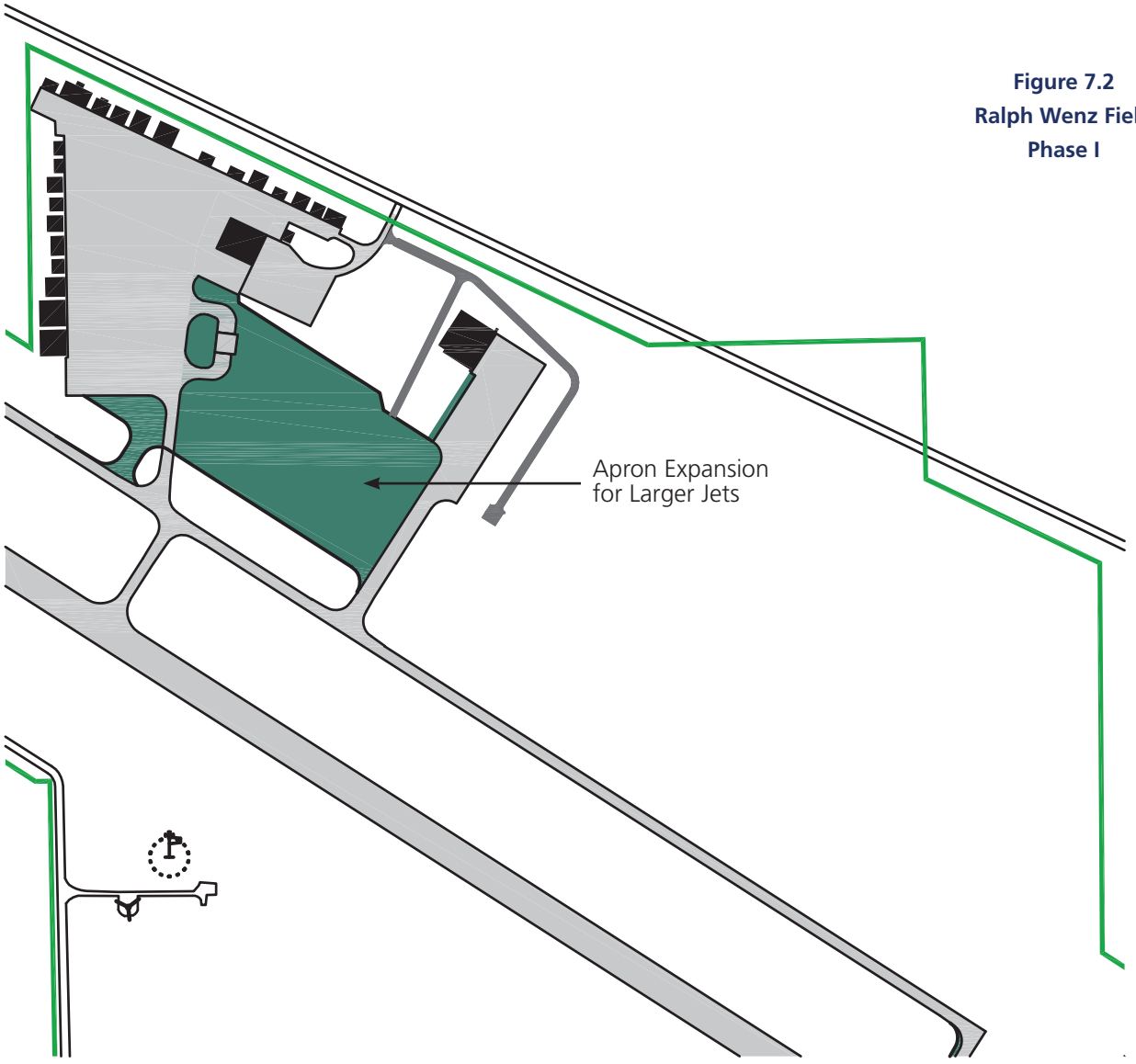


Figure 7.2
Ralph Wenz Field
Phase I

By FY16 the pavements in the oldest section of the aircraft parking aprons, the north small aircraft parking area, will need attention. The surface should at a minimum be overlaid and repainted. The existing non-standard tiedowns will be removed and replaced with the continuation of the standard parking layout.

By FY17 the majority of Runway 11/29 and parallel taxiway pavements will be approaching 20 years old. With proper maintenance these pavements have been holding up very well, but will require a surface overlay to assure that they continue to serve the airport and community into the future.

If appropriate for demand, a new hangar taxiway, much like Taxiway C should be constructed. This item is very much dependent upon demand of the users and should be constructed when the airport is close to reaching hangar capacity.

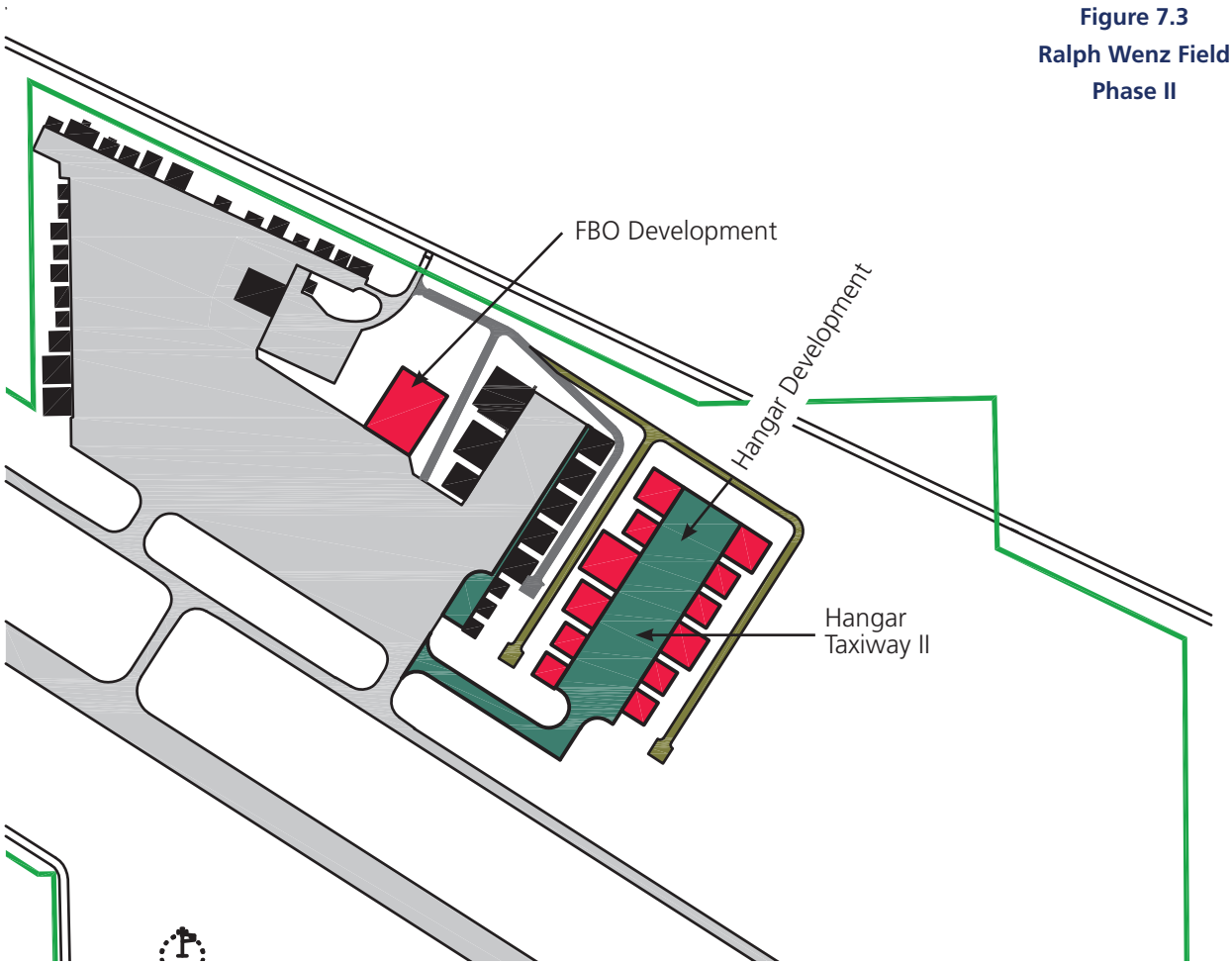
In FY18 a project to seal the apron and hangar taxiway (other pavements should have been overlaid the previous year). This is a scheduled maintenance as part of the State's PMP.

In FY19 a project is planned to install in-field drainage between the runway and the taxiway to allow for the grades to be brought up for easier maintenance and increased safety (a flatter RSA).

By FY20, the airfield lighting system will be nearing the end of its service life (20 years) and should be considered for replacement. As a large cost item, pre-planning is essential to schedule the funding needed for this replacement.

The final project in this phase will be to preform the periodic planning review and conduct a Master Plan update.

Figure 7.3
Ralph Wenz Field
Phase II



Phase III Projects (2022-2032)
Long term projects are to replace maintenance equipment both for airfield, the tractor and mower, and for snow removal with a new snow plow truck and loader equipment.

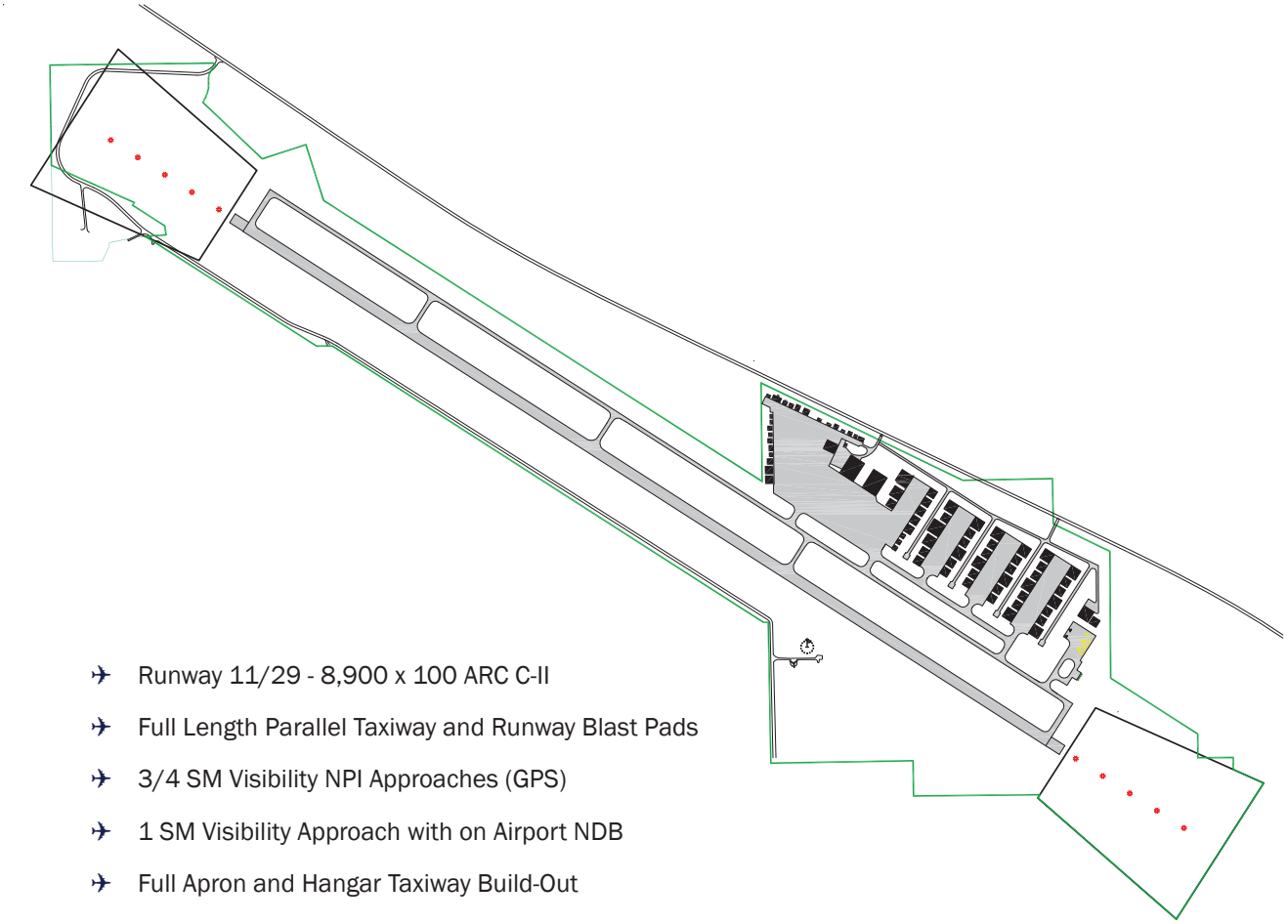
If demand requires additional hangar taxiways should be constructed in the manner set forth previously. There is plenty of additional room, but an old gravel pit will require fill to prepare the site(s).

The Forest Service has shown interest in developing a Single Engine Air Tanker (SEAT) base for aerial fire fighting activities. These areas are typically best separated from the day-to-day activities of the airport. Space has been planned for such the if needed. The entire area may not be needed, but is protected for under this plan.

Long term plans also include the acquisition of all of the remaining RPZ for land use control.

Figure 7.4
Ralph Wenz Field
Phase III

Figure 7.1
Ralph Wenz Field
Final 20 Year Build-Out



- Runway 11/29 - 8,900 x 100 ARC C-II
- Full Length Parallel Taxiway and Runway Blast Pads
- 3/4 SM Visibility NPI Approaches (GPS)
- 1 SM Visibility Approach with on Airport NDB
- Full Apron and Hangar Taxiway Build-Out
- AWOS-III PT
- ODALs Approach Lights
- Full Ownership of RPZs
- Forest Service SEAT Base
- Up to Two Full Service FBOs

Chapter 8 Financial Feasibility Analysis

8.0 General

The purpose of this chapter is to demonstrate the airport sponsor's ability to fund the projects in the master plan. Projects that are expected to be implemented in the near-term are emphasized. A more general discussion of the funding for the mid- and long-term projects is provided.

8.1 Funding and Budget

According to the 2007-2008 report from the Sublette Board of County Commissioners on the State of the County, the Pinedale Airport Board's budget expenditures total about $6.6 million, with part of this amount in the form of capital projects with grant funding. County money is allocated with $100,000 for operations, $355,000 to reserve accounts, and $715,000 as a local match to construct a new taxiway for future hangar development.

Figure 8.1 shows the average revenues and government operating subsidies for the time period of 1999-2010. The 2009 and 2010 fiscal years are estimates.

The miscellaneous revenue (interest) generally accounts for 0.1% of the total revenue at the airport. Town of Pinedale funding has accounted for an average of 42.8% of the airport operating cost budget from 1999-2010. Sublette County funding has accounted for an average of 32.6% of the airport operating cost budget from 1999-2010. WYDOT NAVAIDs maintenance grants have accounted for and average 2.8% of the operating budget for Ralph Wenz Field during the recent past. Federal, State, and Local funding for capital improvement projects will be discussed later.

