

HUNT FIELD MASTER PLAN



CITY OF LANDER, WYOMING

February 2010

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HUNT FIELD MASTER PLAN

STATE OF WYOMING PROJECT NO. LND -01X

SUBMITTED TO:
FEDERAL AVIATION ADMINISTRATION
DENVER AIRPORT DISTRICT OFFICE

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State of Wyoming Project No. LND01X

The contents of this document do not necessarily reflect the views of the FAA. Acceptance of this report by the FAA does not, in any way constitute a commitment on the part of the United States to participate in any airport development, which may be inferred from this study, nor does it indicate that such development is environmentally acceptable in accordance with public laws.

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Chapter I. INTRODUCTION

General

This report is the 2008 Airport Master Plan for Lander Hunt Field. The airport last had a Master Plan prepared in 1994. Since then many things have changed, both at Lander and in the FAA's funding regimen. The airport serves the general aviation needs of central Wyoming and is home to more general aviation aircraft than any other general aviation airport in the state.

This plan is the culmination of a community-wide planning effort to address Lander's aviation needs. A Citizens Airport Advisory Planning Committee was formed. That committee met throughout 2006 to guide the planning process. The Airport Board at its monthly meetings also guided the process. A public meeting was held at the onset of this study to alert the public and inform them of what the planning process would address. A well-attended public hearing was held in January of 2007 to update the public of the plan's initial findings.

Objectives

The primary objective of the FAA's Airport Master Planning process is to develop a long-term plan to support the modernization of existing airports and the creation of new airports. Pertinent airport data must first be collected before aviation demand can be forecast and facility improvements identified. The objectives of Lander's Hunt Field Master Plan, as identified by the airport sponsor and FAA, include the following:

- ▶ Updated aviation demand forecasts that incorporate current variables such as types of aircraft using the airport, changes in population, income, retail sales, and local issues.
- ▶ Determination of short-term and long-term facility requirements and the appropriate phasing and timing of airport improvement projects needed to meet these requirements.
- ▶ Identification of any modifications to current FAA design standards.
- ▶ Revised Airport Layout Plan (ALP) drawings that show existing conditions at the airport and proposed airport improvement projects.
- ▶ A realistic Capital Improvement Program (CIP) that identifies the phased construction of airport improvement projects over the 20-year planning period.

The Master Plan process includes use of information contained in the *National Plan of Integrated Airport Systems (NPIAS)* and *Terminal Area Forecasts* as well as the appropriate FAA Advisory Circulars including:

- ▶ *AC 150/5070-6A, Airport Master Plans*
- ▶ *AC 150/5300-13, Airport Design, including Changes 1-5*
- ▶ *AC 150/5050-6, Airport Land Use Compatibility Planning*
- ▶ *AC 150/5060-5, Airport Capacity and Delay*

Chapter II. INVENTORY

Introduction

The Hunt Field Airport is located on a glacial terrace mesa at the southeast edge of the City of Lander, Wyoming. Lander is situated in the west-central region of the state. The airport elevation is 5,584 feet above Mean Sea Level (MSL). The current single runway is 100 feet wide by 5,005 feet long. The present airport site encompasses approximately 131.75 acres located within Sections 19 and 20, Township 33 North, Range 99 West of the Sixth Principal Meridian.

The Hunt Field Airport is one of four publicly-owned airports in Fremont County. Three are in the National Program of Integrated Airport Systems (NPIAS). Shoshoni, a gravel strip, is not a NPIAS facility. Hunt Field and Dubois Municipal Airports are general aviation facilities. The Riverton Regional Airport, located in Riverton, approximately 19 nautical miles northeast of Lander, has the closest airport offering scheduled commercial service.

Community Profile

General

The City of Lander is the county seat of Fremont County and encompasses an area of approximately 4.4 square miles within Fremont County. The land area adjacent to Lander is comprised of federal, state, and tribal lands. Due to its proximity to the Shoshone National Forest, Sinks Canyon State Park, and other public lands, Lander is a popular destination with abundant opportunities for year-round outdoor recreation. It is also headquarters for the National Outdoors Leadership School and similar recreation oriented businesses.

Climate

Summers in Lander are typically warm and dry with cool nights. The winters are cold with typically sunny days. The average annual rainfall for Fremont County is 12.79 inches. The average annual snowfall for Lander is 98 inches. The average annual temperature is approximately 44.8 degrees Fahrenheit, while the mean maximum temperature during the summer is 86.1 degrees Fahrenheit.

The primary local climate factor most affecting an airport is wind direction and speed. Aircraft take off and land into the wind. They can tolerate only limited cross wind (the percentage of wind perpendicular to the runway) during operations. The FAA recommends that airports have adequate runways to provide coverage of 95% of all wind conditions. Hunt Field's runway 3/21 gives 96.4% wind coverage at 10.5 knots crosswind.

Government

The City of Lander is governed by a city council comprised of six city council members and a mayor. The City has an airport board to oversee the daily operations of Hunt Field Airport and to develop long-range plans. The airport board consists of five members plus a non-voting city council member. An appointed part-time airport manager, who presently also operates the only FBO, handles daily operational matters. That person’s duties include keeping all NAVAID’s and equipment operational, plowing snow as needed, coordinating mowing, and other operational needs.

Population

The State of Wyoming population increased by 12 percent between 1990 and 2004. Within the City of Lander, the population decreased by 2 percent over the same period. However, recent trends indicate Lander’s population is slowly increasing. The distribution of population by age is 24 percent under the age of 18, 7 percent from 18 to 24, 27 percent from 25 to 44, 26 percent from 45 to 64, and 17 percent who were 65 years of age or older. The median age is 40 years. Table II-1 compares population forecasts for Lander, Fremont County, and the State of Wyoming.

**Table II-1
Population Data**

<i>Year</i>	<i>State of Wyoming</i>	<i>Fremont County</i>	<i>Lander, Wyoming</i>
Historic			
1980	469,557	38,992	7,867
1990	453,588	33,662	7,023
2000	493,782	35,804	6,911
2006	515,004	37,163	7,047
Forecast			
2010	529,927	38,113	7,141
2015	549,190	39,336	7,261
2025	589,843	41,899	7,507

Source: Wyoming Department of A & I, Decennial Census Data and Estimates and Projections; Projections for 2010, 2015 and 2025 were extrapolated by James Gores & Associates

Economic Factor General Discussion

Industry and Employment

Service industries rank as the principal industry in Fremont County. Public administration, retail trade, accommodations and food services, and construction all play an important role in the area’s economy. Table II-2 shows employment figures for Fremont County broken down by classification sectors. The table also reflects the change in each sector from 2001 to 2004. The 2004 figures are the latest available.

**Table II-2
Fremont County Employment**

Classification	2001	2004	% Change
Local Government	3,302	3,628	9.9
Retail Trade	2,656	2,558	-3.7
Accommodation and Food Services	1,641	1,707	4.0
Construction	1,952	1,690	-13.4
Farm Employment	1,175	1,166	-0.8
Professional and Technical Services	783	790	0.9
Mining	480	599	24.8
Manufacturing	619	583	-5.8
Transportation and Warehousing	597	560	-6.2
Finance and Insurance	478	535	11.9
Forestry, Fishing, and Related Activities	189	191	1.1
Total Employment	21,472	22,223	3.5

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce

Table II-3 below, lists the top five employers in Lander.

**Table II-3
Top Five Employers in Lander**

Employer	Product	Number of Employees
Wyoming State Training School	Health Services	485
Fremont County School District No. 1	Education	300
Fremont County Courthouse	County	285
Lander Valley Medical Center	Health and Psychiatric Care	215
National Outdoor Leadership School	Outdoor Recreation / Education	100

Source: 2004-2005 Community Profile for Lander, Wyoming supplied by the Lander Chamber of Commerce

Airport Facilities

Airfield Pavements

The existing facilities at the Hunt Field Airport include one primary runway oriented 03/21. Runway 03/21 is paved with porous friction course asphalt and is 5,005 feet long by 100 feet wide. The pavement section is rated at 30,000 pounds for aircraft with a Single Wheel Gear (SWG). The pavement was designed at 30,000 pounds, rather than the standard 12,500 pounds, to handle larger Forest Service fire fighting planes. The Forest Service has not used Lander Airport for fire fighting planes since the 1980's. There is a single parallel taxiway in use at Hunt Field Airport.

The airport has one parking apron. It consists of 24,300 square yards of asphalt pavement and is located north of Runway 03/21. The apron currently has 34 tie-downs which are more than adequate for current airport activity. The apron pavement is rated at 30,000 pounds for aircraft with SWG. The east extremity of the apron is used to accommodate the fuel system. No overlays or other strength altering improvements have been made since 1989. The city has conducted crack sealing and fog sealing on a two to three year cycle since then.

Ground Vehicle Access and Parking

Ground vehicle access to the current hangar areas is via the apron and taxilanes. This creates obvious conflicts between ground vehicles and aircraft on the aircraft movement areas. In recent years, security at airports has become a paramount concern. The FAA strongly encourages keeping ground vehicles separated from aircraft and off the aircraft movement surfaces.

Hangars and Taxilanes

Currently, there are 42 hangars located at the airport. The current area designated for hangars is not adequate due to the projected increase in based aircraft. The Lander Airport Board has received several requests for hangar lots on which to build executive hangars in the past few years. Currently, the airport does not have available lots that offer either a paved or gravel taxilane access.

Airfield Lighting

The runway is equipped with Medium Intensity Runway Lights (MIRL) for nighttime operations. The MIRLs are pilot activated, meaning they remain off until actuated by a pilot wanting to land or take-off at the airport. The airport has a rotating beacon to assist pilots in locating the facility during nighttime operations and periods of inclement weather. Lighted Taxiway Guidance Signs are also in place for nighttime use.

Electronic Navigational Aids

Currently, there is not an Instrument Landing System (ILS) in operation at the Hunt Field Airport to conduct instrument approaches. Both runway ends are equipped with PAPI units and the runway is lighted. The airport has a rotating beacon near the terminal building.