As shown from 1999-2010, operating revenues have averaged 21.7% from sources including the fuel tax rebate, FBO fuel storage, FBO rent, landing and aircraft parking fees, hangar lot rent, parcel 25 rent (residential lease), pasture rent, and sign space rent. The landing and aircraft parking fees are a recent addition and have only been in place since 2008.

Figure 8.1

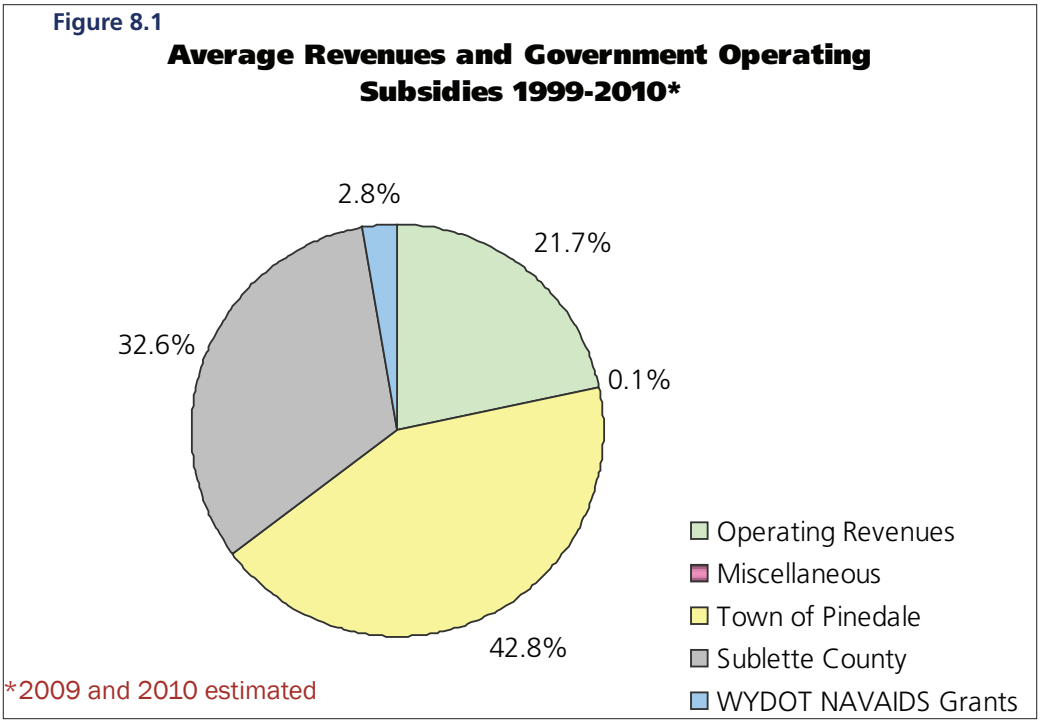
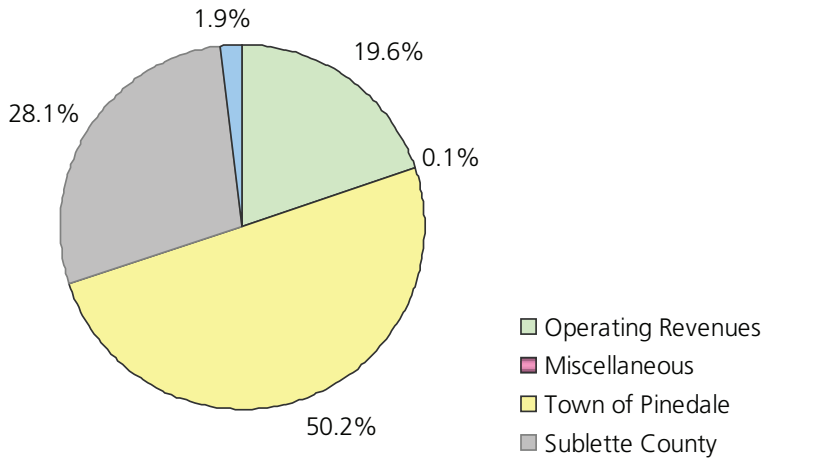


Figure 8.2 **Average Revenues and Government Operating Subsidies 2008-2010***



*2009 and 2010 estimated

Average revenues from 2008-2010 only are shown in Figure 8.2. Figure 8.3 shows the breakdown in revenues and subsidies for 2004, before the landing and parking fees. Figure 8.4 shows the breakdown in revenue and subsidies for 2008 which includes landing and parking fees. When just comparing operating revenues, there was a 4.2% difference in available funding from airport operations between 2004 and 2008. Figure 8.5 shows the funding breakdown per year from operating revenues and government subsidies.

Revenues and Government Operating Subsidies 2004

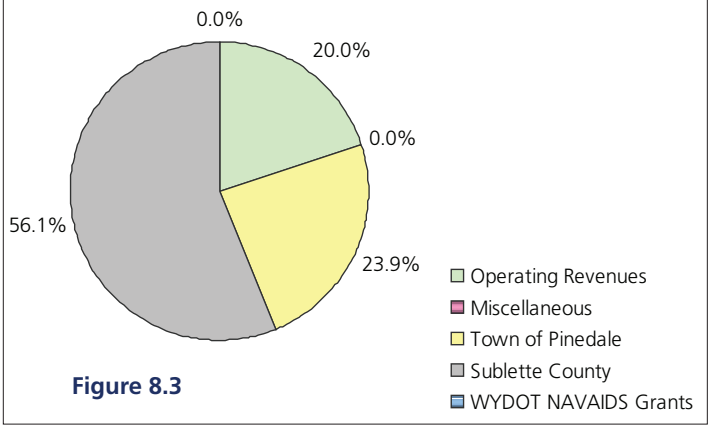


Figure 8.3

Revenues and Government Operating Subsidies 2008

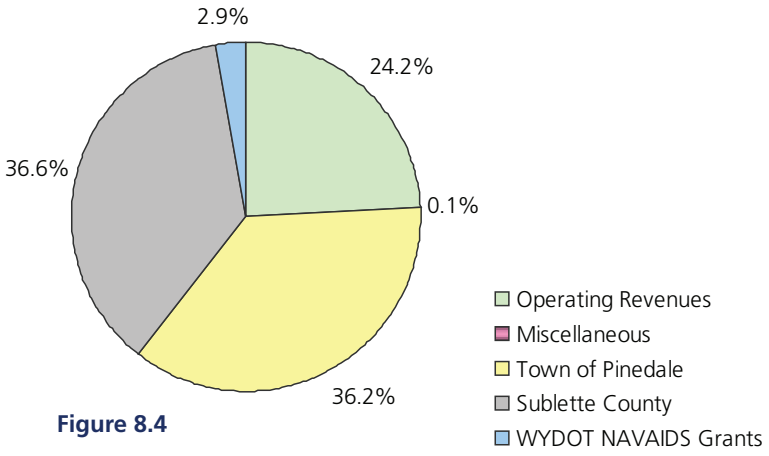
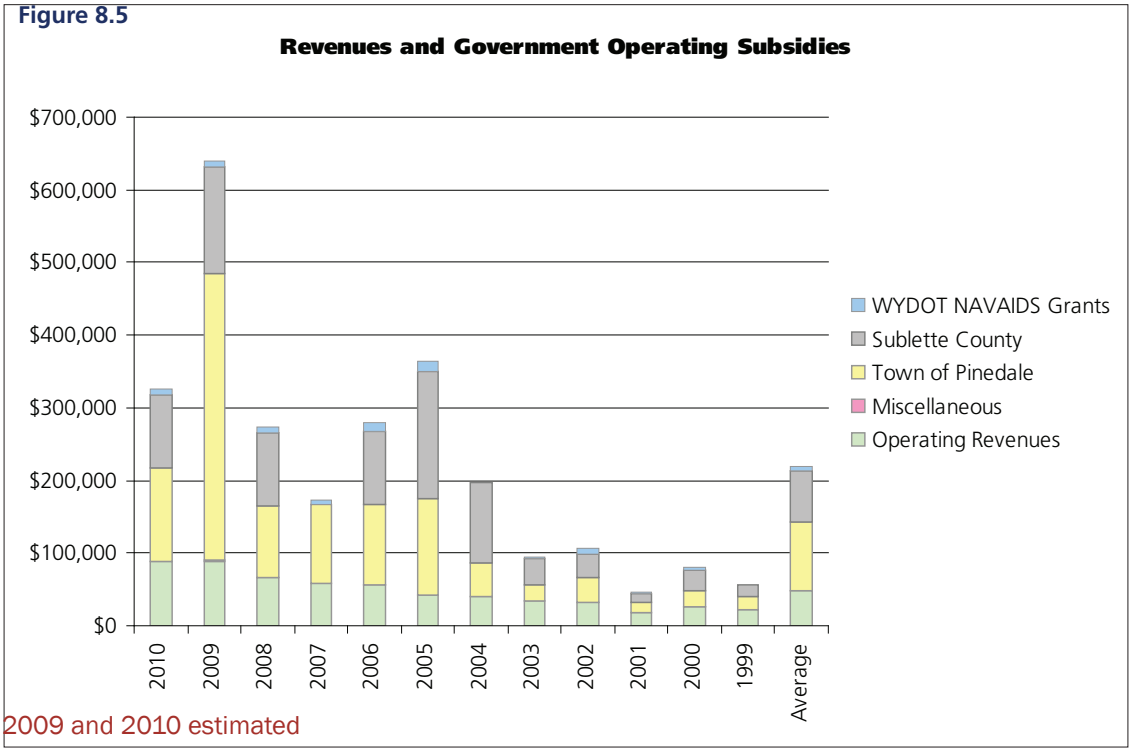


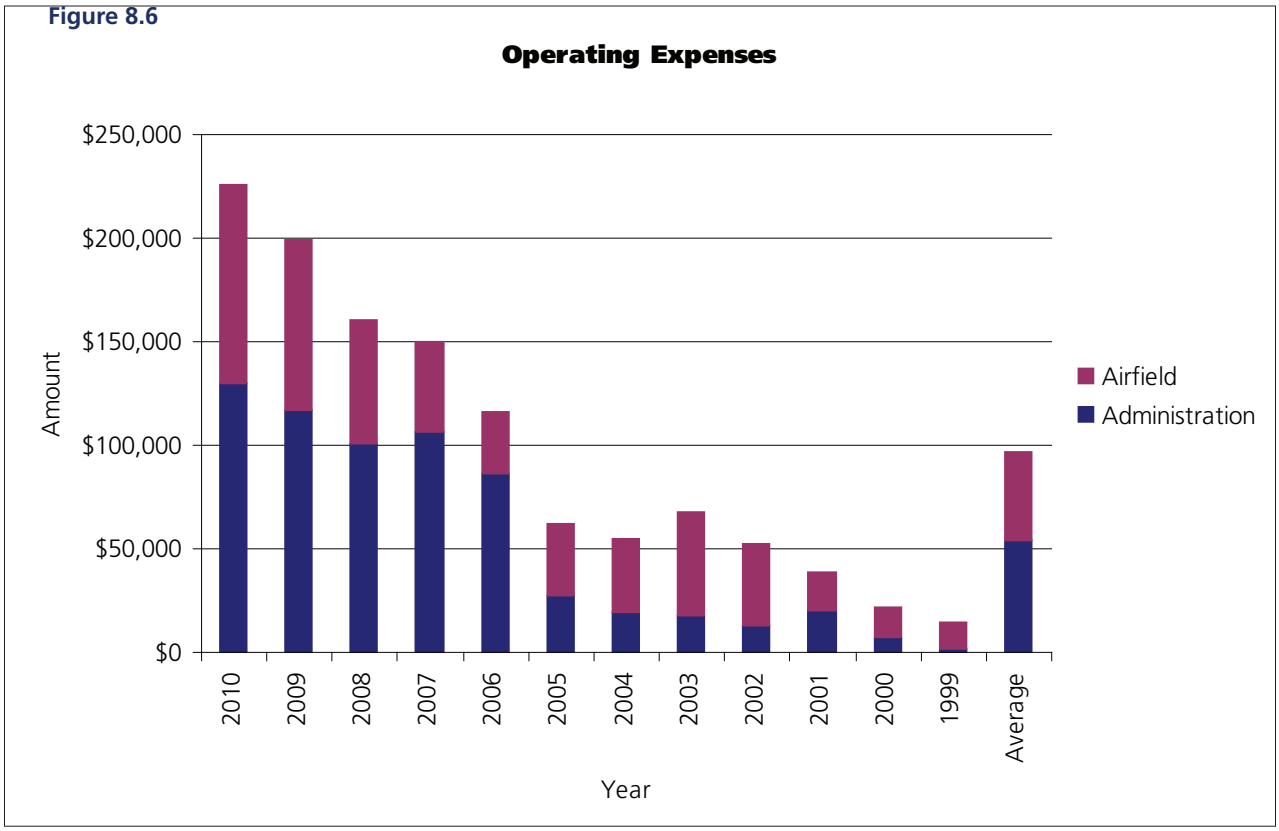
Figure 8.4

Figure 8.5



On the other side of the equation, Figure 8.6 shows the operating expenses for the same time frame, 1999-2010. Administrative costs rose in 2006 with the addition of a full-time professional airport manager.

Figure 8.6



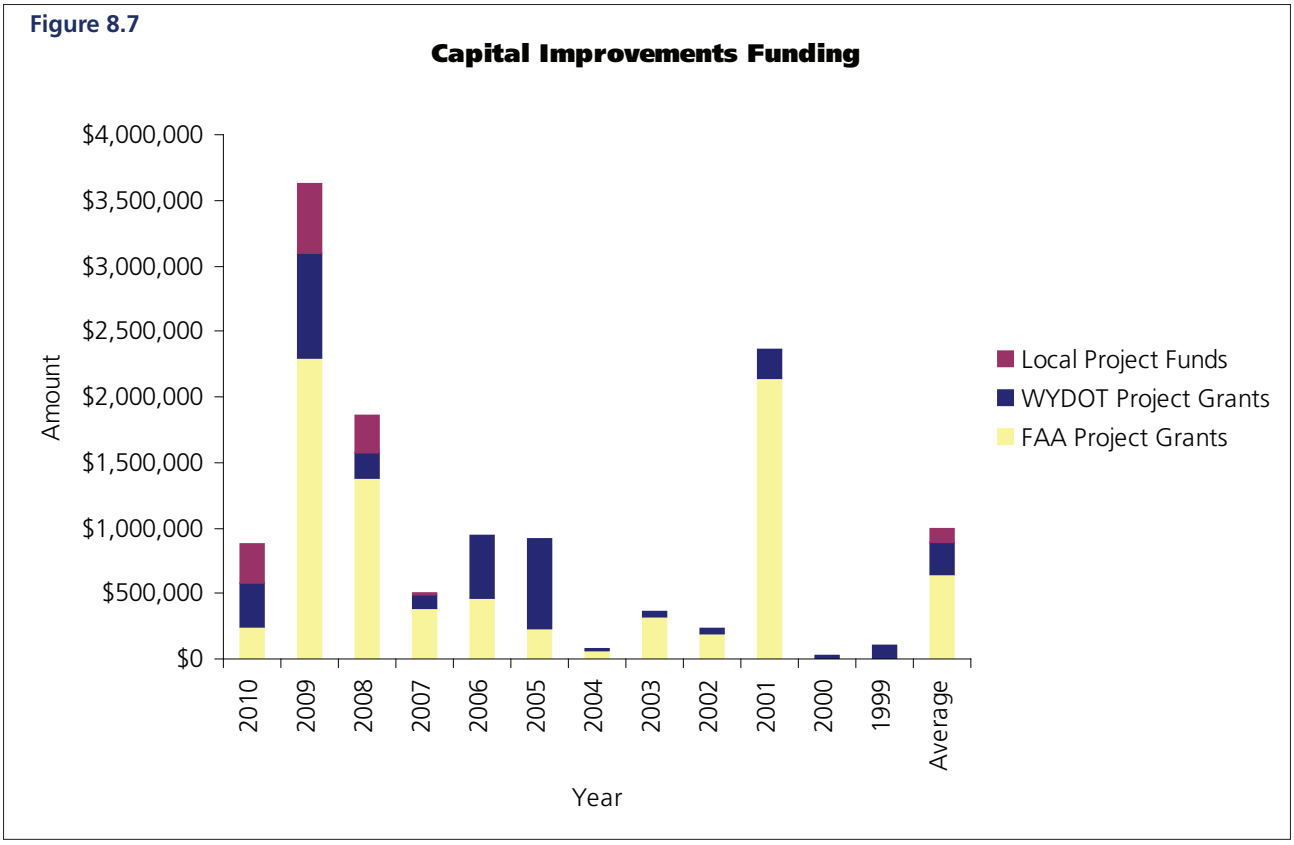
Capital improvements are funded through the FAA, State, and/or local funding. Figure 8.7 and Figure 8.8 show the breakdown of capital improvements funding for Ralph Wenz Field from 1999 to 2010. Capital improvements funding for 2009 and 2010 are estimates.