There is an Automated Surface Observing System (ASOS) on the field. It can be accessed from the cockpit through radio frequency 118.15 or telephone number (307) 332-7707.

Airport Building Area

At this time, there are 42 hangars on the airport. Thirty-eight (38) are executive hangars, three stand-alone T-hangars, and one Fixed Base Operator (FBO) hangar owned by the city. The other buildings include the terminal building and the former National Weather Service office now owned by the city and leased as a professional office.

Fixed Base Operator (FBO) Services and Airport Businesses

Wind River Aviation, Inc. is the only Fixed Base Operator (FBO) on the airport. Services offered include FAA certified aviation mechanical services and fuel. Wind River Aviation, Inc. has a long-term lease with the City of Lander. It is owned and operated by Mr. Gary Loose. Wind River Aviation, Inc. has two employees. Mr. Loose operates the airport day-to-day on a contract basis for the City of Lander. No other aviation business is located on the airport. Flight instruction is available through local certified flight instructors not associated with the FBO.

Airport Access

Access to the airport is provided from Buena Vista Drive, approximately one and a quarter miles south of U.S. Highway 287. Buena Vista Drive is an urban paved street with curb and gutter. It provides adequate passenger and emergency vehicle access.

Fuel Storage Facilities

The airport has two 10,000 gallon above-ground fuel storage tanks. These store 100-octane low-lead fuel. The airport has one 10,000 gallon below-ground tank that stores Jet-A fuel. This system is located north of the runway on the extreme east side of the apron. The capacity of the fuel tanks is adequate for current and projected activity at the airport. Table II-4 provides a summary of fuel flowage at the airport from 2002 to 2005.

Table II-4
Hunt Field Fuel Flowage 2002-2005

Year	Total Gallons of Fuel Sold	Gallons of 100LL	Gallons of JET A
2002	31,362	10,188	21,174
2003	24,122	8,164	15,958
2004	19,360	3,601	15,759
2005	20,478	5,477	15,001

Source: Hunt Field Fuel Sale Records

Airport Equipment

The airport owns and operates the following maintenance equipment:

- 1 – John Deere loader unit with a 10-foot articulating plow
- 1 – tandem axle dump truck with a 16-foot plow

Snow removal is provided by the airport manager and/or airport board members operating the equipment. If city staff is available and free of street plowing operations, they may also assist in plowing the airport during a snow event.

Airport Security

Security for the airport is provided by the Lander City Police and the Fremont County Sheriff's Department. Emergencies at the airport are responded to by the Lander Fire Department and the Lander Emergency Medical Corps. The airport perimeter is enclosed by a 7-foot high game/security fence. All access gates are kept closed and locked as standard procedure. The main vehicle gate and the terminal walk-thru gate are accessed

by numerical combination key pads. There is no method of surveillance or monitoring of airport facilities when airport personnel are not present.

Utilities

The utility lines serving the airport are buried underground and provide service to the building and airfield facilities. Potable water and water for fire protection are provided to the airport by the City of Lander. Electricity is provided to the airport by Rocky Mountain Power. The airport's telephone service is provided by Qwest, and natural gas service is provided by Source Gas. Water, gas, and telephone lines are located along the northwest edge of the aprons. Underground power runs under the runway approximately 570 feet northeast of the ARP for service to the ASOS.

Airport Ownership and Operation

The Hunt Field Airport is owned and operated by the City of Lander. The Lander Airport Board is the administrative body that sets policy for and advises the city council in management of the airport. There are five voting Airport Board Members and a non-voting city council person, all of whose term lengths are at the discretion of the mayor and city council. The Airport Board Members are appointed by the Lander City Council. As mentioned above, the airport manager, Gary Loose, is employed by the City of Lander on a contract basis.

Airport Land

The existing airport site consists of 19 parcels of land encompassing approximately 131.75 acres of land owned in fee simple. The airport has an easement interest in two parcels totaling 0.11 acres.

Land Use

Careful attention must be given to the existing and potential uses of land in the vicinity of an airport when developing and applying land use criteria. It is necessary to be attentive to land uses since it is possible that additional land may need to be acquired for airport related activities or to minimize environmental impacts.

Land use compatibility planning in the vicinity of an airport will achieve an acceptable balance between the needs and tolerances of both the airport and its neighbors. Airport compatible land uses are those which are not adversely affected by airport operations or do not adversely affect the use of the airport. The east half of the airfield is encircled by the Lander municipal golf course, a compatible land use. The nearby hospital, north of the airfield, is located such that an aircraft following a left hand approach pattern may pass over it. Local pilots report that this is a very rare occurrence because the hospital is significantly closer to the runway than a comfortable turning radius for a normal approach. The hospital is not impacted by the 65 DNL noise contour. The city-owned Old Timers Rodeo Grounds and arena is located on the north side of the airport. It is adjoining the west hangar area. On a daily basis there are typically less than 10 people using this area. During community events, particularly over July 4th each year, large crowds do assemble at these rodeo grounds. While the rodeo grounds comply with FAA distance and height clearances, gathering of large crowds adjacent to an airport is not a compatible land use. Residential properties border the southwest (3) end of the runway,

though they are well below the bench on which the airport sits. These residential properties are not a compatible use and are therefore scheduled for acquisition.

Various land uses are incompatible with airports due to the fact that they present a danger to aircraft using the airport. Incompatible land uses would include activities which generate bright lights at night, smoke, amass the public, or electronic interference with aircraft radio navigation equipment. Tall structures which are located in the vicinity where aircraft are operating close to the ground, present a particularly serious hazard to property.

The implementation of land use and development controls can be used to protect an airport from encroachment by uses that are noise sensitive and other incompatible uses. Controls which are generally most useful are as follows: Navigation Easements; Fair Disclosure Rules; Land Acquisition; Land Use Zoning; and Height and Hazard Zoning.

Land Use Zoning

Land use zoning can be a very effective method for assuring that the noise generated by aircraft using the airport does not provoke citizen animosity against the airport. It is an effective planning tool to protecting public health, safety, and welfare by preventing noise sensitive and large group gathering areas from being developed near the airport. Fremont County presently has no zoning within the county. However, the City of Lander does have zoning ordinances that limit land use. The airport is zoned as airport. Through zoning, height restrictions are in place for both ends of the runway approaches, the transitional zones, and also including the horizontal and conical surfaces.

Chapter III. AVIATION ACTIVITY FORECASTS

Introduction

The single most important factor in airport planning is forecasting aviation demands. It is also the most difficult part of the planning process to have indisputable results. These forecasts then are used to measure the adequacy of existing facilities and the need for additional airport improvements. They can also determine many effects associated with development of new or expanded facilities.

In developing Hunt Field's aviation forecasts, an investigation was made of fuel sales records, FAA forecasts of general aviation growth rates, FAA 5010 records, and agencies and businesses that currently use or may potentially utilize the airport. After reviewing past and current operations, it was determined that information derived from fuel records and 5010 data for Hunt Field Airport would most accurately represent both current and future operations. Additionally, information derived from historic and current numbers of based aircraft records at Hunt Field Airport were used to forecast the future number of based aircraft.

There is not an industry standard approach to using fuel records for forecasting operations. Fuel sales records at Hunt Field indicate each type of aircraft purchasing fuel, and provide the most detailed available information regarding trends in activity and the types of aircraft using the airport. Other information of airport activity for Hunt Field is, by comparison, very limited.

The Operations per Based Aircraft (OPBA) methodology was considered, but determined to be less representative of Hunt Field Airport than the fuel sales information coupled with the FBO's detailed explanation of the data. The fleet of based aircraft is primarily comprised of Category A-1 aircraft. Using OPBA methodology would only account for small aircraft and not accurately represent larger C category aircraft.

Based Aircraft Forecast

Forecasts of based aircraft at Hunt Field Airport were developed using the airport's FAA 5010 data for current and historic based aircraft data. In 1994, there were 32 single-engine and 3 multi-engine aircraft based at Hunt Field. In 2005, there were 50 single-engine and 4 multi-engine aircraft based at Hunt Field. The number of based aircraft increased significantly from 35 in 1994 to a total of 55 in 2005. This equates to an annual increase of nearly 4% which is much greater than the expected 1% annual population growth rate for Lander as projected by the Wyoming Department of Administration and Information. Based on this 4% growth rate, the forecasts for based aircraft through the year 2025 were developed as shown in the following table.

**Table III-1
Hunt Field Based Aircraft Forecasts**

Year	Single Engine	Multi Engine	Helicopter	Total Based Aircraft
2005	50	4	1	55
2010	61	5	1	67
2015	74	6	1	81
2025	110	9	2	121

Based on FAA historical data and forecasts for jets, the jet segment of general aviation has been growing faster than any other category of aircraft. Even though this segment has nationally grown rapidly over the last few years, there has not been and still is not a jet based at Hunt Field. Jet activity at the airport has not increased at a lower rate than the national average rate. Based on traffic trends at the airport and interview of Hunt Field aircraft owners, no evidence indicates jets are anticipated to be based at Hunt Field in the foreseeable future. However, if jet aircraft become popular and common at the airport, it may affect the airport ARC and configuration due to their size and expected landing speeds.

Forecast of Operations

Aviation forecasts were developed using Hunt Field Airport fuel records from 2002 through 2005 and FAA 5010 data. This was found to be the best data from any source to indicate the airport's traffic levels. The fuel sale records at Hunt Field Airport clearly document the type of aircraft, type of fuel, and amount of fuel purchased. Based on the fuel records, trends in fuel sales and types of aircraft using the airport were compiled. From this data, the number of fuel sales by each ARC aircraft class was established. From these totals, a percentage of total fuel sales for each aircraft class was developed. Even though this percentage accurately represents fuel sales by aircraft class, it cannot initially be used to determine annual operations because each aircraft does not necessarily purchase fuel each time it lands at the airport.

To correlate fuel sales to operations, a factor relating operations per fuel sale was established for each aircraft class. This was developed in corroboration with the FBO person who handles all fuel sales. Category A aircraft are small and typically used for recreation. The length of flight for these aircraft is typically short which results in a higher number of operations between fuelings. Most category B aircraft are used for longer flights which require fuel to be purchased more frequently. According to the FBO at the airport, these aircraft typically purchase fuel before each take-off. Category C aircraft are reported by the FBO to be purchasing fuel before every other take-off. Because of the fuel consumption of helicopters, these aircraft require fueling before each take-off. According to the owner of the FBO at the airport, the number of operations per fuel sale listed below for each class of aircraft appears to be an accurate estimate of operations.

From percentages of total fuel sales and operations per fuel sale, a percentage of total operations taking place at the airport for each aircraft category was then established.

Based on these weighted percentages, approximate current annual operations for each aircraft category have been developed using current FAA 5010 data of 11,150 annual operations.

**Table III-2
Hunt Field Annual Fuel Sales and Annual Operations 2006**

Aircraft Category	% of Sales	Operations per Sale	% of Operations	Annual Operations
A	56	8	82.7%	9,216
B	29	2	10.7%	1,193
C-I	2	4	1.5%	165
C-II	1	4	0.7%	82
Helicopter	12	2	4.4%	494
Total	100%		100.0%	11,150

Annual fuel records were compared in order to develop annual growth rates in fuel sales for 100 LL and JET A. These growth rates were then used to develop projections of future operations. Fuel records from 2002 through 2005 were evaluated for the current trend in fuel sales, while fuel records from 1994 and 2005 were compared to identify the historic trend in fuel sales. The current trend indicates that fuel sales have remained constant with no significant changes over the last few years. However, from 1994 to 2005, annual fuel sales for 100 LL and JET A increased an average of 2.10% and 1.90%, respectively. The 100 LL fuel is most commonly used in Category A and B aircraft, while JET A fuel is primarily used in Category C aircraft and helicopters. Assuming that these fuel sale increases correspond to increased operations, operation projections were developed for 2010, 2015, and 2025 for each category of aircraft.

**Table III-3
Hunt Field Operations Forecast (2025)**

Aircraft Category	Annual Operations	Growth Rate	2010 Projected Operations	2015 Projected Operations	2025 Projected Operations
A	9,216	2.10%	10,225	11,345	13,966
B	1,193	2.10%	1,324	1,469	2,225
C-I	165	1.90%	181	199	290
C-II	82	1.90%	90	99	144
Helicopter	494	1.90%	543	596	869
Total	11,150		12,363	13,708	17,494

These forecasts show that Hunt Field Airport is expected to experience some growth traffic from C category aircraft in the next 20 years. This agrees with the national trend for jet aircraft usage. The information received from Lander area entities indicated some increase in jet use at Hunt Field Airport. Entities that were contacted include:

- *Lander Airport Board*
- *Wind River Aviation*
- *Wyoming Department of Transportation*
- *U.S. Forest Service*
- *Bureau of Land Management*

- *First Interstate Bank*
- *Lander Valley Medical Center*
- *Fremont Motors*
- *Lander Chamber of Commerce*
- *Net Jets*
- *National Outdoor Leadership School*
- *Mutual of Omaha Insurance*

It should also be noted that these forecasts show a more aggressive increase in operations than the historical trend represented in FAA 5010 data. According to 5010 data, annual operations have decreased from 11,600 in 1990 to 11,150 in 2006. More specifically, general aviation operations have remained constant with no growth while air taxi operations have decreased nearly 75%.

**Table III-4
Hunt Field Aviation Activity (FAA 5010)**

Year	General Aviation		Air Taxi	Total Operations
	Local	Itinerant		
1990	6,000	5,000	600	11,600
1994	6,000	5,000	300	11,300
2006	6,000	5,000	150	11,150

Source: FAA 5010 Records

Local knowledge of operations agrees with the FAA’s reported decline in air taxi operations. In the early 1990’s Lander had a Part 139 charter operator. That operator is no longer in business. General aviation and itinerant operations have, however, increased modestly.

Another factor that should be recognized is the close proximity of Riverton Regional Airport to Hunt Field Airport (26 highway miles). It has been demonstrated that the two airports function in a complimentary manner. The majority of aircraft that operate at Hunt Field Airport are typically private and recreational aircraft. Larger aircraft that require a longer runway and an instrument approach, such as air taxi and commercial aircraft, favor Riverton’s facilities.

Airport Reference Codes

The FAA Airport Reference Code (ARC) is a coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. The ARC consists of two components relating to the airport’s “critical” or “design” aircraft. The first component, which is depicted by a letter, is the aircraft approach category and relates to aircraft approach speeds (operational characteristic). The second component, which is depicted by a Roman numeral, is the airplane design group and relates to aircraft wingspans (physical characteristic). In general, the aircraft approach speed applies to runways and runway related facilities. The airplane wingspan primarily refers to separation criteria involving taxiways and taxilanes.

The aircraft approach category is based on 1.3 times the aircraft's stall speed in its landing configuration at its maximum certified landing weight. The aircraft approach categories are as follows:

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

The airplane design group is based on wingspan. The groups are as follows:

- Group I:* Up to but not including 49 feet (15m).
- Group II:* 49 feet (15m) up to but not including 79 feet (24m).
- Group III:* 79 feet (24m) up to but not including 118 feet (36m).
- Group IV:* 118 feet (36m) up to but not including 171 feet (52m).
- Group V:* 171 feet (52m) up to but not including 214 feet (65m).
- Group VI:* 214 feet (65m) up to but not including 262 feet (80m).

An airport which is expected to accommodate single-engine airplanes normally falls into ARC A-I or B-I. Airports serving larger general aviation and commuter-type airplanes are usually in ARC B-II or C-II. Small to medium-sized airports serving air carriers are usually ARC C-III, while larger hub air carrier airports are usually ARC D-IV through E-VI.

Hunt Field ARC for the 20-Year Planning Horizon

Based on the above operations forecast, it is expected that an airport capable of accommodating Category B-II aircraft will adequately serve the Lander community for the coming 20 years. However, due to the national trend of growth among the jet category of aircraft, a Category C-II will be presented as the ultimate airfield in this Master Plan. The Category C-II footprint will allow for Category B-II improvements within it that are readily upgradable when it becomes necessary.

Through the course of this Master Plan it has also been determined that the present airport site will accommodate a higher category airport, but at a cost and with some restrictions as noted in Chapter V - Alternatives. Additionally, it has been determined that in the Lander area there is no feasible alternative site that can accommodate a Category C-II airport as discussed in Chapter V – Alternatives. Finally, the Lander community has expressed a strong preference to improve the capabilities of Hunt Field to no higher category than Category B-II, but within an ultimate Category C-II footprint.

The Canadair CL – 600 was identified as the ‘critical’ or ‘design’ aircraft for improvements during the 20-year planning period.

Chapter IV. FACILITY REQUIREMENTS

Introduction

This section of the Master Plan is used to identify the capital improvements and facilities that will be required to meet the expected aviation activity, the needs of the community, and the standards established by the FAA. These items not only provide a plan for future development, but are also necessary in order to maintain the present investment in the airport. The ALP drawings will graphically depict these items.

Ultimate improvements for Hunt Field will be planned using FAA Airport Design criteria for ARC C-II. The forecasts presented in Chapter III do not project operations at the airport to reach the threshold requiring C-II configuration during this planning period, through 2025. However, there is a clear trend that the national air fleet includes an ever-increasing amount of C category aircraft and that C category traffic is increasing. With this trend in mind, all improvements are being planned so that they readily lend themselves to ARC C-II. Airport improvements that can be upgraded without complete reconstruction will eventually result in a significant cost-savings for Lander and the funding agencies.

Dimensional Standards

In any airport planning effort, a key consideration is to determine and evaluate the dimensional standards established by the FAA. Airport geometry is established using object clearing and design standards criteria. A computer model developed by the FAA may be used to determine the dimensional standards for a specific location once the ‘critical’ or ‘design’ aircraft has been determined. In Chapter III of this report, the Canadair CL – 600 was identified as the ‘critical’ or ‘design’ aircraft for improvements during the 20-year planning period. Ultimate improvements will be planned using FAA Airport Design criteria for ARC C-II.

Table IV-1 below gives a summary of significant FAA object clearing criteria and design standards that need to be considered for improvements made in the future at the Hunt Field Airport. According to the FAA standards, the runway safety area, taxiway object free area, taxiway safety area, and runway-taxiway centerline separation will need to be expanded.

**Table IV-1
Hunt Field Dimensional Standards**

Object Clearing Criteria	Existing R/W 03/21	FAA Standards ARC B-II	FAA Standards ARC C-II
Runway Object Free Area (OFA)			
Width	400'	500'	800'
Length Beyond Runway End	300'	300'	1000'
Runway Safety Area (RSA)			
Width	120'	150'	500'
Length Beyond Runway End	240'	300'	1000'
Runway Obstacle Free Zone (OFZ)			
Width	120'	250'	400'
Length Beyond Runway End	200'	200'	200'
Taxiway Object Free Area (TOFA)			
Width	89'	131'	131'
Taxiway Safety Area (TSA)			
Width	49'	79'	79'
Design Criteria			
Runway Width	100'	75'	100'
Taxiway Width	40'	35'	35'
Runway Centerline to Parallel Taxiway Centerline	163'	240'	300'
Runway Centerline to Edge of Aircraft Parking	250'	250'	400'
Taxiway Centerline to fixed or Movable Object (1/2 of TOFA)	44.5'	65.5	65.5'

Source: AC 150/5300-13, Airport Design

Runway Object Free Area (OFA) - A two-dimensional ground area centered on the runway centerline. The runway OFA clearing standard requires clearing the OFA of above ground objects protruding above the runway safety area edge elevation except those objects whose location is fixed by function such as navigational aid.

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. Hunt Airfield does not meet the current ARC B-II RSA standards.

Runway Obstacle Free Zone (OFZ) - A defined volume of airspace centered above the runway centerline that is required to be clear of all objects except for frangible visual NAVAIDs. The runway OFZ is the airspace above a surface where elevation at any point is the same as the elevation of the nearest point on the runway centerline. The present OFZ at Hunt Field meets the ARC B-II standards

Taxiway Object Free Area (TOFA) - The TOFA is a two-dimensional ground area centered on the taxiway centerline. The taxiway OFA precludes vehicle service roads, parked airplanes, and objects except those whose location is fixed by function such as navigational aids.