The Airport Improvement Program (AIP) was established by the Airport and Airway Improvement Act of 1982 to provide funding to airports on a priority needed basis. The FAA (Federal Aviation Administration) coordinates this program.

During fiscal year 2006 there was

- $3.41 billion distributed across the country;
- $16.98 million distributed in Wyoming; and
- $375,000 spent at Ralph Wenz Field for the runway extension.

Figure 8.7



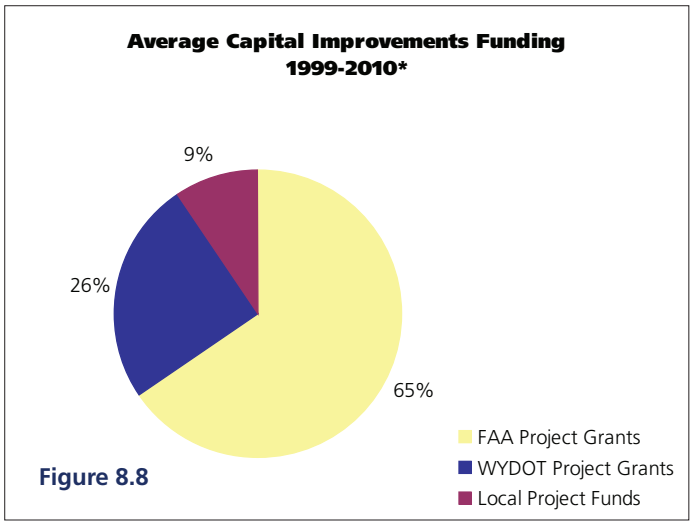


Figure 8.8

During fiscal year 2007 there was

- $3.34 billion distributed across the country;
- $23.1 million distributed in Wyoming; and
- $3.69 million spent at Ralph Wenz Field for the runway extension.

During fiscal year 2008 there was

- $3.47 billion distributed across the country;
- $24.6 million distributed in Wyoming; and
- $150,000 spent at Ralph Wenz Field for this Master Plan Update.

Revenues that fund the AIP program are generated from taxes on aviation activity such as the sale of aviation fuel and oil, aircraft, aircraft parts, and airline tickets. The AIP is a user funded program and not funded by federal income tax dollars. The AIP funds are collected in the Airport and Airway Trust fund which is divided into several entitlements. While some of the funding is used for FAA overhead costs, the majority of the money is distributed to community airports through grants.

Eligible projects include those improvements that enhance airport safety, capacity, security, and environmental concerns. Aviation demand at the airport must justify the projects. Eligible projects include such things as airfield lighting, land acquisition, planning studies, and weather observation stations (AWOS). Ineligible projects include such things as landscaping, marketing plans, improvements for commercial enterprises, and maintenance or repairs of buildings. Currently, 95 percent of the total cost for eligible AIP projects are paid for through the federal grant funds.

There are several entitlements that are included within the AIP. A non-primary entitlement of $150,000 per year is granted to smaller general aviation airports under the current legislation. The non-primary entitlement can be stored for up to four years for larger projects. If a project exceeds that amount, it may be eligible for state apportionment funds, money granted to the State of Wyoming through the AIP program for Wyoming projects. If the project exceeds both the non-primary and state apportionment funds available or is a high priority, it can compete on a regional level for discretionary funds. Commercial Service airports receive primary entitlements and may also use Passenger Facility Charges (PFC) to fund local projects.

The State of Wyoming Department of Transportation (WYDOT), Division of Aeronautics also collects funds for aviation improvements. The State of Wyoming helps finance airport projects through the state's general budget as well. Generally, the State of Wyoming provides a 3 percent match to the federal AIP funding. The State currently also helps pay for NAVAID maintenance at the airport.

Local communities provide the remaining 2 percent funding for eligible projects. Occasionally, projects that are not eligible for AIP funding are eligible for 80/20 assistance with the State paying 80 percent of the total cost and the local community paying the remaining 20 percent. An example of this type of projects is the purchase of new snow removal equipment. The local community also supports the airport with an operation and maintenance budget. They may also subsidise a manager's salary.

The local community's investment in the airport helps ensure that a safe route of transportation is available into and out of the community. This includes the ability to safely land emergency aircraft such as the Intermountain Life Flight aircraft shown in Figure 8.9 that landed and departed on at least two separate days in June 2009 and regularly lands for patient transport.

Figure 8.9
Life Flight

8.2 Estimated Cost of Development Projects

The cost estimates are based off 2010 dollars. The Sponsor, FAA, and State shares of total costs are presented in the estimates. The current FAA share is 95 percent of the total cost of eligible improvements under the AIP (Airport Improvement Plan) grant program. The State's match of eligible items is typically 3 percent of the remainder, leaving the local community with a 2 percent contribution. Projects that are not eligible for federal funds may be funded through State grants with shared responsibility from the Sponsor.

Other projects may be funded entirely by the Sponsor or by private funds from monetary donations or work preformed on private structures. Federal participation is usually available for runway, taxiway, and apron improvements. Access roads are eligible, but not a high priority. Automobile parking areas, hangars, fuel-storage facilities, and utilities are generally ineligible.

Table 8.1 Phase I Cost Estimates
Ralph Wenz Field

Description	FAA	State	Sponsor	Private	Total
Apron Expansion - Design and Construct, Phase I	$450,000	$14,211	$9,474		$473,685
Construct Apron Expansion Phase II		$970,200	$230,000		$1,550,000
Widen Taxiway A-1 and A-5 to 50 feet, C-III		$119,200	$29,800		$149,000
Construct Apron Expansion Phase III	$3,515,000	$111,000	$74,000		$3,700,000
Acquire Snow Removal Equipment	$450,000	$245,803	$14,200		$710,003
Pavement Maintenance (PMP)		$272,000	$68,000		$340,000
Acquire Portion of RPZ and Install ODALs (Approach Lights)	$180,500	$5,700	$3,800		$190,000
Airport Layout Plan Update	$150,000	$4,737	$3,158		$157,895
Phase I Total	**$4,745,500**	**$1,742,851**	**$432,432**		**$7,270,583**

Table 8.2 Phase II Cost Estimates
Ralph Wenz Field

Description	FAA	State	Sponsor	Private	Total
Rehabilitate North Apron Area	$1,330,000	$42,000	$28,000		$1,400,000
Rehabilitate Runway and Taxiway	$450,000	$2,000,000	$50,000		$2,500,000
New Hangar Taxiway	$1,900,000	$60,000	$40,000		$2,000,000
Pavement Maintenance (PMP)		$280,000	$70,000		$350,000
Install Infield Drainage	$1,140,000	$36,000	$24,000		$1,200,000
Airfield Lighting Replacement	$1,615,000	$51,000	$34,000		$1,700,000
Airport Master Plan Update	$300,000	$9,474	$6,316		$315,790
Phase II Total	**$6,735,000**	**$2,478,474**	**$252,316**		**$9,465,790**

Table 8.3 Phase III Cost Estimates Ralph Wenz Field					
Description	**FAA**	**State**	**Sponsor**	**Private**	**Total**
New Tractor and Mower	$114,000	$3,600	$2,400		$120,000
SRE Truck and Plow	$152,000	$4,800	$3,200		$160,000
Acquire Land for RPZ	$570,000	$18,000	$12,000		$600,000
SRE Loader with Plow/Broom	$190,000	$6,000	$4,000		$200,000
Phase III Total	**$1,026,000**	**$32,400**	**$21,600**		**$1,080,000**

Table 8.5 Total Cost Estimates Ralph Wenz Field					
Description	**FAA**	**State**	**Sponsor**	**Private**	**Total**
Phase I Total	$4,745,500	$1,511,259	$217,506		$6,474,265
Phase II Total	$6,735,000	$2,478,474	$252,316		$9,465,790
Phase III Total	$1,026,000	$32,400	$21,600		$1,080,000
Non-Programmed Total	$12,506,500	$4,022,133	$491,422		$17,020,055
Total	**$5,410,000**	**$2,873,233**	**$182,822**	**$100,000**	**$8,566,055**

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Chapter 9 Planning for Compliance

9.0 General

The FAA has published the FAA Airport Compliance Manual, Order 5190.6B. The Airport Compliance Program was developed to ensure that airport sponsors comply with federal obligations in the form of grant assurances, surplus and nonsurplus obligations, or other applicable federal laws.

The manual provides guidance on interpreting and administering the various continuing commitments airport sponsors make to the U.S. Government when they accept grants of federal funds or federal property for airport purposes. This chapter will provide a brief overview of planning needs for compliance with some of these standards.

9.1 Sources of Obligations

The federal obligations a sponsor assumes by accepting FAA administered airport development assistance are mandated by federal statute. These obligations are incorporated in the grant agreements and property conveyance instruments entered into by the sponsor and the United States Government. The sources of airport sponsor federal obligations include:

- Grant agreements issued through airport development grant programs including:
  - Federal Aid to Airports Program (FAAP)
  - Airport Development Aid Program (ADAP)
  - Airport Improvement Program (AIP)
- Grant agreements and instruments of nonsurplus conveyance issued under the:
  - 1946 Airport Act
  - 1970 Airport Act
  - Airport and Airway Improvement Act of 1982 (AAIA)
- Surplus property instruments of transfer issued under the provisions of section 13(g) of the Surplus Property Act of 1944, as amended
- Deeds of conveyance issued under section 16 of the 1946 Airport Act, Section 23 of the 1970 Airport Act, and Section 516 of the AAIA
- AP-4 agreements authorized by various acts between 1939 and 1944
- Exclusive Rights under section 303 of the Civil Aeronautics Act of 1938, as amended and section 308(a) of the FAA Act, as amended
- Title VI of the Civil Rights Act of 1964, as amended
- Commitments in environmental documents prepared in accordance with current Federal Aviation Administration requirements that address the National Environmental Policy Act of 1969 (NEPA) and the AAIA
- Separate written agreements between the sponsor and the FAA, including settlement agreements resulting from litigation.

9.2 Federal Grant Obligations

The following list of assurances and deed restrictions are those most commonly encountered in compliance cases.

a. Exclusive Rights Prohibition:

1) Applies to airports subject to: Any federal agreement or property conveyance.
2) Obligation: To operate the airport without granting or permitting any exclusive right to conduct any aeronautical activity at the airport. (Aeronautical activity is defined as any activity which involves, makes possible, or is required for the operation of an aircraft, or which contributes to or is required for the safety of such operations; i.e., air taxi and charter operations, aircraft storage, sale of aviation fuel, etc.)
3) Duration of obligation: For as long as the property is used as an airport.

b. Maintenance of the Airport:

1) Applies to airports subject to: FAAP/ADAP/AIP agreements, surplus property, conveyances, and certain section 16/23/516 conveyances.
2) Obligation: To preserve and maintain the airport facilities in a safe and serviceable condition. This applies to all facilities shown on the approved ALP

which are dedicated for aviation use, and includes facilities conveyed under the Surplus Property Act.

3) Duration of obligation: Standard*.

c. Operation of the Airport:

1) Applies to airports subject to: FAA/ADAP/AIP agreements and surplus property conveyances.
2) Obligation: To operate the aeronautical and common use areas for the benefit of the public and in a manner that will eliminate hazards to aircraft and persons.
3) Duration of obligation: Standard*.

d. Protection of Approaches:

1) Applies to airports subject to: FAAP/ADAP/AIP agreements and surplus property conveyances.
2) Obligation: To prevent, insofar as it is reasonably possible, the growth or establishment of obstructions in the aerial approaches to the airport. (The term "obstruction" refers to natural or man-made objects which penetrate the imaginary surfaces as defined in FAR Part 77, or other appropriate citation applicable to the specific agreement or conveyance document.)
3) Duration of obligation: Standard*.

e. Compatible Land Use:

1) Applies to airports subject to: FAAP (after 1964)/ ADAP/AIP agreements.
2) Obligation: To take appropriate action, to the extent reasonable, to restrict the use of lands in the vicinity of the airport to activities and purposes compatible with normal airport operations.
3) Duration of obligation: Standard*.

f. Availability of Fair and Reasonable Terms:

1) Applies to airports subject to: Any federal agreement or property conveyance.
2) Obligation: To operate the airport for the use and benefit of the public to make it available to all types, kinds, and classes of aeronautical activity on fair and reasonable terms and without unjust discrimination.
3) Duration of obligation: Twenty years from the date of execution for grant agreement prior to 1964. For grants executed subsequent to the passage of the Civil Rights Act of 1964, the statutory requirement prohibiting discrimination remains in effect for as long as the property is used as an airport. The obligation runs with the land for surplus property and section 16/23/516 conveyances.

g. Adherence to the Airport Layout Plan:

1) Applies to airports subject to: FAAP/ADAP/AIP agreements.
2) Obligation: To develop, operate, and maintain the airport in accordance with the latest approved airport layout plan. In addition, airport land depicted on the latest property map (Exhibit "A") cannot be disposed of or otherwise encumbered without prior FAA approval.
3) Duration of obligation: Standard*.

h. Utilization of Surplus Property:

1) Applies to airports subject to: Surplus property conveyances.
2) Obligation: Property conveyed under the Surplus Property Act must be used to support the development, maintenance and operation of the airport. If not needed to directly support an aviation use, such property must be available for use to produce income for the airport. Such property may not be leased or rented at a discount or for nominal consideration to subsidize nonairport objectives. Airport property cannot be used, leased, sold, salvaged, or disposed of for other than for airport purposes without FAA approval.
3) Duration of obligation: Standard*.