Taxiway Safety Area (TSA) - The TSA is a defined surface alongside the taxiway prepared for reducing the risk of damage to an airplane unintentionally departing the taxiway.

Runway Requirements for Runway and Taxiway

The existing facilities at the Hunt Field Airport include one primary runway oriented 03/21. Runway 03/21 is paved with porous friction course asphalt and is 5,005 feet long by 100 feet wide. This width is adequate for both B-II and C-II category. The current runway meets the FAA recommended standards for current and projected activity at the airport.

The current separation between the runway and taxiway at Hunt Field is approximately 163 feet. This separation distance satisfies only FAA criterion for the B-I Small Airplanes Only. This separation is planned to increase to 300 feet, which meets C-II design standards. The runway or taxiway must be moved to achieve the required separation.

The recommended runway length for a specific airport is determined by reviewing the mix of airplanes forecasted to use the airport. The runway length for a specific airplane is based on that particular airplane's weight, wing span, airport temperature, airport elevation, condition of the runway surface, and the maximum differences in elevation of the runway centerline coupled with the aircraft's performance characteristics.

Guidelines for determining the length for runways is provided in *FAA Advisory Circular (AC) 150/5325-4A, Runway Length Requirements for Airport Design*. Nomograph design charts may be used for determining the appropriate length based on airplane groupings or for specific airplanes.

FAA has developed the Airport Design software which may be used to quickly determine the recommended runway length for airport design. **Table IV-2** shows the recommended runway length for the Hunt Field Airport based on an elevation of 5,584 feet above sea level, an ambient temperature of 86° F, and a maximum difference in runway centerline elevations of 35 feet. The present runway at Hunt Field is 5005 feet long.

**Table IV-2
FAA Recommended Runway Lengths for Hunt Field**

Small Aircraft with less than ten passenger seats	
75 percent accommodation	4,850'
95 percent accommodation	6,860'
100 percent accommodation	6,860'
Small Aircraft with ten or more passenger seats	
	6,860'
Large Aircraft of 60,000 pounds or less	
75 percent accommodation at 60 percent useful load	7,120'
75 percent accommodation at 90 percent useful load	8,940'
100 percent accommodation at 60 percent useful load	11,340'
100 percent accommodation at 90 percent useful load	11,340'

Source: AC 150/5325-4A, Runway Length Requirements for Airport Design

Airport Airspace and Obstructions – FAR Part 77

Federal Aviation Regulations (FAR) Part 77 surfaces are imaginary surfaces which surround every airport. These surfaces are used to determine whether an object penetrates an airport’s navigable airspace. Any object penetrating these surfaces is considered by the FAA to be an “obstruction”. The size of each such imaginary surface is based on the category of each runway according to the type of approach available or planned for that airport.

Primary Surface - A longitudinally-centered surface on the runway which extends 200 feet beyond each end of the runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of the primary surface required and the width of the existing primary surface for runway 03/21 is 500 feet.

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 the runway based upon the type of approach available or planned for that runway end. The future approach is planned for 20:1. If an instrument approach is made available this slope becomes a maximum of 34:1. The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of 1500 feet for runway 3/21 and for a length of 5,000 feet from the end of the runway. This configuration provides airspace for an instrument approach, should one be developed and published.

Horizontal Surface - A horizontal plane 150 feet above the established airport elevation. The horizontal surface is constructed by swinging 5,000 foot radii from the center of each end of the primary surface of the runway.

Conical Surface - Extends outward and upward from the horizontal surface at a slope of 20 to 1 for a distance of 4,000 feet.

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 surface.

The width of the primary surface impacts the setback requirements for the Building Restriction Line (BRL). This line is shown on the Airport Layout Plan. This governs how closely hangars and any other structure can be built to the runway. The BRL is typically placed where the 7:1 transition surface reaches a height of 35 feet, 495 feet from runway centerline for Hunt Field. The current hangars are located closer than that distance and would therefore be considered obstructions even though they are well under the maximum height. It is recommended that the Airport Board set the BRL at 418 feet from the runway centerline for the ultimate C-II Hunt Field Airport layout. At that location, a maximum building height of 24 feet stays below the 7:1 transition surface slope. All existing hangars fit beneath that 24-foot maximum height.

There is only one identified obstruction that penetrates any of Hunt Field's FAR Part 77 surfaces. The mountain south of the airfield penetrates the Conical Surface and the very outer edge of the Horizontal Surface at one point. The maximum penetration of the Conical Surface is approximately 135 feet.

Landside Facility Requirements

Landside facilities are those facilities that support the airside facilities. These facilities include access roads, auto parking areas, and similar support facilities.

Terminal Building

The present terminal building is over 40 years old. It provides a public phone, a weather forecast terminal, pilots' lounge, a small manager's office, and restrooms. One office area houses a small office for the National Weather Service. The building can comfortably accommodate no more than 15 people. It offers insufficient room to accommodate any large number of people at any one time. It should be replaced with a building constructed to modern standards to provide the space for the projected growths in airport use.

Auto Parking

Hunt Field's auto parking area consists mainly of a single row of paved, unmarked parallel parking stalls abutting the airport fence immediately west of the terminal building. This provides room for approximately 18 vehicles. An additional gravel area for parking is available north of the paved parking area. This area is not designed nor laid out in any organized manner to accommodate parking. The parking is generally adequate for day-to-day activities at the airport. It is inadequate for events such as fly-ins, accommodation of support crews for forest fire fighting, or other activities that gather any

more than approximately 40 vehicles. It is recommended that the entire parking area be overlaid and paved.

Hangars and Taxilanes

Available hangar area is a critical need at Hunt Field. In Chapters II and III, it is noted that the number of based aircraft at Hunt Field has been steadily increasing and is expected to reach approximately 120 aircraft by 2025. This necessitates significant additional hangar area. These additional hangars shown on the ALP drawings are projected to store a total of approximately 120 aircraft by 2025. Also, new taxilanes will be needed to provide access to these new hangars as they are constructed.

Aircraft Parking Apron

The parking apron consists of 24,300 square yards of asphalt pavement and is located north of Runway 3/21. It is adequate in size for all present needs except the annual Fly-In. It was crack sealed in 2003 and 2006. It is in need of a crack seal and pavement overlay. The apron currently has 34 tie-downs which are adequate for current and future airport activity. Should additional tie-downs be necessary, they can be installed in open portions of the apron. The apron pavement is rated at 30,000 pounds for aircraft with SWG and is adequate for forecast uses.

Security and Fencing

As noted in Chapter II – INVENTORY, the airport has a chain link security/game fence around its entire perimeter. The fence is fitted with one powered lift gate and one normally locked, manually opened gate for auto access, and a pedestrian walk-thru gate. Both are secured with a key combination pad. The fence affords adequate security.

Security at airports has become an increasingly higher priority nationwide. The present level of security at the airport should be vigilantly maintained and improved as situations and funding warrant. Recommended improvements consist of surveillance cameras located to monitor activity in the fueling area of the apron and the terminal building itself.

Equipment

The airport easily receives enough snowfall each winter to need good, reliable snow removal equipment. The current equipment has been sufficient, but is near the end of its expected life cycle and showing signs of age. Replacement of this old equipment is recommended in the near future before significant problems develop.

Land Use Recommendations

Planning and zoning in the area of the Hunt Field Airport is under the authority of both the City of Lander and Fremont County. Land uses surrounding the airport are generally compatible with airport operations.

The Hunt Field Airport is surrounded almost entirely by residential, golf course, light industrial, and rangeland uses. Industrial, golf course, and rangeland uses are generally

compatible with airport operations provided they do not represent a danger to aircraft using the airport. Exceptions include commercial and industrial activities that generate smoke, bright lights at night, or electronic interference with aircraft radio navigation equipment. Wildlife attractants should be avoided in the area of airports. On the other hand, residential land uses are not normally compatible with airport operations.

In recent years, residential development along Hillside Drive and off the end of runway 21 (the northeast end of the airfield) has added to potential incompatible land use. This is leading to an increase in the number of residences that are in the approach pattern and experiencing overflights. The aircraft can present a real danger to people and property in the area. It is recommended that such residential development not be encouraged.

The most serious hazard to an airport may be the existence of tall structures in the area where aircraft are operating close to the ground. *FAR Part 77* sets standards for determining obstructions in navigable airspace. An obstruction to air navigation is any object with a top elevation greater than any of the surfaces presented in Subpart C of Code of Federal Regulation (14 CFR), Part 77. *FAR Part 77* requires that each sponsor who proposes a construction project shall notify the FAA with Form 7460-1, Notice of Proposed Construction or Alteration. Upon receipt of Form 7460-1, the FAA performs an analysis to determine whether the proposed structure presents any hazard to the navigable air space. At the conclusion of the analysis, the FAA issues an official finding that the proposed construction will constitute either a “hazard” or “no hazard”. This concludes the FAA’s involvement in the issue. Local government authorities having jurisdiction over zoning and the issuance of building permits must make the final decision whether to allow the proposed structure to be built.

Through City Code 4-12-15, the City of Lander has adopted and is enforcing building height restrictions around the airport. The restrictions specifically reference the Airport Layout Plan set. The plan references submission of an FAA Form 7460-1 for all construction inside the airport’s horizontal surface boundary and as described in *FAR Part 77, Objects Affecting Navigable Airspace*. The City requires this as a condition to issuance of a building permit in the vicinity of the airport.

Zoning

Hunt Field is located within the City of Lander. It is located on the south center perimeter of the City and is bordered on the south by lands in the County. The City has zoning in place; the County does not.

Since the County does not zone lands under its jurisdiction, no zoning is in effect beyond the south property line of the airport.

Within the city, the airport, adjoining rodeo arena, and adjoining golf course are zoned “airport” or “public land”. These lands are all owned by the City of Lander. The local hospital and some of the city maintenance facilities occupy a small piece of this land. Use and height restrictions are in place for both ends of the runway approaches, the

transitional zones, and also include the horizontal and conical surfaces. Permitted uses of public lands include parks; recreation facilities, of which the golf course is one; and any other public facility.

The Public Land Zone provides a considerable buffer around the majority of the airport property.

Lands that surround the Public Land Zone are zoned as follows:

R-5	Multi-family Residential
R-1	Single Family Residential
C-1	General Commercial
M-I	Light Industrial

The nearest residential property is over 1/4 mile north of the runway. The property beyond the runway 21 end is zoned light commercial. A plumbing contractor, an electrical contractor and similar operations occupy it. Lands southwest of the runway 3 end are in the county and are not zoned. Rural residential development is occurring in this area. Other portions of the area are occupied by scattered rural ranchettes.

The hospital, which is approximately 100 feet north of the runway, is incompatible with adjoining airport uses due to the noise generation of the aircraft at the airport. It is also a facility that congregates the public.

Summary of Requirements

Table IV-3, below, presents a summary of the requirements of the Hunt Field airport facility.

**TABLE II-3
HUNT FIELD AIRPORT
FACILITY DATA**

GENERAL FACILITIES	
Acreage	187.41
Elevation	5585' MSL
Mean Daily Temperature (Hottest Month)	86.1° F
Unicom Frequency	122.8
Ownership	City of Lander, Wyoming
Role	Public Use General Aviation
Approach Status	Visual - Greater Than 1 Mile
RUNWAY AND LIGHTING DATA	
Direction	03/21 (Northeast/Southwest)
Length	5005'
Width	100'
Surface	Porous Friction Course Asphalt
Approaches	NONE
Marking	Visual
Lighting	Medium Intensity Runway Lights (MIRL)
Rotating Beacon	Yes
Wind Cone	Yes
Pavement Strength	30,000 lbs. (SWG)
PAPI	Runways 3 and 21
TAXIWAY DATA	
Orientation to Runway	Parallel
Width	35'
Pavement Strength	30,000 lbs. (SWG)
HANGAR AND APRON DATA	
Apron Area Including Taxilanes	53,000 SY
Tiedowns	28
T-hangars	18
Terminal	Yes
Executive Hangars	28
FBO Hangar	1
FUEL STORAGE FACILITIES	
Tanks	2 Above Ground-1 Below Ground
Type of Fuel	1-10,000 gal. Jet A 2-10,000 gal. 100 low-lead

Chapter V. ALTERNATIVES

Introduction

Airport master planning is used to determine how the needs of the flying public can be met in a safe and economical manner. All public use airports developed with federal funding assistance should be planned, designed, and constructed to ensure the safety, economy, efficiency, and longevity of the facility. *FAA Advisory Circular 150/5300-13, Airport Design*, details the minimum requirements for aircraft operations plus a safety margin based on airport-specific conditions as well as operating experience. The focus of this chapter is to discuss the alternatives that have been explored to achieve that goal for the Lander area's flying public.

Lander Hunt Field Airport does not currently meet FAA separation and object clearing standards for even ARC B-II. The airport is under continuing pressure for more private hangars and is quickly exhausting the area currently available for hangar construction. This chapter will identify and examine those alternatives the Airport Sponsor, the Wyoming Department of Transportation Division of Aeronautics and the FAA may consider in correcting the non-standard conditions and meeting future aviation traffic demands.

Because expansion of Hunt Field is geographically constrained, the Wyoming Division of Aeronautics requested that Lander make a cursory inventory of possible nearby alternate sites for an airport in the Lander area. This inventory was only to identify sites which may warrant further study if initial evaluation of the site(s) discovered no fatal flaws. Four sites were examined as possibilities for bringing the existing airport into compliance with FAA airport design requirements. This Airport Master Plan reports on these alternate sites as well as the options available at the current location.

Alternatives Considered

Several alternatives were considered during this master planning process to provide the most robust airport for the future of the Lander area. These alternatives included the following:

1. Take no action – Maintain the airport as it currently exists.
2. Move the airport to an alternative site that provides better approaches, is less constrained by urban growth, and has a larger area capable of fully accommodating a C-II category airfield.
3. Upgrade the current site configuration. This alternative had two options, both of which included variations of the following:
 - Maintain the present runway and airfield configuration with the terminal, FBO, and hangar area on the north side of the airfield.
 - Relocate the runway to the south of the existing runway.
 - Reconstruct the existing taxiway.
 - Add area for additional hangars.

Alternative One – Take No Action

The Take No Action alternative, which must be evaluated in Federally Funded projects, would not provide the current and expected future users of the Lander Hunt Airfield with a facility capable of safely accommodating their needs. The existing airport simply cannot meet these needs safely and efficiently. This alternative would result in the airport not meeting FAA design standards for even an Airport Reference Code (ARC) B-II airport. Maintenance of the existing airport in its current configuration will continue to severely limit the aircraft now using the airport. Safety will continue to be a problem and the local economy will be reduced as a result.

This alternative was discarded for a number of reasons. First, this option provides no further development of the airport. Second, it does nothing to provide solutions for the limitations presently faced by the airport. Third, without a master plan of the needed projects, the FAA will likely resist contributing further funds to the Lander Hunt Field.

Alternative Two – Move Airport to New Site

The FAA has a policy that it will fund nearby airports if they are separated by at least one-half hour travel time or 20 nautical miles. Given the proximity of Riverton Regional Airport, some 26 miles away, Hunt Field is limited in where it can be relocated within the FAA's criteria. It was determined by the funding agencies that any relocated facility should be configured to meet minimum standards for a C-II category airport. Assuming a minimum C-II runway of 9,000 feet long, an alternate site requires a length of 11,000 feet, (over 2 miles) when adding required safety areas and runway protection zones. The space must be large enough to also accommodate an aircraft parking apron, a FBO, hangars, a terminal, auto parking, and other support facilities. Altogether, these criteria require a reasonably flat and level site that is about two miles in length encompassing approximately 290 acres. Given Lander's proximity to the foothills of the Wind River Mountain Range, few sites meet those requirements.

Using U.S. Geological Survey topographic mapping, this study examined sites in the Lander area that could provide adequate room for a C-II category airport. A preliminary analysis was made of four alternate sites within 10 highway miles of Lander. These sites were:

1. Onion Flats southwest of Lander adjoining the Jeffery City Highway, U.S. 287
2. Lyons Valley site east of the Little Popo Agie River
3. Tweed Lane site two miles northwest of Lander, and
4. Mill Creek northwest of Lander near the junction of U.S. 287 and WY. 132.

These sites each possess advantages and disadvantages from both construction and environmental standpoints. The following is an overview of those sites.

Onion Flats Site

This site adjoins U.S. Highway 287 and is approximately 10 miles from Lander. The site is relatively flat and is undeveloped. State owned land may comprise a third of the site. The balance would require acquisition from private owners. Given the required length of the

site, the hills on the eastern end would conflict with the approach surface. As with the other alternate sites, no site-specific wind data is available and the orientation of the site may not match the prevailing wind direction. The wintertime pattern of drifted snow in this area indicates that the prevailing winds are not aligned with the highway and the conceptual orientation of the runway. There is not adequate room at the site for a crosswind runway or reorientation of the main runway, should that be needed to achieve 95% wind coverage. As a result of approach obstructions and wind conditions, the site was judged unacceptable.

Lyons Valley Site

This site is approximately six air miles east of the present airport. It is located on a dry undeveloped bench of federal land on the east side of the Little Popo Agie River in the Lyons Valley area. Prevailing wind direction is unknown but the orientation of the site lies generally at the orientation of Hunt Field. The site is in quite rough terrain that could, with a lot of earthwork, provide a site. However, it is short of the desired runway length. With the flank of the Wind River Mountains only 2½ statute miles away it offers a marginal departure path. Because of rough terrain and the departure conditions, the site was judged unacceptable.

Tweed Lane Site

This site is approximately four air miles north and west of the present airport. It would span an area from the North Fork of the Popo Agie River at the extension of North Second St. southwest to U.S. Highway 287. The runway could be oriented essentially the same as the present Hunt Field runway. A terrain ridge occupies much of the site. Considerable earthwork would be required to construct a runway meeting FAA line of sight criteria. The departure path would take aircraft to the flank of the Wind River Mountains in approximately one statute mile. The area is presently developed into high end rural ranchettes. Acquiring the needed property would require acquisition on numerous costly properties and homes. It would also require truncating Tweed Lane, a paved county road, and rerouting it or dead ending it from both directions. This could be politically unpopular. With the site's poor departure path along with its many acquisition and construction challenges, it is judged to be less favorable than the present site.

Mill Creek Site

This site is approximately 10 air miles north and west of the present site. It has the most favorable terrain of any of the alternate locations. It is located about eight highway miles from Lander and is located on the Wind River Indian Reservation. The site is subject to many jurisdictional issues, the resolution of which is unknown. The site is also entirely developed, irrigated, agricultural land on private property that would have to be acquired. As with two of the other sites, the departure path would take aircraft to steeply rising terrain at the base of the Wind River Mountain Range within 2½ statute miles. The mountain flank terrain climbs at a slope of approximately 7%. A common climb angle for aircraft is approximately 5%. This could lead departing aircraft into terrain that they would have difficulty out climbing. For this reason and the site's accompanying land jurisdictional issues, the site is judged less favorable than the present site.

Estimated Project Costs of Alternate Sites

In order to properly evaluate whether to move the airport to a new location as a viable alternative, development costs needed to be identified and analyzed. For purposes of this report, development costs were based on the minimum airport site requirements that were identified in Chapter IV – Facility Requirements. Conceptual level project costs are based on the following assumptions:

• Land Required	290 acres
• Runway Dimensions (9000 ft. x 100 ft.)	100,000 square yards
• Parallel and Access Taxiway Dimensions (10,000 ft. x 35 ft.)	38,900 square yards
• Aircraft Parking Apron	25,000 square yards
• Executive Hangars (60 ft. x 60 ft.)	42 each
• T-hangars – 10 Units (48 ft. x 465 ft.)	2 each
• FBO Hangar	1 each
• Fuel System	1 each

Table V-I, below, identifies the costs necessary to move the existing Lander Hunt Field to one of the four (4) candidate sites.