i. Utilization of Section 16/23/516 lands:

1) Applies to airports subject to: Section 16/23/516 conveyances.
2) Obligation: Property must be used for airport purposes; i.e., uses directly related to the actual operation or the foreseeable aeronautical development of the airport. Incidental use of the property must be approved by the FAA.
3) Duration of obligation: Standard*.

j. Sale or Other Disposal of Property Acquired Under FAAP/ADAP/AIP:

1) Applies to airports subject to: FAAP/ADAP/AIP agreements.
2) Obligation: To obtain FAA approval for the sale or other disposal of property acquired under FAAP/ ADAP/AIP, as well as approval for the use of any net proceeds realized.
3) Duration of obligation: Standard*.

k. Utilization of Airport Revenue:

1) Applies to airports subject to: Any federal agreement or property conveyance.
2) Obligation: To use all airport revenues for the capital or operating costs of the airport, the local airport system, or other local facilities which are owned or operated by the owner or operator of the airport, and directly related to the actual air transportation of passengers or property.
3) Duration of obligation: Standard for grants and conveyances executed prior to October 1, 1996. For airports receiving assistance on or after that date, the obligation continues as long as the facility is used as a public-use airport.
4) Special Conditions Affecting Noise Land and Future Aeronautical Use Land: Apply interim revenue derived from noise land or future aeronautical use land to projects eligible for grants under the AIP. This income may not be used for the matching share of any grant.

l. National Emergency Use Provision:

1) Applies to airports subject to: Surplus property conveyances (where sponsor not released from this clause.)
2) Obligation: That during any war or national emergency, the government has the right of exclusive possession and control of the airport.
3) Duration of Obligation: Runs with the land (unless released from this clause by the FAA, with concurrence of the Department of Defense.)

m. Fee and Rental Structure:

1) Applies to airports subject to: FAAP/ADAP/AIP agreements.
2) Obligation: To maintain a fee and rental structure of the facilities and services being provided the airport users which will make the airport as self-sustaining as possible. (Note: Fair and reasonable for aeronautical activities and fair market value for nonaeronautical activities.)
3) Duration of obligation: Standard*.

n. Preserving Rights and Powers:

1) Applies to airports subject to: FAAP/ADAP/AIP agreements.
2) Obligation: To not enter into any transaction which would operate to deprive it of any of the rights and powers necessary to perform any or all of the sponsor assurances without FAA approval, and to act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere with such performance by the sponsor. To not dispose of or encumber its title or other interests in the site and facilities for the duration of the terms, conditions, and assurances in the grant agreement without FAA approval.
3) Duration of Obligation: Standard*.

o. Environmental Requirements:

1) The AAIA requires that for certain types of project, an environment review be conducted. The review can take the form of either an environmental assessment or an environmental impact statement. These environmental documents often contain commitments related to mitigation of environmental impacts. FAA approval of environmental documents containing such commitments has the effect of requiring that these commitments be fulfilled before FAA grant issuance or as part of the grant.

p. Other Obligations:

1) The above obligations represent the more important obligations assumed by an airport sponsor. Other obligations that may be found in grant agreements include:
    - Use of Government Aircraft
    - Land for Federal Facilities
    - Standard Accounting Systems
    - Reports and Inspections
    - Consultation with Users
    - Terminal Development Prerequisites
    - Construction Inspection and Approval
    - Minimum Wage Rates
    - Veterans Preference
    - Audits, Audit Reports and Record Keeping Requirement
    - Local Approval
    - Civil Rights
    - Construction Accomplishment
    - Planning Projects
    - Good Title
    - Sponsor Fund Availability

*Standard means:

1) Grant agreements for development other than land purchase. Pavement and other facilities built to FAA standards are designed to last at least 20 years, and the duration of the obligation should generally be assumed to be 20 years. The duration may be shorter for grants made exclusively for certain equipment, such as a vehicle, that clearly has a useful life shorter than 20 years.
2) Grant agreements for land purchase. AIP grant agreements for purchase of land provide that obligations do not expire, since the useful life of land does not end or depreciate. However, FAAP and ADAP grants did not always contain this language, and the grant documents should be reviewed to determine whether the obligations expire in 20 years or continue indefinitely. Also, grants to a private operator of a public-use general aviation airport provide for a defined duration of the obligations attached to the grant, and the grant documents should be reviewed to determine the actual obligations that apply.
3) Surplus property deeds and nonsurplus land conveyance documents. Documents conveying federal land and property interests for airport use generally have no expiration date, and obligations continue indefinitely until the sponsor is formally released from the obligation by the FAA. Obligations run with the land and bind subsequent owners.

9.3 Grant Assurances

There are 39 Grant Assurances that are briefly described here. Complete descriptions and requirements are located within Appendix A of Order 5190.6B.

1 General Federal Requirements - The sponsor must comply will all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance, and use of Federal funds for the project.

2 Responsibility and Authority of the Sponsor - The sponsor must have legal authority to apply for the grant and to finance and carry out the proposed project and comply with all terms, conditions, and assurances of the grant agreement. As applicable, a resolution, motion, or similar action must be duly adopted or passed as an official act of the applicant's governing body authorizing the filing of the application.

3 Sponsor Fund Availability - The sponsor must have sufficient funds available for the portion of the project costs that will not be paid by the United States. Sufficient funds must also be available to assure operation and maintenance of items funded under the grant agreement.

4 Good Title - The sponsor must show that good title is held or will be acquired by the sponsor, public agency, or Federal government. The sponsor must hold good title or obtain good title for noise compatibility program projects.

5 Preserving Rights and Powers - The sponsor will not take or permit any action which would deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in the grant agreement. The sponsor will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property shown on Exhibit A or properties for which noise compatibility program funds have been expended. The sponsor must enter into an agreement with the property owner for noise compatibility programs that are not on airport property.

6 Consistency with Local Plans - The project should be reasonably consistent with plans of public agencies that are authorized by the State to plan for area development existing at the time of application submission.

7 Consideration of Local Interest - The sponsor should give fair consideration to the interest of communities located in or near the project location.

8 Consultation with Users - The sponsor must undertake reasonable consultations with parties that use the airport.

9 Public Hearings - The sponsor must give opportunities for public hearings for projects involving the location of an airport, an airport runway, or a major extension of the runway.

10 Air and Water Quality Standards - Projects involving airport location, a major runway extension, or runway location must have a certification by the Governor or the Administrator of the Environmental Protection Agency stating that the project will be located, operated, and maintained in a method that will comply with all applicable air and water quality requirements.

11 Pavement Preventative Maintenance - The sponsor assures or certifies that an effective pavement-maintenance management program has been implemented.

12 Terminal Development Prerequisites - The sponsor must show that all required safety equipment, security equipment, and access to the passenger enplaning and deplaning areas has been provided for projects which include terminal area development.

13 Accounting System, Audit and Record Keeping - All project accounts and records must be kept and be available for inspection.

14 Minimum Wage Rates - Contracts in excess of $2,000 that involve labor must have provisions establishing minimum wage rates to be paid.

15 Veteran's Preference - The employment of labor preference shall be given to Veterans of the Vietnam era and disabled veterans. The preference does not apply to executive, administrative, and supervisory positions and only applies where individuals are available and qualified.

16 Conformity to Plans and Specifications - The project must be executed subject to FAA approved plans, specifications, and schedules.

17 Construction Inspection and Approval - The sponsor must provide and maintain competent technical supervision at the construction site throughout the project to assure that the work conforms to the FAA approved plans, specifications, and schedules.

18 Planning Projects - Planning projects must be completed in an approved method. The material must be made available for examination. The plan may not be copyrighted and approval of the plan does not constitute or imply any assurance or commitment to approve any future airport grants.

19 Operations and Maintenance - The airport and all facilities that are necessary to serve the aeronautical users of the airport shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards that may be required. The sponsor may not cause or permit any activity or action that would interfere with its use for airport purposes.

20 Hazard Removal and Mitigation - The sponsor must take actions to ensure that terminal airspace as required to protect instrument and visual operations to the airport will be adequately cleared and protected by mitigating existing airport hazards and by preventing the creation of future hazards.

21 Compatible Land Use - The sponsor must take appropriate action, to the extent reasonable, to restrict the use of land adjacent to and in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations. If the project is for noise compatibility program implementation, the sponsor will not cause or permit any change in land use, within its jurisdiction, that will reduce its compatibility with respect to the airport or the noise compatibility program measures.

22 Economic Nondiscrimination - The sponsor must make the airport available for public use on reasonable terms and without unjust discrimination to all types, kinds, and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.

23 Exclusive Rights - The sponsor may not permit an exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public. There may be a single FBO serving the airport that would not be considered an exclusive right if certain conditions exist.

24 Fee and Rental Structure - The sponsor must maintain a fee and rental structure for the facilities and services at the airport that will make the airport as self-sustaining as possible under the circumstances existing at the particular airport.

25 Airport Revenues - All revenues generated by the airport and any local taxes on aviation fuel will be expended by it for the capital or operating costs of the airport, the local airport system, or other local facilities that are owned or operated by the owner or operator of the airport and that are directly and substantially related to the actual air transportation of passengers or property. The revenues can also be used for noise mitigation purposes on or off the airport.

26 Reports and Inspections - Annual operations reports, airport development project records and documents, and noise compatibility program records must be maintained and be available for inspection.

27 Use by Federal Government Aircraft - The sponsor must make all of the facilities of the airport developed with Federal financial assistance and all those usable for landing and takeoff of aircraft available to the United States for use by Government aircraft in common with other aircraft at all times without charge. If use by Governmental aircraft is substantial, a reasonable and proportional charge for the cost of operating and maintaining the facilities may be charged.

28 Land for Federal Facilities - The sponsor must furnish without cost land or water areas to the Federal Government for the use in connection with any air traffic control, air navigation activities, weather-reporting, and communication activities related to air traffic control.

29 Airport Layout Plan - The sponsor must keep the airport layout plan up to date at all times. Changes or alterations made on the airport that are not shown on an approved airport layout plan may be subject to elimination or relocation at the sponsor's expense.

30 Civil Rights - The sponsor must comply with existing rules to ensure that no person is excluded on the grounds of race, creed, color, national origin, sex, age, or handicap from participating in any activity conducted with or benefiting from funds received.

31 Disposal of Land - Land no longer used for airport noise compatibility purposes or airport development purposes must be properly disposed of following existing guidelines.

32 Engineering and Design Services - All contracts or sub-contracts for services must be awarded in a qualifications-based method.

33 Foreign Market Restrictions - The sponsor will not allow funds provided under the grant to be used to fund any project that uses any product or service of a foreign country when that country is listed by the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.

34 Policies, Standards, and Specifications - The sponsor must carry out the project in accordance with the FAA approved policies, standards, and specifications.

35 Relocation and Real Property Acquisition - The sponsor must follow Subparts B, C, D, and E of 49 CFR Part 24.

36 Access by Intercity Buses - The airport owner will permit, to the maximum extent practicable, intercity buses or other modes of transportation to have access to the airport. There is no obligation by the airport owner to fund special facilities.

37 Disadvantaged Business Enterprises (DBE) - The grant recipient shall not discriminate on the basis of race, color, national origin, or sex in the award of any DOT-assisted contract, in the administration of its DBE program, or the requirements of 49 CFR Part 26. Implementation of the DBE program is a legal obligation.

38 Hangar Construction - The airport owner must grant a long term lease that may be subject to terms and conditions for hangars constructed on the airport at the aircraft owner's expense.

39 Competitive Access - Applies to medium or large hub airports.

9.4 Compatible Land Use

Land use planning is important to ensure that airport investments are not affected by incompatible land uses adjacent to and in the immediate vicinity of the airport. Incompatible land uses at or near airports may result

in the creation of hazards to air navigation, reductions in airport utility resulting from obstructions to flight paths, or noise-related incompatible land use resulting from residential areas too close to the airport.

Zoning is an effective method of meeting the federal obligation to ensure compatible land use and to protect airport approaches. According to 5190.6B, restricting residential development near the airport is essential in order to avoid noise-related problems. Residential developments can also be incompatible for safety reasons. The development of public facilities such as schools, churches, public health facilities, and concert halls should also be avoided near the airport due to noise incompatibility.

Compatibility of land uses is attained when the use of property adjacent to and near the airport neither adversely affects flight operations from the airport nor is itself adversely affected by the flight operations. Land uses that adversely affects flight operations are ones that create or contribute to a flight hazard. These can include tall structures, features that inhibit pilot visibility such as light or smoke, produce electronic aberrations in navigational guidance systems, or that attract birds.

Order 5190.6B states the FAA's position in regard to several variations on residential properties on or near airports. Airpark developments allow aircraft owners to reside and park their aircraft on the same property with immediate access to an airfield. The FAA considers residential use by aircraft owners to be no different from any residential use and finds it incompatible with the operation of a public use airport (20.4.b).

Permitting development of a residential airpark near a federally obligated airport, through zoning approval or otherwise, would be inconsistent with Grant Assurance 21 (20.4.b). Any residential use existing on the airport or any residential use granting "through-the-fence" access is an incompatible land use (20.4.a).

A "through-the-fence" operation is defined by the Federal Aviation Administration (FAA) as any activity or use of real property of an aeronautical or nonaeronautical nature that is located outside (or off) of airport property but has access to the airport's runway and/or taxiway system. Airport property is property owned by the airport sponsor and shown on an FAA approved Airport Layout Plan (ALP). "Through-the-fence" operations occur from property that is immediately adjacent to the airport but which is owned by corporations, businesses or private parties. These properties are not under control in any manner by the airport sponsor.

Off-airport residential airparks are privately owned and maintained residential facilities. The FAA does not consider them to be aeronautical facilities eligible for reasonable access to a federally obligated airport. Therefore, the sponsor is under no federal obligation to allow "through-the-fence" access for privately owned residential airparks. Allowing access could be an encumbrance on the airport in conflict with Grant Assurance 5. Residential hangars with "through-the-fence" access are considered incompatible land uses at federally obligated public use airports.

Other non-residential "through-the-fence" activities may be allowed, but the sponsor must make sure that the use agreement does not violate any of the grant assurances.

The most common improper and noncompliant land uses include nonaeronautical leaseholds being located on designated aeronautical use land without FAA approval (not shown on the ALP) or on property not released by the FAA. Another common noncompliant land use is allowing dedicated aeronautical property to be used for nonaeronautical uses. This includes using hangars to store vehicles, using property and buildings for animal control facilities, nonairport vehicle and maintenance equipment storage, aircraft museums, and municipal administrative offices.

Some common incompatible land uses include the introduction of a wildlife attractant or failure to take adequate steps to mitigate hazardous wildlife at the airport. Other incompatible land uses include wastewater ponds, municipal flood control channels

and drainage basins, sanitary landfills, solid waste transfer stations, electrical power substations, water storage tanks, golf courses, and other bird attractants. Towers or building that penetrate Part 77 surfaces or are located within a runway protection zone (RPZ), runway object free area (ROFA), object free zone (OFZ), and clearway or stopway are also incompatible uses.