**TABLE V-1
LANDER HUNT FIELD AIRPORT
NEW AIRPORT SITE DEVELOPMENT COSTS**

Item No.	Description	Estimated			Estimated
		Quantity	Unit	Unit Cost	Cost
1	Land Acquisition & Environmental	290	Acres	\$ 20,000	\$ 5,800,000
2	Utilities				
	Water	1	Lump Sum	\$ 200,000	\$ 200,000
	Sewer	1	Lump Sum	\$ 100,000	\$ 100,000
	Electric Power	1	Lump Sum	\$ 75,000	\$ 75,000
	Telephone	1	Lump Sum	\$ 10,000	\$ 10,000
3	Access Road and Auto Parking	7,000	S.Y.	\$ 144	\$ 1,008,000
4	Runway	100,000	S.Y.	\$ 180	\$ 14,400,000
5	Parallel and Access Taxiways	38,900	S.Y.	\$ 144	\$ 5,601,600
6	Aircraft Parking Apron	25,000	S.Y.	\$ 144	\$ 3,600,000
7	Runway and Taxiway Lighting	1	Lump Sum	\$ 600,000	\$ 600,000
8	Executive Hangars (60 ft. x 60 ft.)	42	Each	\$ 220,000	\$ 9,240,000
9	T-Hangars (20 Unit)	1	Each	\$ 500,000	\$ 500,000
10	FBO Hangar	1	Each	\$ 750,000	\$ 750,000
11	Fuel Farm	1	Lump Sum	\$ 600,000	\$ 600,000
12	Engineering and Contingencies @ 20%				\$ 7,916,920
Total Estimated Cost					\$ 54,000,000

Alternative 3 – Upgrade the Current Site Configuration

The options explored for Hunt Field in its present location are: (1) relocate only the runway to meet C-II separation standards, or (2) relocate the runway and taxiway to meet C-II standards. Options 1 and 2 will accommodate larger aircraft that may become the critical design aircraft for Hunt Field if the operating characteristics of aircraft using the airport significantly increase in the future.

Option 1 – Runway Relocation Meeting C-II Standards

C-II standards can be met by relocating the runway 137 feet southeast of its current location. This would provide the 300 feet separation required between the runway and taxiway, and allow the existing taxiway and hangars to remain in place. C-II requirements necessitate having 200-foot wide safety shoulders on each side of the runway which must be graded to a maximum slope of 5%. Likewise, the 1000-foot safety area off each end of the runway will also need to be graded to no greater than a 5% slope. These criteria, coupled with site topography, require significant volumes of imported fill to meet the grading standards. Because the topography beyond the “3” end of the runway adjoining Mortimer Lane is quite steep, and because of the grading requirements established by the FAA for C-II airports, the maximum runway length which can be attained is approximately 5,000 feet. Accommodating the required fill would necessitate purchasing significant additional properties along the southeast side of the runway, including two existing homes. Acquiring the property for the Runway Protection Zone (RPZ) will require purchasing three other existing homes. This would mean the acquisition of seven additional properties to obtain the land needed to accommodate fills and the Runway Protection Zone on the “3” end of the runway alone. Similarly, on the “21” end of the runway the RPZ would span Highway 287 and would require the acquisition of two existing businesses, the relocation of the golf course club house, and the relocation of the golf cart storage garage.

Option 2 –Runway and Taxiway Relocation Meeting C-II Standards

Relocating the taxiway by moving it 64 feet north of its present location and relocating the runway 75 feet south of the present location would also be an alternate method of meeting C-II separation standards.

Even though this alternative would require the acquisition of slightly less property along the southeast side of the runway than would Option 1, it would result in the acquisition of three additional homes to accommodate the fill and the Runway Protection Zone on the “3” end of the runway. Likewise, on the “21” end of the runway, the RPZ would span Highway 287 and would require the acquisition of two existing businesses, the relocation of the golf course club house, and the relocation of the golf cart storage garage. The grading of 200 feet of steep drop-off along the southeast side of the existing runway would require a significant amount of imported fill material.

Moving the taxiway north for C-II standards would require the relocation of 26 hangars and the airport fueling system and diminish the present apron by some 60%. Additional land

would need to be acquired on the northwest to accommodate the required hangar space projected for the C-II configuration. The move to the north is limited due to a city water tank, the hospital, and residences. Because of the combined impacts, this option of Alternative 3, Option 2 is judged to be impractical.

Hangar Area Expansion

Regardless of which of the previous options is selected, additional area is needed for the forecast number of additional aircraft hangars. The Old Timers Rodeo Grounds occupies approximately 20 acres of city owned property adjoining the airport. This area is the only feasible location for expanding the hangar area, but it will require the relocation of the arena. The city is in the process of contacting two other public entities who hold land suitable and potentially available for a new site for the rodeo grounds. The location of that new site has not yet been determined.

The construction of the expanded hangar area will also necessitate removal and relocation of seven private hangars. Three of these are wood frame T-hangars (with no paved access), which are likely the oldest structures on the airport.

Estimated Project Costs for Upgrading the Current Site Configuration

The options include evaluation of the total estimated construction costs, the existing structures, and infrastructure available to bring Hunt Airfield to C-II standards. The estimated costs were evaluated based on the C-II runway/taxiway configuration. The remaining estimated costs for land acquisition, taxiway, apron, taxilane, hangar area and miscellaneous projects remain constant with both alternatives.

The following totals for the entire Construction Improvement Program for each option in Alternative 3 were used as part of the selection of the preferred alternative:

Option 1 \$ 48,156,825
Option 2 \$ 46,809,324

Summary

The four (4) alternate sites identified in this chapter were selected, in part, because they each contained sufficient land to accommodate a fully compliant C-II airport facility. They have some similarities but also several deficiencies in ownership, topography, geology, ground access, and available utilities.

Options to bring the existing airport into compliance with FAA airport design requirements are examined and discussed in Chapter IV – Facility Requirements. The costs to upgrade the existing facility are compared to the costs to develop a new airport site. The “preferred” alternative and Capital Improvement Program (CIP) are presented for consideration by the public and funding agencies.

The sponsor has selected as the preferred alternative the updating of the existing Hunt Field Airport to a C-II configuration as depicted in Alternative 3, Option 1.

Environmental coordination, which was completed during the site evaluation phase, is included in Appendix D of this report.

Chapter VI. CAPITAL IMPROVEMENT PROGRAM (CIP)

Introduction

The analysis conducted throughout this planning process has evaluated Hunt Field's development needs based upon forecast activity, Federal Aviation Administration (FAA) Airport Design Standards, input from the Airport Citizens Planning Committee, the Lander Airport Board, airport users, and the Lander City Council. Basic economic and financial management rationale was then applied to the resulting plan to ensure it is feasible and can be reliably implemented. This chapter concentrates on those factors that will help bring the plan to fruition. The development program outlined in this chapter has been evaluated from a number of views. A variety of development funding and sequencing of projects is possible in implementing the improvement program presented in this chapter. Program funding as well as scope and sequence of projects will further evolve as the plan is implemented.

As is outlined in this chapter, the primary funding source for airport development is monies collected nation-wide from airport users and subsequently distributed by the Federal Aviation Administration and the State of Wyoming. The process of collecting and distributing aviation funds is quite variable, but does follow basic guidelines. Taxes and fees are collected through the Aviation Trust Fund, allocated by congress, and managed by the FAA. Distribution of funding is done by priority-based formulas established by the program guidelines.

Funding Sources

The Aviation Trust Fund administered by the FAA can provide up to 95% of the funding for eligible improvement projects. Wyoming Department of Transportation Aeronautics Division (WYDOT) can provide up to 3% of the project funding, with the final 2% of funding to come from the sponsor, in this case, the City of Lander.

The FAA and WYDOT have funding priority models which rank projects nationally and state-wide, respectively. For major projects typical of the projects proposed in this master plan, Lander's projects will have to compete for funding based on those established funding priorities. Lower priority projects can be designated to receive lower proportions of grant funding, leaving the City of Lander with a larger matching portion to be funded by local monies.

WYDOT currently cost-shares pavement and some other airport maintenance costs at an 80/20 State/Local funding match basis. This funding mode is applied to cost estimates, pavement maintenance, and other projects in the CIP not funded or of low funding priority under the FAA funding guidelines.

Under the current aviation funding legislation, the City of Lander receives \$150,000 per year entitlement funding through the FAA for use on airport projects. This funding can be spent year-to-year or accumulated over a short number of years for a larger project.

The continuation of this funding allocation for general aviation airports has been consistent in recent years, but is dependent on congressional reauthorization.

Sequence of Projects and Opinions of Probable Project Cost

This chapter summarizes Hunt Field's overall development needs for the next 20 years. Details for all of the capital expenditures are shown in Tables VI-1, VI-2, and VI-3. The development schedule has been staged in three development periods. The first stage covers the first five years between 2008 and 2012. The second stage runs from 2013 through 2017 and the final stage between 2018 and 2028. The items presented in the Capital Improvement Program (CIP), have been prioritized on a year-by-year basis, in general conformance with FAA funding priorities and modified in some instances to meet priorities of the Airport Board.

The development projects are based upon current needs and projected activity at the airport. The estimates of future activity were used to determine the need for additional airport facilities and to determine the effects associated with development of these facilities. Should airport activity vary from projected levels, implementation of projects should occur when demand actually warrants, rather than according to the estimated staging presented herein.

Cost estimates presented in Tables VI-1, VI-2, and VI-3 should be viewed as only conceptual level estimates, and therefore need to be refined for final design and construction purposes. However, these estimates are considered sufficient for performing the feasibility analysis in this chapter.

The cost estimates presented are in current dollars, with no inflationary factor applied to future dollars or to future years. As the plan is implemented, the cost estimates will need to be updated so they can serve as a useful management tool throughout the life of this master plan's implementation.

Local Funding Sources

Local funding is largely generated from the leasing of hangar space, sale of aviation fuel, hangar lease to the FBO, and office space lease of the airport's former weather service building. This revenue stream (\$30,470 in 2006) is not sufficient to cover Lander's share of the Capital Improvement Program presented in this chapter. Additional funding will need to be provided from the City of Lander's general fund or through other local sources to implement the development program.