Appendices

Appendix 1 Letter for Agency Comments

GDA ENGINEERS

ENGINEERING • SURVEYING • PLANNING

P.O. Box 338
1508 Stampede Avenue
Cody, WY 82414
PH: 307.587.3411
FAX: 307.527.5182
www.gdaengineers.com

May 26, 2009

«Full_Name»
«Title»
«Department»
«Address»
«City_State» «Zip_Code»

Dear «Name»,

The Town of Pinedale, Wyoming is submitting to the FAA the enclosed Airport Layout Plan (ALP) showing the 20 year planned projects at Ralph Wenz Field, Pinedale's airport. The proposed plans include new hangar access taxiways and roads and new hangar buildings.

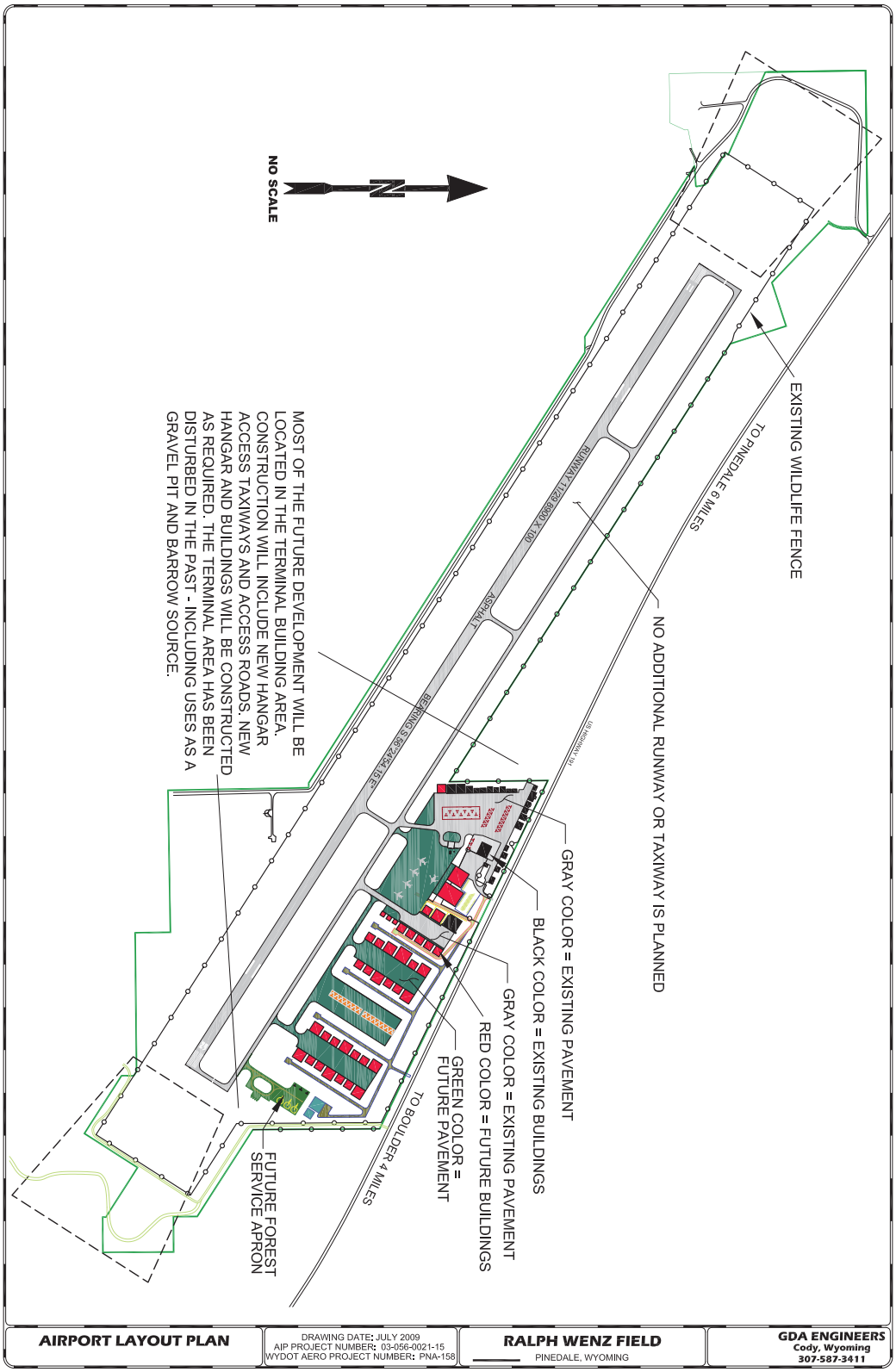
Please provide any comments concerning the proposed development from your agency. In addition, your agency will again be contacted prior to each individual project with a detailed project description as part of the Federal Grant Application process.

Airport:	Ralph Wenz Field Airport (PNA)
Sponsor:	Town of Pinedale
Funding Agencies:	The project is funded by a grant of 95% by the FAA with 3% from the State of Wyoming and 2% from local contributions.
Legal Description:	The main airport buildings are located within the NE1/4SE1/4 of Section 25, T. 33 N., R. 109 W., 6th P.M., Sublette County, Wyoming. The approximate latitude is 42°47'43.7" N and approximate longitude is 109°48'25.5" W.
Location:	Ralph Wenz Field (PNA) is located 5 miles southeast of Pinedale, Wyoming on U.S. Highway 191.
Mapping:	Please see included drawings.
FAA contact person:	Marc Miller, Airport Engineer (303) 342-1282 in Denver, CO

If you have any questions, please do not hesitate to contact us.

Sincerely,
GDA Engineers

Nikki Leck
nikki@gdaengineers.com


NO SCALE
N
EXISTING WILDLIFE FENCE
TO PINEDALE 6 MILES
NO ADDITIONAL RUNWAY OR TAXIWAY IS PLANNED
RUNWAY 17/28 (8000 X 100)
ASPHALT
GRAY COLOR = EXISTING PAVEMENT
BLACK COLOR = EXISTING BUILDINGS
GRAY COLOR = EXISTING PAVEMENT
RED COLOR = FUTURE BUILDINGS
GREEN COLOR = FUTURE PAVEMENT
TO BOULDER 4 MILES
FUTURE FOREST SERVICE APRON
MOST OF THE FUTURE DEVELOPMENT WILL BE LOCATED IN THE TERMINAL BUILDING AREA. CONSTRUCTION WILL INCLUDE NEW HANGAR ACCESS TAXIWAYS AND ACCESS ROADS. NEW HANGAR AND BUILDINGS WILL BE CONSTRUCTED AS REQUIRED. THE TERMINAL AREA HAS BEEN DISTURBED IN THE PAST - INCLUDING USES AS A GRAVEL PIT AND BARROW SOURCE.
AIRPORT LAYOUT PLAN
DRAWING DATE: JULY 2009
AIP PROJECT NUMBER: 03-056-0021-15
WYDOT AERO PROJECT NUMBER: PNA-158
RALPH WENZ FIELD
PINEDALE, WYOMING
GDA ENGINEERS
Cody, Wyoming
307-587-3411


NO SCALE
N
11
25
TERMINAL PLAN DETAIL
DRAWING DATE: JANUARY 2008
AIP PROJECT NUMBER: 03-56-0022-10
WDOT AERO PROJECT NUMBER: POY-02X
RALPH WENZ FIELD
PINEDALE, WYOMING
GDA ENGINEERS
Cody, Wyoming
307-587-3411

Full Name	Title	Department	Address	City, State	Zip Code	Responded
Mr. Tim Stark	Environmental Services	Wyoming Department of Transportation	5300 Bishop Blvd.	Cheyenne, WY	82009	✓
Mr. Ronald Surdam	Agency Director	Wyoming State Geological Survey	PO Box 1347	Laramie, WY	82073	
Ms. Mary Hopkins	SHPO Interim	Wyoming State Historic Preservation Office	2301 Central Ave., Barrett Bldg. 3rd Floor	Cheyenne, WY	82002	✓
Mr. John Emmerich	Deputy Director	Wyoming Game and Fish Department	5400 Bishop Blvd.	Cheyenne, WY	82006	✓
Mr. Chuck Otto	Field Manager	Bureau of Land Management	PO Box 768	Pinedale, WY	82941	
Mr. Brian Kelly	Project Leader	U.S. Fish & Wildlife Service - Ecological Services	5353 Yellowstone Rd., Ste. 308A	Cheyenne, WY	82009	✓
Mr. Patrick Tyrrell	State Engineer	Wyoming State Engineer's Office	122 W 25th Street, 4th Floor East	Cheyenne, WY	82002	
Mr. Ryan Lance	Deputy Chief of Staff	Office of Federal Land Policy Office of the Governor	200 West 24th Street	Cheyenne, WY	82002	
Mr. Don Simpson	State Director	Bureau of Land Management	PO Box 1828	Cheyenne, WY	82003	
Mr. J. Xavier Montoya	State Conservationist	Natural Resources Conservation Service	Federal Building PO Box 33124	Casper, WY	82602	✓
Mr. Tom Doll	State Oil & Gas Supervisor	Oil and Gas Conservation Commission	PO Box 2640	Casper, WY	82602	
Mr. Ryan Lance	Deputy Chief of Staff	State Planning Coordinator Office of the Governor	200 West 24th Street	Cheyenne, WY	82002	
Mr. Tony Hoyt	Air Quality Division	Wyoming Department of Environmental Quality	510 Meadowview Drive	Lander, WY	82520	✓
Mr. Mark Baron	Water Quality Division	Wyoming Department of Environmental Quality	510 Meadowview Drive	Lander, WY	82520	✓
Ms. Jennifer Hayward		Sublette County Conservation District	PO Box 36	Pinedale, WY	82941	
Mr. Matthew Bilodeau		U.S. Army Corps of Engineers Wyoming Regulatory Office	2232 Dell Range Blvd., Ste. 210	Cheyenne, WY	82009	
Mr. John Lawson	Area Manager	Bureau of Reclamation	PO Box 1630	Mills, WY	82644	✓ *
Mr. Bruce Barrett*	Provo Area Manager	Bureau of Reclamation	302 East 1860 South	Provo, UT	84606	
Mr. John Eddins		Wyoming Department of Transportation	PO Box 1260	Rock Springs, WY	82902	
Mr. Dan Carlson		Federal Emergency Management Agency Denver Federal Center	Building 710, Box 25267	Denver, CO	80225	
Mr. Joe Moore		Wyoming Office of Homeland Security	122 W. 25th Street Herschler Building, 1st Floor-East	Cheyenne, WY	82002	
Mr. Bart Myers		Sublette County Planning & Zoning	PO Box 506	Pinedale, WY	82941	
Pinedale Regional Office		Wyoming Game and Fish	PO Box 850	Pinedale, WY	82941	

* Mr. Lawson forwarded information to Mr. Barrett on 6/12/09

Appendix 3 WYDOT Response

Nikki Leck

From: Timothy Stark [Timothy.Stark@dot.state.wy.us]
Sent: Wednesday, June 03, 2009 8:01 AM
To: Deb Ferguson; John Samson; Julie Francis; Kevin Powell; Thomas Hart
Cc: Bob Maxam; Cheryl Bean; Nikki Leck
Subject: The Pinedale Airport Project

Attachments: 1 GDA Letter.pdf; 2 Project Area.pdf; 3 Plan Sheet 1.pdf; 4 Plan Sheet 2.pdf

1 GDA Letter.pdf (971 KB) 2 Project Area.pdf (859 KB) 3 Plan Sheet 1.pdf (484 KB) 4 Plan Sheet 2.pdf (507 KB)

Attached is information regarding the project at the Pinedale Airport known as the Ralph Wenz Field. This is a WYDOT project through FAA. Please provide your input back to Nikki Leck of GDA Engineers of Cody. Please let them know what federally protected resources are involved and what surveys will need to be conducted. Also, let them know which agencies they need to be coordinating with regarding the federally protected environmental resources. I do not know if any additional highway accesses is included with this project. I will be routing the original information in hard copy form.

Nikki Leck

From: Julie Francis [Julie.Francis@dot.state.wy.us]
Sent: Wednesday, June 03, 2009 9:46 AM
To: Deb Ferguson; John Samson; Kevin Powell; Thomas Hart; Timothy Stark
Cc: Bob Maxam; Cheryl Bean; Nikki Leck
Subject: Re: The Pinedale Airport Project

The FAA has the responsibility to consult with the State Historic Preservation Office on this project. That consultation should include what level of investigations will be needed.

Julie

A follow-up e-mail was sent 10/14/09 to the mailing list to check for final comments regarding WYDOT highways. No further comments have been received.

Appendix 4 Wyoming SHPO Response

ARTS. PARKS. HISTORY.
Wyoming State Parks & Cultural Resources

State Historic Preservation Office
Barrett Building, 3rd Floor
2301 Central Avenue
Cheyenne, WY 82002
Phone: (307) 777-7697
Fax: (307) 777-6421
http://wyoshpo.state.wy.us

Jun 1, 2009

Nikki Leck
GDA Engineers
P.O. Box 338
1508 Stampede Avenue
Cody, WY 82414

Re: Projects at Ralph Wenz Field, Pinedale's Airport (SHPO File # 0509JRD021)

Dear Mrs. Leck:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project.

A search of our records shows that a cultural resource survey has not been conducted in the area of potential effect. Following 36 CFR Part 800, and prior to any ground disturbing activities, we recommend GDA Engineers in conjunction wit the FAA carry out appropriate efforts necessary for identification of historic properties, which may include a file search, background research, consultation, consideration of visual effects, sample field investigations or field survey. The identification efforts must be conducted by a consultant meeting the Secretary of the Interior's Professional Qualification Standards (48 FR 22716, Sept. 1983). A report detailing the results of these efforts must be provided to SHPO staff for our review and comment.

We have enclosed a copy of a cultural resource consultants list for your use. Please refer to SHPO project control number #0509JRD021 on any future correspondence dealing with this project. If you have any questions, please contact Joseph Daniele, Archaeologist/Review and Federal Consultation at 307-777-8793.

Sincerely,

Joseph Daniele
Wyoming State Historic Preservation Office

Dave Freudenthal, Governor
Milward Simpson, Director

WYOMING SHPO
CULTURAL RESOURCE CONSULTANTS
2009

The Wyoming State Historic Preservation Office (SHPO) does not permit or license consultants and makes no endorsement of any particular consultant.

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Appendix 5 Wyoming Game and Fish Response

WYOMING GAME AND FISH DEPARTMENT
5400 Bishop Blvd. Cheyenne, WY 82006
Phone: (307) 777-4600 Fax: (307) 777-4610
Web site: http://gf.state.wy.us

June 5, 2009

WER 1078.01
GDA Engineers
Proposed Airport Layout Plan
New Hangar, Access Taxiways, Roads and
New Hangar Building
Ralph Wenz Field Pinedale Airport
Sublette County

Nikki Leck
GDA Engineers
PO Box 338
Cody, WY 82414

Dear Ms. Leck:

The staff of the Wyoming Game and Fish Department has reviewed the proposed Airport Layout Plan for a new hangar, access taxiways, roads and a new hangar building for the Ralph Wenz Field Pinedale Airport in Sublette County. We offer the following comments for your consideration.

Terrestrial Considerations:

We have no terrestrial wildlife concerns pertaining to these proposed projects.

Aquatic Considerations:

To minimize impacts to the aquatic resources of the New Fork River, we recommend that best management practices be incorporated into each plan to ensure that all sediments and other pollutants are contained within the boundaries of the work area for construction activities. If you have any questions or concerns, please contact Ms. Hilda Sexauer, 307-367-4353, Pinedale Region Fisheries Supervisor.

"Conserving Wildlife - Serving People"

Ms. Nikki Leck
June 5, 2009
Page 2 - WER 1078.01

Thank you for the opportunity to comment.

Sincerely,

John Emmerich
Deputy Director

JE: MF:gfb

cc: USFWS
Scott Smith
Dean Clause
Hilda Sexauer

Appendix 6 US Fish and Wildlife Service Response

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

JUL 01 2009

In Reply Refer To:
ES-61411/WY.22/WYO9TA0278

Ms. Nikki Leck
GDA Engineers
P.O. Box 338
Cody, WY 82414

Dear Ms. Leck:

Thank you for your letter of May 26, 2009, received in our office on May 28, regarding the proposed work over the next 20 years at Ralph Wenz Field in the town of Pinedale in Sublette County, Wyoming. The proposed work will consist of new hangar taxiways and roads and new hangar buildings. Mark Bellis of my staff visited the project site on June 23 to gather additional necessary information regarding potential impacts of your proposed work.

The U.S. Fish and Wildlife Service believes that your letter and subsequent site visit provided sufficient information to determine the effects of this project to federally listed species. Based on the information provided in your letter and Mark Bellis' site visit, it is unlikely that the proposed work will adversely affect any current threatened or endangered species or migratory birds. You may consider this project, as proposed, to be currently in compliance with the Endangered Species Act of 1973, as amended (Act), 16 U.S.C. 1531 *et seq*. and the Migratory Bird Treaty Act, 16 U.S.C. 703. Since the list of threatened and endangered species and management guidelines for migratory birds are subject to revsion, we encourage you to coordinate with our office during all phases of construction.

This project should be re-analyzed if new information reveals effects of the action that may affect listed species or designated or proposed critical habitat (1) in a manner or to an extent not considered in your letter, (2) if the action is subsequently modified in a manner that causes an effect to a listed species or designated or proposed critical habitat that was not considered in this letter, and/or (3) if a new species is listed or critical habitat is designated that may be affected by this project.

We appreciate your efforts to ensure the conservation of endangered, threatened, and candidate species and migratory birds. If you have further questions regarding this letter or

your responsibilities under the Act, please contact Mark Bellis of my staff at (307) 352-0377.

Sincerely,

for Brian T. Kelly
Field Supervisor
Wyoming Field Office

cc: FAA , Airport Engineer, Denver, CO (M. Miller)
Pinedale Airport, Airport Manager, Pinedale, WY (J. Parker)
WGFD, Non-game Coordinator, Lander, WY (B. Oakleaf)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (M. Flanderka)

Appendix 7 NRCS Response

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
100 East B Street, Room 3124
P.O. Box 33124
Casper, Wyoming 82602

Date: 6/16/2009

GDA Engineers
Attn: Nikki Leck
PO Box 338
1508 Stampede Avenue
Cody, WY 82414

Dear Nikki:

The Natural Resources Conservation Service (NRCS) has reviewed the **Ralph Wenz Field Airport Project** proposal dated May 26, 2009.

The Agriculture and Food Act of 1981, (Public Law 97-98) containing the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549, is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency.

Based on the information provided, we do not believe the work will adversely impact important agricultural lands, since there will be no apparent conversion of lands from agricultural use to non-agricultural use.

If you have any questions, or need to discuss this comment, please contact Casey Sheley at (307) 233-6770.

Sincerely,

Paul Shelton, for

J. XAVIER MONTOYA
State Conservationist

Cc: Jennifer Hayward, District Conservationist, Pinedale Field Office
Geri Sullivan, Area Conservationist, Riverton Area Office

Helping People Help the Land

An Equal Opportunity Provider and Employer

Appendix 8 WYDEQ Response - Air Quality

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

May 29, 2009

Nikki Leck
GDA Engineers
P.O. Box 338
Cody, WY 82414

RE: Town of Pinedale, Ralph Wenz Field
Environmental Assessment

Dear Ms. Leck:

The Air Quality Division received your May 26, 2009 letter regarding the proposed development plans at the Ralph Wenz Field, Pinedale's airport. The proposed plans include new hangar access taxiways and roads, and new hangar buildings.

The compliance section of the Air Quality Division does not foresee any adverse air quality impacts associated with such a project with the exception of possible dust problems during construction. Your environmental planning should include effective dust control procedures such as frequent watering and/or chemical stabilization along haul roads and on stockpiles. Reduction of wind blown dust off of exposed acreage can be accomplished using various techniques such as compaction, mulching and reseeding during the post construction phase. Earth or other materials tracked onto paved streets should be removed promptly by water or other means. Good dust management practices will allow you to comply with the Wyoming Air Quality Standards and Regulations. For more information see the Chapter 3, Section 2 of the Wyoming Air Quality Standards and Regulations.

Please call me at 307-335-6977 if you have questions concerning this matter.

Sincerely,

Marty Hamilton
Wyoming DEQ/Air Quality Division

Lander Field Office • 510 Meadowview Drive • Lander, WY 82520 • http://deq.state.wy.us

ABANDONED MINES (307) 332-5085 FAX 332-7726
AIR QUALITY (307) 332-6755 FAX 332-7726
LAND QUALITY (307) 332-3047 FAX 332-7726
SOLID & HAZARDOUS WASTE (307) 332-6924 FAX 332-7726
WATER QUALITY (307) 332-3144 FAX 332-7726

Appendix 9 WYDEQ Response - Water Quality

Nikki Leck

From: Baron, Mark [mbaron@wyo.gov]
Sent: Thursday, May 28, 2009 2:24 PM
To: nikki@gdaengineers.com
Subject: Town of Pinedale Ralph Wenz Field Airport

Nikki, I have received and reviewed the proposed plans for the Town of Pinedale's Airport modifications. Any modifications to the Airport's sewage system will require a permit to construct from the Wyoming Department of Environmental Quality. If the Airport's water system serves 25 or more persons a permit to construct is require from the Wyoming Department of Environmental Quality.

Sincerely,

Mark Baron
Southwest District Engineer
Water Quality Division

5/28/2009

Appendix 10 Bureau of Reclamation Response

United States Department of the Interior
BUREAU OF RECLAMATION
Great Plains Region
Wyoming Area Office
P.O. Box 1630
Mills, Wyoming 82644-1630

IN REPLY REFER TO:
WY-4202
LND-6.00

JUN 12 2009

MEMORANDUM

To: Area Manager, Provo Area Office, 302 East 1860 South, Provo, UT 84606-7317
Attention: PRO-100 (Bruce Barrett)

From: John H. Lawson
Area Manager, Mills, WY JOHN H. LAWSON

Subject: GDA Engineers Request for Comments on Proposed Improvements to the Pinedale Airport

Attached is a letter from GDA Engineers requesting Bureau of Reclamation comments on improvements the town of Pinedale, Wyoming, plans to make at the Ralph Wentz Field Airport.

Since the proposed project lies in Sublette County, Wyoming, within the area administered by the Provo Area Office, we are forwarding the GDA letter and attached airport layout plans for your action.

Attachment

cc: [redacted]
GDA Engineers
1508 Stampede Avenue
Cody, WY 82414 (w/o attach)

A follow-up letter was mailed on 10/14/09 to Bruce Barrett. No comments have been received.

Appendix 11 Proposed Land Use Zoning Regulation

Chapter III
Section 8. Airport Safety Zone Requirements in any Zoning District. As authorized by W.S. §10-5-301, 10-5-302, 15-1-601 and/or 18-5-102 and as determined by the FAR Part 77, *Objects Affecting Navigable Airspace* and applicable FAA regulations including AC-150/5300-13, *Airport Design*, the following apply to all Zoning Districts for properties located within the safety zones as described below and as graphically illustrated in Appendix 1:

a. The Board of County Commissioners hereby finds and declares that:
   (1) An airport hazard endangers the lives and property of the users of the airports and property or occupants of land in its vicinity. If the obstruction reduces the size of the area available for the landing, takeoff, and maneuvering of aircraft, it tends to destroy or impair the utility of the airports and the public investment in the airport facilities.
   (2) The creation or establishment of an airport hazard is a public nuisance and an injury to the region served by the airports.
   (3) For the protection of the public health, safety, order, convenience, prosperity and general welfare, and for the promotion of the most appropriate use of land, it is necessary to prevent the creation or establishment of airport hazards.

b. Generally:
   (1) General Requirements: Notwithstanding any other provisions of this Section, no use may be made of land or water within any zone established within this Section in such a manner as to create electrical interference with navigational signals or radio communication between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airports.
   (2) Lighting: No new or expanded industrial, commercial, recreational, or residential use shall project lighting directly onto an existing runway, taxiway, or approach/departure surface except where necessary for safe air travel. Lighting for these uses shall incorporate shielding to reflect light away from the airport and shall not imitate airport lighting.
   (3) Communications Facilities: Approval of cellular and other communications or transmission towers located within any zone described within this Section shall be conditioned to require their removal within 90 days of discontinuance of use.
   (4) Non-Conforming Pre-Existing Uses: Nonconforming pre-existing uses shall be regulated as stated within Chapter VII of these regulations. However, the owner of any existing nonconforming building, structure, or tree shall be required to permit the installation, operation, and maintenance thereon of any markers and lights as deemed necessary by the FAA to indicate to operators of aircraft in the vicinity of the airport the presence of such airport obstruction.
   (5) Variances: Any and all variances from Chapter III, Section 8 shall be processed as stated within Chapter VI of these regulations. However, all variance requests from Section 8 shall have written approval from the State of Wyoming Department of Transportation Aeronautics Division, the Federal Aviation Administration, and the Airport Sponsor prior to requesting a variance from the County. Any variance granted may, if such action is deemed advisable to effectuate the purpose of this Section and be reasonable in the circumstances, be so conditioned as to require the owner of the building, structure, or tree to install, operate, and maintain, at the owner's expense, such markings and lights as may be necessary for safety.
   (6) Map Updates: The Airport Sponsor shall be responsible for providing updated maps to the County as changes occur at the airports.
   (7) FAA Form 7460-1 or 7460-2: All developers within any zone established within this Section shall be made aware that there is the potential that federal law (CFR Title 14 Part 77.13) will require that a 7460-1 and/or 7460-2 form be submitted to the FAA. More information regarding this requirement can be found at https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

(8) Disclosure: To all extents possible, property owners and potential property buyers should be made aware of the following disclosure. The disclosure statement shall be listed on all new subdivision plats for any subdivision approved within any of the identified zones.

Properties near the airports in Sublette County may be subject to varying noise levels. Properties near the airport may be located within height and use restriction zones as described and illustrated by Federal standards and regulations and the Sublette County Zoning and Development Regulations. It is conceivable that standard flight patterns will result in aircraft passing over the properties at low altitudes and during all hours of the day. Future airport expansion may impact the size and number of aircraft that utilize the airport. Generally, it is not practical to redirect or severely limit airport usage and/or planned airport expansion. Developments near the airport should assume that at any given time there will be some impact from air traffic.

c. Safety Zones. Some properties may lie within two Safety Zones. The uses and height limitations for the most restrictive Zone shall apply.

(1) Runway Protection Zone (RPZ): The RPZ is shown as **Zone A**.

i. Land uses prohibited within the RPZ include residences and places of public assembly including churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons. Fuel storage facilities or the storage or use of significant amounts of materials which are explosive, flammable, toxic, corrosive, or otherwise exhibit hazardous characteristics shall not be located within the RPZ.

ii. Allowable uses include those that do not attract wildlife and do not interfere with navigational aids.

iii. The building/structure height limitation within this zone is 35 feet.

(2) Approach Surface: The Approach Surface is shown as **Zone B**.

i. Land uses prohibited within the Approach Surface include residences and places of public assembly including churches, schools, hospitals, office buildings, shopping centers, and other uses with similar concentrations of persons. Fuel storage facilities or the storage or use of significant amounts of materials which are explosive, flammable, toxic, corrosive, or otherwise exhibit hazardous characteristics shall not be located within the Approach Surface. Hazardous wildlife attractants including waste disposal operations, water management and storm water facilities with above-ground water storage, and man-made wetlands shall not be allowed within the Approach Surface.

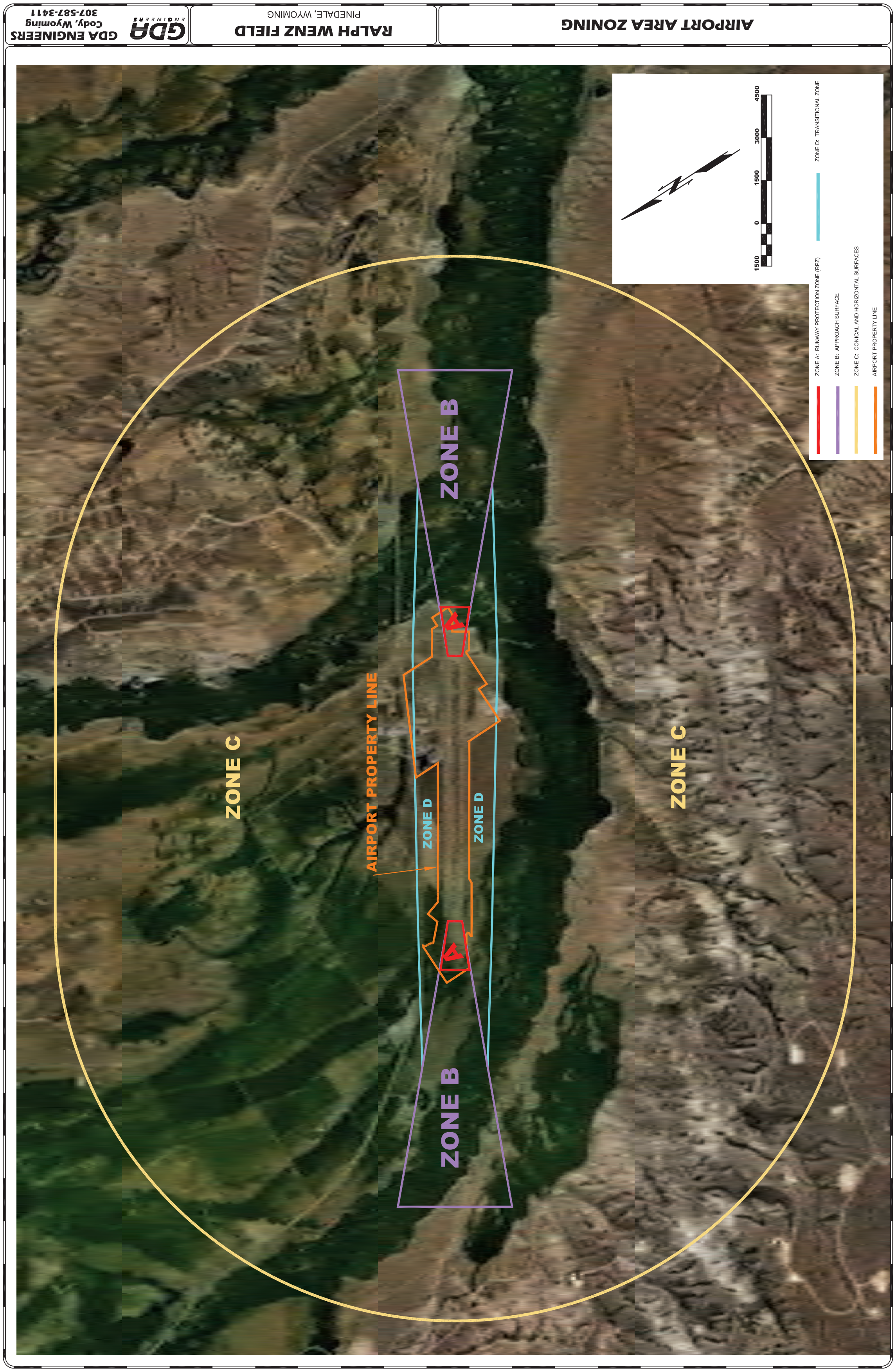
ii. The building/structure height limitation within this zone is 35 feet.