The City of Lander does have the rodeo grounds as an asset to contribute in addition to cash. The city is willing to commit the Old Timers Rodeo Arena grounds to airport use. The appraised value of that property may be used as in-kind match in lieu of cash for the local funding match for upcoming grants.

Private Sector Financing

This source of development funds is frequently overlooked. For example, T-hangars, corporate hangars, FBO maintenance hangars, and air cargo buildings are sometimes built using private funds, thereby eliminating the need for the airport to serve as financier and rental manager for these facilities. The advantage of third-party development is that the airport doesn't incur major capital expenditures. By utilizing third-party financing, the airport not only avoids unnecessary debt service but is often relieved of many maintenance costs associated with the upkeep of these facilities.

Other Funding Sources

Certain facilities involved in airport operation are funded by sources other than Federal AIP grants and the various local revenue sources discussed above. For example, air traffic control towers and the installation of certain essential aviation equipment are considered a Federal responsibility and are therefore funded under a separate section of the *Airport and Airway Improvement Act*. This separate section of the Facilities and Equipment Program requires no local matching funds, but it is not a source of funds for runway extensions, land acquisition, or many of the typical airport improvements. At present, Lander's Hunt Field has no such facilities and none are expected in the future.

The last two forms of capital revenue are interest income and the occasional sale of assets. Interest income is usually considered as miscellaneous operating revenue, its capital origin notwithstanding. These are listed here as possible revenue sources, but not necessarily as an indicator of utilizing these sources as part of this plan. Hunt Field presently does not receive any meaningful interest income. No assets are planned for sale as a source of funds.

Finally, land acquisition has been accomplished in some locations through private donations. This private funding source has more potential for application at airports with relatively undeveloped surroundings. In such cases, land donations can accelerate the airport's growth, thereby greatly increasing the value of a developer's remaining nearby land holdings. However, no such transactions are anticipated at Hunt Field.

First Five Years, 2008-2012

The primary FAA safety standard deficiency at Hunt Field is the insufficient separation distance between the runway and the parallel taxiway. Correcting that deficiency entails rebuilding the runway in a new location to achieve the separation distance stipulated by FAA standards. The first step in addressing this need is purchasing the land necessary to relocate the runway parallel to and southeast of its present location.

The second major deficiency at Lander's Hunt Field is an area in which to meet the ongoing and continuous demand for new hangars. Additional hangar space is a pressing problem for the airport. Construction of the first phase of the planned taxilanes and hangar area during this initial period is necessary for the airport to accommodate its

present rate of hangar growth. Without the added hangar area, growth of the flying community in Lander will be severely thwarted. Building the first phase of the hangar area is expected to meet hangar area demand until the balance of the hangars can be built later in the final ten years of the planning period. The only space available for additional hangars is presently occupied by the rodeo grounds. Therefore, relocating the rodeo arena will need to be done in this initial time period.

Other improvements and expenditures that are identified for this first five-year period are those items needed to maintain the ongoing operation and security of the airport.

The following projects and maintenance program are recommended for consideration during the first five years of the CIP. The recommended projects are shown on Figure VI-1 and are described as follows:

Land Acquisition

Acquiring 22 parcels of land totaling approximately 61.91 acres on both ends and along the southeast side of the existing runway is required as a first step in the Capital Improvements Program (CIP). This land is needed to accommodate the RPZ's for a new runway. Acquisition of this land will require land surveys, appraisal of parcels, and a funding grant(s) through the FAA. The structures on that land will also need to be removed.

The land for additional hangars is already owned by the City of Lander. However, none of this land is available for use by the airport until the rodeo arena is moved. After the arena is relocated, any remaining facilities will need to be demolished and/or salvaged. It is by making this property available that the needed local matching funds can be made available.

Equipment

A replacement snow blower is needed early during this period to replace the aging, existing equipment. Reliable snow removal during the winter is an operational necessity for the airport. The existing snow blower is nearly worn out and requires replacement in the very near future.

Construction

Constructing a small extension of the existing taxilane and one additional new taxilane will provide access to approximately 22 new hangar spaces. This is forecast to meet demand for 10 to 12 years into the planning period. It is estimated that construction of the balance of the planned taxiways can wait until after the runway relocation has been completed.

Additionally the area between the existing taxilane and the taxiway will be filled in and paved. This provides open movement area from the taxiway to hangars and eliminates the taxilane centerline to taxiway centerline separation requirement.

Security and Fencing

A perimeter fence will need to be installed on the perimeter of the acquired properties and the rodeo grounds in order to control access to the airport. The installation of the recommended surveillance equipment is not dependent upon any of the other planned improvements and can also be done in this initial period. It will provide an immediate security enhancement.

Pavement Maintenance Program

The airport currently has 37,700 square yards of apron and connecting hangar taxiway asphalt pavement. The runway and taxiway consist of 56,800 and 28,600 square yards of asphalt pavement, respectively. Pavement condition index (PCI) assessments are conducted for the airport on a three year interval by the Wyoming Aeronautics Division of WYDOT.

The airport, in conjunction with WYDOT, has carried out an active program of conducting crack and fog sealing maintenance work on all airport asphalt pavements regularly over the past 20 years. It is recommended that this aggressive maintenance program be continued. It is recommended that crack sealing be conducted on approximately two-year intervals with seal coats (fog seals) applied every four years.

Second Five Years, 2013-2017

The following projects are planned during the second five years of the CIP. These projects are shown in Figure VI-2.

Construction

With the needed land for the runway relocation having been acquired in the first five years, the design and construction of the runway can proceed. This will also include the relocation of Mortimer Lane in the area of Hill Crest Street. The construction may be phased as funding allows. Because of the scale of the runway project and the level of funding required, no other construction is planned for these five years.

Pavement Maintenance Program

The pavement maintenance program described in the previous section should be continued. The life and serviceability of all paved surfaces can be economically prolonged by such a program.

Final Ten Years, 2018-2028

The following projects are recommended for consideration during the third five years of the CIP. The recommended projects are shown on Figure VI-3 and are described as follows:

Construction

Following the construction of the new runway, the existing taxiway will be reconstructed in its present location. The rehabilitation of the apron area will be done concurrently with the taxiway. Taxilanes to access the balance of the new expanded hangar area can also be constructed in this final part of the planning period.

A new fuel system will be constructed to provide a modern card reader and inventory system. This work would be best done during the apron rehabilitation work.

Land Acquisition

Acquiring 12 parcels of land totaling approximately 15.14 acres off the ends of the new runway is required to secure the RPZ's needed for an ARC C-II airport. Acquisition of this land will require land surveys, environmental assessments, appraisal of parcels, and funding grants through the FAA. The structures on that land will also need to be removed.

Pavement Maintenance Program

Following construction of the runway, connecting taxiways, and the taxilanes, the airport will have 52,700 square yards of apron and connecting hangar taxiway asphalt pavement. The runway and taxiway consist of 56,800 and 39,000 square yards of asphalt pavement, respectively. Pavement condition index (PCI) studies are expected to be conducted for the airport by WYDOT on a three-year interval. The pavement maintenance program discussed previously should be continued indefinitely.

Construct Second Phase of Hangar Area

If the current rate of hangar development continues, the hangar lots made available in the first phase of the hangar area development (22 lots) will be fully occupied, or nearly so, within the first 10 to 12 years of the planning period. It is forecast that by the year 2018 the airport will again find itself nearly out of available hangar lots.

Fuel System Card Reader and Inventory System

The airport board wants to install an automated fuel inventory system. This would aid significantly in tracking fuel dispensing and correlation of records. While that system is being installed they want to also add a credit card reader similar to those available on nearly all present day automobile fueling outlets. This would afford the airport the opportunity to sell fuel during non business hours when the FBO is unattended. This addition will increase airport revenues through added fuel sales. It is recognized that funding will be local possibly supplemented by a state loan.

Terminal Building

The final step in this master plan is to construct a new terminal. As of 2008, the terminal building is some 40 years old and barely meets day-to-day operating needs. In the coming years it will likely become increasingly inadequate.

Lander Airport Master Plan
 Future Capital Improvements
 C-II Facility
 12/03/07
 Airport Board Meeting

<u>Project</u>	<u>Local Priority</u>	<u>FAA Priority Scale*</u>
Acquire approximately 13 private tracts totaling 18 acres and remove structures.	1	40
City transfer Rodeo Arena land and other tracts to airport use, totaling approximately 21 acres.	2	N/A
Construct security fence around perimeter of purchased property.	3	41
Install and implement airport security features.	4	83
Snow removal equipment. Plow truck.	5	47
Construct first taxilane and hangar area.	6	26
Relocate runway.	7	70
Relocate ASOS, segmented wind cone, and other obstructions outside OFA and Building Restriction Line.	8	43
Rehabilitate taxiway.	9	66
Construct apron modifications.	10	60
Acquire replacement fair grounds property and construct facilities.	11	40
Construct second taxilane and hangar area.	12	26
Upgrade/replace terminal building.	13	35
Fueling facility and area improvements.	14	19

*Larger number denotes higher priority

The above listing of priorities demonstrates that the local needs differ significantly from FAA priorities.