(3) Conical and Horizontal Surface: The Conical and Horizontal Surfaces are shown as **Zone C**.

i. Buildings/structures within this zone cannot exceed a built height total elevation of 150 feet above the published airport elevation MSL (mean sea level).

(4) Transitional Zone: The Transitional Zone is shown as **Zone D**.

i. The building/structure height limitation within this zone is 35 feet.


AIRPORT AREA ZONING
RALPH WENZ FIELD
PINEDALE, WYOMING
GDA ENGINEERS
Cody, Wyoming
307-587-3411
ZONE B
ZONE B
ZONE C
ZONE C
ZONE D
ZONE D
AIRPORT PROPERTY LINE
1500
0
1500
3000
4500
ZONE A: RUNWAY PROTECTION ZONE (RPZ)
ZONE B: APPROACH SURFACE
ZONE C: CONICAL AND HORIZONTAL SURFACES
AIRPORT PROPERTY LINE
ZONE D: TRANSITIONAL ZONE

Glossary

Common Acronyms

AC: Advisory Circular
ADG: Airplane Design Group
ADO: Airport District Office
AGL: Above Ground Level
AIP: Airport Improvement Plan
ALP: Airport Layout Plan
ALS: Approach Light System
AMSL: Above Mean Sea Level
AOA: Airport Operations Area
AOPA: Airplane Owners and Pilots Association
APS: Airport Planning Standard
ARC: Airport Reference Code
ASL: Above Sea Level
ASV: Annual Service Volume
AT: Air Traffic
ATC: Air Traffic Control
AVGAS: Aviation Gasoline
AWOS: Automated Weather Observation System

BLM: Bureau of Land Management
BMP: Best Management Practices
BRL: Building Restriction Line

CAT: Category
CEQ: Council on Environmental Quality
CFI: Certificated Flight Instructor
CFR: Code of Federal Regulations
CIP: Capital Improvements Program
CTAF: Common Traffic Advisory Frequency

DEIS: Draft Environmental Impact Statement
DEQ: Department of Environmental Quality
DME: Distance Measuring Equipment
DME/P: Precision Distance Measuring Equipment
DNL: Day/Night Equivalent Sound Level (see also Ldn)
DOD: Department of Defense
DOI: Department of Interior
DOT: Department of Transportation
DWG: Dual Wheel Gear

EA: Environmental Assessment
EIS: Environmental Impact Statement
ENAV: En Route Navigational Aids
EPA: Environmental Protection Agency

FAA: Federal Aviation Administration
FAAP: Federal Aid Airport Program
FAR: Federal Aviation Regulation
FBO: Fixed Base Operator
FEIS: Final Environmental Impact Statement
FEMA: Federal Emergency Management Agency
FIRM: Flood Insurance Rate Maps
FONSI: Finding of No Significant Impact
FPPA: Farmland Protection Policy Act

GA: General Aviation
GPS: Global Positioning Satellite or System

HF: High Frequency
HIRL: High Intensity Runway Lights
HITL: High Intensity Taxiway Lights

IAP: Instrument Approach Procedure
IATA: International Air Transport Association
IFR: Instrument Flight Rules
ILS: Instrument Landing System
INM: Integrated Noise Model

Ldn: Day/Night Noise Levels
LOC: Localizer
LPV: Localizer Performance with Vertical Guidance

MALS: Medium Intensity Approach Lighting
MDA: Minimum Descent Altitude
ME: Multi-Engine Aircraft
MGW: Maximum Gross Weight
MGTW: Maximum Gross Takeoff Weight
MIRL: Medium Intensity Runway Lights
MITL: Medium Intensity Taxiway Lights
MPU: Master Plan Update
MSL: Mean Sea Level

NAAQS: National Ambient Air Quality Standards
NAS: National Airspace System
NAVAIDS: Navigational Aids
NBAA: National Business Aviation Association
NDB: Non-Directional Radio Homing Beacon
NEPA: National Environmental Policy Act
NM: Nautical Mile
NOAA: National Oceanic and Atmospheric Administration
NOL: Net Operating Loss
NPI: Non-Precision Instrument
NPIAS: National Plan of Integrated Airport Systems
NRCS: National Resource Conservation Services
NWS: National Weather Service

OFA: Object Free Area
OFZ: Obstacle Free Zone

PA: Precision Approach
PAPI: Precision Approach Path Indicator (Visual Approach Aid)
PIR: Precision Instrument Runway

REIL: Runway End Identicator Lights
RF: Radio Frequency
RNAV: Area Navigation
RPZ: Runway Protection Zone
RSA: Runway Safety Area

SE: Single Engine Aircraft
SM: Statute Miles
SWG: Single Wheel Gear

TAF: FAA Terminal Area Forecast
TAP: Terminal Area Plan
TSA: Taxiway Safety Area
TSA: Transportation Security Administration

UNICOM: Universal Communications
USDA: U.S. Department of Agriculture
USFWS: U.S. Fish and Wildlife Service
USGS: United States Geological Survey

VFR: Visual Flight Rules
VHF: Very High Frequency
VLF: Very Low Frequency
VLJ: Very Light Jet
VOR: VHF Omnidirectional Range

WX: Weather

Common Terms

Abandoned Runway: A runway permanently closed to all aircraft operations, which may be marked in accordance with current FAA standards for marking and lighting of deceptive, closed and hazardous areas on airports.

Above Ground Level (AGL): Altitude expressed as feet above terrain or airport elevation (see MSL).

Access Road: The right-of-way, the roadway and all improvements constructed thereon connecting

Access Taxiway: A taxiway that provides access to a particular location or area.

Active Aircraft: Aircraft registered with the FAA and reported or estimated to have been flown at least one hour during the preceding year.

Active Runway: The runway at an airport that is being used for landing, taxiing or takeoff operations.

Actual Runway Length: The length of a full-width usable runway from end to end of full strength pavement where those runways are paved.

Advisory Circular (AC): External publications issued by the FAA consisting of non-regulatory material providing for the recommendations relative to a policy, and guidance and information relative to a specific aviation subject.

Air Taxi: An aircraft operated under an air taxi operating certificate for the purpose of carrying passengers, mail, or cargo for revenue in accordance with FAR Part 121 and FAR Part 135.

Air Traffic Control: The control of aircraft traffic, in the vicinity of airports from control towers, and in the airways between airports from control centers.

Aircraft Approach Category: A grouping of aircraft based on 1.3 times their stall speed in their landing configuration at their maximum certificated landing weight. The categories are Category A through Category E and range from a speed of less than 91 knots to 166 knots or more.

Aircraft Mix: The type of aircraft which are to be accommodated at the airport.

Aircraft Operation: The landing, takeoff or touch-and-go procedure by an aircraft on a runway at an airport.

Aircraft Tiedowns: Positions on the ground surface that is available for securing aircraft.

Aircraft: A device that is used or intended to be used for flight in the air (FAR Part 1).

Airplane Design Group: A grouping of aircraft based on wingspan and/or tail height. When an airplane is in two categories, the most demanding category should be used.

Airport Beacon: A visual navigation aid displaying alternating white and green flashes to indicate a lighted airport or white flashes only for an unlighted airport.

Airport Capital Improvement Plan: The planning program used by the Federal Aviation Administration to identify, prioritize and distribute funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

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

Airport Imaginary Surfaces: Imaginary surfaces established at an airport for obstruction determination purposes and consisting of primary, approach, departure, horizontal, vertical, conical, and transitional surfaces.

Airport Improvement Program (AIP): The Airport Improvement Program of the Airport and Airways Improvement Act of 1982 as amended by the Airport and Airway Safety and Capacity Expansion Act of 1987. Under this program, the FAA provides funding

assistance for the planning, design and development of airports and airport facilities.

Airport Layout Plan: A graphic presentation, to scale, of existing and proposed airport facilities, their location on the airport, and the pertinent clearance and dimensional information required to show conformance with applicable standards. To be eligible for AIP funding assistance, an airport must have an FAA approved airport layout plan.

Airport Master Plan: The planner's concept of the long-term development of an airport.

Airport Obstruction Chart: A scaled drawing depicting the Federal Aviation Regulation (FAR) Part 77 surfaces, a representation of objects that penetrate these surfaces, runway, taxiway, and ramp areas, navigational aids, buildings, roads and other detail in the vicinity of an airport.

Airport Reference Code (ARC): The ARC combines two separate factors of aircraft design (aircraft approach category and airplane design group) into one code. The first designator, represented by letters A through E, is the "aircraft approach category" and relates to an aircraft's speed as it approaches an airport for landing. The second designator, represented by Roman numerals I through VI, is the airplane design group, and relates to an aircraft's wingspan and/or tail height.

Airport Reference Point (ARP): The latitude and longitude of the approximate center of the airport.

Airport Sponsor: The entity that is legally responsible for the management and operation of an airport including the fulfillment of the requirements of laws and regulations related thereto.

Airport: An area of land or water that is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any.

Annual Service Volume (ASV): The number of annual operations that can reasonably be expected to occur at the airport based on a given level of delay.

Approach and Runway Protection Zone Layout: A graphic presentation to scale of the imaginary surfaces defined in FAR Part 77.

Approach Area: The defined area the dimensions of which are measured horizontally beyond the threshold over which the landing and takeoff operations are made.

Approach Lighting System (ALS): Radiating light beams guiding pilots to the extended centerline of the runway on final approach and landing.

Approach Lights: High intensity lights located along the approach path at the end of an instrument runway. Approach lights aid the pilot as he transitions from instrument flight conditions to visual conditions at the end of an instrument approach.

Approach Slope Ratio: The ratio of horizontal to vertical distance indicating the degree of inclination of the approach surface.

Approach Surface: A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

Apron: A specified portion of the airfield used for passenger, cargo or freight loading and unloading, aircraft parking, and the refueling, maintenance and servicing of aircraft.

Automated Weather Observing System (AWOS): Equipment that automatically gathers weather data from various locations on an airport and transmits the information directly to pilots by means of computer generated voice messages over a discrete frequency.

Auxiliary Power Unit (APU): A self-contained generator in aircraft producing power for ground operation and for starting the engines.

Avigation Easement: A land use easement permitting the unlimited operation of aircraft in the

airspace above the land area involved and restricting incompatible development of areas.

Avionics: Airborne navigation, communications, and data display equipment required for operation under specific air traffic control procedures.

Based Aircraft: The total number of active general aviation aircraft which use or may be expected to use an airport as a home base.

Building Area: An area on an airport to be used, considered, or intended to be used, for airport buildings or other airport facilities or rights-of-way, together with all airport buildings and facilities located thereon.

Building Restriction Line (BRL): A line which identifies suitable building area locations on airports.

Capital Improvement Plan: The planning program used by the Federal Aviation Administration to identify, prioritize and distribute Airport Improvement Program funds for airport development and the needs of the National Airspace System to meet specified national goals and objectives.

Commercial Service: Commercial service airports are public use airports which receive scheduled passenger service aircraft, and which annually enplane 2,500 or more passengers.

Common Traffic Advisory Frequency (CTAF): The radio frequency, also called the UNICOM.

Conical Surface: A surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

Controlled Airspace: Airspace in which some or all aircraft may be subject to air traffic control to promote safe and expeditious flow of air traffic.

Critical (Design) Aircraft: The most demanding aircraft with at least 500 annual operations that operates, or is expected to operate, at the airport.

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

Crosswind Runway: A runway additional to the primary runway to provide for wind coverage not adequately provided by the primary runway.

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

Decibel (dB): A unit of measurement used for defining a noise level or an exposure level.

Displaced Threshold: A threshold that is located at a point on the runway other than the physical beginning. Aircraft can begin departure roll before the threshold, but cannot land before it.

Distance Measuring Equipment (DME): Equipment used to measure, in nautical miles, the distance of an aircraft from the DME navigational aid located on the airport.

Environmental Assessment: An environmental analysis performed pursuant to the National Environmental Policy Act to determine whether an action would significantly affect the environment and thus require a more detailed environmental impact statement.

Environmental Impact Statement: A document required of federal agencies by the National Environmental Policy Act for major projects or legislative proposals affecting the environment. It is a tool for decision-making describing the positive and negative effects of a proposed action and citing alternative actions.

Executive Aircraft Operator: A corporation, company, or individual which operates owned or leased aircraft, flown by pilots) whose primary duties involve pilotage of aircraft, as a means of transportation or personnel or cargo in the conduct of company business.

Exit Taxiway: A taxiway used as an exit from a runway to the apron or other aircraft operating area.

FAR Part 77: Contains obstruction requirements at or near airports.

Federal Aviation Administration (FAA): Created by the act that established the Department of Transportation. Assumed all of the responsibilities of the former Federal Aviation Agency including aircraft safety, movement, and controls.

Federal Aviation Regulations (FAR): Rules and regulations that govern the operation of aircraft, airways, and airmen.

Finding of No Significant Impact (FONSI): A public document prepared by a Federal agency that presents the rationale why a proposed action will not have a significant effect on the environment and for which an environmental impact statement will not be prepared.

Fixed Base Operator (FBO): An individual or company located at an airport, and providing commercial general aviation services such as fuel, maintenance, and storage.

Flight Plan: Specified information relating to the intended flight of an aircraft, which is filed orally or in writing with air traffic control. (FAR Part 1)

Fuel Flowage Fees: Fees levied by the airport operator per gallon of aviation gasoline and jet fuel sold at the airport.

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

General Aviation Airports: Those airports with fewer than 2,500 annual enplaned passengers and those used exclusively by private and business aircraft not providing common carrier passenger service.

General Aviation Itinerant Operations: Takeoffs and landings of civil aircraft (exclusive of air carrier) operating on other than local fights.

Glide Slope: Generally a 3-degree angle of approach to a runway established by means of airborne instruments during instrument approaches, or visual ground aids for the visual portion of an instrument approach and landing.

Global Positioning System (GPS): A satellite based radio positioning, navigation, and time-transfer system.

Ground Power Unit (GPU): A source of power, generally from the terminals, for aircraft to use while their engines are off.

Hangar: A building used to store one or more aircraft, and/or conduct aircraft maintenance.

Horizontal Surface: An imaginary obstruction-limiting surface defined in FAR Part 77 that is specified as a portion of a horizontal plane surrounding a runway located 150 feet above the established airport elevation. The specific horizontal dimensions of this surface are a function of the types of approaches existing or planned for the runway.

IFR Airport: An airport with an authorized instrument approach procedure.

IFR Conditions: Weather conditions below the minimum for flight under visual fight rules.
Instrument Approach Runway: A runway served by an electronic aid providing at least directional guidance adequate for a straight-in approach.

Instrument Approach: An approach to an airport, with intent to land, by an aircraft flying in accordance with an IFR flight plan, when the visibility is less than 3 miles and/or when the ceiling is at or below the minimum initial altitude.

Instrument Flight Rules (IFR): Procedures for the conduct of flight in weather conditions below Visual Flight Rules weather minimums. The term IFR is often also used to define weather conditions and the type of flight plan under which an aircraft is operating.

Instrument landing system (ILS): A precision instrument approach system which provides in the

aircraft, the lateral, longitudinal, and vertical guidance necessary for a landing.

Integrated Noise Model (INM): The FAA's standard methodology since 1978 for noise assessments.

Itinerant Operations: Operations by aircraft that leaves the local airspace.

Jet Noise: The noise generated externally to a jet engine in the turbulent jet exhaust.

Land Use Plan: Shows on-airport land uses as developed by the airport sponsor under the master plan effort and off-airport land uses as developed by surrounding communities.

Landing Gear: That part of an aircraft which is required for landing. Gear may be configured as Single Wheel Gear (SWG), Dual Wheel Gear (DWG), or Dual Tandem Wheel Gear (DTWG).

Landing Roll: The distance from the point of touchdown to the point where the aircraft can be brought to a stop, or exit the runway.

Landside Operations: Those parts of the airport designed to serve passengers including the terminal buildings, vehicular circular drive, and parking facilities.

Large Aircraft: Aircraft of more than 12,500 pounds maximum certificated takeoff weight.

Ldn: A quantity indicating a day/night noise exposure level calculated using the Ldn noise-forecasting methodology. This quantity can be used to predict community response to projected levels of aircraft activity.

Local Operations: Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

Localizer: A navigational aid that consists of a directional pattern of radio waves modulated by two signals which, when receding with equal intensity, are displayed by compatible airborne equipment as an "on-course" indication, and when received in unequal intensity are displayed as an "off-course" indication.

Location Map: Shown on the airport layout plan drawing, it depicts the airport, cities, railroads, major highways, and roads within 20 to 50 miles of the airport.

Marking: On airports, a pattern of contrasting colors placed on the pavement, turf, or other usable surface by paint or other means to provide specific information to aircraft pilots and sometimes to operators of ground vehicles, on the movement areas.

Mean Seal Level (MSL): Altitude expressed as feet above sea level, rather than above local terrain.

Minimums: Minimum altitude a pilot can descend to when conducting an instrument approach. Also refers to the minimum visibility a pilot must have to initiate an instrument approach.

Multi-Engine Aircraft: Reciprocating, turbo-prop or jet powered fixed wing aircraft having more than one engine.

Municipally Operated Airport: An airport owned by a city and run as a department of the city, with policy direction by the city council and, in some cases, by a separate airport commission or advisory board.

National Environmental Policy Act (NEPA): Federal legislation that establishes environmental policy for the nation. It requires an interdisciplinary framework for federal agencies to evaluate environmental impacts and contains action-forcing procedures to ensure that federal agency decision makers take environmental factors into account.

National Plan of Integrated Airport Systems (NPIAS): A plan prepared by the FAA which identifies, for the Congress and the public, the composition of a national system of airports together with the airport

development necessary to anticipate and meet the present and future needs of civil aeronautics, to meet requirements in support of the national defense, and to meet the special needs of the postal service. The plan includes both new facilities and qualitative improvements to existing airports to increase their capacity, safety, technological capability, etc.

Nautical Mile Per Hour (KNOT): Most common measure of aircraft speed. One knot is equal to one nautical mile per hour (1.15 knots = 1 mile).

Nautical Mile: Most common distance measurement in aviation, equivalent to the length of one minute of latitude along the earth's equator or 6076.115 feet.

Navigable Airspace: Airspace at and above the minimum flight altitudes prescribed in the FARs, including airspace needed for safe takeoff and landing. (FAR Part 1)

Navigational Aid (NAVAID): Any facility used as, available for use as, or designed for use as an aid to air navigation, including landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio direction-finding, or for radio or other electronic communication, and any other structure or mechanism having similar purpose and controlling flight in the air or the landing or takeoff of aircraft.

Noise Contour: A line connecting equal points of noise exposure. Usually color coded by decibels.

Non-Directional Beacon: Signal that can be read by pilots of aircraft with direction finding equipment. Used to determine bearing and can "home" in or track to or from the desired point.

Non-Precision Approach: Provides course guidance without vertical path guidance.

Non-Precision Approach Procedure: A standard instrument approach procedure in which no electronic glide slope is provided.

Non-Precision Instrument Approach Aid: An electronic aid designed to provide an approach path for aligning an aircraft on its final approach to a runway. It lacks the high accuracy of the precision approach equipment and does not provide descent guidance. The VHF Omni range (VOR) and the non-directional beacon (NDB) are two examples of non-precision instrument equipment.

Non-Precision Instrument Runway: A runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance for which straight-in non-precision instrument approach procedure has been approved.

Notice to Airmen (NOTAM): A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure) of, or hazard in the National Airspace System, the timely knowledge of which is essential to personnel concerned with flight operations.

Object Free Area (OFA): An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

Obstacle Free Zone (OFZ): The OFZ is required to be clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance protection for aircraft landing or taking off from the runway, and for missed approaches. The OFZ is divided into the Runway OFZ, the Inner-approach OFZ, and the Inner-Transitional OFZ.

Obstruction: An object which penetrates an imaginary surface described in the FAA's Federal Aviation Regulation (FAR) Part 77.

Operation: The landing, takeoff or touch-and-go procedure by an aircraft on a runway at an airport.

Overflight: Aircraft whose flights originate or terminate outside the metropolitan area that transit the airspace without landing.

Parallel Taxiways: Two taxiways which are parallel to one another which allow traffic to move simultaneously in different directions at busy airports.

Parking Apron: An apron intended to accommodate parked aircraft.

Pavement Structure: The combination of runway base and subbase courses and surface course which transmits the traffic load to the subgrade.

Pavement Sub-Grade: The upper part of the soil, natural or constructed, which supports the loads transmitted by the runway pavement structure.

Peak Hour: An estimate of the busiest hour in a day. This is also known as the design hour.

Precision Approach Path Indicator (PAPI): A system of lights on an airport that provides visual descent guidance to the pilot of an aircraft approaching a runway.

Precision Approach Procedure: A standard instrument approach procedure in which an electronic glide slope is provided, such as ILS and PAR.

Precision Approach: A standard instrument approach using a precision approach procedure. See precision approach procedure.

Precision Instrument Runway: A runway having an existing instrument approach procedure utilizing an Instrument Landing System (ILS), or a Precision Approach Radar (PAR). It also means a runway for which a precision approach system is planned and is so indicated by an FAA approved airport layout plan; a military service approved military airport layout plan; any other FAA planning document, or military service military airport planning document.

Primary Surface: An imaginary obstruction limiting surface defined in FAR Part 77 that is specified as a rectangular surface longitudinally centered about a runway. The specific dimensions of this surface are a function of the types of approaches existing or planned for the runway.

Public Airport: An airport for public use, publicly owned and under control of a public agency.

Ramp: A defined area, on a land airport, intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance.

Rotating Lighted Beacon: An airport aid allowing pilots the ability to locate an airport while flying under VFR conditions at night.

Runway Bearing: The magnetic or true bearing of the runway centerline as measured from magnetic or true north.

Runway Configuration: Layout or design of a runway or runways, where operations on the particular runway or runways being used at a given time are mutually dependent. A large airport can have two or more runway configurations operating simultaneously.

Runway Direction Number: A whole number to the nearest tenth of the magnetic bearing of the runway and measured in degrees clockwise from magnetic north.

Runway End Identification Lights (REIL): An airport lighting facility in the terminal area navigation system consisting of one flashing white high intensity light installed at each approach end corner of a runway and directed toward the approach zone, which enables the pilot to identify the threshold of a usable runway.

Runway Environment: The runway threshold or approach lighting aids or other markings identifiable with the runway.

Runway Gradient (Effective): The average gradient consisting of the difference in elevation of the two ends of the runway divided by the runway length may be used provided that no intervening point on the

runway profile lies more than 5 feet above or below a straight line joining the two ends of the runway. In excess of 5 feet, the runway profile will be segmented and aircraft data will be applied for each segment separately.

Runway Lights: Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway light intensity may be controllable or preset, and are uniformly spaced at intervals of approximately 200 feet.

Runway Markings: (1) Basic marking-markings on runways used for operations under visual flight rules, consisting of centerline marking and runway direction numbers, and if required, letters. (2) Instrument marking-markings on runways served by nonvisual navigation aids and intended for landings under instrument weather conditions, consisting of basic marking plus threshold marking. (3) All weather marking- markings on runways served by nonvisual precision approach aids and on runways having special operational requirements, consisting of instrument markings plus landing zone marking and side strips.

Runway Orientation: The magnetic bearing of the centerline of the runway.

Runway Protection Zone (RPZ): A runway protection zone is a trapezoidal area at ground level, under the control of the airport authorities, for the purpose of protecting the safety of approaches and keeping the area clear of the congregation of people. The runway protection zone begins at the end of each primary surface and is centered upon the extended runway centerline.

Runway Safety Area (RSA): A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

Runway Strength: The assumed ability of a runway to support aircraft of a designated gross weight for each of single-wheel, dual-wheel, and dual-tandem-wheel gear types.

Runway: A defined rectangular area at an airport designated for the landing and taking-off of an aircraft.

Scope: The document that identifies and defines the tasks, emphasis and level of effort associated with a project or study.

Segmented Circle: A system of visual indicators designed to provide traffic pattern information at an airport without an operating control tower.

Shoulder: As pertaining to airports, an area adjacent to the edge of a paved surface so prepared to provide a transition between the pavement and the adjacent surface for aircraft running off the pavement, for drainage and sometimes for blast protection.

Single Runway: A airport having one runway.

Small Aircraft: Aircraft of 12,500 pounds or less maximum certificated takeoff weight.

Socioeconomic: Information dealing with population or economic characteristics of a region.

Stopway (SWY): A defined rectangular surface beyond the end of a runway prepared or suitable for use in lieu of runway to support an airplane, without causing structural damage to the airplane, during an aborted takeoff.

Straight-In Approach (IFR): An instrument approach wherein final approach is commenced without first having executed a procedure turn (not necessarily completed with a straight-in landing).

Straight-In Approach (VFR): Entry into the traffic pattern by interception of the extended runway centerline without executing any other portion of the traffic pattern.

Student Pilot: A pilot who is training for a private pilot certificate, either before or after the first solo.

Taxilane: The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

Taxiway Safety Area (TSA): A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

Taxiway: A defined path, usually paved, over which aircraft can taxi from one part of an airport to another without interfering with takeoffs or landings.

Terminal Area Forecast: The official forecast of aviation activity, both aircraft and enplanements, at FAA facilities. This includes FAA-towered airports, federally contracted towered airports, non-federal towered airports, and many non-towered airports.

Terminal Area: The area used or intended to be used for such facilities as terminal and cargo buildings, gates, hangars, shops and other service buildings; automobile parking, airport motels and restaurants, and garages and vehicle service facilities used in connection with the airport; and entrance and service roads used by the public within the boundaries of the airport.

T-Hangar: An aircraft hangar in which aircraft are parked alternately tail to tail, each in the T-shaped space left by the other row of aircraft or aircraft compartments.

Threshold Crossing Height (TCH): The height of the straight-line extension of the visual or electronic glide slope above the runway threshold.

Threshold Lights: Lighting arranged symmetrically about the extended centerline of the runway identifying the runway threshold. They emit a fixed green light.

Threshold: The designated beginning of the runway that is available and suitable for the landing of airplanes.

Total Operations: All arrivals and departures performed by military, general aviation and air carrier aircraft.

Touch-and-Go: An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.

Touchdown Zone: The area of a runway near the approach end where airplanes normally alight.

Touchdown: (1) The point at which an aircraft first makes contact with the landing surface. (2) In a precision radar approach, the point on the landing surface toward which the controller issues guidance instructions.

Traffic Pattern: The traffic flow that is prescribed for aircraft landing at, taxiing on, and taking off from an airport (FAR Part 1). The usual components of a traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.

Transient Operations: Operations or other activity performed by aircraft not based at the airport.

Transitional Surface: These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface, extend a distance of 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

Turning Radius: The radius of the arc described by an aircraft in making a self-powered turn, usually given as a minimum.

UNICOM: Frequencies authorized for aeronautical advisory services to private aircraft. Only one such station is authorized at any landing area. The frequency 123.0 MHz is used at airports served by airport traffic control towers, and 122.8 MHz is used for other landing areas. Services available are advisory in nature, primarily concerning the airport services and airport utilization.

Utility Runway: A runway that is constructed for and intended to be used by propeller driven aircraft of 12,500 pounds maximum gross weight and less.

Very High Frequency (VHF) Omni directional range (VOR): A ground based electronic navigation aid transmitting navigation signals for 360 degrees orientated from magnetic north. VOR is the historic basis for navigation in the national airspace system.

VFR Airport: An airport without an authorized or planned instrument approach procedure.

Vicinity Map: Shown on the airport layout plan drawing, it depicts the relationship of the airport to the city or cities, nearby airports, roads, railroads, and built-up areas.

Visual Approach Aid: Any device, light, or marker used to provide visual alignment and/or descent guidance on final approach to a runway. Also see REIL, VASI.

Visual Approach Slope Indicator (VASI): An airport lighting facility in the terminal area navigation system used primarily under VFR conditions that provides vertical visual guidance to aircraft during approach and landing, by radiating a pattern of high intensity red and white focused light beams, which indicate to the pilot that they are above, on, or below the glide path.

Visual Approach: An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of a radar facility and having an air traffic control authorization, may deviate from the prescribed instrument approach procedure and proceed to the airport of destination, served by an operational control tower, by visual reference to the surface.

Visual Flight Rules (VFR): Procedures for the conduct of flight in weather conditions above Visual Flight Rules (VFR) weather minimums. The term VFR is often also used to define weather conditions and the type of flight plan under which an aircraft is operating.

Visual Runway: A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan, a military service approved military airport layout plan, or by a planning document submitted to the FAA by competent authority (FAR Part 77).

VORTAC: Very High Frequency Omni Range Facility (VOR co-located with a Tactical Air Navigation (TACAN) facility.)

Wind Cone or Wind Sock: A free-rotating fabric truncated cone which when subjected to air movement indicates wind direction and wind force.

Wind Rose: A diagram for a given location showing relative frequency and velocity of wind from all compass directions.

Wind Tee: A visual device in the shape of a "T" used to determine wind direction.

Zulu Time (Z): Time at the prime meridian in Greenwich, England.

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