Summary of Costs

TABLE VI-1					
HUNT FIELD AIRPORT					
CAPITAL IMPROVEMENT PROGRAM AND DEVELOPMENT SCHEDULE					
<i>FIRST FIVE YEARS, 2008-2012</i>					
Year	Description	Total Cost	FAA Share	State Share	Sponsor Share
2008	Conduct Environmental Assessment for Land Acquisition	\$ 194,750	\$ 185,013	\$ 5,843	\$ 3,895
	Crack Seal, Fog Seal and Re-mark All Pavements	\$ 90,000		\$ 72,000	\$ 18,000
2009	Acquire Runway South Properties and Remove Structures	\$ 4,030,556	\$ 3,829,028	\$ 120,917	\$ 80,611
	Plow Truck/Snow Blower	\$ 205,000	\$ 194,750	\$ 6,150	\$ 4,100
	Relocate Rodeo Grounds	\$ 1,550,000	\$ 1,472,500	\$ 46,500	\$ 31,000
2010	Construct Taxiway Extension & South Hangar Taxiway	\$ 2,156,551	\$ 2,048,723	\$ 64,697	\$ 43,131
	Install Security Equipment	\$ 61,875		\$ 49,500	\$ 12,375
2011	Crack Seal All Pavements	\$ 40,000		\$ 32,000	\$ 8,000
	Demolition/Salvage of Existing Rodeo Facilities	\$ 805,400	\$ 765,130	\$ 24,162	\$ 16,108
2012	Construct Perimeter Fence on Acquired Properties	\$ 149,138	\$ 141,681	\$ 4,474	\$ 2,983
	SUBTOTAL-FIRST FIVE YEARS	\$ 9,283,269	\$ 8,636,825	\$ 426,242	\$ 220,203

TABLE VI-2					
HUNT FIELD AIRPORT					
CAPITAL IMPROVEMENT PROGRAM AND DEVELOPMENT SCHEDULE					
<i>SECOND FIVE YEARS, 2013-2017</i>					
Year	Description	Total Cost	FAA Share	State Share	Sponsor Share
2013	Crack Seal, Fog Seal, and Re-mark All Pavements	\$ 90,000		\$ 72,000.00	\$ 18,000.00
2014	Design Runway Construction Project	\$ 704,700	\$ 669,465	\$ 21,141	\$ 14,094
2015-17	Construct Relocated Runway	\$ 17,377,029	\$ 16,508,178	\$ 521,311	\$ 347,541
2016	Crack Seal All Old Pavements	\$ 40,000		\$ 32,000	\$ 8,000
	SUBTOTAL-SECOND FIVE YEARS	\$ 18,211,729	\$ 17,177,643	\$ 646,452	\$ 387,635

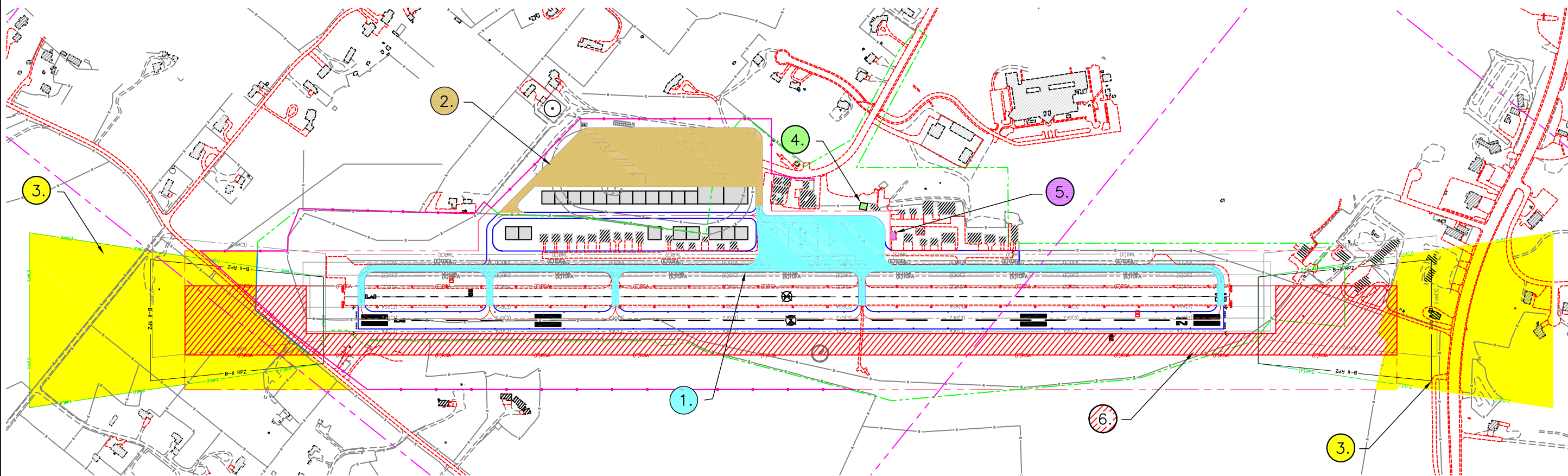
**TABLE VI-3
HUNT FIELD AIRPORT
CAPITAL IMPROVEMENT PROGRAM AND DEVELOPMENT SCHEDULE**

FINAL TEN YEARS, 2018-2028

Year	Description	Total Cost	FAA Share	State Share	Sponsor Share
2018	Crack Seal, Fog Seal, and Re-mark All Pavements	\$ 90,000		\$ 72,000	\$ 18,000
2019	Construct Fuel System Card Reader and Inventory System	\$ 95,634		\$ 66,944	\$ 28,690
2020	Crack Seal, Fog Seal, and Re-mark All Pavements	\$ 90,000		\$ 63,000	\$ 27,000
	Reconstruct Taxiway and Rehabilitate Apron	2,405,415	\$ 2,285,144	\$ 72,162	\$ 48,108
	Construct Middle Hangar Area Taxilane	\$ 563,040	\$ 534,888	\$ 16,891	\$ 11,261
2021	Crack Seal All Pavements	\$ 40,000		\$ 28,000	\$ 12,000
2022 to 28	Crack Seal, Fog Seal, and Re-mark All Pavements	\$ 90,000		\$ 72,000	\$ 18,000
	Acquire Runway Safety Properties and Remove Structures	\$ 1,561,844	\$ 1,483,752	\$ 46,855	\$ 31,237
	Construct North Hangar Area Taxilane	\$ 208,656	\$ 198,223	\$ 6,260	\$ 4,173
	Construct New Terminal	\$ 546,480	\$ 519,156	\$ 16,394	\$ 10,930
	Construct Perimeter Fence on Acquired Properties	\$ 172,200	\$ 163,590	\$ 5,166	\$ 3,444
	Crack Seal All Pavements	\$ 40,000		\$ 28,000	\$ 12,000
	Construct C Category Safety Areas	\$ 13,979,952	\$ 13,280,954	\$ 419,399	\$ 279,599
	SUBTOTAL-FINAL TEN YEARS	\$ 19,883,220	\$ 18,465,707	\$ 913,071	\$ 504,442

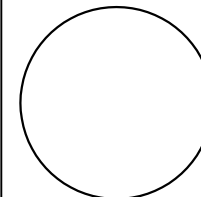
CAPITAL IMPROVEMENT PLAN FINAL 10 YEARS 2018-2028

MAG. DEC. 11'22" M.N.
RATE OF CHANGE
08" W PER YEAR
MARCH 21, 2006 (NGDC)



- 1. Reconstruct Taxiway and Rehabilitate Existing Apron.
- 2. Construct North Hangar Area and Taxilanes.
- 3. Acquire C-II RPZ's.
- 4. New Terminal Building.
- 5. Fuel Inventory and Card Reader System.
- 6. Construct C-II Safety Areas.

NO.	DESCRIPTION	DATE BY



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DATE: APR. 2008

HUNT FIELD
WYDOT NO: LND-01X
CAPITAL IMPROVEMENT PLAN
FINAL TEN YEARS
FILE: M:\1026\1026\FINAL_A\A\1026_LP_JL.DWG DATE: 9/4/2008 4:52 PM

PROJECT NO.
10-26-01-06
SHEET
3 of 3

Chapter VII. AIRPORT PLANS

Introduction

This section of the report provides the ALP drawing set. These drawings consist of the following exhibits, which are included at the end of this report:

Sheet 1	Cover
Sheet 2	Airport Layout Plan
Exhibit 3	Airport Airspace Drawing
Exhibit 4	Runway Approach Plan & Profile - Runway 3 & 21
Exhibit 5	Terminal Area Drawing
Exhibit 6	Land Use Drawing
Exhibit 7	Airport Property Map - Exhibit "A"

Prior to any major airport development being federally funded, an ALP must be approved by both the FAA and the local Airport Sponsor. *Advisory Circular 150/5070-6A, Airport Master Plans*, provides standards for preparation of the ALP. Development standards and design criteria are contained in *Advisory Circular 150/5300-13, Airport Design*.

As mentioned in previous sections of this Master Plan report, the Hunt Field Airport presently serves aircraft primarily in ARC B-I and B-II categories. All future improvements will be based on FAA ARC C-II design standards in order to improve operational safety and accommodate eventual ARC upgrades. The ALP drawing set graphically depicts these improvements.

Airport Layout Plan

The Airport Layout Plan is a key document in the planning of airports, which should be kept current. Features shown on the ALP drawing include the following:

- Location map
- Wind rose
- Runway and airport data tables
- Sponsor approval block
- Legend of airport facilities

This drawing has a location map which shows where the Hunt Field Airport is located with respect to surrounding communities and airports. Existing facilities and proposed development for the airport are also shown on this drawing.

Airport Airspace Map – Part 77 Surfaces

The Airport Airspace Drawing was prepared in accordance with the *FAR Part 77, Objects Affecting Navigable Airspace*. For Runway 03/21 the surfaces correspond to 20:1 visual approach dimensions.

All significant objects within the approach surfaces were depicted. Composite ground profiles are also depicted. The composite profiles show the highest existing ground at any point under the approach surface.

Runway Approach Surfaces and Profiles for Runway 03/21

These exhibits give further details of obstructions which are in the approach surfaces for Runway 03/21. This sheet shows the existing approach surfaces for both runway ends.

Terminal Area Drawing

The Terminal Area Drawing is intended to provide a larger scale view of the area surrounding the terminal. This plan shows the locations of the aprons, fueling areas, buildings, hangars and parking lots.

Land Use Drawing

This exhibit depicts the existing and recommended use of all land within the ultimate airport property line. Noise mapping is shown on the Land Use Drawing. The 65 DNL area is shown in dark green. It is this area that may be most affected by noise from the airport.

Airport Property Map Exhibit “A”

The Exhibit “A” Property Map indicates how various tracts of land within the airport boundaries were acquired. It also shows the properties that need to be acquired to accommodate planned improvements, their acreage, and current ownership